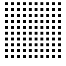
INTRODUCTION



Land, Finance, Technology

Perspectives on Mortgage Lending

DAIVI RODIMA-TAYLOR

Land has served as a primary means of sustenance, but also as a vehicle for wealth and power throughout the ages. Lending against land has taken diverse forms in different societies and time periods. Oftentimes a risky practice, mortgage has been treated in scholarly literature primarily as an economic or legal contract. This book calls for a fuller, culturally sensitive, and human-centered exploration of this age-old, but continuously reinvented institution.

Today, lending against real property is occurring in significant volumes globally. Mortgage loans in the OECD[1] countries increased from 20 percent to 64 percent of GDP between 1914 and 2010 (Proskurovska and Dorry 2018). In the United States alone, mortgage debt reached $10.44 trillion at the end of June 2021, according to the Federal Reserve Bank of New York.[2] Homeownership remains a principal means of wealth creation for most Americans – more than a financial asset, it allows access to schools, jobs, and other opportunities (Faber 2018). Mortgage lending is also an important part of land titling reforms that seek to enhance agricultural productivity and rural entrepreneurship in the Global South. The outcomes of such initiatives have been uneven and ambiguous, and remain a hotly debated policy issue.

Advances in information technology have significantly changed mortgage lending. The 2007 subprime crisis revealed the pitfalls of some of the new financial instruments – such as mortgage-backed securities that enabled the sale of the debt on secondary markets and integrated home loans with speculative global finance. The subsequent foreclosure crisis deprived millions of homeowners of their property and savings worldwide – with particularly grave effects for low-income populations. New digital technologies for the management of housing markets may denote

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a new "technological phase" of housing financialization marked by data collection and analysis with the help of algorithms—with data turned into a marketable commodity and people profiled and ranked for profit in the ever-growing digital "information dragnet" (Fields 2019: 17–18; Fourcade and Healy 2017). At the same time, abstract and depersonalized financial flows entailed in commercialized housing debt paradoxically involve persistent personalized sentiments of reciprocity and mutuality, and conversations about individual responsibility and moral behavior (Langley 2008; Maurer 2006; Samec 2018; Stout 2019a). The embeddedness of mortgage loans in familial patterns of reciprocity and intergenerational cycles of exchange may render mortgage holders even more vulnerable to dispossession and disempowerment.

New technologies such as digital mortgage processing offer hope for previously underserved populations, while bringing along new challenges and vulnerabilities. Lending assisted by financial technology (FinTech) could expand credit for those with limited access to traditional financial markets by facilitating easier and less costly services, while lessening discrimination resulting from personal interactions. The digital take-off has been rapid. The market share of FinTech lenders[3] in US mortgage lending has grown from 2 to 8 percent between 2010 and 2016 (Fuster et al. 2018).[4] On the other hand, the algorithm-empowered mortgage also introduces significant fair lending concerns and may reinforce racial and economic inequalities (Allen 2019; Courchane and Ross 2019). Drawing on the historical legacies of discriminatory redlining,[5] the predictive models of algorithms may introduce new, difficult-to-detect biases that call for novel approaches to housing policy and ethics.

This chapter argues that the ambiguous and uneasy partnerships of the formal and informal, public and private have resided in mortgage and titling institutions throughout history. With a focus on the evolution of legal norms and institutions for mortgage credit and land titling in the non-Western and Western world, it relates these continuities to new practices and technologies in the mortgage space. In an era of intensifying population mobility, resettlement and political transitions in many parts of the world, these questions carry broader social and political import. Postsocialist settings have become a testing ground for land titling and financialization reforms after the era where real property rights did not exist. Attempts to institute mortgage lending in these societies testify, however, to the endurance of preexisting authority patterns and recombinant property forms that mix frameworks from different periods and property regimes. Reforms that institute exclusive land rights may exacerbate political conflicts, power struggles, and economic inefficiencies.

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It is therefore important to study local and global perspectives of financialization as interlinked, exploring the ways in which local economies interact with large corporations and governments (see Hart 2017; Hart, Laville, and Cattani 2010). Hart calls for a more detailed study of the complementary potential and dialectical movement of bureaucracy and informality, and the specific, cultural embeddedness of both. Setting out to study mortgage lending from a human economy perspective, this chapter contends that the impact of new financial technologies should be evaluated within the particular historical and socio-cultural contexts of mortgage institutions. Land and the mortgage are frequently central to broader struggles over belonging and identity, calling attention to an increasing plurality of real property forms, entitlements, and calculative practices in the Global South and North—as well as the historical continuities in broader, racialized relations of inequality shaping the mortgage lending. The institutional and technological advances in global mortgage markets continue to intersect with interpersonal networks of reciprocity and expectations of mutuality among mortgage borrowers—while building on the social imaginaries and public representations of housing credit as a safeguard of one's biological survival and social continuity.

Pledging, Contracting, and Mortgaging in Historical Perspective

The Social Embeddedness of Land

Land has historically been situated in the nexus of wealth and power, and land transactions have been shaped by attempts to keep up existing social and political hierarchies. Early land pledges took variable forms and served diverse functions, while also fortifying the positions of the powerful, including chiefs and hereditary landed estate owners. At the same time, as histories from early Africa and Europe reveal, land credit has also been deeply embedded in interpersonal networks, informal agreements, and patterns of mutuality that often may have contradicted the written word of legal contract—if such could be found.

Land pledging in Africa has existed since pre-colonial times and varied greatly historically and geographically, but also featured some important regularities. Called a multitude of names—"pawning," "pledging," "promising," "secured agreement"—it has served as an important source of credit, but also functioned as a form of land sales in places where these have been illegitimate (Delville et al. 2002). Pledging is a process where a borrower grants another person the right to use his or her farmland

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until the repayment of the borrowed sum. The transaction was often highly personal and based on complementary interests between parties with unequal access to productive resources (2002: 63). The duration and form of the arrangement have varied widely, depending on factors such as customary land rights and patterns of settlement, social recognition of open-ended loans, interpersonal relations and patterns of reciprocity, and urgency of credit needs. Such land transfers often served to integrate newcomers into local communities with the emergence of new cash crops: in early twentieth-century Ghana, cultivation of cocoa and groundnuts opened up frontier areas where new settlers provided labor assistance to farmers for access to land (Mireku et al. 2016). That solidified chiefly authority over land allocation in the form of land "leases" that has persisted through postcolonial times (Berry 2013).

Therefore, land pledging has features in common with other customary contracts—it could be renegotiated or revoked and often depended on the consent of third parties such as family and kin (Ghai 1969). As landholding was frequently subject to multiple and overlapping user rights, property law was concerned with obligations between people in respect to things, rather than rights of persons over things (Gluckman 1965). Jural rights emanated from multiplex social ties between people, including kinship, but also territoriality and co-residence and the history and frequency of mutual support (Moore 1998). Land pledging thus featured as an integral part of a complex web of reciprocal obligations and exchanges among people related by kin, territory, and other modes of affinity.[6]

Pledging or pawning land was thus part of "informal" land tenure where ancestral or kin-group land was held in trust and defined by a variety of use rights and long- and short-term obligations. The rise of the institution of formal mortgage in much of the non-Western world has been associated either with colonial-era land grabs of settler economies (see Shipton 2009 for Kenya), or with post-colonial land titling reforms that have seen varied success at best. It has been estimated that more than 70 percent of the world's population lacks access to legally registered land titles.[7] Formal land titling reforms are based on the "freehold-mortgage" nexus—the assumption that individually owned and freely transferable landholding easily translates into agricultural credit, and the creditor has a full and inalienable right to the forfeited land (Shipton 2009). Proponents of land titling in the Global South have viewed registration as a means to protect marginalized farmers from land grabs and dispossession or advocated it as facilitating entrepreneurship by turning land into tradable asset and mortgage collateral. Although land registration can thus be viewed as a "pro-poor legal empowerment strategy," such re-

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forms may have divisive and destabilizing effects – considering that most land titling initiatives tend to involve profound shifts and transformations in existing rights (Boone 2019: 384). Both claims on land and their reinforcement are embedded in institutions, many of which are broader than strictly economic or legal spheres – and can include lineage, family, age-sets, and community (2019: 395). Land property has been at the center of the interaction between custom and statutory law in Ghana where informal negotiations of inheritance and credit transactions continue to abound (Berry, this volume). Land pledges have constituted a source of continuity as well as conflict in financial and social relations, partly also due to their ambiguity and open-endedness. Boundaries between informal pledges, land sales, and formal mortgages are increasingly blurred, creating new challenges for mortgaging inherited property. Many recent land titling initiatives in Africa and elsewhere in the Global South have fueled speculative investment and land concentration in the hands of the wealthy.

