Article

Economy and Space

EPA: Economy and Space
2020, Vol. 52(7) 1415–1433

DOI: 10.1177/0308518X20909391
journals.sagepub.com/home/epn
SAGE

Standards and SSOs in the contested widening and deepening of financial markets: The arrival of Green Municipal Bonds in Mexico City

Hanna Hilbrandt
University of Zurich, Switzerland

Monika Grubbauer
HafenCity University Hamburg, Germany

Abstract

Particularly since the financial crisis of 2008, much has been written about the growing influence of finance in the development of cities in the global North. Today, financial markets also appear to be expanding southwards. A small but growing number of existing studies on the financialization of Southern cities helpfully explore how international investment changes urban development locally. Yet, they say less about the actors, procedures, and hurdles through which global market expansion is forged and expanded in the first place. In this paper, we examine the role of standards and standards-setting organizations in fostering market expansion and financial deepening. In particular, we highlight the efforts of standards-setting organizations in implementing a novel financial tool, green municipal bonds. Green municipal bonds are debt instruments that allow cities to raise capital through the issuance of bonds exclusively for investment in projects certified as sustainable. First employed by European, Canadian, and US cities, the paper traces the processes that led up to the issuance of these bonds in Mexico City, one of the first municipalities in the so-called 'emerging markets' to issue green municipal bonds. Our findings indicate that standards barely impacted project implementation; nevertheless, with the political efforts of standards-setting organizations, standards worked as vehicles through which infrastructures of markets, knowledge, and political support were built, legitimized, and secured. While these processes widened and deepened financialization, they also encountered challenges in terms of the long-term stabilization of these infrastructures and the upkeep of political support.

Corresponding author:
Hanna Hilbrandt, University of Zurich, Department of Geography, Winterthurerstrasse 190, 8057 Zürich, Switzerland.
Email: hanna.hilbrandt@geo.uzh.ch

Keywords
Financialization, standards, development, green municipal bonds, Mexico City

Introduction

Much has been written about the growing influence of finance on European, Canadian, and US cities (Aalbers, 2017; Christophers, 2014). Today, financial markets also appear to be expanding southwards into the 'rising' cities of Asia, Africa, and Latin America in order to invest in their infrastructures, land, property, and real estate (Rouanet and Halbert, 2016; Soederberg, 2015). While a small but growing number of studies on the financialization of Southern cities (Halbert and Rouanet, 2013; Klink et al., 2019; Kutz and Lenhardt, 2016; Sanfelici and Halbert, 2015) helpfully explore how international investment changes urban development locally, they say less about the *actors, procedures,* and *hurdles* through which global infrastructures of market expansion are forged and expanded in the first place. Instead, most literature tends to assume that capital is 'footloose' and flows freely around the globe (cf. Searle, 2014).

In this paper, we are concerned with background work that accompanies efforts to *widen and deepen financialization* in and to the South, with a particular focus on the role of international standards and standards-setting organizations (SSOs). Standards and SSOs, subjects of substantial academic debate (Bowker and Star, 2000; Lampland and Star, 2009; Timmermans and Epstein, 2010), are instrumental to the broader trend of policy and finance innovations travelling the globe through networks of knowledge exchange (Baker et al., 2016; Faulconbridge and Grubbauer, 2015; Larner and Laurie, 2010; Roy, 2012). Standards, it is commonly argued, do not only serve to foster market transparency, minimize economic risk, and transnationalize regulation (Delimatsis, 2015; Djelic and den Hond, 2014; Ponte and Cheyns, 2013), they also appear to advance the privatization and globalization of governance (Büthe and Mattli, 2011; Ouma, 2010).

Against the background of this literature, we scrutinize if and how the regulatory shifts around standard-setting advance the financialization of Southern cities by exploring the processes that precede and accompany the use of a relatively novel financial tool, green municipal bonds (GMBs). GMBs are debt instruments that allow cities to raise capital through the issuance of bonds intended exclusively for investment in certified sustainable projects, promising considerable reputational gains for issuers and investors. To accredit the ecological and financial sustainability of these projects, a number of green standards, such as climate bond certificates (CBC) and the Green Bond Principles (GBPs), have emerged. Unlike well-established standards that are contractually recognized by governments, such as the German DIN (German Institute for Standardization), these sustainability standards can be labelled as market standards as the organizations promoting them are private corporate actors or NGOs (cf. Imrie and Street, 2009). Since the World Bank and Skandinaviska Enskilda Banken (SEB) started issuing GMBs in 2008, the use of this instrument has quickly gained momentum.

This paper examines how GMBs travelled to Mexico City, focussing on the actors, procedures, and hurdles that accompany, support, or hinder these movements: who is involved in these processes and with what motives?; what are the means through which these actors engage?; and what are the conflicts and challenges that these processes encounter? Based on semi-structured interviews and the analysis of legal and regulatory documents, we address these questions through the following line of argumentation:[1] in the arrival of GMBs in Mexico City, standards barely impacted project implementation through their technicalities – rather, standards worked as vehicles through which infrastructures of markets and political support are built, legitimized, and secured, with SSOs performing important political work. While these processes extended financial logics to new sites and into new spheres of urban governance, implementing standards and building these infrastructures required significant efforts and encountered challenges in terms of the long-term stabilization of these infrastructures and the upkeep of political support beyond electoral cycles.

To substantiate these points, we first highlight the 'landing' of GMBs in Mexico City to pinpoint the political work and coordinating role of SSOs in spreading global agendas of financial inclusion and sustainable growth. In aligning ever-broader actor constellations – including sustainability NGOs, city networks, consultancies, financial actors, and SSOs themselves – SSOs, such as those certifying GMBs, advance these global agendas and legitimize the processes of financialization that they promote, through their association with green or sustainable growth. Secondly, we turn to the implementation of GMBs to consider the local governance changes that accompanied the issuance of these bonds. The case findings demonstrate that, as standards and associated financial market norms are translated into local or national rules and embedded in the work of the bureaucracy, standards foster financial thinking, accountings metrics, and the logics of calculating and quantifying green benefits. However, while these processes were, as we argue, globally expanding market infrastructures and locally deepening a process of financialization by embedding global standards into the governing process of the local state, they also need to be understood as a fragile and conflictive project largely dependent on continuous maintenance and individual support.

This paper proceeds by discussing the literature that theorizes the globalization of finance and the shifting regulatory landscapes in which this process is embedded, highlighting in particular the role of standards and SSOs in these developments. The subsequent section III starts by introducing the emergence of GMBs, then discusses the efforts required to issue standardized bonds in Mexico City and the complications that this process encountered. Finally we offer conclusions on the effects of these developments regarding climate mitigation and adaptation as well as the globalization of finance.

Cities as sites and targets of financialized global development and climate agendas

In recent years, the urgent financial and infrastructural needs of Southern cities, finance's search for profitable investment opportunities in the built environment, as well as new possibilities related to green investment have made room for finance to assume a global role as a driver of (supposedly sustainable) urban growth. At the same time, both developmental and green agendas assign cities a particular relevance in combatting climate change. The diffusion of GMBs needs to be set against the background of these shifts, placing them in the context of literature focusing firstly on developmental policies around green and municipal finance in the Global South and, secondly, on the work of standards and SSOs in fostering global development agendas of financial inclusion.

