Evolving market infrastructures: the case of assetization in UK social housing

Researchers with an interest in real estate financialization have recently turned their attention to the rental sector (Wijburg et al. 2018; Byrne 2020). While earlier work highlighted the growth of buy-to-let (BTL) markets in the UK and Netherlands (French and Leyshon 2009; Aalbers et al. 2017), for example, scholars have begun to focus on the growth of institutional landlords (Revington and August 2020), the build-to-rent (BTR) market (Brill and Durrant 2020; Nethercote 2020) and REITs (Waldron 2018), as intermediaries deepen the reach of financial capital into residential markets. The carefully curated 'departure' of the state from housing provision (Belotti 2022) has seen local authorities either transfer or sell their housing stock, with private landlords standing-by to capture the resultant rent extraction opportunities (Wijburg and Aalbers 2017). Studies have emphasised the light regulation and subsequent poor management by private landlords (Brill and Durrant 2021), but in contrast, housing associations (HAs), are more strictly regulated and have a social mission as part of their charitable foundations, which historically underpins attempts to prioritise tenants (Byrne and Norris 2019; Cooper 2022).

The UK's HA sector has a long history, emerging in the nineteenth century in an attempt to create quality housing for the working classes. HAs were often established by philanthropists and industrialists, for example, the Peabody Trust (1862) and Guinness Trust (1890), which aimed to ameliorate poor living conditions. In the 1990s, many local authorities moved their public housing assets over to existing HAs, or new HAs were established to facilitate the asset transfers (Tickell 1996). HA mergers took place in the 1990s and 2000s as these organisations sought to build efficiencies (Malpass 2000), but they also became substantial developers of rental property, with many turning to financial markets to initiate bond

programmes and raise capital for further construction (Wainwright and Manville 2017; Smyth 2020).

Rather than focussing exclusively on financial returns for investors (Gruis and Nieboer 2007), HAs offer below-market rents to tenants, complemented by a more social outlook. For example, they often support tenants by providing training for employment (Wainwright and Manville 2017). As such, HAs are less likely to chase high rents at the expense of affordability and are more inclined to voluntarily invest in asset improvements to support their residents (Gruis and Nieboer 2007). Despite this, HAs have become increasingly subject to financialization's politics since they turned to raise finance from capital markets (Wijburg and Aalbers 2017; Beswick and Penny 2018; Aalbers 2019; Smyth 2020), which privilege financial returns over social values, and in doing so, have begun to realign HA management priorities to consider investor returns with those of the wider private sector.

In order to examine the enablers of financialization, researchers have been inspired by the sociology of finance, and the study of calculative tools, devices and knowledges, to gain insight into how financialization is enacted by the measurement of risk, asset comparability and in shaping the governance of organisations to maximise returns (Callon and Muniesa 2005; Caliskan and Callon 2010; Birch 2017). In short, what matters is measured, while other activities are arguably marginalised, eroded or neglected. As HAs come to measure activity that suits the politics of financialization, the historically created social value has been effectively disregarded in some institutions as it escapes measurement or is 'designed out' (Smyth et al. 2020). While researchers have highlighted the development of new assemblages, metrics and evaluative social infrastructure to frame markets (Fields 2018; Asiyanbi 2018), we seek to extend this field of study further, by examining how these assemblages change over time. Specifically, we reveal competition between different groups of actors, who push for alternative evaluative infrastructures, which better suit their needs.

Taking inspiration from Belotti's (2022) phased approach, we observe two key phases in the UK HA bond market, each defined by the development of a new type of assemblage, to capture changing priorities and evolving infrastructure.

In Phase 1, which began post-GFC in 2008, existing antecedent frameworks and assemblages were borrowed and modified from US municipal bond markets, in an attempt to calculate risk, make the new assets comparable to other bond markets, and 'borrow' legitimacy. Accordingly, the prioritization of financial returns rendered social value invisible through mobilising elements of existing metric assemblages. Specifically, we focus on assemblages related to bond rating metrics. For Phase 2, which began in 2020, institutional investors increasingly became interested in social value, as part of a broader movement towards ESG investment mandates.[1] As some HAs continued to fulfil their social mission, new HA bond frameworks were re-calibrated to render social value visible for the benefit of UK and European investors. Here, we direct our attention to a new sustainability reporting standard.

Through our analysis, we seek to provide two main contributions: First, scholars drawing upon social studies of finance and assetization (Birch 2017; Omstedt 2020), have emphasised the instability of frameworks and assemblages. They observe how assets are a relational achievement, resulting from the 'flattening' of data, whereby different numerical measures on a similar theme, are manipulated to fit common analytical frames and measurement tools (Fields 2018). Through comparing assemblages across the two phases, we seek to advance debate further by noting the potential for more disruptive sector shifts, beyond instability, as competing actors in the market seek to temporally redevelop tools and frameworks, to best

[1] Environment, social and governance (ESG) criteria have seen investors focus on values beyond economic returns. Social value is central to our paper, and while we recognise that HAs will be taking actions to enhance their governance and mitigate environmental impact, we have focussed on social value in our paper due to limitations of space, but to also prioritise an examination of how HAs' historical social value has disappeared and reappeared over time, through changes in investor interests and the creation of new tools under financialization.

meet their own needs. Second, we contribute by reasserting the role of non-financial politics in studies of real estate financialization. Research has often focused on how financialization prioritises economic returns over the needs of residents (Byrne and Norris 2019; Brill and Durrant 2021; Belotti 2022), but a recent turn by some actors in the sector has sought to reprioritise the social value of bonds, alongside economic returns. We further provide critical analysis of this turn, arguing that while market participants are keen to signal support of tenants and create social value, there remains disagreement amongst actors, particularly investors in the sector, and that social value still sits behind the priority of economic returns, in contrast to being a serious challenge to the economic.

The rest of the paper is structured as follows: the next section investigates research on real estate financialization and how financial metrics and assemblages have been devised to facilitate assetization within the social sector. This is followed by a discussion of the research methods and data collection. We then examine the two phases of metric and social infrastructure development. The final section concludes the paper.

2. Financialization and market infrastructures

2.1 *Financialization and social housing*

Research on financialization's role in reshaping residential real estate has become a well-established field of research (Wijburg et al. 2018; Wijburg 2019; Waldron 2018). Aalbers (2017) defines financialization as the 'increased dominance by financial actors, practices, market measurements and narratives, which transform firms, states and households', where supportive tools, frameworks and processes support financial institutions in increasing their returns and in the formation of new markets (Ioannou and Wojick 2018). Earlier work in the field observed the development of new secondary debt markets through the securitization of

residential mortgages in variegated contexts (for example, Gotham 2009; Wainwright 2009; Walks and Clifford 2015). The field has since diversified, moving beyond mortgage financing. For example, examining the private rental sector (Byrne and Norris 2019; Aalbers et al. 2021), the resultant rise of financialized urbanism (van Loon et al. 2019), the mobilisation of REIT structures (Waldron 2018), BTR developments (Nethercote 2020; Revington and August 2019), and new tools to acquire single family properties for private equity investors (Fields 2018). Perhaps the starkest work, has unpicked how financial returns can be gained from opportunities presented by market failure within the sector, mediated through homelessness impact investing (Cohen and Rosenman 2020; Baker et al. 2020).