In societies undergoing violent conflicts, resettlement, or regime transitions, land property can become central in broader struggles over belonging and identity (Shipton and Rodima-Taylor 2015). Formalization of land claims becomes a contested and political process where new normative and institutional frameworks for land titling and transacting may arise locally and in parallel to official frameworks (Benjaminsen and Lund 2003; Geschiere 2009; Lund 2013; Meinert and Rodima-Taylor 2017). In post-conflict northern Uganda, resistance and contestation surround the growing monetary transactions involving familial land (Kusk and Meinert, this volume). Post-socialist settings in particular have become a testing ground for land titling reforms aiming to bring about broad-based social and economic restructuring. Many countries in Eastern Europe experienced an almost complete elimination of real property rights during the socialist era, and new land privatization policies view land credit as a primary vehicle in rendering land a mobile and productive asset. Not many landholders, however, are exercising their right to use land as collateral: its market value remains low, compounded by unclear ownership records and conflicting claims, ineffective foreclosure procedures, and incomplete legal frameworks (European Bank for Reconstruction and Development 2007; Giovarelli and Bledsoe 2001). The rights-based models that seek to restore land to former owners have often failed to consider the multiple use rights and intermediate nodes of administrative control that characterize the lived experience in agrarian communities (Humphrey 1983; Sikor 2006; Rodima-Taylor and Shipton 2017; Verdery 2003). Local power relations and informal hierarchies have persisted through-

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out the post-socialist era, often replicating the pre-reform patters of differentiation and inequality (see Dorondel, Rodima-Taylor and Rusu, this volume).

The Contractual Features of Medieval European Mortgage

The institution of mortgage shaping people's present-day realities through global financial markets as well as government policies largely results from the historical development of the concept in Western jurisprudence. An important feature in the evolvement of the early mortgage in Europe is the gradual shift in the legal documents from the credit aspect of mortgage contract to land and title transfers that introduced an arbitrary element of harshness. In medieval England, mortgage involved a physical transfer of the property to the creditor. First described by Randulf de Glanvill,[8] Chief Justiciar of England in the twelfth century, the term depicted an arrangement where profits and fruits from the land could be kept by the creditor in addition to full loan repayments. Known as mortgage or "dead pledge" in Norman French, the name referred to the fact that it provided no profit to the owner (Shanker 2003: 71).

Lenders' possession of the landholding could be seen as a protective measure in the absence of the land titling system, while also circumventing the Church's prohibition on charging interest on debts (Burkhart 1999: 252). In the absence of a valid title system, both Glanvill's gage and its thirteenth-century derivative, Bractonian mortgage, left it to the lender to provide proof about the loan and valid title. Littleton's gage, which emerged in the fifteenth century and similarly entailed possession by the mortgagee, sought to address this issue by granting legal title to the lender immediately after the loan transaction, while the borrower was able to recover the land automatically after timely debt repayment (Berman 2005: 85). Mortgage was therefore legally structured as a contractual arrangement obligating the mortgagor to fully forfeit their property in case of default—and reinforced unconditionally by early common law courts that considered the "freedom of contract" paramount (Shanker 2003: 72). The Littletonian gage was thus a "culmination of a process by which the borrower and lender's relationship increasingly shifted from its true character and invested the lender with greater rights in the borrower's land" (Burkhart 1999: 255). Most of the mortgages, however, did not serve their modern purpose of financing property purchase, but functioned mostly as a last source of credit for risky borrowers (Waddilove 2018). The finality of land forfeiture in case of loan default created a disconnect between the legal structure of the mortgage, and the underlying

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purpose of the debt transactions where land featured merely as a collateral security for a loan, with its value often exceeding the loan amount (Berman 2005).

Equity of Redemption and the Beginning of Modern Mortgage

The present-day mortgage originates from the seventeenth century, when equity law[9] took it over from common law courts. Applying to mortgages its repertoire of equitable principles, equity courts instituted mortgagor's equity of redemption that prohibited the lender benefiting from the mortgaged property once the debt had been repaid. Mortgage law thereby became a distinct body of equity law, while earlier it had been governed by general contract law and conveyance law—and where it had been bound by the actual terms of agreement that may have often been guided by the superior bargaining power of one party over another (Shanker 2003: 69–73). The equity courts thus started to follow the content of the transaction, which was a debtor-creditor relationship. In order to protect the interests of the lender, a foreclosure proceeding was developed that required the borrower to exercise his or her right of redemption by a full payment within a reasonable time period (2003: 76).

This introduced a novel situation where the mortgagor continued to hold the land, despite the lack of legal title, and was eligible to repay the loan and redeem property until the point when equity of redemption was foreclosed by the court (Waddilove 2018). As a result, mortgages became widespread since the late seventeenth century. Discussing the social origins of equity of redemption, David Waddilove mentions the increasing unfairness of mortgage terms to mortgagors as well as the attempts by the Chancery to help hereditary aristocracy "unlock the capital value of their prime asset" with a lesser likelihood of losing it (2018: 119). He argues, however, that there might have been another important reason behind equity of redemption that the history of jurisprudence has not yet recognized. This is the widespread informality that governed the relationships between mortgagors and lenders—who often knew each other and were connected by multiple ties of reciprocity. Despite strict legal terms of mortgage contracts, practices that enabled delayed mortgage payments might have been a cultural norm (see also David J. Seipp, this volume, about the development of legal doctrines underpinning mortgages in Anglo-American law). Situated in such social context, equity of redemption appears as an "enforcement of prevailing social views of proper mortgage dealings irrespective of legal technicality" (2018: 142). This demonstrates the central importance of broader social norms and net-

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works of credit and debt in the evolvement of real property mortgage in Western jurisprudence—not just in non-Western societies.

Equity of redemption also affected the development of mortgage law in British North American colonies,[10] with the mortgagor retaining the ability to grant additional liens to other creditors—known as junior lenders (Berman 2005: 89). In recent decades, however, real estate finance has profoundly changed, and junior mortgage debt is increasingly converted into alternative contracts and arrangements. The economic depression of the 1930s that forced many lenders to withdraw from mortgage lending precipitated the rise of a secondary mortgage market[11] and securitization of mortgages. This market remained largely inactive until the 1970s and 1980s when an acceleration of mortgage-backed securities occurred (Berman 2005: 93)—partly fueled by the entry of semi-private banks and insurance firms into the residential mortgage market as well as advances in information technology.

The new financial instruments demonstrate a growing tension between contract law and property law, suggests Andrew Berman. These include arrangements such as mezzanine loans[12] and preferred equity investments for corporate bodies—frequently at the heart of commercial mortgage-backed securities—which could lead to heightened risk-taking by market participants (2005). Sjef Van Erp points out that this significant blurring of boundaries occurring between equity law and contract law is accompanied by a "growing category of intermediary rights." While both of these legal fields regulate relationships between private citizens, contract law has historically focused on the person of the citizen, whereas property law pertained to his or her rights against other subjects in regards to an object (2013: 2). At the center of the nineteenth-century contract law was the autonomy and freedom to contract, while property law was more complex.[13] Transfers of contractual claims almost did not exist at that time, and if they occurred, it was between natural persons rather than "financial conglomerates"—a far cry from the mortgage securitization of the present day (2013: 3).