Financialization and development in cities of the Global South

Particularly after the financial crises of 2008, the way that global finance is increasingly shaping urban development processes has become a major topic of debate (Crosby and Henneberry, 2016; David and Halbert, 2014). Yet, findings concerning how financial logics dominate the production of the built environment in terms of land (Kaika and Ruggiero, 2015), housing (Aalbers, 2017), urban infrastructure (Grafe and Hilbrandt, 2019; Torrance, 2008), as well as redevelopment processes (Rutland, 2010; Weber, 2010), still largely speak about European, Canadian, and US cities. At the same time, critical development scholars document how a new agenda of financial inclusion in mainstream development policy (Mader, 2017; Soederberg, 2013) is changing the context of urban governance in cities of poor and middle-income countries. They pinpoint how new actors, such as charities, business communities, city networks, and consultancies, work alongside multinational development institutions to foster the expansion of financial infrastructures to the South, partly replacing 'classical development policies' of direct partnering and financial aid (Bracking, 2016; Carroll and Jarvis, 2015; Grubbauer, forthcoming; Mawdsley, 2016). This new type of development politics impacts cities of the South particularly through its focus on green finance on the one hand and municipal finance on the other.

On the one hand, we are witnessing an increasing political consensus that changing the course of global urbanization to more sustainable trajectories must be based on financial expansion to the Global South (IPCC, 2014; UNEP, 2013). Before the Sustainable Development Goals (SDGs) were agreed upon, the UN had already set the course for expanding the involvement of private and financial actors in development, through instruments such as blended finance and the strengthening of private sector initiatives. In the current development policy discourse, the SDGs are accompanied by an explicit agenda regarding the increasing involvement of financial markets in development (UN, 2015; cf. Mader, 2017: 462; Mitlin et al., 2018; Weber, 2017). As the actual effects of these policies begin to manifest themselves, critical scholars studying the financialization of climate and nature have highlighted a plethora of green financial mechanisms, such as green-, carbon- and cat-bonds, infrastructure trusts, and REDD+ certification schemes (Bigger, 2017; Silver, 2017). This work documents how these mechanisms inscribe new relations of inequality at global and local scales. Local burdens are often placed on poor communities already disadvantaged through climate change (Bond, 2019), whereas more often than not the global gains are made in the North, where green finance not only opens up lucrative investment possibilities but also means of legitimation (Bracking, 2014, 2015).

On the other hand, municipal finance is assigned an ever more important role in steering urban development towards more sustainable forms. Municipalities have historically built on debt finance (Braudel, 1983). Yet more recently – and frequently in face of urban austerity and the necessity to maintain municipal services – cities have built urban policies on newly invented financial instruments (Beswick and Penny, 2018; Kirkpatrick, 2016; Pike et al., 2019) such as Social Impact Bonds (Lake, 2015) or Interest Rate Swaps (Lagna, 2015). In this way, the financialization of the state is changing, as Karwowski puts it, the 'relationship between the state, understood as sovereign with duties and accountable towards its citizens, and financial markets and practices, in ways that can diminish those duties and reduce accountability' (2019: 1001). Critical geographers investigating the impacts of these processes on the ground thus frequently pinpoint that 'investments are diverted to those that deliver financial results rather than those that benefit local communities' (Aalbers, 2019b: 10). Yet, as Aalbers observes, the literature is divided in its evaluation of the agency of cities in these processes, with some authors stating that finance is 'capturing urban governance' (Aalbers, 2019a: 2; e.g. Hendrikse and Sidaway, 2014), and others pointing more towards the opportunities for cities to experiment with financial innovations (e.g. Weber, 2010).

While these debates thoroughly explain some of the general processes through which financial markets have spread to impact cities in the Global South, only a few studies have highlighted processes that complicate capital flows (Goodfellow, 2017; Klink and

Stroher, 2017; Rouanet and Halbert, 2016). For instance, Searle (2014: 60) unpacks the 'conflicts and commensurations' between foreign investors and Indian real estate developers who struggle to agree on 'the social, cultural, and technical conditions' required for building an internationally recognizable market. Nevertheless, current research largely fails to provide insights into the actors, procedures, and hurdles through which the globalization of financial markets is pushed to expand further into the South. Such insights, we argue, have the potential to advance our understanding of the globalization of finance when conceptualized against the background of debates about new forms of transnational rule-making and, specifically, debates about standard-setting and SSOs.

Transnational rule-making, standard-setting, and the role of SSOs

The increasing influence of private corporate actors, the concomitant growth of non-binding 'soft rules' in regulatory processes, and the related transnationalization of regulation have brought up controversies concerning the dwindling power of nation-state institutions (Jurčys et al., 2013). In particular, regarding financial markets, the literature widely concurs on the proliferation and growing influence of private governance arrangements through the widespread creation of new regulatory agencies at the global scale (Djelic and den Hond, 2014; Djelic and Sahlin-Andersson, 2006). These private governance arrangements seek to enable 'global self-regulation' (Riles, 2011: 32) in order to address the particular legal problems resulting from the transnational character of financial and other markets. The goal of such efforts is to become independent of national laws and problems resulting from their disparities or to influence national regulation through global legislative institutions and intergovernmental agreements; often, however, this new global regulatory order is based on the interests and experiences of the global West (Levi-Faur, 2005).

In the field of sustainability, transnational rule-making emerged as a reaction to ecological challenges that were perceived as transcending national boundaries (Dingwerth, 2007). Initially, social and environmental certification was agreed upon by small groups of experts and practitioners, organized around professional and social commitments to coordinate solutions more effectively (Bartley and Smith, 2010). Their increasing growth and interconnectedness has turned these niche players into global SSOs within an organizational field that quickly gained legitimacy (Dingwerth and Pattberg, 2009). Today, sustainability-related certification schemes such as the Forest Stewardship Council (FSC) and the Marine Stewardship Council (MSC) are among the most prominent examples of this 'new transnationalism' (Dingwerth, 2007). However, the value and effectiveness of these private governance systems is under debate (Botzem and Dobusch, 2012; Cashore, 2003; Fortin and Richardson, 2013). Some authors emphasize the democratic potentials of transnational environmental governance (Dingwerth, 2007), or how standard-setting potentially opens up spaces for weak actors to influence regulation (Dobusch and Quack, 2013) and to sustain a multiplicity of standards in their favour (Reinecke et al., 2012), whereas others emphasize how power relations are shifted and public interests challenged (Bartley, 2007). Particularly in the governance of climate change, the performativity of standards and the extent to which they actually promote local and sustainable transformation continues to be disputed (Bigger and Millington, 2019). Questioning the effects of standard-setting points to the processes that precede and accompany standardization.

Firstly, standards are discussed in the context of marketization processes (Berndt and Boeckler, 2012), as they provide the necessary social, technical, and calculative infrastructures for markets to function (Heeg and Bitterer, 2015). Standards are thus a central part of markets infrastructures, understood here with MacKenzie as 'the social, cultural, and technical conditions that make [markets] possible' (MacKenzie, 2005: 12; see also Bitterer and Heeg, 2015; Knox-Hayes, 2013), including, for instance, financial institutions, buildings, norms, knowledge, technological devices, or social networks. Standards, it is argued, are pivotal for these infrastructures, through their 'capacity to enhance coordination' (Botzem and Dobusch, 2012: 737). For instance, Porter shows how knowledge networks in global markets rely on standards to define the operations of market participants and render them acceptable (Porter, 2007). Thereby, the embedding of these standards 'in the routine practices of transnational networks institutionalizes relationships and solidifies compromises' (Porter, 2007: 130). In the expansion of financial markets, it is argued that standards work alongside new financial technologies to create market transparency (or to bridge its absence) in order for global capital to locate and secure profitable outlets (Brummer, 2012). The creation of market transparency through standards is, thus, expected to minimize economic risks and to establish legitimacy for private sector activities (Botzem and Dobusch, 2012; Loconto, 2017). Yet, others have shown how risk is merely changing its scale and constitution (Christophers et al., 2020). What remains open to debate, however, is how the background activity – the work that *precedes* the 'landing' of global standards in local contexts – impacts the effectiveness of standards in widening markets. Assessing this background activity crucially requires grounded empirical research into the creation of demand for particular standards, the building of support, and the aligning of relevant political and market actors around concerted discursive strategies.