More recently, there has been a turn to examine how financialization's politics and technologies have been moved from private sector housing into the social sector (Beswick and Penny 2018; Wijburg and Aalbers 2017; Clegg 2019). Notable examples from this rich field, include Belotti's (2022) analysis of multi-scalar 'state crafting' to facilitate financialization of social housing in Italy, and Smyth et al's (2022) investigation of the internalisation of bond rating metrics into day-to-day operations. Aalbers (2016) and Wijburg and Aalbers (2017) have revealed how the Netherlands and Germany have seen an influx of private equity and hedge fund activity in purchasing public authority housing (Aalbers 2016; Wijburg and Aalbers 2017), fostering innovative public-private partnerships, which see actors increasingly adopt and internalise investor expectations (Aalbers 2019). Studies have also examined how local governments are beginning to create subsidiaries to undertake speculative co-funded developments, often termed financialized urban entrepreneurialism (Morrison, 2018; van Bortel and Gruis, 2019), which Beswick and Penny (2018) argue, highlights the increased permeation of finance into public housing through variegated funding models, despite the inherent risks from failed speculative behaviour illustrated through Vestia and Cosmopolitan's failures (Aalbers 2016; Wainwright and Manville 2017).

While studies have drawn attention to the role of the state in shaping the markets that facilitate the financialization of public housing (Belotti 2022; van Loon et al. 2019), we seek to examine attempts to reshape market frameworks by competing groups of elite financial intermediaries (Folkman et al 2007).

Despite the burgeoning growth of this sub-field, the financialization of social housing assets remains comparatively understudied (Aalbers et al. 2017; Wijburg and Aalbers 2017). This is particularly problematic due to the potential for the displacement of its social value, as recently highlighted by Cooper's (2020) research on the pressures undermining the imperative to provide shelter by Canadian non-profit providers. This is significant, as HAs have a charitable imperative, both legal and historical, to provide below-market rents and to support tenants. As such, the sector's core function has been to create social value by supporting tenants, but this is challenged under financialization, as financial returns for investors often take precedence.

In the UK, a market for HA bonds has grown since the 1980s, as the British government sought to reduce state funding, leading HAs to use commercial loans to meet development cost shortfalls (Aalbers at al. 2017; Smyth 2019). Since the 2008 GFC, the market has grown considerably, causing HAs to reorganise their activities and priorities, to align them with the quantified expectations of investors (Wainwright and Manville 2017; Smyth 2020). As a result, new methodologies for measuring financial performance and risk were developed. This led to the emergence of translucent financial products where conventional bond structures were remodelled for HAs to partly accommodate their sources of welfare income, reliant on London's financial infrastructure and professional knowledge to facilitate the functioning of the new market (Clark and O' Connor 1997). Investors seek returns, but desire

that HAs remain financially sustainable, to ensure that bond returns are protected. However, this can be at the expense of the social value creation as this reduces available capital to support philanthropic activities.

2.2 Measuring social value?

In contrast to established methodologies for measuring corporate financial performance under financialization, for example, through EDBITA (earnings before interest, taxes, depreciation, and amortisation) and DSCR (debt-service coverage ratio) (Keenan 2020), measuring social values in investments is problematic, with difficulties in calculating social impact. In the context of HA financialization, social value measurement was often overlooked in investment decisions, in favour of financialized returns. As will be seen later, this is now changing, but critical insight into social finance more generally remains an understudied area (Dowling 2017; Sinclair et al. 2019). Despite research advances on social equities, retail bonds and accelerator funds, social finance networks are generally fragmented, consisting of small ecologies and limited numbers of actors to enable these markets to effectively function at scale (Glänzel and Schuerle 2015).

One particular problem with social finance concerns ambiguity stemming from the creation of metrics to measure and manage social value performance. This issue is exacerbated by differences in values, language and terminology that shape the development of financial deals with for-profit and not-for profit stakeholders (Glänzel and Schuerle 2015; Pache and Santis 2013). For example, Gabor and Kohl (2022) in critiquing ESG investment labels, argue that a social taxonomy is needed in real estate to avoid ‘social washing’. They argue that current ESG measures focus on funds rather than assets, but that existing measures and metrics are

open to manipulation, by specialist consultants. Such measures on the environment are often vague, while the social domain is overlooked. Metrics that capture data on fair pay, labour rights, affordability and living standards, for example, are needed in the sector (Gabor and Kohl 2022).

Clearly, tensions exist in managing economic and social logics. As highlighted by Chiapello and Knoll (2020), social impact bonds (SIBs), for example, are highly diverse and the complex networks of actors leads to institutional conflicts and compromises, which can continue to be reconfigured, even after the transaction has been 'launched'. Recent work has examined poverty management through SIBs, to finance social service interventions, in Anglo-American spaces, following neoliberal reforms that seek to address unemployment, prisoner rehabilitation and homelessness (Baker et al. 2020). In order to make poverty investible, homeless citizens are objectified through poverty knowledges, stratification, and calculations to enable generalizability (Baker et al. 2020; Cohen and Rosenman 2020). This has led to the emergence of specialist analytics providers to create new techniques to measure the impact multiples of money, where metrics seek to render social and environmental outcomes equivalent (Cohen and Rosenman 2020).

Proponents of SIBs argue that private capital logics unlock innovation to address social problems, leading to a proliferation of rubrics and metrics to measure social impact (Cohen and Rosenman 2020). However, one critique is that geographers have broadly overlooked social value in their work, with Cohen and Rosenman (2020) arguing that social and environmental goals should be blended, rather than studied separately, while Langley (2020) suggests that the boundaries between social and market domains are being dissolved. Attempts to blend domains requires the adoption of existing asset metrics and frameworks as

they provide legitimacy, but different rubrics are needed in an attempt to fully capture the phenomena that they are supposed to quantify, which in turn requires reworking to create market infrastructure.

2.3 Assetization and market infrastructure

To return to Aalbers' (2017) definition of financialization, practices and market measurements are important. As such, researchers have begun to mobilise social studies of finance perspectives (Mackenzie 2009). For example, Ouma's (2016) work on farmland financialization and Omstedt's (2019) research on municipal bond ratings, while Fields (2018) adopted this approach to examine how new technologies were used to create a market for the securitization of single-family homes for private equity investors. Socio-technical approaches seek to draw attention to assemblages of measurement tools, frameworks, processes and knowledges to calculate an asset's value and risk, where market devices are used to perform calculations to frame and understand a market (Callon and Muniesa 2005; Mackenzie 2009; Preda 2006). Work from the social studies of finance can also prove useful in understanding how new financial assets are created (Berndt and Boeckler 2012), particularly social ones (Langley 2018).

Existing market technologies are often re-assembled to create new socio-technical devices and assemblages, to calculate valuations of new assets, by measuring and accommodating their attributes (cf. Muniesa et al. 2017). The development of new assets requires the assemblage of a series of elements, including technological devices, such as spreadsheet models like discounted cash flow and expert market knowledge, from legal and accounting disciplines, for example (Birch 2017). These devices are often disentangled from the social

relations within the context of which they were originally designed, and are connected to other new or modified elements, to form an assemblage to be deployed in a new context (Fields 2017). This enables 'things' to become objectified by markets, to turn them into assets, where they become defined entities with particular values and properties, that can be used to create prices and to enable exchange (Caliskan and Callon 2010).

