

# **Prime Property Institutions for a Subprime Era:**

## **Exploring Innovative Models of Residential Development and Finance**

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## **Abstract**

This paper breaks new ground toward contractual and institutional innovation in models of homeownership, equity building, and mortgage enforcement. Inspired by recent developments in the affordable housing sector and in other types of public financing schemes, this paper suggests extending institutional and financial strategies such as time- and place-based division of property rights, conditional subsidies, and credit mediation to alleviate the systemic risks of mortgage foreclosure. Alongside a for-profit shared equity scheme that would be led by local governments, we also outline a private market shared equity model, one of bootstrapping home buying with purchase options.

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## 1. Introduction

The subprime crisis has vividly demonstrated the risks of relying on rising market values to prevent debt from surpassing the value of the security, as well as showing the severe collective action problem embedded in the securitization of mortgage-backed loans. However, the recent turn of events raises even more fundamental questions about the way in which land-related property rights and credit markets are designed. This paper seeks to break new ground toward contractual and institutional innovation in models of homeownership, equity building, and mortgage enforcement that may overcome some of these drawbacks.

Numerous scholarly endeavors have been made to correct the failures of the market. In their recent contribution to the *American Law and Economics Review*, Eric Posner and Luigi Zingales (2009) identify the broad-based deadweight loss of foreclosures, and call to force a renegotiation between the homeowner and the mortgagee in cases of negative equity, but without making any of the contracting parties worse off, or increasing the systemic cost of credit. They thus suggest a plan by which a household, located in a ZIP code where house prices dropped more than a certain threshold from their peak, would have a right to obtain a mortgage reduction to the current value of the home in exchange for a certain percentage of the future appreciation of the house above the current level. We view Posner and Zingales's model of binding together mortgage restructuring with a shared equity scheme as holding great potential for reforming the market, and we develop

this idea more extensively in this paper to include both the public and private sectors. Moreover, whereas Posner and Zingales's model focuses on the ex post scenario of mortgage default, we construct in this paper innovative models for housing development and finance, ones that would ex ante address the broader prospects and perils of the real estate market.

In so doing, our paper builds particularly upon institutional insights obtained by analyzing two innovative forms in current real estate development and finance. First, community land trusts (CLTs), which are non-profit community organizations that supply affordable housing based on long-term shared equity, divided ownership schemes. Second, tax increment financing (TIF), in which a local government, working through a subsidiary agency, designates an area for for-profit development or redevelopment, incurs up-front expenditures (e.g., land assembly, public infrastructure), and issues revenue bonds that are paid back over time by earmarking future incremental increases in property taxes in the designated area.

These two forms substantially diverge, and may even be considered as outright opposites. CLTs are designed to perpetually maintain housing units at below-market affordable prices. Conversely, TIF districts rely on stimulating market value appreciation following the area's redevelopment as the *raison d'être* of the project and in so doing enabling the agency to repay the bonds. However, each of these forms offers broader-based institutional lessons that, suitably adapted, enrich the range of design options for the conventional for-profit housing sector.

Our paper has two main objectives. First, it offers a tentative outline for a type of a CLT/TIF hybrid in the form of a for-profit shared equity development model that would allow consumers to acquire full homeownership through a gradual, two-phase purchase and finance process. Second, it illuminates a broader range of issues that typify the current for-profit real estate development and finance market, by pointing to instances of institutional myopia and refutable conventional wisdom. Among these topics, we address the insufficient design alternatives for building equity from zero, an all-or-nothing approach to homeownership, and inefficient risk-shifting in case of mortgage foreclosures. These insights play in turn an important role in suggesting general institutional design principles that go beyond the suggested CLT/TIF hybrid and may inspire improvements to existing private market products in the real estate industry.

In the paper, we identify the local government as a potential protagonist in devising different forms of institutional innovations. US local governments play an established role in the real estate industry in light of their broad powers in land use regulation and ongoing reliance on property taxation as their most prominent own-revenue resource. We argue that local governments can also play a systematic role in other issues that up until now have been generally considered to be within the realm of either individual and market activity or of higher-level government policy and finance. As a low-level entity that nevertheless enjoys established powers of collective action, local governments can engage in a variety of activities that would provide better access to credit from financial institutions, efficient risk-management at the local level, diversity of property formations,

and front- and back-end taxation tools for both facilitating real estate development and internalizing government-created local benefits.

At the same time, however, our paper is not aimed solely at advocating local government growing intervention. More fundamentally, it seeks to inform private entrepreneurs about real estate development possibilities that might have been viewed skeptically by them up until recently, but which may gain currency in the aftermath of the mortgage crisis. Specifically, our suggested CLT/TIF hybrid scheme may inspire both entrepreneurs and middle-class and up private consumers to adopt new market products which would allow for a gradual, multi-phase purchase of homeownership. Such concepts can create better opportunities for developing and disseminating property models that have been traditionally associated with low-income households, while at the same time addressing persistent failures of irresponsible lending, inefficient risk deflection, and over-fragmentation of interests that have often plagued real estate markets.

Accordingly, although our analysis in the paper focuses largely on local governments as conduits of innovativeness, it by no means suggests that low-level governments would inherently outdo the private market in coming up with new models for real estate development in the face of the present crisis. Thus, following the detailed discussion of our suggested for-profit shared equity scheme, we conclude by presenting an alternative private model, which we entitle bootstrapping home buying with purchase options. This model too builds on key institutional insights learned from the CLT/TIF settings, but applies them to an innovative, private contractual framework. This variety demonstrates that the theoretical and institutional analysis offered in this paper could be appealing and

useful both for advocates of public intervention in the supply of for-profit housing and for those who remain loyal to developing private market, non-subsidized products.

## **2. Local Government Stakes in Housing Development and Finance**

Government involvement in real estate development and finance is an intricate and multi-faceted field that cannot be comprehensively surveyed within the scope of this paper. One can discern, however, a quantitatively and qualitatively different form of involvement in the non-profit vis-à-vis the for-profit housing sector throughout US history.

The non-profit sector has been governed by different generations of government involvement, most prominently on the federal level, starting with European-inspired direct construction of public housing as of the 1930s, subsidies for privately-developed affordable housing as of the 1950s, Section 8 demand-side housing vouchers for tenants as of the 1970s, and new mixed-income projects in which government subsidizes private developments that set apart a number of units at below-market prices (Ellickson 2008b).<sup>1</sup>

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<sup>1</sup> The constant changes in government policy are not unique to the US. A 2007 survey of the 27 EU member states demonstrates the enormous changes in these countries since housing began to systematically emerge as a social issue in the mid-nineteenth century. West European countries have come a long way from the direct provision of public housing to working classes and later on to socioeconomically disadvantaged groups, with East European countries making their own dramatic shifts from the socialist era of

Government involvement in the for-profit sector free market is more difficult to conceptualize, since it does not adhere to a centrally defined “public policy” framework, but is rather an amalgam of various types of issue-specific, substantive and procedural laws and policies undertaken by different levels of government.