Van Erp suggests that the rise of digital technologies and possibilities for electronic cross-border commerce situates the institutional and legal frameworks governing real property transactions increasingly "on the borderline of contract and property" (2013: 7). This can be seen in the case of MERS (Mortgage Electronic Registration System), a privately held company in the United States set up by banks and the government-sponsored enterprises involved in housing loans, which claims to hold title to approximately half of the mortgaged homes in the United States (2013: 12).[14]

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It records transfers and modifications to servicing rights and ownership of the loans. In that privately controlled electronic registry where MERS is registered as mortgagee for at least half of the mortgages, the system is able to transfer mortgages to registered banks in a way that is only visible to system participants (2013: 13). By promising its users commercial certainty, MERS has afforded mortgage titles an "unprecedented level of liquidity" (Keenan 2019: 20).

Contemporary Mortgage Markets: Financialization, Depersonalization, and Persisting Mutualities

Over the past half century, housing markets have become increasingly dependent on the performance of global and anonymous financial markets. Originally designed as credit markets to finance house purchasing, mortgage markets, while facilitating loans, also drove up housing prices—expanding the market while lenders relaxed mortgage requirements. In the early twentieth-century United States, homeownership was viewed as a relatively risk-free and profitable investment: mortgage markets became "important routes to homeownership, equity and economic growth" (Aalbers 2008: 153; see also Aalbers 2012). The creation of three government-sponsored agencies—Federal National Mortgage Association (Fannie Mae), Federal Home Loan Mortgage Corporation (Freddie Mac), and Government National Mortgage Association (Ginnie Mae)—that functioned as securitizers, buying mortgages from lenders and then repackaging and selling these mortgage-backed securities to investors, led to further institutionalization of mortgage markets. Neoliberal deregulation aided the expansion of secondary markets that connected mortgage loans to stock markets and added to their volatility. In 2005, secondary markets represented two-thirds of the country's mortgage markets (Aalbers 2008: 155). While the "originate-to-distribute" business model of institutional lenders facilitates the expansion of real property markets, its intersection with global financial markets makes it possible to expand the demand for real property beyond homeowners' income or capital circulating in the domestic economy (Proskurovska and Dorry 2018: 4). Mortgage portfolios on secondary markets are grouped and priced by risk categories for lenders and investors. Credit scoring as well as other anticipatory technologies are used to predict borrowers' behavior. Such automated credit-scoring models reduce individuals to homogenized members of assumed groups, while concealing their socio-geographical characteristics

and local expertise – facilitating a "redefinition" of the family home as an "object of speculation and credit" (Aalbers 2008: 156–57).

Standardization of mortgages as mortgage-backed securities (MBS) thus makes the product more transparent to investors and ties mortgage loans further to global capital markets. The growing loan securitization may therefore be viewed as an instance of financialization – a pattern of accumulation where "profit-making occurs increasingly through financial channels rather than through trade and commodity production" (Aalbers 2008: 148; see also Kalb 2013 about financialization as reproducing a large-scale institutionalized system of unequal exchange). Turning the financial sector from serving other sectors into an independent growth industry (Aalbers 2008: 148; Engelen 2002), financialization involves non-financial sectors of the economy in capital and money markets – and housing constitutes one of the primary areas where these connections occur. Before the 2007 financial crisis, the fastest growing part of the secondary mortgage market were subprime MBS – those with high-risk credit scores from borrowers with less than perfect credit. Such MBS attracted predatory lenders who practiced higher than normal fees, abusive terms, and targeted marginalized and inexperienced borrowers. This resulted in an explosive combination.

The mortgage foreclosure crisis that followed the 2007 financial crash deprived around 9 million households in the United States of their homes, while triggering a cycle of "downward mobility" among many middle-class Americans (Stout 2019a: 4). The questionable public-private partnerships continued in the aftermath of the mortgage crisis in the form of homeowner assistance programs where "corporate loan modification bureaucracies" – largely involving the same lenders who had profited from subprime mortgages – reframed the political nature of the mass-scale bank seizures as "technical and bureaucratic." Between 2009 and 2015, 70 percent of applicants for home loan modification were denied assistance (Stout 2019a: 8–10). The abysmal performance of mortgage modification programs exacerbated widespread moral critiques of the lenders and a refusal of blame for default among the borrowers (Jefferson 2013: 92).

The foreclosure crisis of 2008 reverberated globally leading to hundreds of thousands of foreclosures and evictions in Spain alone, with tremendous costs in human health and labor (Garcia-Lamarca and Kaika 2016). It challenged the popularly held premises of reciprocity entailed in mortgage debt, adversely affecting relationships between commercial mortgage lenders and customers, but also upsetting the perceived bal-

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ance of rights and duties between citizens and the state (Sabaté 2016). This highlights the relevance of studying mortgage loans and foreclosures as lived experience—as an arena where the familial and social interacts with impersonal financial markets. Tomas Samec (2018) describes housing mortgages in post-socialist Czech Republic as being closely tied to familial exchanges and generational reciprocity, with intergenerational money transfers from parents to children serving as an important means of payment. That has resulted from inadequate lending institutions and regulatory policies to finance housing loans, but is also shaped by cultural norms and social expectations. These informal loans and kin-based circles of mutuality interact with the "circulation of formal debts" and contribute to the social embodiment of the highly formalized mortgage (2018: 550). Samec contends that such attachments of the "semi-financialized subjectivity" (2018: 549) can be more easily taken advantage of by the formal sector lenders in their "social regulation of poverty," playing on family-related emotions, fears, and obligations. With the spread of high-risk subprime lending, the practices of financial markets have thus extended from "high finance" into everyday "routines and rhythms" of the mortgage borrowers, as Paul Langley suggests (2008: 472). By capturing the informal practices and social networks of the poor and financially underserved and formalizing these through credit scores and other devices, such lending serves to create responsible, self-sufficient subjects "on the edges of the financial system" (Kear 2016: 261).

Emerging experiments with alternative financing strategies such as housing microfinance that have proliferated particularly in the Global South make promises toward new affordable and incremental housing strategies, while remaining fraught with challenges and unknowns (Grubbauer and Mader 2021). Recent retreat of the state from providing housing to low-income groups and the rise of private housing investment have rendered such populations even more vulnerable to the "financial inclusion" agendas advanced by multinational organizations and financial institutions (2021: 469). As Rodrigo Fernandez and Manuel Aalbers (2020) suggest, "subordinated financialization of housing" in the Global South remains shaped by the dynamics of the integration of peripheries in the "hierarchical global monetary structures" (681). Mortgage alternatives such as housing microfinance may therefore deepen the structures of inequality and dispossession, while normalizing the calculative logics of formal financial discipline and encouraging risk-taking among the vulnerable in the guise of "debt-free narratives of financial inclusion" (Grubbauer and Mader 2021: 471).

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New Technologies for Titling and Mortgaging: Promises and Pitfalls

The historical evolvement of land title qualification procedures has involved a gradual disarticulation of land from its everyday use and ownership practices. Historically, two main types of title qualification procedures have emerged, each evolving from particular historical situations and political rationales: recording and registration. These systems differ in the management of uncertainty around the transfer of property rights (Proskurovska and Dorry 2018: 14). The recording procedure that originated in old English law and was prevalent in common law countries[15] noted down the conveyances as well as all claims and liabilities relating to a plot of land. The purpose of the record was not to validate ownership but provide public information about the transaction. Relying on tracing the histories of ownership through long chains of paper deeds, conveyancing was anchored in physical possession of land. Based on the feudal tenure system and the Crown as an overarching holder of land, the possession-based title was relative rather than absolute, as deed-based ownership could be contested and negotiated (Bouckaert 2010).