Birch (2015) has framed this process as assetization, to uncover the socio-technical devices and practices needed to convert objects into new and speculative assets, by identifying income streams, assets and liabilities, thus creating a performative management of value. Assetization emphasises that the asset is a legal and social construct, which can separate ownership and control rights (Birch and Muniesa 2020), which is useful in the analysis of HA bonds, as it draws attention to how future, expected payments of housing benefits and wages can be reconfigured through an investor and debtor relationship, into revenue streams, risk profiles and bond yields, through the creation of new assemblages. The determination of this risk is necessary to objectify new financial assets, but to also make the bonds comparable to those in other real estate markets, to smooth away obstacles to exchange with investors (Callon and Muniesa 2005; Caliskan and Callon 2010). In using this approach, studies have been able to examine the creation of assets from underlying intangibles, such as nature (Ouma 2015), taxes (Omstedt 2020) and rents (Fields 2018), which are reconfigured and reframed to force them into fitting measurement tools and frameworks, and ensuring that capital flows follow financialized demands for enhanced revenue streams (Langley 2020).

While these calculatory tools and frameworks are devised to establish value and facilitate financialization, further supportive infrastructure is needed to create new financial markets and asset classes (Hilbrand and Grubbauer 2020). Creating bonds through assetization is not

enough: actors need to develop a stable and sustainable market (Williams 2020). This can involve the development of trade bodies and groups which seek to establish market characteristics and standards in an attempt to develop legitimacy and visibility to potential participants (Fields 2018; Brill and Durrant 2021). These shared understandings enable market participants to co-create and respond to measuring devices and calculatory tools, to draw meanings from these new markets (Caliskan and Callon 2010; Kear 2014; Birch and Muniesa 2020). The governance of new assets and their assemblages are often unstable, as their legitimacy often comes from the reworking of existing tools and models from other 'successful' markets, so new markets and assets that may not neatly fit the characteristics of an object that has been assetized (Birch 2017; Korpf and Mandel 2018). However, this instability also makes it easier for assets to be reconfigured by owners (Birch and Muniesa 2020), as we shall see later: from HA bonds, to sustainable HA bonds. The creation of new assemblages requires disruption, and McFarlane (2011) has highlighted how power relations between different actors can conflict, relating to re-alignments, where an assemblage can be viewed as a relational achievement, where it becomes (temporarily) stable. As we argue later in our paper, different groups within the market can attempt to change its evaluative infrastructure, to meet their own needs and priorities, by taking active steps to reshape the tools used in assetization and the formation of the market. As such, we suggest that assets and assemblages can perhaps be better understood as being 'more or less stable' as they are continually under renegotiation, but where external market changes can lead to more substantial phases of reconfiguration.

2.3 Research design

This paper draws upon semi-structured interviews and secondary sources to place the findings into a wider context, to examine the assetization of HA bonds and to scrutinise the

assemblages used to calculate risk, which enable the politics of financialization to move into social housing. This approach enables a critical reading as to how these assemblages are inherently unstable and how social value was omitted from the analytical frameworks used in assetization, which removed social value from measurement, and by extension deprioritised social activities in HA business plans. In order to examine a shift to reprioritise the social with competing assemblages later, in the contemporary history of HA bond markets, we conducted fieldwork over two periods.

First, between 2013 and 2015 30 interviews were conducted with research participants, consisting of HA directors (n=15), financiers (n=5), regulators and industry representatives (n=4), investors (n=4) and management consultants (n=2). These stakeholders were active in creating, issuing and purchasing HA bonds. Second, in 2021 and 2022, 15 further interviews were conducted with HA directors (n=8), financiers (n=3), investors (n=2) and management consultants (n=2) to establish the shift in interest towards social value, through the creation and adoption of a new framework assemblage called the Sustainability Reporting Standard (SRS), which was designed to capture social value, standardise its framing across the sector, and to move towards the needs of investors who are not exclusively focussed on economic returns.

Relevant stakeholders were located through a combination of Internet searches and snowballing, where reports from stakeholders such as the Homes England were used to identify a mix of actors and informants within the ecosystem. This was complemented by information from publicly available bond fund literature, bond rating methodologies, metric framework documents and the financial press (for example, Financial Times and Social Housing). The semi-structured interviews provided interviewees with the opportunity to discuss issues they thought pertinent, that were not covered by the researchers, enabling us to develop greater insight in the project. The interview schedules investigated the history of

housing association bonds, issue processes, practices and questions around risk management, bond rating, evaluative frameworks and sustainability. Interviews lasted between 45 minutes and 2 hours, and each interview was recorded and transcribed, before being thematically coded and analysed.

3. Competing frameworks for assetization: removing, then replacing the 'social'

3.1 Phase 1: Plagiarism in the metric market?

The UK's HA bond market began in 1988 when The Housing Finance Corporation (THFC) was created, which sought to act as a platform intermediary that would bring together smaller HAs and raise bonds collectively on their behalf (THFC 2016). In the 2000s, retail banks surpassed the THFC when they began to underwrite large loans to fund the (re)developments of HAs. However, this higher risk lending at long-term, low-fixed interest rates was curtailed after the 2008 GFC, with funding switching to direct bond issuance by the largest HAs, and a resurgent THFC that was joined by other new aggregator platforms such as GB Social Housing. Subsequently, HAs became active in establishing their own bond programmes to raise development funding. However, given that the market was new and unfamiliar to established investors, financial intermediaries representing the HAs had to frame the assets to make them comparable and measurable to existing real estate asset classes to attract new international investors (c.f. Fields 2017; Caliskan and Callon 2010).

In the context of real estate bonds, the collateral is the property itself, but the perceived value of the bonds stems from its future income streams that originate as mortgage or rental payments, where the bond is effectively an assetized product of income streams, risk and collateral. In order to render financial assets calculable and comparable (Callon and Muniesa

2005), there is a requirement for a degree of standardisation, shared codes and expectations, for an asset to become an established and 'legitimate' asset class (Philips and Johnson 2019; Berndt and Boeckler 2012). This is particularly important when seeking to develop an international market for bonds, as a deeper market requires larger volumes of comparable bonds to be available for purchase, requiring standardisation. Arranging banks, rating agencies and legal services firms, with experience in bond markets initially collaborated to ensure their HA clients' bonds would converge towards a standardised format, where the assemblage of artefacts and knowledge would create comparable products through assetization, as highlighted below:

> *"Of course, nothing ever starts from scratch, there are good models out there, so it's a matter of taking a model of the legal paperwork and modifying it, if necessary. At the same time, you are really needing help to decide the shape of the bond." R27 Director, Housing Association, 2015*

As we illustrate below, the models and frameworks in this phase focused on economic metrics and indicators, following the pressures of financialization and attempts at abstraction (Caliskan and Callon 2010), leading to the exclusion of social value from measuring attempts. Metrics of particular importance, reported by interviewees, related to two covenants, known as asset cover and income cover. Asset cover, often expressed as a ratio of at least 110%, indicates that the housing stock valuation must be greater than the value of the issued bonds and outstanding debt. This is to reassure investors that in the event of a default, there is more than sufficient collateral to cover their 'lost' investment, if the assets are sold. Income cover, often expressed as a 100% minimum, indicates that the income from rents will at least be equal to the bond yield paid out to investors. These two metrics are used as a point of comparison for investors to assess which bonds are the 'safest', enabling calculations of risk to be completed:

> *"Most deals are done these days in the bond market, and the one we are doing this afternoon will have an asset cover as a security requirement...generally the interest cover covenant is linked to the security, rather than to the overall business"R20 Director, Investment Bank, 2014*

Further measures considered the percentage of housing units in arrears, where higher arrears indicate a higher risk to investors, as the HA management are assumed to be unable to improve tenant payments through financial literacy training, or in debt management. The ratio of full to partial benefits is also important, as HAs whose tenants receive more 'full' welfare benefits per tenant are more likely to have stable revenue flows than if they are employed, or are on partial benefits, indicating a risk to potential interruptions of rental income, if a tenant loses their job. Ironically, this metric's meaning is rather different from other markets. For example, in mortgage or private rental markets, welfare benefits are viewed negatively. For HAs, as will be seen later, the borrowing of frameworks from other markets through assetization, is used to make welfare payments a 'positive' benefit to the bond market. Some HAs have diversified into student accommodation, BTR and build-to-sell, which are deemed higher risk activities as HAs do not necessarily have expertise and experience in these markets. Subsequently, focussing mainly, or completely on social housing, is viewed as a lower risk by investors.