Secondly, the literature points out how global standards shape governance structures. This involves the rise of new actors and shifting roles for existing ones (Cutler, 2010; Dezalay and Garth, 2010; Sajor, 2005). These new actors – non-profit organizations or for-profit firms – act as standard-setters, accreditors, and certifiers, typically in the form of a 'tripartite standards regime' as described by Loconto and Busch (2010). The division of tasks and responsibilities is intended to secure compliance, legitimate standards processes, and build trust (Cashore, 2003; Galland, 2017; Loconto, 2017). Creating organizational fields and reorganizing the tasks and relations of existing actors (Loconto and Fouilleux, 2014) gives SSOs a crucial role as governance actors. Moreover, the widespread proliferation of SSOs is interpreted in terms of a fundamental 'strategic shift ... from lobbying rule makers to making and implementing the rules themselves' (Dingwerth and Pattberg, 2009: 708). This allows imposing hegemonic views, as SSOs in the field of sustainability 'not only have the ability to evaluate and probe possibilities of putting sustainability into practice, but also to shape the definition and meaning of the concept of sustainability for the whole sector' (Manning and Reinecke, 2016: 624). What remains open to debate is how processes and structures of governance around global standards impact public administrations and legal frameworks by *reaching into* these institutions and changing the actions and routines of individuals. This is particularly crucial if we seek to understand if and how standards deepen the financialization of Southern cities (e.g. Macdonald, 2020).

The two lines of debate – around standards as crucial elements of market infrastructure and SSOs as key governance actors – provide starting points to deepen knowledge of the background activity of standards processes based on the case of GMBs, to which this paper now turns.

Standards and SSOs in the widening and deepening of financial markets: The case of GMBs in Mexico City

When the senior officer in the Department of Climate Change and Political Projects in Mexico City's Secretariat of the Environment first heard about the possibility of employing

GMBs to finance some projects associated with the city's policy programmes, the idea appeared, as he noted, 'very distant, very remote, very difficult, totally alien' (interview, 22 July 2019). But it was not only the lack of knowledge and the difficulty of conceptually aligning the regulations of the stock exchange with the aims of the city's current climate strategies; The issuance of green bonds faced a wider set of substantial hurdles: the lack of market infrastructures, political support and administrative capacities as well as fears regarding financial risks that needed to be overcome in order to enable Mexico City's first issuance of a green bond (interview, 10 July 2019).

The remainder of this paper focuses on the work of SSOs and the socioeconomic and political processes that accompany the implementation of Mexico City's GMBs in three steps: following a contextualization of the global arena in which GMBs are set, we sketch out how the idea of issuing a bond 'landed' in Mexico City. Subsequently, we outline the process of implementing the bonds.

The 'emergence': Contextualizing GMBs

Before we turn to discuss the 'landing' and implementation of Mexico City's GMBs, a contextualization of this financial instrument, its emergence and proliferation is in order. Green bonds are debt instruments that are employed to fund or refinance projects that are declared to be sustainable or 'green'. This 'greenness' is defined either through transnational SSOs, such as the Climate Bonds Initiative (CBI), or else is self-labelled, in which case the issuers themselves decide what counts as 'green' (UNECLAC, 2017). Currently, green-labelled bonds only account for a small percentage of the market, with a total volume of US$226.4b labelled bonds in 2018, including funds certified through the other (less prominent) climate-labels of 'sustainable' and 'blue' (CBI, 2019).

Green bonds are standardized in two ways: first, by setting standards regarding the sustainability of the projects to be funded. This implies that, unlike most other bonds, green bonds are bound to specific, certified projects. Most prominently, the CBI's Climate Bonds Standard & Certification Scheme[2] 'sets detailed green definitions and eligibility criteria' regarding these projects and certification (CBI, 2017) and streamlines procedures for nomination, certification, and reporting.[3] Second, green bonds tend to build on the standardization of associated financial processes. Created in 2014 on the initiative of global banks (Shishlov et al., 2016: 17) and coordinated by the private market regulator ICMA, the GBPs are the forerunner to – and, to date, the most common guideline in – this process. They constitute 'voluntary process guidelines that recommend transparency and disclosure and promote integrity in the development of the Green Bond market' (ICMA, 2017: 3) and focus, in particular, on the use, evaluation, management, and reporting of the proceeds (ICMA, 2017). In harmonizing these agendas, SSOs have aligned market principles with ecological sustainability standards, thereby uniting civil and financial actors and agendas. This has created, as the C40 Cities Finance Facility (CFF) claims, 'first-of-its kind transparency' (C40, 2015: 1) in global debt markets, making GMBs particularly pertinent in tracing capital investment from global markets to concrete project implementation.

GMBs are issued by municipalities, rather than corporations, states, or supranational institutions. Like other green bonds, GMBs need to be project-related – used to fund environmentally oriented infrastructure, land use, or transport projects. Leaving aside the fiscal incentives offered by some states or cities, experts disagree on the existence of financial advantages vis-à-vis unlabelled, so-called plain vanilla, or corporate bonds (interviews, 10 July 2019 and 24 July 2019; Bachelet et al., 2019) as they do not necessarily sell better, despite the reputational gains for both investor and issuer. There is, however, wider agreement that GMBs count as a relatively secure investment option: not only does the issuer (i.e. the city) guarantee through its disposable resources to pay off the loans, but municipal finance is typically also backed up by federal state funds (Gorelick, 2018).

In the USA, municipal bonds have been on the market since 1812 (Limbach, 2013: 24). However, their use has grown immensely in recent years, from US$26b invested in 1975 to US$263.8b in 1999; in 2010, US municipalities sold bonds valued at US$433b (Limbach, 2013). However, it was multinational banks rather than cities that first promoted *green* bonds. First issued under the label of a Climate Awareness Bond (CAB) by the European Investment Bank (EIB) in 2007, in 2008 the World Bank and SEB sold financial products now termed 'green bonds' in Europe (World Bank, 2018). The first municipality to enter the market was the Swedish City of Gothenburg in 2013 (UNFCCC, n.d.). Since European, Canadian, and US cities started issuing GMBs, various financial institutions and multilateral organizations have worked to support cities in so-called 'emerging markets' to adopt this tool through workshops, guidelines, and individual support (C40, 2015). In 2014, Johannesburg became the first Southern city to employ GMBs. Following this example, Mexico City issued the first Latin American GMB in December 2016 (worth 1 billion pesos, approximately US$50m), which was used for lighting projects, public transport, as well as bus rapid transit lines and water plants (CDMX, 2016). In the following years, the city issued two further certified bonds: a sustainable bond in 2017 and a green bond in 2018. The remainder of this section outlines the processes that led up these public offerings, focussing first on the role of SSOs in geographically widening the market and second on aligning the work of the municipality with its logics.

The 'landing': Expanding market infrastructures, raising political support

The 'landing' of GMBs in Mexico City was preceded by substantial background activity driven largely by the financial sector. The Climate Bond Initiative (CBI) fulfilled a dual function in this process. Not only did it, as commonly recognized in the literature (e.g. Botzem and Dobusch, 2012; Porter, 2007), provide technical guidance to facilitate communication between different actors and jurisdictions, but it was also actively involved in constructing networks and promoting its standards through webinars, conference visits, and extensive data provisioning. In fact, the CBI describes its activities as consisting of 'information flows for ratings agencies and index providers' as well as 'outreach to inform and stimulate the market' (CBI, 2016b). Alongside organizing annual conferences, it builds up infrastructures and knowledge through its Partners Program (CBI, 2016b) that networks financial initiatives including the UNEP Finance Initiative and the Wold Bank's private sector arm, the IFC.