Local governments in the US play the prominent role in land use regulation, as well as in enjoying the lion’s share of property taxation from lands and structures. As a matter of fact, local governments often bind together these two spheres of activity, bringing about the “fiscalization” of zoning and other land use decisions. This means that local land use regulators that attach great weight to the public revenue/public expenditure tradeoff systematically turn their land use powers into a primary fiscal tool (Lehavi 2006). Such interconnectivity may have implications that go beyond the fate of the specific project unto potential extra-territorial implications, such as in cases of “exclusionary zoning” (Fischel, 2001).<sup>2</sup> It may have a systematic property design effect on the institutional

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predominantly state-owned rental housing. Whereas few generalizations are equally applicable to all European states, one can identify a number of general trends in recent decades, such as the decentralization of housing policy from the state to local governments and gradual privatization of existing social housing stock, alongside more recent government commitments to promote the construction of new affordable housing units, including through public-private partnerships (CECODHAS 2007).

<sup>2</sup> “Exclusionary zoning” refers to land use regulation that seeks to indirectly monitor the socioeconomic composition of residents, especially by zoning out residents with



configuration of the for-profit housing sector. A leading example is the highly favorable approach that residential community associations (RCAs) or “private communities” have been receiving from local governments, up to the extent that cities such as Las Vegas now mandate that every new residential development would be governed by an RCA, thus facilitating growth and increased tax revenues with minimal public expenditures (McKenzie 2005).

Conversely, government involvement in the mortgage market has chiefly taken place at the federal level. Starting in 1934 with the mortgage insurance programs of the Federal Housing Administration (FHA); followed by the establishment of Fannie Mae in 1938 and Freddie Mac in 1970 to supply liquidity to the mortgage market by buying mortgages from lending institutions; the Home Mortgage Disclosure Act of 1975 (HMDA), aimed also at more effectively targeting public spending to poor areas so as to stimulate private investment; and up to the retaking of Fannie Mae and Freddie Mac in 2007 and the massive purchase of “toxic” mortgage-related securities under The Emergency Economic Stabilization Act of 2008—federal law and policy have been playing the chief governmental role in what is largely considered a *national* real estate credit market. The

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relatively low income but with high demand for public services such as schools or welfare. A minimum-lot-size requirement is a quintessential example of exclusionary zoning. Since the property tax in the US is *ad valorem*, that is, based on a certain fraction of the property’s value, such a regulatory demand would generally keep out, through the price mechanism, low-income families that would have decreased the average property tax base.

latest measure taken to date to alleviate the effects of the mortgage crisis has been the 2009 Home Affordable Modification Program, under which the federal government provides partial fund matching to reduce homeowners' monthly mortgage payments (US Dept. of Treasury 2009).<sup>3</sup>

States engage, of course, in their own modes of controlling, directly or indirectly, different aspects of the for-profit housing sector, including the promulgation of general real property laws, mortgage foreclosure statutes, landlord-tenant law, recordation and taxation of transactions, fair housing acts, and so forth.

The 2007-08 crisis raised fundamental concerns not only about the appropriate scope and content of the above-mentioned government intervention, e.g., should and how government intervene more extensively in the real estate credit market to prevent allegedly predatory lending. Moreover, it questioned the prevailing institutional division

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<sup>3</sup> Under this program, the borrower first has to reduce payments on mortgages to 38% Front-End Debt to Ratio (DTI). The U.S. Treasury then matches further reductions in monthly payments, dollar-for-dollar, with the lender/investor, down to a 31% Front-End DTI. The program's success has been questioned, however, since it has been implemented only with a small fraction of borrowers. The federal government is currently devising yet another initiative, aimed at encouraging delinquent borrowers to shed their houses through a "short sale," in which the property is being sold for less than the balance of the mortgage, based on a self-binding real estate valuation commissioned by the lender (Streitfeld 2010).

of labor among different levels of government, and the sustainability of prevailing taxonomies between the for-profit and non-profit sectors in designing law and policy.

Focusing attention on local governments, recent empirical research demonstrates that the problem of high mortgage foreclosure rates concerns not only individual homeowners, lending institutions, holders of mortgage-backed securities, and national-level agencies such as Fannie Mae or Freddie Mac. Foreclosures also harm neighbors by reducing the value of nearby properties, especially when the aggregate rate of physically-adjacent foreclosures crosses a certain threshold, and this in turn reduces local governments' tax bases way beyond tax delinquency for foreclosed assets (Shuetz, Been & Ellen 2008).

The identification of substantial jurisdictional public effects of what is allegedly a private market issue does not dictate, however, a single type of solution. More coercive regulatory intervention in the market may not necessarily result in more efficient provision of housing or finance. Instead, local governments may opt for an advisory, mediative, or otherwise non-coercive role in broadening the possibilities for homeowners. According to one such suggestion, municipalities could serve as a conduit for matching homeowners and investors for the purpose of home equity insurance against fluctuations in area home values or for selling off their upside potential (Fennell & Roin 2010). Yet other institutional innovations may be inspired by already existing types of development.

The present paper seeks to explore some of these mechanisms. We start by analyzing Community Land Trusts (CLTs), which show impressively low foreclosure rates even though their beneficiaries are low-income people. We identify which organizational and

contractual features make this possible, with a view to transplanting some of these features to other markets and policies.

### **3. The Growth of Community Land Trusts (CLTs)**

One type of housing development in which local governments have been playing an increasingly growing role in the past few years is that of Community Land Trusts (CLTs). As of 2009, there were over 230 CLTs, which included some 6,000 housing units across the US.

The CLT is a community-based non-profit organization that acquires land for the purpose of retaining perpetual ownership in it to facilitate affordable housing. The individual homeowner leases the land for a long period of time (typically, 99 years) and becomes the owner of the building erected on the land. The lease agreement on the land divides the property bundle between the individual and the CLT both during the tenancy and upon its transfer by inheritance or resale. Thus, for example, the homeowner must occupy the land as her primary residence, may not sublease the land without the CLT's consent, is required to receive permission for major capital improvements, and is obligated to properly maintain the building.

To keep the land available for affordable housing in perpetuity, when the homeowner decides to sell the housing unit, the CLT repurchases the property or monitors its direct transfer from seller to buyer, but in both cases ensures that the resale price is restricted to a set formula. Although there are several generic approaches to setting the resale price, with

many variations for each and potential combinations, the most prevalent mechanism in CLTs is that of appraisal-based formulas. These formulas establish the resale price of the house by adding to the original price a certain percentage (typically, 25 percent) of any increase in the home's market value (Davis 2006; Sungu-Eryilmaz & Greenstein 2007).<sup>4</sup> The declared goal of this resale formula is to divide the gains from market appreciation, so that the exiting homeowner receives a "fair" return on her investment, while concurrently granting future income-eligible homebuyers "fair" and "affordable" access to this housing unit. Since the formula establishes a value "ceiling" and not a "floor," the homeowner is nevertheless exposed to the economic risks resulting from declining property values or deterioration in the asset's condition such that the formula-determined price may not be guaranteed (Davis 2006).