Finally, investors will look at the yields of bonds, in comparison to other recent or forthcoming deals to establish pricing. These core metrics are important to the sector. On the one hand, it enables investors to reduce the complex histories, operations and cultural contexts of HAs into a comparable number of metrics for decision-making, a key tool of the politics of financialization (Fields 2018), as indicated below:

“[Compared to other bonds on offer in the market] there have been some cases where…the package had to be made a bit more attractive to investors… [is it] likely to go to the index which this fund has to be loaded…[is the fund manager] sure about the pricing or the credit quality” R19 Director, Asset Manager, 2014

At the same time, an awareness of these metrics signals to HAs what is perceived to be a ‘good’ HA, leading them to manage their business in a way that improves their metrics (Smyth et al. 2020), to make their bonds more desirable to investors, as increased demand lowers the cost of funding. This focus on economic measures was highlighted by the analytical frameworks developed by bond rating agencies, who would reorganise these metrics, into new assemblages, entangling knowledge, models and assumptions borrowed from other markets (c.f. Birch 2017). This required the adoption of existing metrics and measures from other real-estate markets to enable the modelling of risk and to flatten the diversity of HAs to feed into more abstract models, making the resultant bonds calculable to investors (see Table 1).

[Table 1 around here]

For example, metrics of interest in a standardised credit assessment of a UK HA by Standard and Poor’s, singled out data to establish its economic sustainability, for example criteria on voids, being the number of empty properties, and age of stock, as older housing stock may make it harder to attract tenants, or be more expensive to maintain, reducing potential income. Note, quality and tenant experience is absent as a measure. Further criteria focus on revenue and downward pressure on it, such as operational costs including management and

maintenance costs, in addition to outstanding interest and debt payments, that can weigh on revenue and undermine returns for bond investors.

To widen the appeal of UK HA bonds to US investors, and to build legitimacy, US bond rating agency metrics and models were used as an independent signifier of a HA investment bond 'quality' (Smyth et al. 2020). Weightings are added to different attributes as part of the assetization of rental payments, to create one single metric of credit worthiness, which in turn can be used to compare HA bonds against each other. HA bond rating metrics are problematic assemblages, as we shall see below, as new methodologies and manuals are often reassembled from established bond markets, as these methodologies had legitimacy stemming from the idea that the models historically 'worked', but also as the common frame and measures in the tools create opportunities for comparability across other asset classes (Callon and Muniesa 2005; Birch 2017). When the market was new, the rating calculations drew upon the knowledge of analysts and frameworks from the US, that do not accurately capture the complexity of UK HAs, their context, and their wider entanglement with other actors. One banker highlighted issues in what he believed to be a problematic attempt to impose assumptions and knowledge from other bond markets that were inappropriate for the UK HA context:

> *"I think where the rating agencies are confused, and of course they are all American based agencies trying to apply a methodology to here for god's sake. And the rating committees are international rating committees where they are rating on an entity in an area they may never even be able to find on the map... I mean [Bond agency B] have changed their whole team over the last two years, and undoubtedly some of the people who have come into the team have North American securitization backgrounds, and it's a nightmare. These businesses are*

not a securitization, they are a living business" R20 Director, Investment Bank, 2014

HA bond rating assemblages 'benefitted' from underpinning elements that had legitimacy, having worked in other markets, but they did not capture the diversity of HAs, which may indicate that a HA is a higher risk to investors, because the HA does not fit the bond-rating agency formula, rather than it being inherently more 'risky'. This led to bankers choosing a bond rating agency, based on which of their calculative frames best captured their clients' business activities, to give them the most favourable rating.

While some interviewees indicated that bond rating agencies have continued to develop, refine and improve their credit risk models and weightings, others remained critical. Bond rating metrics continued to be inaccurate and unstable assemblages that struggled to represent HAs accurately. A key problem in the underlying assemblages were assumptions from US bond rating analysts. In seeking to develop a new methodology and rating system, they borrowed from existing scripts to 'reuse' their legitimacy. Given the charitable status of HAs, the closest assemblages of documents and models were US municipal public sector entity frameworks (e.g Moody's 2010; Fitch 2013). For example, Moody's (2010) credit literature refers to the HA sector methodologies as a 'sub-sovereign', 'government-related issuer', with 'extraordinary support', assumed from the state. This framing arguably had two benefits for investors and HAs: First, the models brought legitimacy to the new market, and second, they reduced the funding costs. However, for the latter, this came at the expense of underestimating bond risk in the creation of new evaluative assemblages. Following the public sector municipal models and assumptions, HA rental income as welfare benefit was viewed as government-backed revenue, which led to an implicit assumption that HAs would be bailed out by the government in event of a financial collapse.

While the government would possibly seek to support a struggling HA, they are independent social organisations, unrelated to the government, with no formal guarantee or support mechanism. As such, welfare benefits are viewed positively as an income source, but due to the ratings model, a non-existent guarantee is inferred to exist, which reduces the risk allocated to the bonds:

> *"I think the one thing I can say about the rating agencies obviously is they all take a large amount of faith in the Government's ability to bail out an association…And I think that kind of colours the way they think about things; if two thirds or half of the credit assessment [weighting] is all about the Government's implied guarantee, you don't have the same kind of focus on the underlying individual business that you are looking at" R21 Director, Investment Bank, 2014*

Based on the above, bond rating methodologies, as assemblages at the centre of HA assetization, could arguably be viewed as misleading, as it infers that HA bonds are presented as comparable to sovereign bonds. The 'implied guarantee', or illusion of one, has arguably understated the risk and reduced funding costs, accelerating the financialization of the sector, through wrapping elements of US bond methodologies into the UK HA bond market. These framings and assumptions make the abstraction of HAs problematic, but can also punish HAs, for undertaking business decisions which are beneficial in the long term and in making the organisation more sustainable. Given the assumptions, based on US public sector scripts, which were embodied in the bond assemblages, they did not accommodate the freedom that HAs have as independent organisations, which could constrain their activities, even if it was beneficial to the organisation:

"And the other thing that you do get with a credit rating is you can have a scenario where the rating actually cuts against your strategic objectives…one of the objectives that we've got, is to rationalize our stock base and get out of areas that are not strategically important to us any more….but one of the measurements that the credit rating agency use in balancing their assessment of risk is the extent of which your business plan is predicated on asset sales. Now our business plan isn't particularly predicated in that sense, so it just happened that we are doing it for strategic reasons. But what the credit rating agencies do is they actually measure your activity, not the purpose behind it…they will look at your asset disposals and say "Oooh, you are selling a lot of assets. You are getting a lot of money through assets disposals, therefore you are a higher risk organization" and 'By the way, we've dropped your credit rating'" R5 Director, Housing Association, 2013