In dialogue with these international initiatives promoting green bonds, Mexico City's stock exchange, in particular its MexiCO2 branch, a platform aiming to develop the Mexican green financial market, recognized the need to link actors on the demand and supply sides of green finance.[4] In response, numerous individuals organized around the stock exchange founded an advisory council, the Mexican Climate Finance Advisory Group (CCFC), to unite relevant actors in the industry and pave the way for issuing climate-aligned debt (interview, 10 July 2019). This involved processes of lobbying, or, as a member of the council stated, to 'get closer to the institutions to establish, say, a direct communication channel to those responsible within in SEMARNAT [the national Ministry of the Environment], those responsible in the Treasury and the Bank of Mexico' (interview, 24 July 2019).

At the same time, these first steps in building up a market involved substantial engagement of key figures at the municipal level. In 2014, well before Mexico City issued its first bonds, Sean Kidney, the CBI's CEO, repeatedly travelled to Mexico to meet with the municipality, the above-mentioned council, investors, and banks. It took Kidney three visit to establish a personal relationship with Mexico City's Secretariat of the Environment (SEDEMA) (interview, 22 July 2019) and to secure political support. Together with substantial city-diplomacy – in which Anne Hidalgo, Mayor of Paris and Chair of C40 Cities, campaigned for the local introduction of GMBs – Mexico City's then mayor Miguel Ángel Mancera convinced the local Secretary of Finance (SEFIN) of the scheme's merits and the process finally went ahead (interview, 23 July 2019).

While the city's first bond was issued according to the GBPs, the Mexican stock exchange (BMV, Bolsa Mexicana de Valores) soon issued its own set of principles that still relied heavily on the GBPs, the global market norms (CCFC, 2018). According to the director of the CCFC, the process hardly aimed to change the standard itself. Although it led to the standardization of listing requirements to allow for the recognition of green or sustainable bonds, it was also an exercise in informing and joining up actors to further widen the market (interview, 10 July 2019). The new principles established a baseline for actors to get involved and initiated a dialogue around the expansion of green bonds.

Alongside the adherence to the GBPs, the CBI's Certification Scheme prescribes the engagement of a verifier, i.e., an independent assurance provider or auditor. This approach secures the CBI's position in the 'standards market' (Reinecke et al., 2012) and establishes an audit culture of climate accounting and disclosure in which a number of verifiers approved by the CBI certify the financial and ecological sustainability of the cities' investments.[5] When the bonds were first issued the city still had to buy verification services from *Sustainalytics*, a foreign verifier whose nearest office was then in New York (Sustainalytics, 2016). Lacking a Mexican branch, contracting the company required special permissions; payment in foreign currency, the translation of all project documentation and the city's climate programmes into English, as well as the firm's unfamiliarity with and doubts about Mexico City's governance structures further complicated the bond's verification (interview, 22 July 2019). Thus, in the process of learning from the issuance of the first bond, the CBI qualified and registered two Mexican verifiers (interview, 24 July 2019).

The first bond issuance was described as a huge success. Issued in local currency, thus directed to the Mexican market, the bond was largely oversubscribed (2.5×) and was purchased mainly by Mexican pension funds at an interest rate of 6.02% (documentation shared by HR Rating, interview, 24 July 2019). Once the bond was issued, the CBI went on to spread knowledge concerning the newly issued bond. In 2016, it launched a Spanish-language report on the potentials of the Mexican green bond market (CBI, 2016a). In 2017, it honoured Mexico City with the Green Bond Pioneer Award to promote 'Mexico as a leader in LATAM [Latin America] for green bond development' (Kidney, 2016). The city supported the further promotion of knowledge, with individual bureaucrats travelling to other cities to train their staff on the use of the bonds in a process of peer learning and regional collaboration. A municipal officer, then director of a responsible department in SEDEMA, was excited to participate in the process:

> I believe that Mexico City was a spearhead in the country and in Latin America. We were approached by many governments. We gave a lot of advice, a lot of training to other governments for the issuance of their green bonds. In fact, I went to Sao Paulo to talk to investors, because they were very interested in the issuance of green bonds in Brazil. (Interview, 23 July 2019)

Rather than an automatic roll-out of the standards and the ideas behind GMBs, SSOs actively promote their standards, which (as with standards in general) are only useful once they achieve international renown. However, in the process, SSOs also promote networks and set up support infrastructures that provide the expertise relevant to implementing their standards.

The 'implementation': Teaching local government, embedding standards

Well before the city was able to implement the bond and promote its success, it had to overcome the hurdles set out at the beginning of this section. In particular, local bureaucracy was required to learn the logics of green finance and apply its standard accounting metrics. This included not only joining up selected projects with the requirements of the standards, but also familiarizing its secretariats with the demands of the market. While this process, as we argue, was embedding standards into the governing process of the state and thereby deepening a process of financial integration, it also needs to be understood as a fragile and conflictive project that was largely dependent on individual support by key individuals.

Since 2003, Mexico City has been in a good position to issue debt. Backed up by national government finances (Congreso de la Unión, 2014), the municipality not only builds on years of experience in debt finance, but has also repeatedly received the best credit rating scores (AAA) (Fitch Ratings, 2019), which has important implications for investors' risk evaluation of their bonds and resulting cost-savings in issuing debt. Yet despite these preconditions and the efforts sketched out in the previous section, issuing green debt first necessitated persuading responsible officials, expanding the existing knowledge base, and shifting the mindset within the bureaucracy. On the one hand, the Secretariat of Finance (SEFIN) had to be convinced to take on the extra efforts of issuing green bonds. The reluctant director of the department in charge offered a set of questions:

> Why do I put a green stamp on it? If I already have prestige, I have already gone out to the market, they already know me ... The resistance was mine! Why should I dedicate more work to this? Why do we pay more? Why do we strive to select projects, if we already have everything ready? Yes, it was more work to be sending ... compiling all the information! (Interview, 30 July 2019)

On the other hand, the Secretariat of the Environment had to learn to adapt administrative work to, for instance, the timing of bond finance, i.e., releasing bonds on a specific date (interview, 22 July 2019). Moreover, adapting to the needs of the market required homogenizing CBI's taxonomy with the city's own political programmes, to select projects that would meet the demands of both. During this process, the bureaucracy received help from (among others) MexiCO2, the previously mentioned branch of the stock exchange which not only capacitated bureaucrats in working with the standard's taxonomy, but also helped to build up a list of eligible projects. An official in the Secretariat of the Environment at the time described the process:

> Somehow, we sought compliance with the climate action programme, the resilience strategy, all this instrumentation that was already in place ... That served as part of the Green Bond Principles, to begin to document and see that there was some harmonization in terms of climate policy. Then, from there, we began to review what the projects were. (Interview, 1 August 2019)

The alignment of the bond with the city's climate strategies reassures investors (as interviewees claimed) that their funds are used towards coordinated and longer-term ends. To understand this procedure more fully, it is necessary to stress that the projects selected through this process would have been financed in exactly the same way without 'greening' the bond. The city's debt ceiling dictates that GMBs are not used to raise *additional* funds, it only permits to issue some of the city's debt in this standardized way. Yet, while much of the funds raised through the bond are used to refinance existing debt, officials in the Secretariat of the Environment argue that it gave them some leverage in setting priorities; that implementing the bond allowed shifting the mindset within the bureaucracy.