The registration procedure that originated in Roman law became widespread in countries influenced by German civil law. Registration produces a "constitutive effect" as the procedure assures that the title has been vetted for possible defects (Bouckaert 2010). These two distinct qualification practices gave birth to the three main styles of real property registration systems: the German, Torrens/English, and French/Latin approach. The Torrens title system,[16] which arose as a modification to the common law system at the time of the global industrial revolution, was a shift away from the relativity of possession-based common law title toward a more "market-friendly" registration-based title that sought to turn land into a liquid asset. This also shifted the legal basis of the title from histories of prior possession to the singular act of registration. The title registration system could be seen as part of the growing line of new record-keeping technologies such as double-entry bookkeeping that enabled efficiently balancing growing amounts of data about commercial transactions (Keenan 2019). Such financial instruments strove to create one-to-one correspondence between written registry and reality in order to convey an immediately existing value to the holder of the financial instrument – a hallmark of many credit instruments to come (Keenan 2019; see also Riles 2011).

New technology applications are being increasingly explored for large-scale data coordination and management and novel transparent solu-

tions to titling and mortgaging (see also Tariq Rahman in this volume on efforts to digitize the land revenue system in Lahore, India). In the development of land and real estate markets, several stages have been identified based on the degree of separation between land and land-derivative.[17] This entails the creation of increasingly abstract commodities through a chain of contracts that produce re-classifications, moving from simple commodities such as ownership and mortgages, to complex ones such as mortgage-backed certificates, land-based securities or insurance products (Proskurovska and Dorry 2018: 12; Wallace and Williamson 2006). For functioning mortgage credit markets to develop, mechanisms have to be in place for physical parcels to be reclassified into such tradable assets (see also Bouckaert 2010). Increasing volumes of transactions and new forms of intermediaries give rise to new inefficiencies, such as growing costs, information asymmetries, and speculative behavior.[18] Innovations in land administration systems have aimed at standardizing the qualification practices[19] to harmonize land derivatives both nationally and internationally (MSCI 2018). New information technologies such as blockchain, artificial intelligence, and big data enable easier validation and synchronization of information pertaining to real property (Graglia and Mellon 2018; Peiro and Martinez Garcia 2017).

Some of the new technologies hold particular promise for land registries as these involve vast amounts of supporting documents and data, and are typically organized as centralized databases. It has been reported that about a third of the countries globally have some sort of digital land database (Shang and Price 2018). Blockchain technology has been eyed as facilitating more transparent and tamper-resistant land registries. Records on blockchain are widely distributed and verified by a multitude of nodes in a peer-to-peer digital network, affording such property records system transparency and resilience (De Filippi and Wright 2018). Blockchain-based land registries are currently being developed in countries such as Georgia, Ghana, and Sweden, with variable success (see Rodima-Taylor 2021). The application also poses challenges. Not unlike other digital registries, blockchain registries leave out significant details that do not fit into their strict parameters—therefore legitimizing a single perspective or version of events. Digital land registries often fail to convey a multisided representation of lateral use practices with their extended kin implications, cutting out the element of negotiation and disputing that has traditionally served as an important part of both oral and written contracts. Furthermore, as blockchain land registries often entail partnerships with private technology companies, the owners of the blockchain may end up becoming private owners and traders of public data (see Van Erp 2016; Vos 2017).

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Such technology innovations may thus enable new spheres of accumulation and profiting. Helping investors establish a new asset class based on "bundled rental checks" for cheaply accumulated foreclosed single-family homes, now converted into multi-apartment rentals, digital innovations have provided the owners with new ways to aggregate income flows and interact with capital markets (Fields 2019). By means of the "automated landlord," properties and tenants are "not only mediated, but governed, by smartphones, digital platforms, and apps, and the data and analytics these devices . . . enable" (2019: 1). Helping landlords manage their geographically dispersed property portfolios, digital technologies become part of the ongoing strategies of financial accumulation of contemporary capitalism, while grounded in material life and existing power relations (2019: 17).

There have also been increasing attempts to digitize the mortgage lending process. The digital turn has been further propelled by a search of mortgage lenders for new solutions with steadily growing loan production costs[20] and the recent decline in the volume of mortgage loan originations (2016–2018).[21] While many mortgage lenders utilize new technologies to some degree, FinTech lenders have fundamentally streamlined and automated their mortgage origination processes, with an "end-to-end online mortgage application platform and centralized mortgage underwriting . . . augmented by automation" (Fuster et al. 2018: 6). The role of such technology-based mortgage lenders offering online application processing is growing in the mortgage market, taking over customers from nonbanks (independent mortgage finance companies), community banks, as well as larger banks. FinTech lenders profess to offer customers cost savings and efficiency through reduced processing times and easy online access. FinTechs are also increasingly important in refinancing that has become a key part of the mortgage markets in the recent years. Andreas Fuster and his colleagues suggest that the emergence of several stand-alone FinTech lenders[22] in the past few years may mark the rise of a new business model, particularly as the uptake of new technologies for established lenders with branch-based loan origination is not a smooth process.[23] While the operations of the latter are less flexible as compared to specialized nonbank lenders[24] due to organizational and regulatory complexity, advantages include low-cost deposit funding and cross-selling opportunities. However, the shift to online lending involves economies of scale necessary for maintaining an online platform, and this may result in a more concentrated mortgage market (Fuster et al. 2018).

The digital uptake for some FinTech mortgage lenders has been quick and impressive. One of such novel companies, Quicken Loans, recently

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announced a four-year partnership as the first ever "official mortgage sponsor of the NFL."[25] The company's first ad aired during Super Bowl 2016 promised house-hunters loan approval in as little as eight minutes: "PUSH BUTTON. GET MORTGAGE." The memorable commercial was a success. Quicken's *Rocket Mortgage* quickly became the largest mortgage lender in the United States with its $25 billion worth of mortgages in the fourth quarter of 2017, overtaking San Francisco-based bank Wells Fargo as the largest of the nation's thirty thousand home lenders.[26] The Detroit-based Quicken is reaching borrowers online in all fifty states out of its three hubs. Professing to have been "FinTech before FinTech was cool,"[27] the company that was founded in the 1980s is now part of a growing range of firms and startups offering mortgage digitally.

A recent report by Boston Consulting Group points out that while the digital initiatives are expected to lead to an increase in the volumes and cost-effectiveness of mortgage originations, implementation for many companies been more challenging: successful applications have "interwoven digital into the fabric of the entire organization, including marketing, sales, back-office operations, technology, risk and compliance, and integrations with third party partners" (Jindal, Hart, and Levin 2019: 2). The uptake of digital mortgage technology has accelerated with the COVID-19 pandemic, which set limitations on face-to-face meetings of borrowers with loan officers. At the same time, the pandemic has adversely affected low-income and minority communities and households, straining care and solidarity networks, and fueling mortgage and rent defaults due to income loss (Rogers and Power 2020). FinTech lending could expand credit for those with lower access to traditional financial markets, by facilitating competition, reducing the cost of obtaining information and discrimination resulting from personal interactions. Minority borrowers are often at a disadvantage when applying for a mortgage as they are "less attached to traditional financial institutions, are less likely to shop for a mortgage, and are residentially concentrated in lower income neighborhoods." On the other hand, the digital technology introduces new data sources and processing methods, and alternative ways of credit modeling that can exacerbate fair lending risk (Courchane and Ross 2019: 784–88).

Redlining in Mortgage Lending before and after the Algorithm

The mortgage industry has a history of inhibiting racial and ethnic minorities from generating home equity, systematically reproducing spatial

segregation and dispossession. Racially restrictive covenants that have been part of the housing history in the United States have frequently found expression in discriminatory restrictions around mortgage lending. The federal housing policies, formulated by the National Housing Act of 1934 and aimed at making housing more accessible in the wake of the Great Depression, ended up fostering residential segregation. The newly formed Federal Housing Administration established racially oriented restrictions on eligibility for mortgages (Rothstein 2017). The practice of "redlining" was introduced through the racial and wealth maps of US cities of the Home Owners' Loan Corporation that financed federally backed government home loans in the 1930s and soon became a nationwide "risk-evaluation" standard (Allen 2019: 221). The color-coded maps encouraged mortgage lending in more affluent and White areas, while inhibiting it in areas populated by racial minorities and recent immigrants—where financially qualified community members were often denied credit (2019: 236). The federal backing of housing loans that was limited to White Americans reinforced the lines between segregated neighborhoods and separated impoverished inner cities from affluent suburbs for decades to come.