Another intriguing institutional facet of the CLT concerns its governance structure. The CLT is typically an open-membership organization for all those that live within the wider geographic area that the CLT defines as the relevant "community." It is governed by

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<sup>4</sup> Other methods include indexed formulas, which link upward adjustments in the original purchase price to a specific index such as the Consumer Price Index (CPI) or the Area Median Income (AMI). Yet other formulas are "itemized," meaning that the price is adjusted by adding or subtracting specific factors such as the value of owner-made capital improvements; maintenance, repairs, and depreciation; or inflation adjustments. While self-standing itemized formulas are quite rare, some measure of itemization (e.g., owner-made improvements) usually accompanies the more prevalent appraisal-based formulas.

a board with tripartite composition: one-third of board members are representatives of the leaseholders/homeowners; another third are elected representatives of other community residents outside the CLT; and the final third are co-opted by the first two-thirds, with some of these seats often being reserved for local government representatives, private lenders, and other major players.

CLTs are seen sympathetically by local governments as a means to foster effective, long-term aid to needy families. In 2006, the City of Irvine, California, set up the Irvine Community Land Trust (ICLT), with the purpose of establishing nearly 10,000 CLT housing units by 2025. More broadly, in a growing number of CLTs, the entire one-third of “external” board members is now affiliated with and appointed by the local government (Davis & Jacobus 2008).

The main reason for our focus on CLTs is the low foreclosure rates that CLT units had experienced even after the subprime crisis, and although CLT units are intended by design and are in fact used by low- and moderate-income families. At the end of 2008, CLT homeowners had a foreclosure rate of 0.52%, compared with the significantly higher national rate, estimated by the Mortgage Bankers Association in early 2009 at 3.3% (National CLT Network 2009). As discussed below, these figures can be attributed not only to the typically lower up-front prices of CLT housing units, but also to dynamic front- and back-end measures taken by CLTs aimed at mitigating the risks of insolvency and avoiding inadequate foreclosure procedures.

We identify four broad institutional features of CLTs that point to their success in combining issues of property configuration, access to credit, and risk management.

### *A. Affordability through Unbundling of Rights and Subsidies*

The property product designed by the CLTs is located at an interim point along the landownership/lease continuum. It divides the bundle of property rights between the individual homeowner and the land trust in an innovative manner, rather than opting for the conventional “own all or nothing” strategy. Because of the unique property structure of CLTs, which means that homeowners do not acquire the land, buyers pay much less upfront, typically in the 25-30 percent range. In addition, buyers usually enjoy a subsidy in their purchase price, their monthly rent, or both. CLTs tend to provide greater subsidies when the land is donated to them. In contrast, when the CLT has to acquire the land, some of these acquisition costs are typically passed on to consumers. This additional cost could be reflected in the up-front price of the housing unit, or, more typically, in the monthly lease fee that is collected by the CLT. As a matter of public policy and the actual incentive structure for potential homeowners, the subsidies offered by the CLT for the home or the monthly rent payments must be substantial enough to justify the legal and economic limits placed on CLT homeowners during and after their tenure. At the same time, the pairing of subsidies with the unique property structure of the CLT facilitates this mechanism’s potential superiority over other types of public housing assistance.

### *B. Credit Mediation*

In mediating and facilitating a loan agreement for the house vis-à-vis lenders, the CLT aids in narrowing down informational asymmetries between the parties to the loan agreement, and in better assessing ex ante the financial ability of the borrower to pay back

the loan. This is done typically by requiring homeowners to undergo training and orientation, and by explaining to banks (1) that the collateral for the CLT home purchase mortgage is the leasehold estate—the value of house improvements plus the value of the leasehold interest in the land— and (2) the favorable loan-to-value ratio in CLT leasehold mortgages (since the CLT’s write-down of the home purchase price is regarded as equity). Although the CLT is not a direct party to the loan agreement, it typically retains a privilege to step in, in case of mortgage default, to forestall the foreclosure process for a few months in order to work with the borrower to avoid foreclosure, to take over the borrower’s interests, or to remove the resale restrictions in case of foreclosure or the taking of the deed in lieu. As a result, local banks, who become engaged in repeat play vis-à-vis the CLT, are more willing to originate mortgages at lower interest rates.

### *C. Prevention of Insolvency*

CLTs play a preventive or “backstopping” role in mortgage defaults not only during the pre-leasehold negotiation, but also throughout the tenure period. Since the leaseholders pay the CLT a monthly lease fee, and since homeowners typically default on the mortgage only after failing to make other types of payments, the lease fee payment serves as a potential “alarm device” that warns the CLT in advance if the homeowner is nearing default on her mortgage loan. Whereas at this stage the CLT is formally entitled to terminate the lease and evict the lessee from the land, it may work either to adjust the leasehold scheme vis-à-vis the borrower, or—if this is impracticable—to purchase the



home from the borrower, bring the account current vis-à-vis the lender, and place a lien on the property for the amount of that payment, which is then recouped at resale.

#### *D. Lower Cost of Insolvency*

Finally, in case of insolvency that already triggers the lender's action, the CLT may take a number of steps to prevent court foreclosure, including exercising its prerogative to take over the homeowner's interests (being in fact a right of first refusal over the home). Even in cases of formal foreclosure, the CLT still owns the underlying land and thus has a strong bargaining power vis-à-vis the lender or any future buyer of the home.<sup>5</sup> Since the model CLT ground lease allows the CLT to charge market-rate rent if the eventual homeowner is not an otherwise eligible low-income household, in a few cases of foreclosures, the new homeowners voluntarily agreed to re-impose the CLT resale

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<sup>5</sup> One may wonder about the incentives of lenders to lend when considering this power. Two factors may be important in this regard. First, CLTs are repeat players, so that they have incentives not to behave opportunistically in any particular deal. Second, US lenders, especially local ones, may be under regulatory pressure to lend to low-income mortgage applicants. At the same time, the low foreclosure rates in CLTs may encourage lenders to keep engaging in such lending as compared to the perils of conventional markets.

restrictions in exchange for being charged below-market lease fees.<sup>6</sup> Put differently, the CLT structure alleviates the “anticommons” fear that may be embedded in splitting ownership between the land and the house (Heller 1998). This is so in the sense that the CLT has leverage to repurchase the specific home in case of foreclosure, or to otherwise prevent a “checkerboard” scenario, in which a number of foreclosures in a CLT area will create a divide among CLT and non-CLT homes, a significant issue also for the ongoing collective governance of the entire CLT development.