In Phase 1, new metrics and assemblages were imposed upon HAs to support their access to capital from international bond markets. As the HA bond market was new, existing antecedent frameworks and tools were borrowed and modified, in an attempt to calculate risk, make new assets comparable to other bond markets, and to gain legitimacy. We draw out two important observations from this phase: First, the politics of financialization and focus on investor returns, ensured that these frameworks displaced the importance of social objectives. As noted above, key metrics were all financial, regarding revenue, arrears, and other financial ratios. As such, social value was absent from these assemblages, so was effectively deprioritised from the operational plans, activities and reporting of HAs. Second, metrics and evaluative infrastructure were borrowed from US public sector bond markets, partly following the existing scripts of US-based rating agencies, but to also make the bonds more attractive and familiar to US investors, increasing the market of potential capital. However, in

doing so, legitimacy was borrowed, but the assemblages underpinning the assetization were unstable, arguably miscalculating risk, with an impact on pricing. What is particularly notable here, from both UK HAs and financial professionals, was a bitter-sweet relationship with the use of the metrics, where they were critical of the assemblages used in the assetization, which they viewed as being externally 'imposed'. As we see shortly, led to the introduction of a new additional framework developed by UK market participants, to better meet the demands of UK investors and HAs.

3.2 Phase 2: (Re)introducing social value

As highlighted earlier in our paper, HAs have historically aimed to support tenants, following their charitable origins which focus on the provision of housing for vulnerable or low income households (Gruis and Nieboer 2007; Smyth et al. 2020). In introducing the politics and technologies of financialization through bond financing, new frameworks focussed on economic metrics for investors, overlooking the recognition of social value, a position that has recently changed in response to ESG demand. Uniquely, HAs as a sector already create social value, so managers only have to make it 'visible' through the creation of new assemblages, rather than create new untested initiatives or changes to their business models, *and* new assemblages. This track record has made the HA sector attractive to ESG investors:

> *"…we're very strong on S&G anyway, social and governance in this sector. We've always done it, so we've never really thought about valuing it, or recording it beyond that. But clearly, our treasury colleagues, so on my team have, from an investor point, have suddenly seen a real interest in it, from their own perspective" R31 Director, Housing Association, 2021*

Despite the earlier removal of social value generating activities by some HAs, due to its absence from metrics, and therefore strategic plans, many HAs remained committed to supporting tenants. For example, during Covid-19, private landlords were criticised for tenant evictions, while some HAs provided financial support, such as writing-off debts for renters who had previously not been in arrears:

> *"…we developed a new business plan with different assumptions to mitigate the losses and managed via COBRA meetings and online board meetings…we have managed to write off a considerable amount of bad debt for 1000 families worth about half a million pounds." R36 Director, Housing Association, 2022*

While this particular example highlights the unique autonomy that HAs have in creating social value, it raises questions over how such heterogeneous interventions and responses can be captured, classified and compared as new assemblages (Glanzel and Schuerle 2015). The following quote from a financial advisory director illustrates, below, how investors began seeking to capture the creation of social value in HAs, to ensure they fit their ESG fund mandates and provide data to report to their clients. In the initial absence of a standardised sector-wide framework, each investor had attempted to create their own in-house assemblage as a questionnaire. This created two problems: First, these assemblages 'borrowed' components from other corporate sectors, which were a poor fit in capturing HA social value. Second, they created an administrative burden for HAs, as they had to try to complete multiple questionnaires for each bond issue, requiring them to collect new data on social value which they did not already collect, or in trying to reformat existing data, to meet the demands of questionnaire assemblages:

“…our clients were getting more inbound enquiries from institutional investors, saying, oh, can you fill in this questionnaire…and they were getting five different versions of this from different investors…which I know for a fact will just get lifted from something that they’re doing in the corporate sector or somewhere else and they’ll try and bend it a bit maybe for housing associations” R32 Director, Boutique Financial Advisory, 2021

“…we got a question, it was about the chief exec’s pay, or something…The categories we had to tick (!) So, this is social housing in the UK, and the category we had to tick was something like, let’s start by, was it less than $5 million? $5 million to $10 million…So that’s to my point that those surveys weren’t really fit for HAs, unless there is an HA out there that pays more than a million to its CEO” R33 Director, Housing Association, 2021

In response to this, members of the UK HA sector and its stakeholders turned to create a new assemblage in the form of a new reporting standard that would seek to harmonize the questionnaire frameworks which seek to ‘capture’ social value creation by investors. Importantly, in contrast to Phase 1, where US bond rating agency metrics were seen as an imposition, and a product, where HAs, pay for the privilege of being judged, the early adopter-creators of the SRS standard viewed the initiative as an opportunity for the sector to collectively own control over how social value is shaped, defined and measured. In 2019, the ESG Social Housing Working Group was formed by financial advisory firm Centrus and the HA Peabody, to consider the creation of a sector-wide template, its governance and the creation of the assemblage’s social infrastructure. This led to a series of meetings and consultations to bring together UK HAs, investors and their existing tools, to sketch out what metrics and data could be included in a new standard. The motivation behind this demand, was led by institutional investors, often European pension funds. The fund managers were

under pressure to compete and find new pools of ESG assets. One solution was to find organisations that already created social value, which made the process of social assetization easier, rather than imposing an existing framework such as GRESB on new property developers, which required them to enact change and create social value, where metrics can be manipulated (c.f. Gabor and Kohl 2022).

These consultations created a new community, or social infrastructure, that would determine the configuration of the reporting standard as an assemblage, and in turn, develop shared understandings and expectations of the market to create meaning on social value, and determine the governance of the SRS (Brill and Durant 2021; Kear 2014; Caliskan and Callon 2010; Macfarlane 2011). In Phase 1, legitimacy came from existing metrics in assemblages, but for Phase 2's SRS, credibility came from prominent stakeholders in the sector, who were early adopters, such as large HAs, including L&Q, Peabody and Optivo and financiers such as THFC, Lloyds and Aberdeen Standard Investments. In 2020, the new SRS criteria was agreed, which helped to render social activity visible. By 2021, the working group transitioned into a new, permanent organisation called Sustainability for Housing, with over 120 organisations using the SRS, including lenders and investors (SRS 2022). As highlighted below, a consultant underscored the need to streamline and simplify social value data reporting, to create an assemblage which would not be overcomplicated, by avoiding the need for data which could place a disproportionate burden for smaller HAs, or which would portray some types of HA negatively:

> *"…the housing associations could see this was clearly an important thing for them to be aware of…so the process of forming these working groups was around making sure there were a broad range of people sitting around the table so that they could develop something which is useful for everyone. So that it wasn't too burdensome for the housing associations, so that it would tell their story well and*

effectively…whereby they can demonstrate their social credentials…if there was a standard or a metric which is already a requirement of the statistical data returns, for example, they'd use the same metric… the constant tension was around the web between what's important and what's interesting" R34 Director, Financial Advisory, 2021

[Table 2 around here]

Table 2 shows the criteria and metrics chosen to create the SRS assemblage. For example, to establish how much housing is provided to more vulnerable groups, the proportion of social to private rents is reported, to ensure that HAs have not moved their provision towards being focussed on market price housing. Data on a greater proportion of 3 year fixed tenancies indicates that a HA provides residents with stability, in addition to qualitative information on steps taken to reduce fuel poverty, and building safety reporting. In a departure from the quantified data used in bond rating judgements, the SRS assemblage seeks to capture more qualitative reporting. This is notable, as assemblages often seek to capture and abstract activity to enable comparisons (Korpf and Mandel 2018). However, due to the flexibility and diversity of activity used to create social value, space is created to accommodate qualitative statements. For example, arrangements for holding management to account and support services for tenants. On the one hand, this enables the SRS to capture social value more effectively, rather than relying solely on more abstract quantitative measures. On the other hand, tenants' groups are not included in the design of the SRS and the reporting standard is completed by HAs. As such, social value as experienced by tenants is omitted from the assemblage, while the qualitative narratives are self-reported by the HA: narratives which may differ from those of tenants.