The Fair Housing Act, part of the Civil Rights Act of 1968, prohibited discrimination around the sale, rental, and financing of housing, and the Equal Credit Opportunity Act of 1974, Home Mortgage Disclosure Act of 1975, and Community Reinvestment Act of 1977 aimed to further safeguard fair lending practices to marginalized and minority communities. The fair housing and lending laws, however, have not managed to completely undo the long history of formal racial redlining as well as more subtle informal practices of biased lending that have limited income generation and housing improvement for entire neighborhoods[28]—and thus continue to define those "high-risk" areas as new technologies for housing finance emerge.

Many of the historically "redlined" communities were infused with predatory subprime credit in the 1990s–2000s, resulting in massive foreclosures. The mortgage industry profited from the subprime loans, with lenders facing increasing pressures from securitizers to provide them. Much of that profitability was due to high fees on loans and exorbitant interest rates that extracted capital from low-income and minority neighborhoods (Hammel and Nilsson 2019: 547). Subprime loans target borrowers with weak credit histories and limited ability to make down payments—borrowers who have historically been excluded from fixed-price loan markets. Risk-based loan pricing for these groups takes advantage of large historical performance data sets (Frame, Wall, and White 2018: 12).

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High-cost mortgage lending has been on the rise in minority communities also after the 2008 subprime crisis. A recent meta-analysis of existing studies assessing discrimination in US mortgage lending markets over the four decades before 2016 found that Black and Hispanic borrowers were more likely to be rejected when applying for a mortgage loan and more likely to receive a high-cost mortgage (Quillian, Lee, and Honore 2020: 25). Based on Home Mortgage Disclosure Act data from 2014, Jacob Faber showed that compared to 71 percent of White applicants approved for home loans, those rates were lower for Asian (68 percent), Latinx 63 percent), and Black borrowers (54 percent). Black and Latinx borrowers were about three times more likely to receive higher cost loans (2018: 215–16). The largest differences between White and minority outcomes were observed in areas where subprime lending had been common prior to the crisis, and where foreclosures accumulated in its aftermath. While seen as presently too risky for mortgage loans by many mainstream lenders, these neighborhoods should be viewed as a product of a long-term, problematic relationship of neglect and rent seeking (Hammel and Nilsson 2019: 547).

These legacies of inequality thus still define access to financial services in many neighborhoods. Since the financial crisis of 2008, low- and moderate-income communities have suffered from bank branch closures— between 2008 and 2016, metropolitan areas across the United States lost 15 to 20 percent of their bank branches (Velasquez 2020). There are high costs of being underbanked, with people forced to use the products of "fringe finance" such as check cashing, money orders, and prepaid cards. The need for mortgage and small loan products in these communities, and their historically poor experience with formal banks, are fueling the demand for FinTech services (Velasquez 2020).

The impact of FinTech-empowered mortgage lending to racial disparities has not been clear-cut, however, while raising challenging questions about the potentially discriminating effects of algorithmic decision-making. In a recent study of Home Mortgage Disclosure Act data that assessed mortgage lending disparities between populations of different racial composition, Tyler Haupert (2020) found that both FinTech as well as traditional lenders were likely to offer subpar terms to non-White applicants, while FinTech-mediated loans resulted in higher rates of subprime loans for Black applicants as compared to their similarly qualified White counterparts. In another recent study that investigated the effects of FinTech mortgage lending on racial disparities, Robert Bartlett, Adair Morse, Richard Stanton, and Nancy Wallace (2019) found that discrimination in mortgage loan pricing was present both in cases of traditional,

face-to-face lenders, and platform lenders offering complete online contracting.[29] Accepted Latinx and African American borrowers paid 7.9 and 3.6 basis points more in interest for home-purchase and refinance mortgages than similarly qualified White borrowers – with the lending discrimination costing to the minority borrowers $765 million in extra interest per year. A reduction in price discrimination against minority borrowers of about 40 percent was observed with FinTech lending (2019: 5–6). While FinTech may remove some "face-to-face biases," FinTech lenders were found to use "pricing strategies and data analytics that nevertheless produce discriminatory pricing" (2019: 29).

With the change of technology in the mortgage industry, the nature of discrimination may thus change from human racism and in-group biases to "statistical discrimination" that can effect disparate impact[30] through the use of Big Data variables (Bartlett et al. 2019: 30). James Allen (2019) argues that the history of segregation has resulted in creating massive data sets consisting of "decades of information built on exclusion and discrimination," and therefore affect the emerging algorithmic decision-making – with "pencil redlining" giving way to "algorithmic redlining" (2019: 234). The historical redlined maps have informed computational procedures for loan risk evaluation and cartography and shaped the funding of public works and private sector investment (2019: 236; see also Light 2011).

Machine learning brings new dimensions into credit scoring processes. While traditional credit scoring employs statistical analysis to "derive a fixed formula based on a defined set of credit history attributes," the flexible algorithms of machine learning models can change with exposure to new data. Machine learning enables identification and utilization of "subtle and difficult-to-observe relationships among disparate data elements from many different sources that can be combined to better predict consumer behavior" (Courchane and Ross 2019: 785–86). Such alternative modeling combined with an expanded set of data elements can broaden credit access to new consumers, including the unbanked. Automated lending can still pose fair lending risk. The use of alternative data sources in lending decisions may lead to "correlations with prohibited factors" that pose disparate impact risk: for example, school attended or geographical location can be correlated with race and ethnicity. When processing large amounts of legitimate risk variables, algorithmic predictive models could therefore proxy race in ways that are not easy to detect. The combination of alternative data sources with machine learning may perpetuate historical biases inherent in those sources – for example, data about banking behavior could underrepresent minority groups (2019: 786–87).

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Algorithmic decision-making is not neutral, but inevitably reflects the values and intentions of the designer—thereby institutionalizing those values in code (Mittelstadt et al. 2016: 7). Algorithmic bias arises from pre-existing social values from which the technology emerges, technological constraints (e.g., alphabetical lists) and errors, and newly emerging contexts of use in the decision-making architecture (2016: 7). Human interpretation of the algorithmic decisions and correlations can further add to the subjectivity. The strategies to prevent discriminatory redlining by "sensitive attributes and proxies" may include the integration of antidiscrimination criteria into the classifier algorithm, construction of various metrics of fairness between data subjects, and other techniques (2016: 8–9). In order to counteract the dangers of algorithmic redlining, James Allen (2019) suggests more attention to the transparency of algorithmic risk evaluation and its auditing. That entails disclosing data inputs used to formulate credit scores and mortgage rates, as well as monitoring the effects produced for bias. These measures are complicated, however, due to the increasingly proprietary nature of the software and the complexity of machine learning where bias can emerge during the process rather than reside in the code. The poor transparency of complex systems and limited ability of humans to interfere highlights the difficulties of applying traditional notions of responsibility to algorithm-empowered decision-making. It is therefore not easy to replace human professionals with implicit and local knowledge with automated decision-makers—ones whose degree of accountability and moral agency remains unclear (Mittelstadt et al. 2016: 11). The challenges involved in automated decision-making may call for new approaches that transcend existing epistemic and regulatory solutions.

Big data is increasingly playing a foundational role in organizing our society and economic relations, and opaque data analysis by corporate and state actors undermines accountability and civil liberties, argue Benedetta Brevini and Frank Pasquale (2020). Highlighting the discrimination residing in the real world in which algorithms operate, Anupam Chander suggests that the transparency of algorithms should be combined with "algorithmic affirmative action" in a world "permeated with the legacy of discriminations past and the reality of discriminations present" (2017: 1025). Considering the limits of transparency in complex machine learning systems, Daniel Innerarity (2021) advises attention to the "strategies of non-transparency" by those exercising power and the ways to construct alternative strategies of "explainable artificial intelligence" (2021: 1). The new "architectures of control" for a critical review of artificial systems should be spearheaded by public organizations and similar actors, and based in collectivities: auditing algorithms thus becomes a "collective

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task and public responsibility" rather than one centered on the rights of an individual user (2021: 7). Such a relational and socio-politically embedded view of algorithmic transparency would entail novel approaches to algorithm audits with a joint engagement between community members and activists, regulatory authorities and planners, as well as new forms of partnerships between FinTech lenders and disadvantaged communities (see Allen 2019; Velasquez 2020). Policy reforms may be required in areas such as intellectual property, data protection, and internet law that could facilitate disclosures from both public and private agencies utilizing algorithmic decision-making (Allen 2019: 262).