#### **4. CLT Lessons for the For-Profit Market**

Some of the central institutional features of CLTs may be adapted into general design principles that could be instrumental in enriching the range of options in the for-profit housing and finance market, thus better addressing some of its imminent problems.

##### *A. Equity Building*

The ex ante partitioning of rights in a CLT between the housing unit and the land parcel enables consumers to better build equity from zero. Unlike the dynamics of high-leveraged loans that were available through the subprime market, the CLT model allows low-income families with little or no equity to enjoy the benefits of tenure security and

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<sup>6</sup> This was the case, for example, in a number of instances involving the Burlington Community Land Trust in Burlington, Vermont. We thank John Davis for this information.

internalization of house improvements at a more favorable loan-to-value ratio. At a later stage, once the homeowner pays back the loan and accrues more capital, she can choose whether to sell the CLT home and buy into conventional homeownership at a different location, or to channel the additional capital to another activity that she deems to be more valuable than the residual value of regular homeownership. Resorting to a useful terminology in the literature, homeowners in CLTs can choose the extent to which they would like to separate the “homeownership as consumption” component from the “homeownership as investment” one (i.e., the “gamble” on the property future value), which in conventional homeownership are being inherently intertwined (Fennell 2008).

Although under the typical resale formula, the CLT homeowner is exposed to some extent to the upside potential of market value rise (i.e., the percentage of the property appreciation that she keeps to herself), as well as to the downside (to the extent that declining property values attach to the housing unit or the leasehold rights), it is clear that the up-front costs of buying into the “investment” component and the consequent exposure to exogenous risks is milder in CLTs than in regular homeownership. This therefore allows the CLT homeowner to build and invest equity more gradually, while at the same time retaining the flexibility to re-bind consumption and investment, should the homeowner decide to sell the CLT unit and move on to conventional homeownership.

We argue that the mechanism of gradual equity building along a certain time horizon can be conceptually extended in the context of the for-profit market to the *same physical asset*. Consider, for example, an innovative development model that would allow a homeowner at first stage to purchase the home only and take a loan against it, and then

entitle her, after repaying this portion of the loan, to purchase the residual portion of the asset (the land, future development rights, and any other attributes that attach to full-scale ownership) and to take a new loan against it. Such a suggestion would, however, have to consider an entire array of issues pertaining to the interim period (i.e., who holds the land rights during this timeframe), as well as to the possibility of continuous asset fragmentation and potential deadlock if the second stage of purchase does not materialize. We later suggest such a tentative institutional solution, focusing mainly on the role that local governments may play to provide such a viable organizational and financial framework, and argue that this model could also support private contracting in this area.

#### *B. Internalizing Risks and Prospects within the Local Community*

Two prominent lessons of the subprime crisis have been the moral hazard and the bargaining problems embedded in mortgage-backed securities. Moral hazard has been caused because the risk was shifted away from the original parties to the loan and on to national and international investors who had poor information about the risks and prospects for each loan. Bargaining difficulties emerged because securitization made it harder to renegotiate in case of market decline and default (Dana 2010). In particular, it made it impossible to internalize the effects of foreclosure decisions on neighboring properties and the community.

Whereas we do not rule out the benefits of bundling rights to different debts (e.g., in Special Purpose Vehicles (SPVs) that pool together yielding financial assets such as mortgage-backed loans, credit card accounts, or auto loans into a separate legal entity),

and we recognize the potential sense behind geographical risk diversification by a provider of mortgage-backed loans, outright alienation from the local basis of mortgages may easily result in suboptimal risk-management, as shown by the current crisis. This is so especially in view of the fact that a significant number of foreclosures within a certain geographical area result in substantial adverse externalities to local governments and neighboring residents—costs that tend to be disregarded more by the remote lenders.

Conversely, CLTs are committed to internalizing both risks and prospects within the relevant local area—which can be flexibly designed to include a single neighborhood, multiple neighborhoods, a city, or an entire metropolitan area. This means that the CLT tripartite board structure represents a broad range of interests within the community beyond CLT residents and immediate neighbors, but it is nevertheless not detached from the local basis of CLTs. Accordingly, CLT managerial decisions, e.g., about which projects to develop, terms of leasehold contracts, resale formulas, and which modes of action to pursue in case of insolvency or foreclosure, are bound to consider the broader-based effects of such instances on the “community.”

Admittedly, given their governance structure, CLTs may suffer an opposite bias. Being dominated by local interests and partly by debtors themselves, CLTs might be tempted to defer foreclosures in bad times, being slow to accept the change in market conditions, at least up to the point of exhausting their endowment. In this sense, although CLTs show very low incidence of default and foreclosure, their numbers are somewhat hard to interpret, given the presence of capital (land) and labor (volunteering) donations,

as well as possibly favorable regulatory treatment by municipalities, in addition to the newness of the experience.

With these caveats in mind, the potential benefits of the CLT structure could be reflected in a potential adaptation of the role of local governments in housing finance. As with CLTs, local governments have a clearer incentive to consider the broader-based effects of inefficient risk deflection and consequent high foreclosure rates on the local real estate market and, moreover, on the local economy. Local governments may thus be more prone to intervene to prevent distress, e.g., by subsidizing credit *ex ante* or stepping in, in case of mortgage delinquency, to prevent the snowball effect of foreclosures. In parallel, local governments are generally motivated to internalize a portion of the upside effects resulting from the collective action, such as by increased tax revenues in case of market value rise. To the extent that a CLT-inspired institutional structure could be devised, which would systematically motivate local governments to better internalize both such negative and positive effects, the current scope of local government activity in the provision of housing supply and finance could be made more effective. Part E of the paper presents the institutional role that local governments could play in what we term For-Profit Shared Equity (FPSE) real estate developments.

As for potential lessons for private developers, and the inspiration that they could derive from CLTs, we do recognize that the governance of CLTs, let alone of broader-based institutions, may involve substantial costs and be unsuited to the market. For example, CLTs are arguably administratively lean, enjoy subsidies, and focus on the purpose of providing affordable housing. But potential adaptations of CLT features to the

for-profit market and the increasing involvement of government agencies may make CLT-like institutions more costly to operate. We address some of these concerns in Sections 6 and 7, when we analyze the potential expansion of for-profit shared-equity institutional structures to public agencies or to private entrepreneurs through new contractual models for housing finance.

### *C. The Scope for Greater Variety of Contractual Structures*

The current for-profit mortgage market has been built around a standard model of unified homeownership in which owners-borrowers purchase both the land and the building and bear the whole economic risk of the purchase: they purchase an inseparable bundle of consumption and investment services. CLTs show that there might be utility in developing new formulas that allowed homebuyers to separate these consumption and investment components of homeownership, tailoring their purchase decisions more closely to their means and, more generally, to their financial profile.