The assemblage was a negotiated output from the social infrastructure, with the earlier

working group seeking to balance maximum transparency against a resource burden in collecting data, or to avoid criteria which may penalise some HAs, reducing the adoption of the SRS in the sector (c.f. MacFarlane 2011). For this reason, the framework assemblage is a reporting standard, rather than a weighted metric which outputs a quantitative score, as seen with bond rating metrics. It was argued that investors can develop these judgements themselves in-house, if required, but that the SRS data enabled a common frame of reference to assess the social value created by HAs. For this same reason, early proponents of the framework decided to not include thresholds or minimum standards. The argument for this, was to encourage SRS adoption, but that in creating sector-wide and transparency, HAs can benchmark their performance against peers using the 'borrowed' metrics and activities listed in the reporting criteria to amend their own operations.

As highlighted by a HA director, capturing social value was useful in providing transparency for investors who wanted to add the bonds to ESG fund portfolios, to attest to the HA's social value. However, they argued that the social value which benefits tenants, was also viewed by investors as a proxy for a well-managed business, which could also provide 'uplift' for a HA's bond's economic fundamentals, by making the organisation more efficient. This resonates with the arguments of Langley (2020) and Cohen and Rosenman (2020), where the domains of economic, social and environmental should not be separated, but examined as being blended and intertwined. For example, the following interviewee suggested how energy efficient housing can benefit the environment, improve the health of tenants, while decreasing void rates, enhancing rental income yields, which in turn, reduces the risk of a bond default:

> *"…[it can] improve the quality of the home for the residents so they are more likely to want to stay and not move on or suffer from health conditions which may affect their rent…if you improve the energy performance there are all sorts of hidden indirect costs that can be quantified…such as reduced rent arrears*

because their energy bills are cheaper…there are less complaints and less people ringing up the business and occupying our customer service teams" R35 Director, Housing Association, 2021

Despite the creation of the new SRS, and attempts by the sector to gain control of the standard, it remains complementary to the economic fundamentals, and calculations of bond rating agency metrics. However, bond rating agencies are currently devising new methodologies to capture social value as part of broader ESG evaluations in corporate bond frameworks and interviewees were expecting them to develop new calculations that would integrate an ESG rating into their existing bond metric, or develop them as a complementary frame:

"We are talking to rating agencies all the time, and you can see that they have now developed their ESG rating abilities. So, from that respect, I think it's only a matter of time before you will start seeing companies sourcing ESG ratings from a Moody's, or an S&P, whereby you will see A-, A+, A, and so on. And from that perspective, you will see that there will be different pricing implications" R33 Director, Housing Association, 2021

This will likely result in the emergence of new competing sustainability frameworks and judgements, which could challenge the SRS assemblage as a standard, acting as a new phase. However, given criticism of the existing metrics' ability to capture and adequately represent HA bonds as seen in Phase 1, having 'borrowed' metrics and infrastructures from other sectors, it can be argued that investors and HAs may prefer the SRS as they have more control over the evaluative infrastructure, and in focussing on a standard for data reporting and transparency, can devise their own metrics.

In summary, Phase 2 emerged as a response to the growth of interest in ESG investing. Institutional investors have become increasingly interested in social value, which has created corresponding demand for assets with social attributes. As some HAs have continued to fulfil their social mission, for example, through below market rents, some to a lesser degree under financialization, market participants realised that HA bonds could be re-evaluated to render social value visible. In this second phase we draw out two further findings: First, to meet new European investor demand, additional evaluative infrastructure and assemblages have been created to capture previously 'hidden' social value. Second, these new metrics and infrastructure sought to directly challenge the earlier US metrics and frameworks, in favour of tools developed by UK sector stakeholders.

Conclusion

Recently, researchers have become increasingly interested in the rise of institutional investors in real estate, as the latter seek to capture new rent extraction opportunities (Wijburg and Aalbers 2017; Brill and Durrant 2020; Nethercote 2020). Following the departure of the state from housing provision under neoliberal policies (Belotti 2022), the private rental sector has grown to provide housing in many marketized economies, but this has also placed greater emphasis on the role of social housing providers. However, the permeation of financialization's politics into the HA sector can arguably challenge the prioritization of tenants, seeking to privilege the security of investor returns over tenant support.

In our paper, we aimed to provide two main contributions to the literature. First, we aimed to add to debates concerning social studies of finance and assetization (Birch 2017; Fields 2018; Omstedt 2020). We sought to extend the concept of frame instability further, by noting more

disruptive shifts, such as adding new competing frameworks, as different groups of actors attempt to privilege assemblages which better meets their professional community's needs. Second, we revealed how non-financial politics remain important within the HA sector. Despite being obscured and 'lost' from the gaze of measurement tools, social value creation in the sector has become more important and visible, through the development of new social measurement tools, as ESG investors seek investable assets that are seen to support stakeholders: in this case tenants.

In the first phase, we observed how US-based bond rating agencies attempted to borrow elements of models from US public sector bond markets, to produce new analytical frames that would capture the risk inherent within HA bonds, but to also make them comparable to those in other markets. Borrowing frameworks from established US markets also transferred 'legitimacy' to the new UK HA bonds, but due to the instability of the assemblages, it could be argued that these frameworks underestimated the risk and pricing. What is clear from these assemblages was a focus on economic returns and risk reduction, which effectively excluded social value from the framing, obscuring this imperative that runs through HA organisations.

In the second phase, we drew attention to attempts to develop a new framework in the form of the SRS. The new assemblage attempts to render social value visible, which benefited HAs, by attracting new ESG investors, while enabling them to re-focus attention on improving tenant support. We observed how in contrast to phase 1, which was viewed as a top-down imposition by elite intermediaries, the SRS emerged through the development of a collaborative community, which culminated in the development of a new social infrastructure consisting of UK HAs and investors. As the SRS is a new and evolving standard, it is

currently unclear as to how it is encouraging the better management of resources to support the better management of social value. However, its initial adoption should help to render visible and protect existing activities that create social value, while providing them with legitimacy and encouraging HAs to rollout activities further across their organisations.

Following Gabor and Kohl (2022), we argue that further research is needed to examine social value creation and capture in real estate. We do not question that financial frameworks and assemblages privilege returns over renters in most settings, but as demand for ESG investments increase, the measurement of social value and the prioritisation of tenants has become more important in the HA sector. One observation that is worthy of further scholarly attention concerns the development and formation of the communities and stakeholders that govern new frameworks. For example, the SRS utilised a bottom-up approach where HAs and investors shaped the framework through consultation, in contrast to choosing an existing framework, or having one imposed upon the sector. This enabled HAs to reveal hidden social value and extend their existing social activities more broadly across the sector. Arguably, this approach could be used in other geographical or sectoral markets, for example, in social housing markets in other countries, or SIBs.