> In the work of planning and programming environmental projects, it is very important that you can really measure your benefits in terms of adaptation and mitigation ... Yes, we have to promote projects that are quantifiable in terms of mitigation and adaptation. When you can really dimension the social, environmental, economic benefits, then you raise an awareness among the institutions that allows you to work in a more coordinated way. (Interview, 23 July 2019)

Such reasoning about sustainability appeared to be pervasive in the 'community of practice' (Wenger, 1998): no matter if the efforts to mitigate climate change are not supplementary to the measures already in place, what counts is that producers and financiers alike develop awareness for the promises of green investment, widening the opportunities to increase its overall market share. But while it may help achieve a shift in values and awareness (still without much environmental effect), the power project of audit, indicators, and measurement (Sampson, 2015; Shore and Wright, 2015) necessary for 'making nature investible' (Sullivan, 2017) is also pursued by embedding standards within the administrative procedures of the state.

In hindsight, most participating actors were excited to be part of what was generally described as a very positive development: to be able to lead the way and set an example. In this way, personal motivation carried the process ahead.

> I think the experience as such, for everyone, really, in a personal way, was incredible. Opening up something that didn't exist. Administratively, I had to convince colleagues. You say, 'This is the process. It has to be done that way'. The experience of this was, as you say, to be part of innovation. (Interview, 1 August 2019)

Alongside the multiple efforts by SSOs and other global initiatives to ease the implementation process, this motivation – the excitement of taking on a pioneering role, globally and vis-à-vis the private sector – the advocacy of high-ranking politicians, their necessity to present measurable 'progress' regarding Mexico City's ambitious climate programs may explain why the city arrived at implementing GMBs, despite the challenges discussed.

Nevertheless, at the time of writing, Mexico City has stopped issuing GMBs. In 2018, its most recent sale of bonds was complicated by the pending change of government and what interviewees called the 'Trump effect', i.e., the unpredictability of Mexico's northern neighbour. This included confusion about the future in local government, reluctance to leave debt to a new local government, and uncertainty about Mexico's future relations with the USA. Subsequently, Mexico City has also experienced a case of 'green default', when the rating of the green bond that was meant to finance the city's planned Texcoco Airport was lowered considerably in 2018 (Moody's, n.d.). This significant event became widely known among national investors. It is difficult to judge if and how it altered the local reputation of green bonds. Either way, interviewees widely agreed that it damaged the prestige of Mexico's national government with regard to its reliability as a financial actor – which indirectly reflected on the sub-sovereign scale. The airport case merits a wider discussion of the budgetary autonomy of municipalities and their financial possibilities to steer urban development towards more sustainable forms. For the present purpose, it demonstrates the inherently political nature of building market infrastructures. From this perspective, the success of such construction work depends substantially on the institutional context – a point of view which puts the power of SSOs in fostering market expansion into perspective. Moreover, at the time of writing, with a change in the local administration and the re-appointment of vital staff members, much of the knowledge infrastructures that had been built were no longer in place, thereby reverting the process to the point at which we began: hurdles in the process of implementing GMBs.

Conclusions

The idea that greening the financial market is central to solving the climate crisis has increasingly become normalized. While sustainable development compacts have created, as Goldman puts it, a 'global truth regime on nature' (Goldman, 2001: 500), in which contemporary climate goals are inextricably linked to 'green' growth, such growth is thought to depend on global financial investment. Analysing the role of standards and SSOs in the arrival of GMBs in Mexico City has allowed us to scrutinize the implications of these developments regarding local, material changes and the globalization of finance.

On the one hand, in the case of Mexico City, the material effects in terms of climate adaptation and local transition through the work of green standards are debatable at best. While the requirements of standards associated with green bonds hold issuers accountable down to the level of projects and allow investors to choose to support 'green' projects could be interpreted as a step in the direction of more transparent and ethical – and therefore more impactful – modes of financing, in the present case, greening debt by standardizing projects neither immediately raised the bar of urban development nor did certifying these projects have direct climate effects. It has certainly not fostered more profound, transformative approaches. On the other hand, the contested arrival of GMBs in Mexico City testifies to the crucial links that have been established between global climate action agendas, private financial interests, and local urban policy. In establishing these links, SSOs and the standards they promote play a key role and had real and material effects on bureaucratic procedures, decision-making structures, and public budgets in Mexico City. Alongside the effects of standardization, it is thus necessary to highlight the background activities of standards and SSOs with regard to widening the market and shifting governance arrangements on the level of the local state.

Beyond the case of Mexico City, these findings allow for several insights into the role of standards and SSOs in the widening and deepening of financial markets: SSOs build infrastructures of knowledge and learning; they discursively produce novelty; they lobby for the importance of financial instruments in meeting the challenges that cities struggle with to combat climate change; and they network key actors. Rather than 'only' creating the rules of this market, SSOs actively work to create or substantiate its infrastructures with standards as vehicles in this process. First, in aligning financial market norms concerning accounting and reporting on the one hand, and (product) standards concerning the sustainability of the 'use of proceeds' on the other, they effectively merge different standards processes into one common goal. This combination of agendas provides for legitimation; raises interest on the side of politics and public administration; and offers reputational advantages for issuers and investors. Second, this fusion implies that the networks needed for implementing GMBs span different parts of the bureaucracy involving sustainability-related actors alongside financial experts. In this process of embedding standards into the work of the municipality, finance is reaching into the state. While the arrival of GMBs in Mexico City thus testifies to the widening and deepening of the market, capital is not (yet) invested more globally; rather, the *infrastructures of finance* are globalizing and consolidating locally. Third, on the level of the projects, the impact of standards is limited however due to the temporal logics of finance and infrastructure planning (Grafe and Hilbrandt, 2019): once cities decide to finance infrastructure through green debt, projects need to be underway within set strategies of urban development. While capital will already flow in the subsequent year, the development of infrastructure projects requires decades of planning ahead. To be sure, it could be argued that the possibility of being eligible to be financed via green debt provides incentives for more sustainable project development in the initial stages of planning. But market standards, such as the CBI's Climate Bonds Standard, ultimately undergird strategies of economic growth and are unlikely to conflict with possible profit margins. As the standards are presently set, many projects currently under development already tend to fit into the scheme as they stand. Thus, from the municipal perspective, standards hardly provide incentives to develop projects in a different way.

Yet, focusing on the actors, procedures, and hurdles in the arrival of GMBs in Mexico City highlights how the widening and deepening of financial markets through standards and SSOs is conditional upon a number of dynamics that complicate the unhindered Southward expansion of green/financial market norms. Firstly, the processes of landing and implementation we have described depend on key players, their corporeal travels, and interactions. Networks that organize around green standards across different fields, including SSOs, transnational governance actors, as well as local administrative bodies, become fragile when, for instance, central actors in the bureaucracy change roles due to election cycles. As the current negation of issuing debt through GMBs in Mexico City shows, new actors can hinder financialization and unbuild infrastructures pointing towards processes of de-financialization (Karwowski, 2019). Secondly, actors at the receiving end of the spread of financial innovation are confronted with asymmetries of information and knowledge that mirror uneven relations between the global North and South; however, this travelling of knowledge also builds on local initiatives and is challenged, altered, and sometimes rejected in the adoption of GMBs. Finally, the issue of if and how networking and learning take effect depends on the positionality of actors and their individual assessments. In this sense, as Sampson (2015: 80) puts it (in speaking more specifically about auditing), financialization hardly 'penetrates us like Foucauldian biopower'. It is rather that central municipal actors chose to experiment with and use financial technologies towards specific ends. To be part of such experimentation thereby requires the motivation of key bureaucrats and their often-tedious work in persuading others concerned.