Furthermore, assuming a public policy of favoring affordable homeownership, CLTs are starting to demonstrate, in the context of non-profit housing, that an innovative institutional structure may not only aid needy families, but can also alleviate the risk of mortgage insolvency and address actual foreclosures effectively, thus making some of CLT's features attractive also to for-profit lenders, especially to local banks that are better

acquainted with a specific CLT.<sup>7</sup> This means that a richer array of alternatives, expanded to the for-profit sector, might potentially promote the interests of lenders, borrowers, government, and other affected stakeholders.

#### *D. Difficulties of Divided Ownership*

A potential deterrent of formulas resembling the CLT model is that market participants may be reluctant to divide ownership, such as by allocating among different persons the ownership of land and building, or granting purchase options to lenders, as suggested in Section 7 below. Thus, for example, in questioning the potential merits of CLTs, Ellickson (2008a, 88-90) argues that any legal design, based inherently on a long-term lease rather than on full-scale homeownership, would result in higher ongoing transaction costs between the landowner and the tenant, who are situated in a bilateral monopoly.

More broadly, the reluctance toward the division of ownership seems to be based on the fundamental concerns rooted in the *numerus clausus* doctrine: multiplicity of property rights may discourage trade, especially when they are designed in a very specific fashion. In our case, the exceptionality of divided ownership could hinder subsequent trade in land or mortgages, therefore deterring the introduction of such formulas.

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<sup>7</sup> Some of these mortgagees hold these loans in their portfolio, while others sell these loans on the secondary market or to state/local housing authorities. We thank Michael Brown for this information.



Let us first examine the logic of the *numerus clausus* doctrine and then examine some other innovations in divided ownership, to illustrate that there is scope for introducing innovative arrangements in this area without hindering trade.

According to the *numerus clausus* principle, which is explicit in the civil law systems but also highly indicative of the Anglo-American one, only certain forms of property rights are recognized as such by the legal system, thus preventing private parties from exercising their otherwise nearly unbound transactional freedom to shape their legal relationships. Current theory seeks to ground such design limits in “optimal standardization,” that is, balancing economic and social demand for different types of property interests against the need to economize on information costs imposed on third parties that have to accommodate to such diversity, in view of the *in rem* nature of property rights (Merrill & Smith 2000).

This, however, does not mean necessarily that recognized types of property rights included in the “closed list,” such as ownership, should essentially adhere to a single blueprint, i.e., an indivisible fee simple interest in both the land and the home. At the same time, for new models that “rearrange” ownership, leasehold, mortgage, servitudes, etc. to become formally institutionalized, the new format need not only become *de facto* familiar to various stakeholders, but should also be supported by enabling legislation and regulation to allow actors such as lenders to fully understand the nature of the property configuration and the type of collaterals, and consequently to be willing to extend credit. We argue that such systematic changes may and do take place when the introduction of innovative design models is shown to effectively address new or adapted patterns of

market demands. In this sense, although the *numerus clausus* principle imposes a structural constraint, it should not be understood as blocking dynamism and innovativeness (Davidson 2008).

An early example for a “non-conventional” housing form, which started in the US in the late nineteenth century and has been applied in both the non-profit and for-profit sectors, is that of cooperative housing (co-op). The cooperative corporation is the owner of the building, and each shareholder of the co-op corporation is entitled to a proprietary lease in a unit within the building (typically for 99 years). Since the purchaser of a co-op unit actually purchases shares in the corporation, when he borrows money for this purchase, the mortgage is secured by a pledge on the shares. In addition, most co-op corporations also borrow money secured by a mortgage on the real property (“blanket mortgage”), so that the owner of a co-op unit makes two types of periodic payments: one on his own mortgage, and another for his pro rata share in the co-op mortgage. Co-ops are still prevalent in the “affordable housing” sector, and are persistent also in New York City’s luxury market because of their stronger control over tenant selection (Schill et al. 2007).

This co-op arrangement was made popular by private initiative alone. In contrast, condominiums became an established property phenomenon only after the different states had passed enabling statutes during the 1960s, and the FHA had started to provide mortgage insurance for this type of tenure as of 1961. The demand for enabling statutes resulted from the need to incorporate into property law the then-innovative legal structure, by which the condominium owner owns his unit in fee simple absolute but shares a pro

rata undivided interest in the common elements (inner streets, parks, joint facilities) as a tenant in common with the other condominium owners. Within about a decade after these Acts, condominium developments have started to emerge as the most prevalent form of multi-family buildings across the US (Hansmann 1991).<sup>8</sup>

A third type of common interest community, the RCA—a planned-unit development that is governed by a homeowners’ association—has also become a roaring success throughout the US, following state-enabling legislation and general judicial support for the RCA’s governance mechanisms. The core of the community property governance lies in the conditions, covenants, and restrictions (CC&Rs) included in the RCA’s governing documents. These reciprocal obligations, recognized as equitable servitudes, control and regulate commonly-owned assets and amenities as well as the use of privately-owned housing units. Beyond enforcing CC&R pre-fixed provisions, the association is empowered to make managerial decisions, promulgate rules, and even amend at times the governing documents without a need for unanimous homeowners’ consent (Lehavi 2008).

The lessons deriving from these types of innovative institutional design of housing development and finance are, *first*, that models that deviate from the “classic” fee simple

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<sup>8</sup> We do not refer here to the potential comparative advantages of condominiums over cooperative housing, and vice versa—an issue which has been addressed to some extent in the literature (Hansmann 1991; Schill et al. 2007). Our intention here is only to show that innovative housing forms are not being outright blocked simply because of the *numerus clausus* principle.

homeownership have merit not only in the affordable housing sector, but also in the for-profit market, in which consumers have a genuine choice among property forms and may moreover attach a market premium to certain types of developments that involve some level of shared ownership and governance. *Second*, as a matter of both economic reality (i.e., the potential of a new institutional product to penetrate the market) and legal design, any type of “bottom-up” innovativeness must not only take firm root among consumers, lenders, and governmental agencies, but also usually gain top-down authorization and support to overcome economic and legal hurdles. This has been vividly demonstrated in the essentiality of enabling legislation for both condominiums and RCAs.

In principle, private entrepreneurs or local governments looking to design innovative property regimes that divide homeownership property rights along a certain time horizon could resort to types of defeasible estates or future interests in the Anglo-American legal system or to existing types of legal trusts for the interim periods during such multi-phase housing projects. However, it seems that for such new housing patterns to become widespread and clearly identifiable to developers, consumers, financiers, and other third parties, new legislation would have to be tailored to the specific traits of such projects, so as to address not only property aspects but also special tax considerations that may be involved in a multi-stage model of real estate purchase.