However, the composition and power of actors within these communities could be problematic, particularly concerning social washing (Gabor and Kohl 2022), and an investigation of the stakeholders behind new and existing standards is worthy of further examination. Larger investors, or real estate landlords, may use their power to influence an assemblage's formation to suit their own organisation. For instance, this could weaken the precision of standard definitions or seek to be selective of particular metrics, to introduce ambiguity and limit the scope for adding social value.

In the case of the HA sector, tenants are a central actor in the ecosystem, yet are absent from the development of social value measurement frameworks and their designs. This raises further questions for researchers, specifically, what is being measured and for whose benefit: do these frameworks simply seek to make existing activity visible, to make bonds more superficially attractive to investors, or can these tools and their newfound transparency be used to push for genuine change by providing tenant groups with access to new sources of data. One route to achieving this may be to draw upon Hughes-McClure's (2022) 'follow the money' approach in examining the assetization of bonds, considering the passage of assemblages and ideas, through different networks and groups of stakeholders.

To return to Cohen and Rosenman (2020), the development of frameworks to capture ESG could compartmentalise each value into its own domain, in attempting to address specific metrics and criteria. HAs and other real estate developers, may seek to directly respond to addressing those measures, rather than viewing the frameworks as an opportunity to undertake transformative innovation to address environmental, social and governance issues simultaneously, though dynamic activities, rather than seeking to incrementally 'tick' individual boxes. Finally, as interest in ESG continues to grow in financial services and new frameworks proliferate, scholars should be well positioned to critically evaluate them, in addition to their protagonists, to identify if some frameworks are more accommodating to the existing social value claimed by landlords and investors than others, in the event that more popular standards are less demanding, and actors are seeking to undertake social washing, rather than use more demanding standards to drive and evidence positive change.

References

Aalbers, M. (2016) The Financialization of Housing: A political economy approach, Routledge: Oxford.

Aalbers, M.B., Loon, J.V. and Fernandez, R. (2017) The financialization of a social housing provider. International Journal of Urban and Regional Research, 41(4), pp.572-587.

Aalbers, M. (2020) Financial geography III: The financialization of the city. Progress in Human Geography, 44(3), pp.595-607

Asiyanbi, A. (2018) Financialisation in the green economy: Material connections, markets-in-the-making and Foucauldian organising actions. Environment and Planning A: Economy and Space, 50(3), pp.531-548

Baker, T., Evans, J., and Hennigan, B. (2020). Investable poverty: Social investment states and the geographies of poverty management. Progress in Human Geography, 44(3), 534-554.

Belotti, E. (2021). The invisible hand of the shareholding state: the financialization of Italian real-estate investment funds for social housing. Housing Studies, 1-24.

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), pp.612-632

Birch, K., (2017) Rethinking value in the bio-economy: Finance, assetization, and the management of value. Science, Technology, & Human Values, 42(3), pp.460-490

Birch, K., and Muniesa, F. (2020) 'Assetization and Technoscientific capitalism' in Birch, K., and Muniesa, F. (Eds.). (2020). Assetization: turning things into assets in technoscientific capitalism. MIT Press pp. 1-44

Boeckler, M., Berndt, C. (2013) Geographies of Circulation and Exchange III The Great Crisis and Marketization ‘after Markets. Progress in Human Geography 37 (3), pp.424–32

Brill, F. and Durrant, D. (2021) The emergence of a Build to Rent model: The role of narratives and discourses. Environment and Planning A: Economy and Space, p.0308518X20969417

Byrne, M. (2020) Generation rent and the financialization of housing: A comparative exploration of the growth of the private rental sector in Ireland, the UK and Spain. Housing Studies, 35(4), pp.743-765

Byrne, M. and Norris, M. (2019) Housing market financialization, neoliberalism and everyday retrenchment of social housing. Environment and Planning A: Economy and Space, p.0308518X19832614

Çalışkan, K. and Callon, M. (2010) Economization, part 2: a research programme for the study of markets. Economy and society, 39(1), pp.1-32

Callon, M., and Muniesa, F. (2005) Peripheral vision: Economic markets as calculative collective devices. Organization Studies 26 (8): 1229–50

Chiapello, E., and Knoll, L. (2020). The welfare conventions approach: A comparative perspective on social impact bonds. Journal of Comparative Policy Analysis: Research and Practice, 22(2), 100-115.

Clark G, O'Connor, K, 1997, ``The informational content of financial products and the spatial structure of the global finance industry'', in Spaces of Globalization: Reasserting the Power of the Local Ed. K Cox (Guilford, New York) pp 89 - 114

Clegg, L. (2019) Economic geography and the regulatory state: Asymmetric marketization of social housing in England. Environment and Planning A: Economy and Space, 51(7), pp.1479-1498

Cooper, S. (2022). Becoming landlords: the changing interests of non-profit and co-operative housing providers in Manitoba, Canada. Housing Studies, 1-18.

Cohen, D., and Rosenman, E. (2020). From the school yard to the conservation area: Impact investment across the nature/social divide. Antipode, 52(5), 1259-1285.

Dowling, E. (2017). In the wake of austerity: social impact bonds and the financialisation of the welfare state in Britain. New political economy, 22(3), 294-310.

Fields, D. (2018) Constructing a New Asset Class: Property-led Financial Accumulation after the Crisis, Economic Geography, 94, 118-140

Folkman, P., Froud, J. Johal, S. and Williams, K. (2007) Working for themselves/ capital market intermediaries and present day capitalism, Business History, 49, pp. 552-572.

Gabor, D., & Kohl, S. (2022). " My Home is an Asset Class": The Financialization of Housing in Europe, The Greens EFA

Gotham, K. F. (2009). Creating liquidity out of spatial fixity: The secondary circuit of capital and the subprime mortgage crisis. International journal of urban and regional research, 33(2), 355-371.

Glänzel, G. and Scheuerle, T. (2016) Social impact investing in Germany: Current impediments from investors' and social entrepreneurs' perspectives. VOLUNTAS: International Journal of Voluntary and Nonprofit Organizations, 27(4), pp.1638-1668.

Gruis, V., & Nieboer, N. (2007). Government regulation and market orientation in the management of social housing assets: Limitations and opportunities for European and Australian landlords. European Journal of Housing Policy, 7(1), 45-62.

Hilbrandt, H. and Grubbauer, M. (2020) Standards and SSOs in the contested widening and deepening of financial markets: The arrival of Green Municipal Bonds in Mexico City. Environment and Planning A: Economy and Space, 52(7), pp.1415-1433

Ioannou, S. and Wójcik, D. (2019) On financialization and its future. Environment and Planning A: economy and Space, 51(1), pp.263-271

Karpf, A. and Mandel, A. (2018) The changing value of the 'green' label on the US municipal bond market. Nature Climate Change, 8(2), pp.161-165.

Kear, M. (2014) The scale effects of financialization: The fair credit reporting act and the production of financial space and subjects. Geoforum 57: 99–109

Keenan, L. (2020). Financialization, securitization and the decline of pubs in Britain. Journal of Economic Geography, 20(6), 1293-1311.

Langley, P. (2018) Frontier financialization: Urban infrastructure in the United Kingdom. Economic Anthropology, 5(2), pp.172-184.