In summary, this paper has pinpointed efforts to widen infrastructures of knowledge and markets. But clearly these infrastructures need maintenance; they are more fragile than expected and not simply established once and then everlasting. Moreover, these findings indicate that it is necessary to go down to the level of individual actors in order to challenge research perspectives that homogenize landscapes of actors through presumptions about the positions for which they stand. Yet, crucial effects of the globalization of finance through GMBs remain beyond the scope of this paper and require further research. Taken to be responsible for implementing green finance, cities in poor and middle-income countries are increasingly drawn further into the work of financial markets. This development raises concerns about the risks associated with (green) municipal debt that are only beginning to be addressed. In particular, these concern intra-urban inequalities. While local efforts are captured in the tedious process of standardizing debt without positive climate effect, increasingly pressing necessities for radical transformations fail to be tackled, particularly to the detriment of poor communities. Moreover, these risks bring inter-urban inequalities into view. With its AAA rating, Mexico City appears to have sound finances. Moreover, it's sovereign guarantees keep the risks associated with indebtedness in check. Nevertheless, increasing attempts to deepen financialization in cities with less means, through deploying creditworthiness programmes, raise questions about novel financial risks and growing inequality between cities.

Acknowledgements

We would like to thank the three anonymous reviewers for their critical and helpful feedback as well as Rebekka Keuß for her support in preparing this paper and Christian Berndt for his comments on an earlier manuscript.

Declaration of conflicting interests

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Funding

The author(s) disclosed receipt of the following financial support for the research, authorship, and/or publication of this article: The work leading to this publication was supported by the PRIME programme of the German Academic Exchange Service (DAAD) with funds from the German Federal Ministry of Education and Research (BMBF).

Notes

1. The paper draws on interviews conducted in July and August 2019 with actors responsible for or involved in the implementation of GMBs in Mexico City, including public officials, rating agencies, verifiers, and NGOs. In addition, it builds on an analysis of strategic and legal documents as well as government reports.
2. For the latest version of the standard, see https://standard.climatebonds.net/files/files/climate-bonds-standard-v2-1-201701.pdf (accessed 20 July 2018).
3. This taxonomy covers the areas of energy, transport, water, building, land use, industry, and waste as well as information and communications technology, excluding for instance projects based on fossil fuels. It draws on certification criteria of other certification bodies, such as LEED for building certification and the Forest Stewardship Council (FSC) to certify agriculture and forestry investment. See https://standard.climatebonds.net/taxonomy (accessed 20 July 2018).
4. http://www.mexico2.com.mx/nosotros.php (accessed 20 July 2018).
5. see: https://www.climatebonds.net/certification/approved-verifiers (accessed 20 February 2020).

ORCID iD

Hanna Hilbrandt https://orcid.org/0000-0001-8873-425X

References

Aalbers MB (2017) The variegated financialization of housing. *International Journal of Urban and Regional Research* 41(4): 542–554.

Aalbers MB (2019a) Financial geography III: The financialization of the city. *Progress in Human Geography*. Epub ahead of print 11 June 2019. DOI: 10.1177/0309132519853922.

Aalbers MB (2019b) Financial geographies of real estate and the city. A literature review. Available at: http://www.fingeo.net/wordpress/wp-content/uploads/2019/01/FinGeoWP_Aalbers-2019-2.pdf (accessed 12 November 2019).

Bachelet MJ, Becchetti L and Manfredonia S (2019) The green bonds premium puzzle: The role of issuer characteristics and third-party verification. *Sustainability* 11(4): 1098.

Baker T, Cook IR, McCann E, et al. (2016) Policies on the move: The transatlantic travels of tax increment financing. *Annals of the American Association of Geographers* 106(2): 459–469.

Bartley T (2007) How foundations shape social movements: The construction of an organizational field and the rise of forest certification. *Social Problems* 54(3,1): 229–255.

Bartley T and Smith SN (2010) Communities of practice as cause and consequence of transnational governance: The evolution of social and environmental certification. In: Djelic ML and Quack S (eds) *Transnational Communities: Shaping Global Economic Governance*. Cambridge: Cambridge University Press, pp.347–374.

Berndt C and Boeckler M (2012) Geographies of marketization. In: Barnes TJ, Peck J and Sheppard E (eds) *The Wiley-Blackwell Companion to Economic Geography*. Chichester: Wiley-Blackwell, pp.199–212.

Beswick J and Penny J (2018) Demolishing the present to sell off the future? The emergence of 'financialized municipal entrepreneurialism' in London. *International Journal of Urban and Regional Research* 42(4): 612–632.

Bigger P (2017) Hybridity, possibility: Degrees of marketization in tradeable permit systems. *Environment and Planning A: Economy and Space* 50(3): 512–530.

Bigger P and Millington N (2019) Getting soaked? Climate crisis, adaptation finance, and racialized austerity. *Environment and Planning E*. Epub ahead of print 25 September 2019. DOI: https://doi.org/10.1177/2514848619876539.

Bitterer N and Heeg S (2015) Die Macht der Zahlen. *Zeitschrift für Wirtschaftsgeographie* 59(1): 34–50.

Bond P (2019) Contradictory time horizons of Durban energy piping in an era of looming climate chaos. *City* 23(4–5): 631–645.

Botzem S and Dobusch L (2012) Standardization cycles: A process perspective on the formation and diffusion of transnational standards. *Organization Studies* 33(5–6): 737–762.

Bowker GC and Star SL (2000) *Sorting Things Out: Classification and its Consequences*. Cambridge, MA: MIT Press.

Bracking S (2014) The anti-politics of climate finance: The creation and performativity of the Green Climate Fund. *Antipode* 47(2): 281–302.

Bracking S (2015) Performativity in the green economy: How far does climate finance create a fictive economy? *Third World Quarterly* 36(12): 2337–2357.

Bracking S (2016) *The Financialisation of Power: How Financiers Rule Africa*. Oxon: Routledge.

Braudel F (1983) *The Wheels of Commerce. Civilization & Capitalism II. 15th–18th Century*. London: William Collins.

Brummer C (2012) *Soft Law and the Global Financial System: Rule Making in the 21st Century*. Cambridge: Cambridge University Press.

Büthe T and Mattli W (2011) *The New Global Rulers: The Privatization of Regulation in the World Economy*. Princeton: Princeton University Press.

C40 (2015) New report offers cities guidance on accessing the vast green bond market. Available at: https://www.climatebonds.net/files/files/Green%20City%20Bonds%20US%20Webinar%20Press%20Release_20150727%20%281%29.pdf (accessed 26 August 2018)

Carroll T and Jarvis DSL (2015) The new politics of development: Citizens, civil society, and the evolution of neoliberal development policy. *Globalizations* 12(3): 281–304.

Cashore B (2003) Legitimacy and the privatization of environmental governance: How non-state market-driven (NSMD) governance systems gain rule-making authority. *Governance* 15(4): 503–529.

CBI (2016a) Bonds and climate change 2016: Mexico edition. Available at: https://www.climatebonds.net/resources/reports/bonds-and-climate-change-2016-mexico-edition (accessed 06 November 2019).