The machine learning technologies in the mortgage space today draw on a longer history of computerization of consumer credit. Information technology advances in the 1990s enabled automatic mortgage underwriting, resulting in important changes for the borrowers (Foote, Loewenstein, and Willen 2019). Advances in data storage and information processing allowed faster and less costly mortgage origination and out-of-state competition. Technology changed the ways mortgage lenders evaluated risk. It enabled coders to include large data-sets of loan records to construct empirical default models, with new additions such as credit scores – while weakening the relevance of some others such as the debt-to-income ratio. It thus minimized the role of "intuitive human judgement" that had been relevant particularly in marginal cases (2019: 3). These developments echoed the increasing centrality of consumer credit scoring systems with the digital advances in the 1980s–1990s that was accompanied by a gradual downgrading of empirical knowledge gained through personal interactions. The distribution channels of retail banks became more centralized and virtualized while information about customers and ways to obtain it became standardized, and private credit-scoring consultancies emerged as major actors in retail banking. As Andrew Leyshon and Nigel Thrift suggest, the credit-scoring technologies led to a "quantitative revolution" designed to evaluate and predict customer behavior at a distance (1999: 450). Branch closures were particularly significant in low-income, inner city areas. Foregrounding the profitability of the customer to the bank, the new values imparted through code and "new monetary networks of inclusion and exclusion" became increasingly less accessible to review and interrogation (1999: 452–54).

The availability of Big Data has changed the way consumer behavior is measured, shifting focus on measuring action (often in real time) and expressing it in scores and ratings associated with good or bad decisions – revealing an emerging "economy of moral judgement" (Fourcade and Healey 2017: 24). Emerging from the bureaucratic forms of administra-

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tion based on standardized categories and routines, the "roboprocesses" mediated by computerized record-keeping and adjudication may amplify the unaccountability of bureaucracy by rendering it automatic, suggests Hugh Gusterson (2019: 4). The technological advances of the 1980s that combined standardized routines with computer code coincided with the global spread of extractive neoliberalism, skewing the algorithmic processes "in favor of corporate profit-making" and perpetuating racial and economic inequalities (2019: 7). The automated calculative systems of mortgage modification programs employed at the wake of the 2008 subprime crisis provide a vivid illustration of such automated bureaucracy, argues Noelle Stout (2019b). Designed to maximize profits for the investors, these automated processes introduced errors and prevented meaningful human intervention, leading to an "unparalleled numbers of bank seizures of American homes" (2019b: 32). Even more importantly, algorithmic decision-making undermined human agency and accountability, inducing humans to act like automatons in charge of "pushing through" the processes "programmed to work against homeowners' interests" (2019b: 41).

On Evolving Mortgaging and Titling

The historical evolvement of mortgage lending and land titling institutions examined in this chapter revealed two broad and conflicting tendencies. First, throughout history and across the world, real property claims and transactions have been embedded in interpersonal networks, and socio-cultural norms and expectations of mutuality – but also in hierarchies of inequality. Second, legal and administrative devices to manage real property have evolved toward growing exclusion of lateral claims, use rights, and ownership histories. This imbalance has a potential to deepen dispossession and disempowerment of low-income mortgagors globally who use their informal networks to manage their formal credit obligations and extend their everyday norms of mutuality to the anonymous mortgage markets managed through algorithms. The "new" mortgage borrowers in the Global South may be especially vulnerable.

The histories of pledging and mortgaging in early Africa and early Europe revealed that such land transactions have been deeply intermeshed with other forms of credit and debt, often functioning as part of existing interpersonal networks and obligations. While early land pledges took variable forms, they often served to fortify the positions of the powerful, including chiefs, village headmen, and landed estate owners. In medieval Europe where land titles were not easily reinforced, early mortgages of-

ten involved a transfer of the land property to the creditor. A concurrent conceptual shift from debt to landholding took place in legal documents with simple cash debts easily leading to land loss to the borrower. However, delayed mortgage payments might have been an informal "cultural norm" at the time (Waddilove 2018). The early mortgage, despite the rigid stipulations of the law books, may thus have been subject to considerable interpersonal renegotiation. When the Chancery courts took over from the common law the administration of mortgage law, borrower's equity of redemption was instituted allowing the submission of a full payment within a reasonable time period after the missed deadline. The impact of this legal reform varied contextually. While this was intended as a device that served the borrower's interests, experience from the colonial United States shows that the introduction of the clearly defined foreclosure proceedings may have also rendered the land more liquid and facilitated the dispossession of indigenous populations (Park 2016).

The popularity of a housing mortgage as a private investment strategy has been growing over the past half century, with mortgage loans becoming dependent on the performance of global, anonymous financial markets. That is also reflected in developments in title registration systems that have gradually shifted their legal basis from histories of prior possession to a singular act of registration, making it easier to sell and purchase land. This has culminated in the mortgage securitization technologies of the present day that render real property a financial instrument to be traded in global markets.

Empirical evidence from different parts of the world shows that the seemingly depersonalized transactions have been frequently shaped by "non-commercialized" norms of mutuality and embedded in familial and intergenerational exchanges and expectations. That embeddedness may render mortgage holders more vulnerable to dispossession and disempowerment. Policy reforms seeking to introduce exclusive land rights in transitional or conflict-related settings similarly testify to the endurance of existing authority patterns and recombinant property forms that mix normative frameworks from different time periods and property regimes.

The emerging FinTech mortgage market aims to make it easier for the borrowers to access mortgage loans, but it may also facilitate smoother access of low-income consumer groups to overpriced and unsuitable financial products—and encourage a further intrusion of formal finance into the everyday "routines and rhythms" of these borrowers (Langley 2008). The rise of algorithmic decision-making in credit-scoring and mortgage processing involves novel challenges to transparency and inclusion. The new credit-scoring infrastructures, designed to evaluate and predict

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customer behavior at a distance, have reinforced the divisions of exclusion, while rendering them increasingly inaccessible to interrogation (Leyshon and Thrift 1999). While partly drawing on historical but biased datasets and methods, algorithmic predictive models can proxy race and other prohibited categories in new and opaque ways—with "pencil redlining" giving way to "algorithmic redlining" (Allen 2019). Algorithmic scorecards integrate personal information of mortgage borrowers, making moral judgments about their behavior and creditworthiness, while turning the data into a marketable commodity for the profit of private investors and technology companies. Increasingly, calls can be heard for novel approaches to collective action and public oversight of algorithmic mortgage lending that involves new partnerships between borrowers, community activists, policy makers, and the financial industry.

Excessive household indebtedness has brought along a moral condemnation of debt and diverse forms of resistance that include debt cancellation campaigns, calls for legislative changes, and alternative lending institutions (Sabaté 2020). Numerous social movements that attempt to reimagine the unequal indebtedness of racialized capitalism have emerged in the United States since the financial crisis, argues Hannah Appel (2019). The Debt Collective and Rolling Jubilee have successfully challenged existing policy frameworks around household debt and inspired broader conversations about debt forgiveness and the colonial histories of exclusion (Appel 2019). New relational forms of financial practice that emerged from the networks of artists and activists of Strike Debt/Occupy Wall Street have incorporated the "everyday distress generated by the debts" into creative popular confrontation with the abstract complexity of financial instruments (Aitken 2015: 862; see also Haugerud 2012 on theatrical political activism to protest wealth disparities). Increasing instances of collective housing debt with the rise of mutual-aid housing cooperatives in the Global South have opened new frontiers for contesting relations between creditors and debtors that often remain invisible due to power disparities, argues Lorenzo Vidal, calling attention to "debt as a power relation" (2018: 1205). Collective institutions such as debtors' unions have demonstrated the potential to renegotiate illegitimate debts as well as build reparative social relations (Appel 2019).