Langley, P. (2020) Assets and assetization in financialized capitalism. Review of International Political Economy, 28(2), pp.382-393

Launius, S., and Kear, M. (2019). Fixing financialization in the credit-constrained city. Urban Geography, 40(9), 1335-1355.

Leyshon, A. and French, S. (2009) "We all live in a Robbie Fowler house": the geographies of the buy to let market in the UK, British Journal of Politics and International Relations, 11(3), pp. 438-460.

MacKenzie, D. (2006) An engine, not a camera: How financial models shape markets. Cambridge, MA: MIT Press

Hughes-McLure, S. (2022). Follow the money. Environment and Planning A: Economy and Space, 54(7), 1299-1322.

Malpass P (2000) The discontinuous history of housing associations in England. Housing Studies 15(2): 195–212

McFarlane, C., 2011. Assemblage and critical urbanism. City, 15(2), pp.204-224.

Nethercote, M. (2020) Build-to-Rent and the financialization of rental housing: future research directions. Housing Studies, 35(5), pp.839-874

Morrison, N. (2018) Innovative affordable housing finance delivery model in England. Affordable Housing Governance and Finance: Innovations, partnerships and comparative perspectives.

Muniesa, F., Millo, Y., Callon, M. (2007) An Introduction to Market Devices. The Sociological Review 55 (October), pp. 1–12.

Omstedt, M. (2020) Reading risk: The practices, limits and politics of municipal bond rating. Environment and Planning A: Economy and Space, 52(3), pp.611-631

Ouma, S. (2016) From financialization to operations of capital: Historicizing and disentangling the finance–farmland-nexus. Geoforum 72 (1): 82–93

Pache, A. and Santos, F. (2013) Embedded in hybrid contexts: How individuals in organizations respond to competing institutional logics, Research in the Sociology of Organizations, 3, pp. 3-35.

Phillips, S.D. and Johnson, B. (2019) Inching to Impact: The Demand Side of Social Impact Investing. Journal of Business Ethics, pp.1-15.

Preda, A. (2006) Socio-technical agency in financial markets the case of the stock ticker. Social Studies of Science 36 (5): 753–82

Revington, N. and August, M. (2020) Making a market for itself: The emergent financialization of student housing in Canada. Environment and Planning A: Economy and Space, 52(5), pp.856-877

Schinckus, C. (2018) The valuation of social impact bonds: An introductory perspective with the Peterborough SIB. Research in International Business and Finance, 45, pp.1-6.

Sinclair, S., McHugh, N., & Roy, M. J. (2021). Social innovation, financialisation and commodification: A critique of social impact bonds. Journal of Economic Policy Reform, 24(1), 11-27.

Smyth, S. (2019) Embedding financialization: a policy review of the English Affordable Homes Programme. Housing Studies, 34(1), pp.142-161.

Smyth, S., Cole, I., & Fields, D. (2020). From gatekeepers to gateway constructors: Credit rating agencies and the financialisation of housing associations. Critical Perspectives on Accounting, 71, 102093.

Tickell J (1996) Turning Hopes into Homes, a History of Social Housing 1235-1996. London: National Housing Federation

THFC (2016) Investing in affordable housing, London

van Bortel, G. and Gruis, V., 2019. Innovative Arrangements between Public and Private Actors in Affordable Housing Provision: Examples from Austria, England and Italy. Urban Science, 3(2), p.52.

Van Loon, J., Oosterlynck, S., & Aalbers, M. B. (2019). Governing urban development in the Low Countries: From managerialism to entrepreneurialism and financialization. European Urban and Regional Studies, 26(4), 400-418.

Wainwright, T. (2009). Laying the foundations for a crisis: mapping the historico-geographical construction of residential mortgage backed securitization in the UK. International Journal of Urban and Regional Research, 33(2), 372-388.

Wainwright, T. and Manville, G., (2017) Financialization and the third sector: Innovation in social housing bond markets. Environment and Planning A, 49(4), pp.819-838.

Walks, A., & Clifford, B. (2015). The political economy of mortgage securitization and the neoliberalization of housing policy in Canada. Environment and Planning A: Economy and Space, 47(8), 1624-1642.

Waldron, R. (2019) Financialization, urban governance and the planning system: Utilizing 'development viability' as a policy narrative for the liberalization of Ireland's post-crash planning system. International Journal of Urban and Regional Research 43(4): 685–704

Wijburg, G. and Aalbers, M.B. (2017) The alternative financialization of the German housing market. Housing Studies, 32(7), pp.968-989.

Wijburg, G., Aalbers, M.B. and Heeg, S. (2018) The financialisation of rental housing 2.0: Releasing housing into the privatised mainstream of capital accumulation. Antipode, 50(4), pp.1098-1119

Williams, J. (2000) 'Recidivists, Rough Sleepers, and the Unemployed as Financial Assets: Social Impact Bonds and the Creation of New Markets in Social Services' in Birch, K., and Muniesa, F. (Eds.). (2020). Assetization: turning things into assets in technoscientific capitalism. MIT Press pp. 287-312

Table 1: Sovereign Housing credit report
Source: Standard and Poor's
Enterprise profile
Average age of the portfolio (years)
Average void rates for past 3 years (%)
Financial Profile
Turnover
Reported EBITDA/Revenue %
Capitalised Repairs/Revenue %
Adjusted EBITDA/Revenues %
Operating margin %
Net margin
Debt Profile
Debt/Adjusted EBITDA
Adjusted EBITDA/interest

Table 2: SRS social criteria			Source: Sustainabilty for Housing
Theme	Importance	Criteria	Measure
Affordability and Security	Core	For properties that are subject to the rent regulation regime, report against one or more Affordability Metric: 1) Rent compared to Median private rental sector (PRS) rent across the Local Authority 2) Rent compared to Local Housing Allowance (LHA)	% of PRS rent % of LHA rent
	Core	Share, and number, of existing homes (homes completed before the last financial year) allocated to: General needs (social rent) Intermediate rent Affordable rent Supported Housing Housing for older people Low-cost home ownership Care homes Private Rented Sector Other	% properties, number of properties
	Core	Share, and number, of new homes (homes that were completed in the last financial year), allocated to: General needs (social rent), Intermediate rent Affordable rent Supported Housing Housing for older people Low-cost home ownership Care homes Private Rented Sector Other	% properties, number of properties
	Core	How is the housing provider trying to reduce the effect of fuel poverty on its residents?	Qualitative response
	Enhanced	What % of rental homes have at least a 3 year fixed tenancy agreement?	% of homes
Building Safety and Quality	Core	What % of homes with a gas appliance have an in-date, accredited gas safety check?	% of homes
	Core	What % of buildings have an in-date and compliant Fire Risk Assessment?	% of buildings
	Core	What % of homes meet the national housing quality standard?	% of homes
Resident Voice	Core	What arrangements are in place to enable the residents to hold management to account for provision of services?	Qualitative response
	Core	How does the housing provider measure Resident Satisfaction and how has Resident Satisfaction changed over the last three years?	Qualitative response
	Enhanced	In the last 12 months, how many complaints have been upheld by the Ombudsman. How have these complaints (or others) resulted in change of practice within the housing provider?	Qualittaive response
Resident Support	Core	What support services does the housing provider offer to its residents. How successful are these services in improving outcomes?	Qualitative response
Placemaking	Enhanced	Provide examples or case studies of where the housing provider has been engaged in placemaking or placeshaping activities.	Qualitative response