CBI (2016b) Green bond labels and standards webinar. Available at: https://www.climatebonds.net/files/files/Green%20Bond%20Labels%20and%20Standards%2010-06-2016.pdf (accessed 23 August 2018).
CBI (2017) Climate bonds standard & certification brochure. Available at: https://www.climatebonds.net/standards/brochure (accessed 23 August 2018).
CBI (2019) Green bonds the state of the market 2018. Available at: https://www.climatebonds.net/resources/reports/green-bonds-state-market-2018 (accessed 23 October 2019).
CCFC (Climate Finance Advisory Group) (2018) Green bonds principles Mx. Available at: http://www.mexico2.com.mx/uploadsmexico/file/GREEN_BONDS_PRIN_MX2(1).pdf (accessed 23 August 2018).
CDMX (2016) Bono verde -GCDMXCB 16V. Available at: http://procesos.finanzas.cdmx.gob.mx/bono_verde/docs/documentos/Bono_Verde_Word_VF_20160316.pdf (accessed 03 November 2019).
Christophers B (2014) Wild dragons in the city: Urban political economy, affordable housing development and the performative world-making of economic models. *International Journal of Urban and Regional Research* 38(1): 79–97.
Christophers B, Bigger P and Johnson L (2020) Stretching scales? Risk and sociality in climate finance. *Environment and Planning A* 52(1): 88–110.
Congreso de la Unión (2014) Ley general de deuda pública. Nueva Ley publicada en el Diario Oficial de la Federación el 31 de diciembre de 19. Available at: https://www.gob.mx/cms/uploads/attachment/file/82145/Ley-General-de-Deuda-P_blica.pdf (accessed 26 August 2018).
Crosby N and Henneberry J (2016) Financialisation, the valuation of investment property and the urban built environment in the UK. *Urban Studies* 53(7): 1424–1441.
Cutler AC (2010) The legitimacy of private transnational governance: Experts and the transnational market for force. *Socio-Economic Review* 8(1): 157–185.
David L and Halbert L (2014) Finance capital, actor-network theory and the struggle over calculative agencies in the business property markets of Mexico City Metropolitan Region. *Regional Studies: The Journal of the Regional Studies Association* 48(3): 516–529.
Delimatsis P (2015) *The Law, Economics and Politics of International Standardisation (International Trade and Economic Law Series)*. Cambridge: Cambridge University Press.
Dezalay Y and Garth BG (2010) Marketing and selling transnational 'judges' and global 'experts': Building the credibility of (quasi)judicial regulation. *Socio-Economic Review* 8(1): 113–130.
Dingwerth K (2007) *The New Transnationalism: Transnational Governance and Democratic Legitimacy*. New York: Palgrave Macmillan.
Dingwerth K and Pattberg P (2009) World politics and organizational fields: The case of transnational sustainability governance. *European Journal of International Relations* 15(4): 707–743.
Djelic ML and den Hond F (2014) Introduction: Multiplicity and plurality in the world of standards. *Business and Politics* 16(1): 67–77.
Djelic ML and Sahlin-Andersson K (2006) *Transnational Governance. Institutional Dynamics of Regulation*. Cambridge: Cambridge University Press.
Dobusch L and Quack S (2013) Framing standards, mobilizing users: Copyright versus fair use in transnational regulation. *Review of International Political Economy* 20(1): 52–88.
Faulconbridge J and Grubbauer M (2015) Transnational building practices: Knowledge mobility and the inescapable market. *Global Networks* 15(3): 275–287.
Fitch Ratings (2019) Fitch Asigna Calificaciones a Bono Verde y a una Emisión Bursátil de la Ciudad de México. Available at: https://www.fitchratings.com/site/re/10049726 (accessed 20 July 2019).
Fortin E and Richardson B (2013) Certification schemes and the governance of land: Enforcing standards or enabling scrutiny? *Globalizations* 10(1): 141–159.
Galland JP (2017) Big third-party certifiers and the construction of transnational regulation. *The ANNALS of the American Academy of Political and Social Science* 670(1): 263–279.
Goldman M (2001) Constructing an environmental state: Eco-governmentality and other transnational practices of a 'green' World Bank. *Social Problems* 48(4): 499–523.

Goodfellow T (2017) Urban fortunes and skeleton cityscapes: Real estate and late urbanization in Kigali and Addis Ababa. *International Journal of Urban and Regional Research* 41(5): 786–803.
Gorelick J (2018) Supporting the future of municipal bonds in Sub-Saharan Africa: The centrality of enabling environments and regulatory frameworks. *Environment and Urbanization* 30(1): 103–122.
Grafe FJ and Hilbrandt H (2019) The temporalities of financialization. *City* 41(4): 1–13.
Grubbauer M (2020) Assisted self-help housing in Mexico: Advocacy, (micro)finance and the making of markets. *International Journal for Urban and Regional Research*, forthcoming.
Halbert L and Rouanet H (2013) Filtering risk away: Global finance capital, transcalar territorial networks and the (un)making of city-regions: An analysis of business property development in Bangalore, India. *Regional Studies* 48(3): 471–484.
Heeg S and Bitterer N (2015) Communities of practice and transnational standards: Changing building practices in Warsaw's commercial property sector. *Global Networks* 15(3): 343–359.
Hendrikse RP and Sidaway JD (2014) Financial wizardry and the Golden City: Tracking the financial crisis through Pforzheim, Germany. *Transactions of the Institute of British Geographers* 39(2): 195–208.
ICMA (2017) The Green Bond Principles 2017: Voluntary process guidelines for issuing green bonds. Available at: https://www.icmagroup.org/assets/documents/Regulatory/Green-Bonds/GreenBonds Brochure-JUNE2017.pdf (accessed 23 August 2018).
Imrie R and Street E (2009) Regulating design: The practices of architecture, governance and control. *Urban Studies* 46(12): 2507–2518.
IPCC (Intergovernmental Panel on Climate Change) (2014) Climate change 2014: Synthesis report. Contribution of working groups I, II and III to the fifth assessment report of the Intergovernmental Panel on Climate Change. https://www.ipcc.ch/site/assets/uploads/2018/02/AR5_SYR_FINAL_Front_matters.pdf (accessed 4 August 2019).
Jurčys P, Kjaer PF and Yurakami R (2013) *Regulatory Hybridization in the Transnational Sphere. (Developments in International Law Series)*. Leiden: Martinus Nijhoff.
Kaika M and Ruggiero L (2015) Class meets land: The social mobilization of land as catalyst for urban change. *Antipode* 47(3): 708–729.
Karwowski E (2019) Towards (de-)financialisation: The role of the state. *Cambridge Journal of Economics* 43(4): 1001–1027.
Kidney S (2016) Mexico update: Climate bonds lifts 'Bonos Verdes' outreach. Available at: https://www.climatebonds.net/2016/06/mexico-update-climate-bonds-lifts-%E2%80%98bonos-verdes%E2%80%99-outreach-new-green-bond-committee-formed (accessed 04 August 2014).
Kirkpatrick L (2016) The new urban fiscal crisis: Finance, democracy, and municipal debt. *Politics & Society* 44(1): 45–80.
Klink J and Stroher LEM (2017) The making of urban financialization? An exploration of Brazilian urban partnership operations with building certificates. *Land Use Policy* 69: 519–528.
Klink J, Empinotti VL and Aversa M (2019) On contested water governance and the making of urban financialisation: Exploring the case of metropolitan São Paulo, Brazil. *Urban Studies*. Epub ahead of print 26 June 2019. DOI: https://doi.org/10.1177/0042098019844390.
Knox-Hayes J (2013) The spatial and temporal dynamics of value in financialization: Analysis of the infrastructure of carbon markets. *Geoforum* 50: 117–128.
Kutz W and Lenhardt J (2016) "Where to put the spare cash?" Subprime urbanization and the geographies of the financial crisis in the Global South. *Urban Geography* 37(6): 926–948.
Lagna A (2015) Italian municipalities and the politics of financial derivatives: Rethinking the Foucauldian perspective. *Competition & Change* 19(4): 283–300.
Lake RW (2015) The financialization of urban policy in the age of Obama. *Journal of Urban Affairs* 37(1): 75–78.
Lampland M and Star SL (2009) *Standards and their Stories: How Quantifying, Classifying, and Formalizing Practices Shape Everyday Life*. Ithaca: Cornell University Press.
Larner W and Laurie N (2010) Travelling technocrats, embodied knowledges: Globalising privatisation in telecoms and water. *Geoforum* 41(2): 218–226.