Contributions to the Volume

Our book aims to study the human economy of mortgage as constructed and remade by people in their daily practices. It unveils the inextrica-

ble intermingling of local forms of mutuality and solidarity with larger bureaucracies: mortgaging is shown to relate directly to inheritance, insurance, taxation, as well as local politics. Most of the existing scholarly literature on land and mortgages has been written by economists and legal specialists, reflecting the perspectives of their disciplinary traditions. Lacking are assessments from a wider range of disciplines in the social sciences and humanities, drawing upon historical experiences, cultural meanings, and locally informed perspectives, including those of mortgagors themselves. This anthology, drawing on empirical research in different parts of the world, is meant to help fill that gap. The chapters in this volume bring together interdisciplinary perspectives and scholarly expertise from anthropologists, historians, legal scholars, and economists, and present a multifaceted analysis of historical and contemporary cases of mortgage and land titling from diverse parts of the world – including Africa, Asia, the United States, and East and West Europe.[31]

A few chapters of the anthology examine the still little-explored topic of embeddedness of land pledging and mortgaging in African countries in vernacular and formal bureaucracies. Sara Berry's chapter elaborates on the ways social groupings, such as families and polities, mediate debt and property. Family land property in Ghana has prolonged the endurance of family as a "micropolitical arena" for contesting claims over wealth and belonging between individuals. Although certain formalization of inheritance transactions has occurred recently, these legal changes may have reinforced the "corporate character" of the Asante family, widening the circle of kin-based inheritors. Land pledges have constituted a source of continuity as well as conflict in social relations, partly due to their ambiguity and open-endedness. Kristine Juul's chapter inquires whether clearly defined property rights could lead to economic growth by enabling both land mortgaging and taxation in the rural communities of Senegal. Juul contends that these reforms have not yet led to enhanced financial stability for the local people who tap into multiplying formal and informal credit instruments to meet their mortgage obligations. In both cases – land mortgage and taxation – the payment of what is owed, either to the state or financial company, can be used to manipulate property rights, as well as validate and reconstruct one's belonging and identity.

Several chapters of the volume caution against the assumption that land privatization and financialization is a panacea for economic insecurity in regions undergoing transition and resettlement. The study by Mette Kusk and Lotte Meinert explores contested land sales in northern Uganda after the long-lasting armed conflict between Lord's Resistance Army and government forces. In areas where people have returned after

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decades-long interruptions, family land property is affected by disputes and arguments centering on the new phenomenon of land sales – often to outsiders and foreigners. The authors investigate what the proliferation of "not-for-sale" signs across the local landscape may tell us about the land market and property relations in that particular place. Focusing on a different transitional context, the chapter by Stefan Dorondel, Daivi Rodima-Taylor, and Marioara Rusu explores the reinvention of land mortgage after a fifty-year interruption caused by the socialist regime in Romania. The analysis situates the post-socialist rural financialization within the histories of diverse tenure reforms in the Romanian countryside, and among a multiplicity of formal and informal actors that shape economic practices in local communities. It highlights the importance of undertaking systematic ethnographic and policy-oriented research into rural lending in post-socialist societies – an area of inquiry that still often remains in the shadows. The micro-politics of resistance is central in the chapter by Nate Coben and Melissa Wrapp that compares the cases in South Africa and Ireland where rural landholders devise strategies to evade mortgage offers from formal financial institutions while relying heavily on informal social networks. The study explores two large-scale public projects: provisioning of post-apartheid social housing in South Africa and the fiscal resolution of an unprecedentedly large mortgage market crisis in Ireland. The two cases reveal stirrings for more self-evidently status-based relations, hierarchies, and asymmetries. These are captured in the concept of "distressed publics": as movements, activities, and aesthetics that represent imaginings and condemnations of prior modes of governance as well as critiques of the inequalities of modern innovation. These chapters call attention to new ways of resistance and novel political imaginaries around mortgages and their failures to solve social problems.

Tariq Rahman's contribution discusses the recent state-led, World Bank-inspired effort to digitize the land revenue system in Lahore, India. Rahman's ethnographic perspectives into the struggle to digitize land records in the Old City of Lahore suggest that concerns about the centralizing capacities of e-governance may be premature. Although land records have been scanned and made accessible to the public at computerized service hubs, *patwari* – the traditional land revenue officials – remain central to the land revenue system. As objects that hold together entangled histories and longstanding social networks, plots of land defy comprehension by digital interfaces alone. Rahman demonstrates that governing land property in the old city remains both a social and material practice – and one deeply embedded in vernacular knowledge and hierarchies.

The contributions by Parker Shipton explore mortgage as a uniquely human institution deriving from particular cultures and forms of reasoning. Shipton examines some of the many imaginative ways, including metaphor and euphemism, in which humans seek to comprehend this institution with its risks and promises. Offering glimpses of the mortgage in Eurasian and North American history, Shipton warns of risks to farming people and communities as the mortgage spreads to rural tropical settings. His second chapter outlines the effects of land loss by family farmers, entailed in the takeover by corporations engaged in industrial animal farming, and the effects on animal well-being.

Historical perspectives from ancient Mesopotamia and Egypt, medieval England, and colonial United States further illuminate the foundations and variations of the mortgage institution. The chapter by Michael Hudson describes land tenure in the ancient Near East, while highlighting its fundamentally political dimensions. Hudson elaborates on the histories of the early struggles to control the usufruct from land and their implications to the development of money and agrarian debt. The chapter relates these historical contestations between rulers and creditors over the control of the rental value of land to contemporary debates over land taxation and financialization. In his chapter about the history of mortgage as a legal device in Anglo-American law, David Seipp discusses the development of mortgage in medieval and early modern England. With the examples of common types of mortgages that provided cases in England's Court of Chancery in late sixteenth-early seventeenth centuries, Seipp points out the gamble-like features of the early modern mortgage and strong social pressures against forfeiture. He argues that the nature and purpose of mortgages have profoundly changed in contemporary modern Anglo-American society with its housing markets and social expectations of individual self-sufficiency: it has become a formalized financial tool with a primary goal of acquiring property. Winifred Rothenberg's chapter examines, using archival records and other sources, more than a century of the first recorded mortgages in colonial Massachusetts and the part they played in the financialization of an economy. The chapter highlights the contributions of mortgage credit to reducing landlessness and poverty in the largely rural region of the United States. Mortgages backed paper money, a novelty at the time. Both borrowers and lenders invested in the mortgage and the colony in paper money, with enough confidence to change the nature and scale of the colonial economy.

Tracing origins of land titling, pledging, and the mortgage in periods over millennia, our book thus explores effects of colonial policies, state impositions, and locally rooted understandings as they have combined and

recombined in diverse regions across the world. Our hope is that this collection will prompt other scholars to devote more attention to the peculiar and culture-bound institution of mortgage and compel them to rethink the premises of land property, finance, and trust in new and productive ways.

Daivi Rodima-Taylor is a social anthropologist, and researcher and lecturer at the African Studies Center of the Pardee School of Global Studies of Boston University. Her research explores the social meanings of property and finance, the morality and regulation of credit and debt, and the intersection of digital technologies with local economies in the Global South. She was educated at Tartu University and Brandeis University, and her work has been supported by the Wenner-Gren Foundation for Anthropological Research. She has been leading a Boston University interdisciplinary task force on migrant remittances and human security, and directs the BU ASC Diaspora Studies Initiative. She has conducted longitudinal field research in East Africa, co-edited special issues, and published articles in journals such as *Africa*, *African Studies Review*, *American Anthropologist*, *Global Networks*, *Social Analysis*, *American Ethnologist*, *Journal of International Relations and Development*, *Geoforum*, *Global Policy*, and *Review of International Political Economy*.