This need may be even more acute in civil law systems, which are traditionally detached from the fragmentary estate system and have aimed at designing ownership as a “unified box” (Merriman, 1974). In legal reality, property rights in land in civil law countries are less “pure” than conventionally depicted. Spain, for example, legally enables

separating the ownership of land from that of buildings erected on it (“derecho de superficie”). And yet some initiatives to use this separation in affordable housing have been viewed unfavorably by potential buyers as ones of “imperfect” or “crippled” rights. Thus, since CLT-like schemes do not fit comfortably within the property forms that are widely known and understood by developers, consumers, and third parties, an enabling top-down reform would probably be essential to make such innovativeness and competition among property forms in the market viable and effective.

## **5. Tax Increment Financing (TIF) Development**

We now move to examine a different kind of development or redevelopment scheme, which might be used as a complement to CLT-like initiatives: the Tax Increment Financing (TIF) district. Although municipalities have always resorted to policy tools aimed at fostering local economic development (North 1966), TIF schemes have proven dominant since their origination in California in 1952 (Klacik & Nunn 2001).

A TIF scheme enables a redevelopment corporation, which is a subsidiary of the local government, to incur expenses, including up-front costs of assembling land and setting up public infrastructure, and to issue revenue bonds that are paid back over time by earmarking future incremental increases in property taxes within the designated area. This means that throughout the period, until the bonds are paid in full (typically around twenty years from issuance), the redevelopment agency does not have to share the incremental

revenues with all other agencies that regularly receive a share of the property taxes (such as counties, school districts, and special service districts) (Weber 2003).

The redevelopment agency typically enters into agreements with different developers for the sale of land and its development in accordance with the redevelopment scheme. In states such as California, redevelopment agencies are entitled at times to participate directly with the developer in the profits of the project, beyond the receipt of taxes. This may be so when the parties disagree on the value of the land because of differing estimates about the project's future economic value so that part of the payment is deferred to actual performance. The agency's participation in the project's cash flow allows it to recover expenditures, such as for parking and highway interchanges, which could not have been recouped as part of the price of the land (Beatty et al. 2004).

TIFs have also been, however, a source of controversy. Critics argue that TIFs often do not generate net municipality-wide gains that could not have been otherwise attained,<sup>9</sup> but are used merely to shift existing economic activity to the TIF district, such that the alleged gains are offset by negative impacts on non-TIF parts of the municipality (Dardia 1998). Other research does point to genuine appreciations within TIFs (Smith 2009).

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<sup>9</sup> In many states, including in California, the legal authority to set up a TIF district hinges on the "but for" criterion, meaning that the local government is able to demonstrate that the private investment in the designated TIF area would not have occurred "but for" the stimulus provided by public investment (Brueckner 2001).

Regardless of disputes over the cost effectiveness of local government action in certain TIF districts, the TIF scheme relies on institutional traits that place local governments in a unique position to provide real estate markets with the benefits of collective action, while at the same being better attenuated to local characteristics, the interconnectivity among different projects, and the public/private interplay within a defined geographical area. We do not claim, of course, that local governments are inherently superior to either private entrepreneurs or to state or federal agencies in crafting any type of development and finance scheme. Our basic assumption is that private developers are generally more efficient producers of for-profit housing units for conventional homeownership or the renting market. But we do suggest that local government low-level collective action and the property tax mechanisms can be employed more broadly to provide new design options.

#### *A. Low-Level Collective Action and Securitization*

The work of municipal-level entities such as redevelopment agencies in undertaking the collective action of assembling land, providing public infrastructure, and accessing up-start credit by issuing earmarked municipal bonds, can be adjusted to different types of development configurations. Nevertheless, attention should be paid to the potential abuse of such powers, e.g., in the coercive use of eminent domain for the hidden purpose of rent-capturing at the expense of landowners (Lehavi & Licht 2007). This fear should not entirely block the potential for innovativeness. It should, however, inspire an effort to

constrain by legislative provisos new schemes involving local governments as entrepreneurs, direct or indirect financiers, or developers.

Special focus should be given here to the ability of local governments to build equity through the use of specific-revenue municipal bonds. In examining the pros and cons of securitization in the real estate market, municipal bonds do seem to be an attractive option for risk management, since their scope is not too small to break down upon a small number of foreclosures, but not too dispersed to create the kind of subprime, inefficient risk-deflecting. Moreover, to the extent that the collective debt of the agency can be conceptually and legally separated to some extent from debts incurred for individual housing units, i.e., in the collateral for the loans, such collective bonds could actually be combined with the extension of additional credit to developers and consumers.

#### *B. The Development Planning Function of Taxes*

The TIF mechanism points to the multi-faceted development potential of taxes, not merely as a passive incident of an already-existing private economic activity, but also as a full-fledged planning tool that allows local governments to create incentives for development and to diversify the sources of equity by seemingly reversing the order of events: obligating part of the future stream of public revenues up front as a market-reliable mechanism for raising private capital. However, as is the case with government collective action, such innovative use of tax mechanisms should walk the fine line between not sticking stubbornly to a conservative view of taxing as future contingent capital, and not rushing into ex ante adventurous gambles on this source of revenue at the expense of the



taxpaying general public. This design principle is especially challenging in the context of *ad valorem* property taxation, since it relies on what is allegedly exogenous to both government and individual actors: the price equilibrium of the real estate market, influenced also by extra-local variables.

Accordingly, the use of tax innovation to create new types of development and finance models should always identify the optimal scale of economic stakeholding, e.g., should chief risks and prospects be managed at the local or sub-local (neighborhood) level, the type and scope of the public collateral for the up-front equity raising, and how would future prospects and risks be shared between the government and private developers or consumers upon the actual implementation of the project. These considerations in mind, we borrow some of the institutional features of TIF districts for designing a new tentative model for housing supply and finance, which we now present.

## **6. A Public Suggested Model: For-Profit, Shared Equity (FPSE) Development**

As stated at the outset, the various institutional insights from both CLTs and TIFs do suggest possibilities for creating new types of financial and legal design models. This section will outline a model for innovative public initiatives and section 7 will sketch an application for the private sector.

At this point, it is important to emphasize once again that our suggested model that involves a public initiative does not stem from any sort of general proposition by which the public sector is superior to the private market in developing and financing housing. As

a general matter, we are inclined to believe it is the other way around. Our model below is rather based on an institutional engineering perspective, which seeks to take advantage of existing mechanisms and institutions that are currently made available to the public sector and to local governments in particular. To the extent that similar economic and legal engineering devices could be developed through private institutions, these would be truly commendable. The model developed below should thus be seen as a general invitation for institutional innovativeness and not as praise to the public sector as such.

That said, what we entitle a For-Profit, Shared Equity (FPSE) scheme seeks to integrate some of the key features of CLTs and TIFs, and designates an important role for local government in facilitating this type of development. Under the FPSE, a development agency, which is a subsidiary of the local government, would acquire land and approve a detailed land use plan for development. These up-front costs would be covered by the issuance of bonds and secured by the revenue stream of property taxes in a manner detailed below.