Levi-Faur D (2005) The global diffusion of regulatory capitalism. *Annals of the American Academy of Political and Social Science* 598(1): 12–32.

Limbach C (2013) *Climate Bonds - Kommunalanleihen: Analyse der Potenziale zur Finanzierung der Energiewende auf kommunaler Ebene*. Munich: AVM - Akademische Verlagsgemeinschaft München.

Loconto A (2017) Models of assurance: Diversity and standardization of modes of intermediation. *Annals of the American Academy of Political and Social Science* 670(1): 112–132.

Loconto A and Busch L (2010) Standards, techno-economic networks, and playing fields: Performing the global market economy. *Review of International Political Economy* 17(3): 507–536.

Loconto A and Fouilleux E (2014) Politics of private regulation: ISEAL and the shaping of transnational sustainability governance. *Regulation & Governance* 8(2): 166–185.

Macdonald K (2020) Private sustainability standards as tools for empowering southern pro-regulatory coalitions? Collaboration, conflict and the pursuit of sustainable palm oil. *Ecological Economics* 167: 106439.

MacKenzie D (2005) Opening the black boxes of global finance. *Review of International Political Economy* 12(4): 555–576.

Mader P (2017) Contesting financial inclusion. *Development and Change* 49(2): 461–483.

Manning S and Reinecke J (2016) A modular governance architecture in-the-making: How transnational standard-setters govern sustainability transitions. *Research Policy* 45(3): 618–633.

Mawdsley E (2016) Development geography II: Financialization. *Progress in Human Geography* 42(2): 264–274.

Mitlin D, Colenbrander S and Satterthwaite D (2018) Editorial: Finance for community-led local, city and national development. *Environment and Urbanization* 30(1): 3–14.

Moody's (2018) Mexico City airport trust NAFIN F/80460. Available at: https://www.moodys.com/research/Moodys-lowers-Green-Bond-Assessment-on-Mexico-City-Airport-Trusts–PR_392552 (accessed 14 November 2019).

Ouma S (2010) Global standards, local realities: Private agrifood governance and the restructuring of the Kenyan horticulture industry. *Economic Geography* 86(2): 197–222.

Pike A, O'Brien P, Strickland T, et al. (2019) *Financialising City Statecraft and Infrastructure*. Cheltenham: Edward Elgar.

Ponte S and Cheyns E (2013) Voluntary standards, expert knowledge and the governance of sustainability networks. *Global Networks* 13(4): 459–477.

Porter T (2007) Compromises of embedded knowledge: Standards, codes, and technical authority in global governance. In: Bernstein S and Pauly LW (eds) *Global Liberalism and Political Order. Toward a New Grand Compromise*. Albany: State University of New York Press, pp.109–131.

Reinecke J, Manning S and von Hagen O (2012) The emergence of a standards market: Multiplicity of sustainability standards in the global coffee industry. *Organization Studies* 33(5–6): 791–814.

Riles A (2011) *Collateral Knowledge: Legal Reasoning in the Global Financial Markets*. Chicago: University of Chicago Press.

Rouanet H and Halbert L (2016) Leveraging finance capital: Urban change and self-empowerment of real estate developers in India. *Urban Studies* 53(7): 1401–1423.

Roy A (2012) Ethnographic circulations: Space-time relations in the worlds of poverty management. *Environment and Planning A* 44(1): 31–41.

Rutland T (2010) The financialization of urban redevelopment. *Geography Compass* 4(8): 1167–1178.

Sajor EE (2005) Professionalisation or hybridisation? Real estate brokers in Metro Cebu, the Philippines, during the boom of the 1990s. *Urban Studies* 42(8): 1321–1343.

Sampson S (2015) Comment: The audit juggernaut. *Social Anthropology* 23(1): 80–82.

Sanfelici D and Halbert L (2015) Financial markets, developers and the geographies of housing in Brazil: A supply-side account. *Urban Studies* 53(7): 1465–1485.

Searle LG (2014) Conflict and commensuration: Contested market making in India's private real estate development sector. *International Journal of Urban and Regional Research* 38(1): 60–78.

Shishlov I, Morel R and Cochran I (2016) Beyond transparency: Unlocking the full potential of green bonds. Available at: https://www.i4ce.org/download/unlocking-the-potential-of-green-bonds/ (accessed 19 July 2018).

Shore C and Wright S (2015) Governing by numbers: Audit culture, rankings and the new world order. *Social Anthropology* 23(1): 22–28.
Silver J (2017) The climate crisis, carbon capital and urbanisation: An urban political ecology of low-carbon restructuring in Mbale. *Environment and Planning A* 49(7): 1477–1499.
Soederberg S (2013) Universalising financial inclusion and the securitisation of development. *Third World Quarterly* 34(4): 593–612.
Soederberg S (2015) Subprime housing goes South: Constructing securitized mortgages for the poor in Mexico. *Antipode* 47(2): 481–499.
Sullivan S (2017) Making nature investable: From legibility to leverageability in fabricating 'nature' as 'natural capital'. *Science and Technology Studies* 31(3): 47–67.
Sustainalytics (2016) Ciudad de México (CDMX). Green bond framework second party opinion. Available at: http://www.sustainalytics.com/sites/default/files/green_bond_opinion_cdmx_11112016_final.pdf (accessed 21 August 2018).
Timmermans S and Epstein S (2010) A world of standards but not a standard world: Toward a sociology of standards and standardization. *Annual Review of Sociology* 36(1): 69–89.
Torrance MI (2008) Forging glocal governance? Urban infrastructures as networked financial products. *International Journal of Urban and Regional Research* 32(1): 1–21.
UN (2015) Addis Ababa action agenda. Available at: https://sustainabledevelopment.un.org/index.php?page = view&type = 400&nr = 2051&menu = 35 (accessed 9 August 2019).
UNECLAC (2017) The rise of green bonds – Financing for development in Latin America and the Caribbean. Available at: https://repositorio.cepal.org/bitstream/handle/11362/42230/1/S1700985_en.pdf (accessed 4 November 2019).
UNEP (2013) City-level decoupling: Urban resource flows and the governance of infrastructure transitions. Available at: http://www.unep.org/resourcepanel/portals/24102/pdfs/Cities-Full_Report.pdf (accessed 4 August 2019).
UNFCCC (n.d.) Gothenburg green bonds. Available at: Sweden. https://unfccc.int/climate-action/momentum-for-change/financing-for-climate-friendly/gothenburg-green-bonds (accessed 19 July 2019).
Weber R (2010) Selling city futures: The financialization of urban redevelopment policy. *Economic Geography* 86(3): 251–274.
Weber H (2017) Politics of 'leaving no one behind': Contesting the 2030 Sustainable Development Goals agenda. *Globalizations* 14(3): 399–414.
Wenger E (1998) *Communities of Practice: Learning, Meaning, and Identity*. Cambridge: Cambridge University Press.
World Bank (2018) World Bank impact report. 10 years of green *bonds*. Available at: http://pubdocs.worldbank.org/en/632251542641579226/report-impact-green-bond-2018.pdf (accessed 19 July 2019).