NOTES

1. The Organisation for Economic Co-operation and Development.
2. Center for Microeconomic Development. "Household Debt and Credit Report." *Federal Reserve Bank of New York*. Retrieved 10 August 2021 from https://www.newyorkfed.org/microeconomics/hhdc.html.
3. Companies that utilize new financial technology such as specialized software and algorithms to improve and innovate financial services.
4. As the 2018 report of the New York Fed points out, the FinTech innovation "has improved the efficiency of financial intermediation in the U.S. mortgage market," with FinTech lenders able to offer faster and less costly services than traditional lenders, and manage better application volatility (Fuster et al. 2018: 21–25).
5. Redlining is a discriminatory practice of denying access to financial services such as mortgage loans based on race and ethnicity. Redlining in the United States originated in the housing policies of the 1930s and prevented people of color from buying or renovating houses in certain areas.
6. Many present-day institutions and norms of mutuality in African communities creatively combine age-old patterns of sharing and reciprocity with new resources and values (Rodima-Taylor 2014). That calls for more research into claims, disputes, and user networks that surround land-based credit arrangements in the present day.

7. The World Bank. "Why Secure Land Rights Matter." *The World Bank*, 24 March 2017. Retrieved 27 March 2021 from https://www.worldbank.org/en/news/feature/2017/03/24/why-secure-land-rights-matter.
8. Glanvill is considered the probable author of *Tractatus de legibus et consuetudinibus regni Anglie* (The treatise on the laws and customs of the Kingdom of England), which is the earliest treatise on the laws of England.
9. The rules of equity arose in England where the strict limitations of common law prompted the King to set up courts of chancery (equity) to provide remedies through royal power. Such activities included correction of property lines, taking possession of assets, imposing liens, dividing assets, or injunctive relief to prevent irreparable damage. "Equity." Law.com. Retrieved 3 April 2021 from https://dictionary.law.com/Default.aspx?selected=646.
10. The emergence of the legal instrument of foreclosure in the colonial history of the United States had a profound significance in altering the relationships between money and land in indigenous communities. As K-Sue Park points out, land became easily exchangeable with money and was used as loan collateral only after mortgage foreclosure was authorized by law: "Colonists began to use land like money and . . . call money 'Coined Land'" (2016: 1008).
11. Marketplace where mortgages are sold by the loan originators, packaged into grouped loans or mortgage-backed securities, to investors such as insurance companies, pension and hedge funds.
12. A mezzanine loan is secured by the borrower's equity in other entities – often subsidiaries that actually own the underlying real property. The same underlying parcel of land usually also serves as mortgage collateral for a conventional borrower who is the direct owner of the property. While a mezzanine loan is subordinate to a senior mortgage lender's collateral, it is also senior to the borrower's equity investment in the real property (Berman 2005: 4–5). The mezzanine lender's right to foreclose on the equity interests is therefore riskier and of limited value as the underlying real property remains subject to the senior mortgage (2005: 37–38).
13. The central tenets of property law included the optimal standardization of *numerus clausus* principle (a concept of property law that limits the number of types of property rights that are recognized legally), the transparency principle, as well as a body of ground rules governing the application of property rights (Van Erp 2013: 5).
14. MERS as a private alternative of land records infrastructure operates without much centralized oversight, and many of its records tend to be invalid or dated (De Filippi and Wright 2018: 115).
15. Under the common law system, past legal precedents and rulings are used to decide cases at hand. Countries that use common law systems include the United Kingdom, United States, Australia, Canada, India, Hong Kong, and New Zealand.
16. Torrens title is a land registration and land transfer system in which a state creates and maintains a register of land holdings that serves as the conclusive evidence of title of the person recorded on the register as the proprietor and of all other interests recorded on the register.

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17. A derivative is a "contract that derives its value from the performance of the underlying land or property" (Proskurovska and Dorry 2018: 12).
18. Services such as price determination, risk assessment, and contract negotiation have become particularly expensive and time consuming (Proskurovska and Dorry 2018: 17).
19. In order to construct abstract property rights expressed through land derivatives, the parcel of land thus needs to be defined in relation to the rest of the land, but also in the context of the relationships of the land to its owners and other stockholders of land derivatives. Yuval Millo (2007) calls this interactive process "qualification," which re-establishes relationships around various derivatives every time a derivative is traded while using land as collateral against a bank loan by agents, such as lenders, notaries, and valuators. These stakeholders build on previous qualifications kept in different databases, while forming a consensus for new qualifications in the emerging chain of derivatives. Among these actors from administrative, legal, fiscal, and other realms, conflicts can arise, and consensus processes depend on effective synchronization between classifications.
20. The Mortgage Bankers Association reported in its Annual Mortgage Bankers Performance Report that in 2018, independent mortgage banks and mortgage subsidiaries of chartered banks faced the lowest net production income per loan since 2008. Adam Desanctis. "Independent Mortgage Bankers' Production Volume and Profits Down in 2018." Mortgage Bankers Association, 17 April 2019. Retrieved 25 March 2021 from https://www.mba.org/2019-press-releases/april/independent-mortgage-bankers-production-volume-and-profits-down-in-2018.
21. The US mortgage market saw a 26 percent decline in origination volume from 2016 to 2018 (Jindal, Hart, and Levin 2019: 3).
22. Similar to other nonbanks, most FinTech lenders sell their loans through channels supported by government guarantee programs.
23. For instance, Bank of America launched a digital mortgage application in 2018: Penny Crosman. "Bank of America Launches a (Mostly) Digital Mortgage." *American Banker*, 11 April 2018. Retrieved 2 April 2021 from https://www.americanbanker.com/news/bank-of-america-launches-a-mostly-digital-mortgage.
24. See also Lux and Greene (2015) on the rise of non-banks (financial institutions that are unaffiliated with depository institutions) in mortgage lending.
25. Terry Lefton. "Quicken Loans Becomes NFL's First Official Mortgage Sponsor." Sports Business Journal, 7 January 2020. Retrieved 20 June 2020 from https://www.sportsbusinessdaily.com/Daily/Issues/2020/01/07/Marketing-and-Sponsorship/Quicken-Loans-NFL.aspx.
26. Samantha Sharf. "Quicken Loans Overtakes Wells Fargo as America's Largest Mortgage Lender." *Forbes*, 5 February 2018. Retrieved 26 May 2021 from https://www.forbes.com/sites/samanthasharf/2018/02/05/quicken-loans-overtakes-wells-fargo-as-americas-largest-mortgage-lender/#37bde091264f.
27. J. D. Alois. "Fintech Before Fintech Was Cool: QuickenLoans is Rebranding as Rocket." *Crowdfund Insider*, 31 January 2019. Retrieved 21 March 2021 from https://www.crowdfundinsider.com/2019/01/143957-FinTech-before-FinTech-was-cool-quickenloans-is-rebranding-as-rocket/.

28. Walter F. Mondale. "The Civil Rights Law We Ignored." *New York Times*, Op-Ed, 10 April 2018. Retrieved 25 March 2021 from https://www.nytimes.com/2018/04/10/opinion/walter-mondale-fair-housing-act.html.
29. The study drew upon "never-before-linked information at the loan level on income, race, ethnicity, loan-to-value ratios, debt-to-income ratios, all contract terms, and indicators for whether the lender-of-record primarily used algorithmic scoring" within the Government Sponsored Enterprises' pricing grid (Bartlett et al. 2019: 5). It investigated whether interest rates offered by the lenders were greater than those required for the sale of loans to Fannie Mae and Freddie Mac.
30. Disparate impact occurs when a "bank applies a racially or otherwise neutral policy or practice equally to all credit applicants, but the policy or practice disproportionately excludes or burdens certain persons on a prohibited basis" (The Office of the Comptroller of the Currency 2010: 8).
31. The discussion of the chapters of the collection began at the symposium "Mortgage across Cultures: Land, Finance and Epistemology" at Boston University African Studies Center in April 2016 (see Rodima-Taylor and Shipton 2017).

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