The FPSE would involve two main phases. During the first stage (which starts at time 0), buyers would be entitled to purchase the building and a market-rate, long-term leasehold on the land. The buyer would be able to approach any commercial lender and take a mortgage loan that would be secured by the value of the building and the leasehold. At this stage, the development agency maintains ownership of the land and entitlement to all future development rights.

If at any time during the first stage, the homeowner fails to pay the mortgage or the leasehold rent, the development agency would have the right to step in, in a similar

manner to CLTs, including a right to evacuate the homeowner or to purchase the house from the borrower and bring the loan current vis-à-vis the lender.

At the end of the first stage's designated period,  $t$ , (which could typically be somewhere between five and ten years), if the homeowner is able to demonstrate to the development agency that he meets his contractual commitments to both the agency and the lender, he would be entitled to exercise an option to purchase the residual components: i.e., fee simple on the land, entitlement to future development rights, and all other rights that attach to fee simple ownership (the "Residual Ownership"). We suggest that whereas the option would be legally granted at time 0, its price would be determined at time  $t$  and would be set at the difference between the asset's full market price and the current value of the rights that are already held by the FPSE homeowner at this point. In case of disagreement between the parties, the price of the option for the purchase of the Residual Homeownership would be set by third party arbitration, the procedural terms of which would be determined in advance by statute. If the homeowner decides to exercise the option, he would be entitled to take a second loan against this residual collateral with any commercial lender. As with the first loan, the development agency would be entitled to intervene in cases of mortgage default. We argue that whereas the option would be of some value at time 0, because it would grant the homebuyer the right of first refusal to purchase the Residual Homeownership at time  $t$  for an *objective* market value (rather than for a price subjectively agreed to by the development agency), the option's value at time 0 would nevertheless not impinge on the affordability of the original FPSE transaction.

Conversely, if at the end of the first stage, the homeowner is solvent but nevertheless declines the option, the development agency would be granted a right of first refusal of its own to repurchase the home and the leasehold upon any instance of resale by the homeowner. In addition, the agency would elect whether to retain the Residual Ownership, or to sell its rights onwards to a third party, including the said right of first refusal on the home and the leasehold.

The decision regarding the second stage, which starts at time  $t$ , should also implicate the tax revenue scheme, which secures the bond that had been issued upfront by the development agency. One possible scheme could be that during the set first stage, the development agency would be entitled to receive *all* property taxes from the asset that are paid by the homeowners. If at the second stage the homeowner exercises the option, the development agency would be entitled to receive exclusively from then onwards only the *incremental* property tax for the duration of the bond, as with TIFs, but the pre-development tax baseline would be allocated among the different taxing jurisdictions. If the option is not exercised, the development agency would be able to continue receiving all tax revenues from the asset up to the duration of the bond, unless it passes on the Residual Ownership to a private purchaser during the term of the bond.

Moreover, the entitlement of the development agency to receive all property taxes if the homeowner fails (willingly or unwillingly) to exercise the option, and the dependence of the agency on tax revenues to pay back the bonds, provides incentives for the local government to act promptly and effectively against those homeowners/leaseholders who fail to pay either the monthly rent payment or the mortgage, and avoid lengthy

foreclosures proceedings and/or long-term vacancy or abandonment of the property, shifting the property to more efficient use as fast as possible.

Overall, we believe that as an *additional* option to current development and finance formats, the basic concepts behind the FPSE grant prospective homeowners a better opportunity to gradually build equity and to make a reasoned decision about the investment of incremental capital to purchase the Residual Ownership at the end of the first stage. Accordingly, the potential deviation from a conventional ownership model need not result in excessive over-fragmentation of rights in the asset, once mitigating measures such as right of first refusal are introduced.

From the local government's perspective, an FPSE-like model allows it to engage in an economically feasible plan to foster growth and to monitor, at least for first purchasers of properties within the development area, against the ill-effects of badly regulated lending (i.e., minimum lending to subprime borrowers) and negative community-wide externalities of concentrated mortgage foreclosures, while at the same time improving the incentives for the local government to act more efficiently in both its regulatory and fiscal capacities. Even if such schemes are not feasible for all kinds of local governments, the possibilities of designing new models that borrow some of these institutional insights from both the for-profit and non-profit sectors can reinvigorate the real estate market and expand consumers' genuine choices, especially in separating the consumption and investment components in housing decisions (Fennell 2008).

## **7. Private Suggested Model: Bootstrapping Home Buying with Upturn Options**

The core feature of CLTs could be usefully introduced into private home buying contracting, mainly forms aimed at making housing affordable by lowering down payments without increasing the chances of default and foreclosure in an economic downturn. CLTs develop their strategy by: (1) allocating to the CLT initial ownership of the land and most elements of home appreciation; (2) contracting several conditional options, which include, at the least, an option to the CLT to intervene in case of default; and (3) managing a complex contractual arrangement by which the CLT selects and monitors purchasers, administers prices of land and rentals, and performs default-avoidance procedures.

At its core, the CLT strategy is grounded in sharing in the increased value that homes reach during economic upturns in order to finance partial homeownership. It is unclear what the cost of CLTs' activities is and, consequently, to what extent they need subsidies to operate. Whatever these subsidies are, a pure unsubsidized for-profit solution would have to be institutionally simpler to be self-sustainable in the market.

Private markets could achieve a similar “bootstrapping” effect by granting lenders (or other agents) an option to buy the home in economic upturns. The value of this option would therefore finance better access conditions to home purchasers. It would lower down payment or lower debt, possibly setting the level of debt below the minimum value that the home is expected to reach in a recession, thereby minimizing exogenous default.

To explain how the system could work, let us use the graphical tool often used in finance to represent options. Figure 1 depicts the conventional home purchase

arrangement in which the purchaser borrows to buy the home. The horizontal axis represents the value of the home, which is a random variable with distribution  $\delta_1$ . There is a positive probability of default when home value is lower than  $L_1$ , the amount of debt, represented by the gray area in Figure 1. The vertical axis also represents the value of the home, with the different functions representing the accumulated values (with the total being represented by a 45° line), and the areas between the functions representing the value achieved by each party (lender and borrower), which vary with home value.

Figure 2 represents a highly stylized version of the CLT model: the CLT owns the land, the buyer borrows  $L_2$  (lower than  $L_1$ , as CLT buyers do not buy the land) and purchases the building, acquiring also a lease on the land. Buyers also get an option to sell their rights to a subsequent buyer receiving a certain fraction (typically 25 percent) of the appreciation in the home's market value.<sup>10</sup> Parameters are set so that the probability of default is zero considering  $\delta_2$ , the probability distribution of the value obtained by the purchaser when entering the deal, which is only a minor exaggeration of CLT prudent practices. Obviously, the complex contractual structure defining a CLT can make the

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<sup>10</sup> Under the appraisal-based formula, appraisals are typically done for the building alone, not for the combined value of the land and the building. Some CLTs appraise, however, the value of both the land and the building, use a ratio to determine how much of the property's value is owned by the homeowner, and then apply the said percentage to the appreciation (Burlington Associates 2005)

equity portion greater or smaller, to compensate for, respectively, greater or smaller down payments.<sup>11</sup>

Figure 3 represents a possible purely private arrangement in which the purchaser buys the home, financing it with a loan  $L_3$  plus the present value of a call option granted to the lender or a third party (not necessarily private), to be exercised at strike price  $X_t$  in a future moment  $t$ . The home value distribution is in this case the same as in Figure 1. The value of the option is given by the substantial positive probability that the home value will be above  $X_t$  (the gray area to the right of the distribution). This should make the initial purchase considerably more affordable, by lowering either the down payment or the loan.

This third system therefore provides affordability and at the same time limits the investment component in home buying. Its main cost results from the fact that in order to make homes affordable, the call option needs to be valuable and, therefore, the strike price needs to be low enough so that the option will often be exercised, triggering eviction or renegotiation of a similar agreement at time  $t$ .

However, the system offers a substantial advantage to the conventional arrangement: renegotiations will take place in times of bonanza instead of ruin and with homeowners receiving a substantial amount of money (the difference between  $X_t$  and  $L_3$ ), which they can use to buy the same or a different home.

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<sup>11</sup> We assume that the 25 percent appraisal-based resale formula does not have a further ceiling that is applied to extraordinary increases in value.



Nonetheless, the system provides little incentive for homebuyers to invest in their property. The option facilitates bargaining at time  $t$  but discourages any home-specific investment by buyers, including home maintenance; as such, investments could easily be expropriated at moment  $t$  by the option holder. A necessary but incomplete palliative is for the contract to deduct verifiable maintenance expenses from the option strike price. This element is somewhat reminiscent of the repurchase formulas in CLT. In addition, to encourage a more balanced renegotiation at  $t$ , the buyer could retain an option to repurchase the home at a later time, let us say  $2t$  at strike price  $X_{2t}$ . In case the holder of the first option decides to exercise it at  $t$ , the previous buyer would be evicted, paid  $X_t - L_3$  and given an option to buy the house at time  $2t$  a price  $X_{2t}$ . Parties could obviously renegotiate such a repurchase as early as time  $t$ , thus avoiding eviction.

This secondary option should not be of much value at time 0, as it is conditional on two consecutive upturns in the market in the two periods under consideration. Its introduction in the original contract would reduce but not eliminate the affordability provided by the system. However, it would be valuable at time  $t$ , in case the first option is being exercised, and generally before  $t$ , when the market goes up and such exercise becomes likely. This should at least provide buyers with better incentives to invest in the home.

Our scheme is somewhat similar to the “shared-appreciation mortgage” developed in the 1970s, in which borrowers pay back both the loan and all or part of the interest with a share of the future increase that the value of the property may enjoy at the end of the loan period. The two models differ substantially, however, in several respects, making our

scheme generally more flexible. First, it allocates to the lender the whole of the appreciation above a certain threshold, if he exercises the call option at time  $t$ , enhancing both affordability and simplicity in the design and implementation of the transaction. Conversely, in shared-appreciation mortgages, the principal of the loan is an unconditional obligation, so that if the property's value decreases, the borrower would still owe it.

Second, our scheme does not require third-party appraisals, something that might hamper other schemes such as shared-appreciation mortgages, given the difficulties of such appraisals, as hinted by Caplin et al. (2008, 9). The simpler structure of our model would facilitate valuation and make both mortgages and options attractive to the secondary markets. Shared-appreciation mortgages might also suffer from the adverse selection and moral hazard problems which, to be cured, require even more complex structures, such as a gradually-increasing “shared-equity rate” in favor of the lender, as proposed by Caplin et al. (2007).

Finally, our suggested model may, at first glance, create a sense of inconvenience in view of the possibility that the homebuyer would have to evacuate if the lender decides to exercise the call option, and the homeowner does not exercise his own repurchase option. But the shared-appreciation mortgage may inadvertently cause much harsher results. Under such a scheme, at the end of the loan period, the borrower would have to pay back a substantial lump-sum amount reflecting the paper-gain appreciation, when he would typically have little liquidity. This would force the homeowner-borrower either to take a new conventional loan to cover the original one or to sell the house to a third party to meet his obligation. This would typically result in the same threat of evacuation, but also with

excessive searching, negotiation, and transaction costs with third parties. Conversely, under our model, the two parties are already well acquainted, and can start renegotiating way in advance of time  $t$ . Moreover, in our model, it is the lender—and not the borrower—who has to generate the financial resources to exercise the call option, if he so elects.

## **8. Conclusion**

The US housing industry is in dire need of institutional innovativeness for alternative development and finance schemes—ones that do not, however, systematically result in the ill effects of irresponsible lending, inefficient risk-shifting, and high foreclosure rates that have broader-based snowball effects for local economies. Building on empirical observations from the non-profit sector, and identifying more general institutional design principles—such as unbundling of property rights, gradual equity building, conditional subsidies, internalizing of risks and prospects within the local community, and employment of tax mechanisms to foster development—the paper delineates the legal and economic contours of two new solutions, which could be applied for restructuring both public initiatives and private contracting.

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Figure 1: Distribution of claims under conventional home buying with mortgage financing

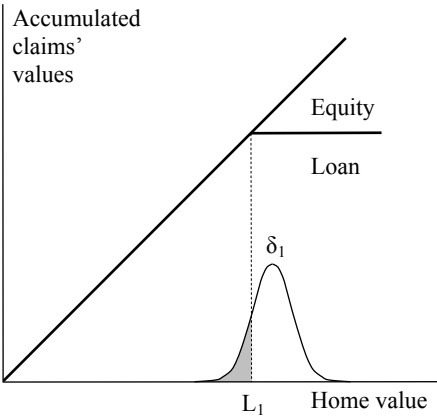




Figure 2: Distribution of claims under a CLT arrangement

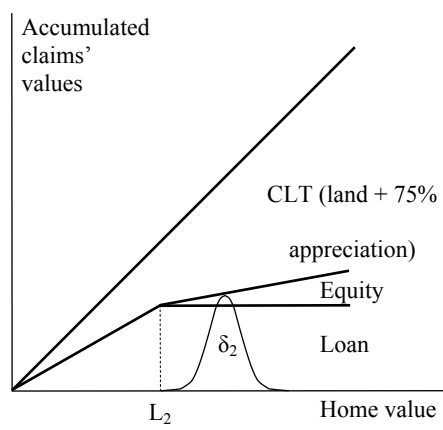


Figure 3: Distribution of claims under mortgage financing with buyer selling a purchase to  
option at strike price  $X$

