Second Liens and the Leverage Option

Adam J. Levitin*
Susan M. Wachter**

This Article demonstrates that the housing bubble was driven by second mortgages to a much greater extent than previously appreciated. A unique feature of American law allows homeowners to take out second mortgages, without the consent or even knowledge of the first mortgage lender. The result is an underpricing and overextension of credit as first mortgage lenders cannot control or properly price for the risks created by second mortgages.

Homeowners' unilateral right to encumber their properties with additional mortgage loans creates what we term the "leverage option" that is embedded in American mortgages. The leverage option is an unintended consequence of a federal law enacted to deal with seller financing arrangements that prevailed during the inflationary economy of the 1970s. The leverage option was of little importance until the housing bubble in the 2000s, as homeowners massively increased their leverage using second mortgages, often unbeknownst to first mortgage lenders, who were unable to price for the risk created by second mortgages on their collateral or for the risk of a credit-fueled asset price bubble.

This Article demonstrates the problems that the leverage option causes for lenders, for homeowners (who pay for it, regardless of whether they want it), for regulators, and for the economy at large. We propose a discrete legal change that will convert the leverage option from being a mandatory, embedded option to a bargained-for, unembedded option that will enable efficient pricing and force the information about total mortgage market leverage that is necessary for macroprudential financial stability regulation.

---

* Professor of Law, Georgetown University Law Center. This article has benefitted from a presentation at the Georgetown Law faculty workshop as well as from comments from John Brooks, Natania Locke, Michelle Kelly-Louw and David Vladeck, and research assistance by Mabel Shaw.

** Sussman Professor of Real Estate and Professor of Finance, The Wharton School, University of Pennsylvania. Dr. Wachter acknowledges assistance from the Research Sponsors Program of the Zell/Lurie Real Estate Center at The Wharton School of the University of Pennsylvania.

I. INTRODUCTION

Excessive home mortgage leverage played a critical role in inflating the housing bubble that wreaked havoc on the United States economy.[1] Borrowers bid up the price of housing using borrowed funds, and when the housing market collapsed, many borrowers found themselves "underwater" with no equity in their homes and subsequently defaulted on their loans.[2] The effects of these defaults reverberated throughout the financial system because of the scale of the unanticipated losses.[3]

Why were homeowners able to become so massively leveraged with mortgages? Part of the answer is that lenders did not know just how leveraged their borrowers were, much less the aggregate level of leverage in the home mortgage market, because of what we call the "leverage option." Accordingly, lenders were unable to properly price for the risk posed by increased leverage, and the underpricing and overextension of leverage fueled further leverage.

This Article shows that lenders were often unable to determine their borrowers' leverage—and could never determine market-wide leverage—because of a peculiar feature of American federal mortgage law. Contractual restrictions are a common feature of virtually all commercial lending contracts. Corporate loans and commercial mortgages frequently include contractual provisions that restrict the borrower's leverage and, in particular, restrict liens on property. Contractual leverage restrictions can also be found in residential mortgage loans in most common law countries, and most of the developed world generally regulates home mortgage leverage. Yet such contractual leverage restrictions are entirely absent from the American residential mortgage market; in fact, federal law actually *prohibits* private contractual limitations on home mortgage leverage.

This Article explores why leverage restrictions are absent from residential mortgage loan contracts in the United States. It shows that contractual restrictions on leverage are the unintended consequence of a provision in the federal Garn-St. Germain Depository Institutions Act of 1982 that prohibits enforcement of mortgage "due on sale" (DOS) clauses upon the encumbrance of a collateral property with a junior lien.[4] A DOS clause is a contractual provision that provides for the acceleration of the mortgage loan—making the entire outstanding loan balance immediately due and payable—if a defined trigger event, such

---

1. *See generally*, Adam J. Levitin & Susan M. Wachter, *Explaining the Housing Bubble*, 100 GEO. L.J. 1177, 1179–1258 (2011) (discussing underpricing of mortgage risk and its role in the financial crisis).

2. *See id.*

3. *See id.*

4. A junior lien is a lien with a subordinate priority to an existing ("senior" or "first") lien, giving the junior lienholder "second dibs" on the collateral, relative to the senior lienholder. We refer to these junior liens collectively as "second liens" although they are sometimes in fact third or even more junior priority.

as a sale, alienation, encumbrance, or other disposition of the collateral property occurs.

The Garn-St. Germain Act prohibition on enforcement of DOS clauses triggered by junior liens was an attempt to carve out the limited, conservative, traditional, second-lien lending market from the Act's provisions aiming to prevent the "creative financing" arrangements that flourished in the inflationary housing market of the late 1970s and early 1980s. In the face of rising interest rates, buyers often sought to assume sellers' below-market-rate mortgages, but often supplemented these assumed mortgages with various forms of second-lien seller financing. The result was to place tremendous interest rate pressure on financial institutions, which found themselves stuck with their below-market-rate mortgages being assumed by buyers with different credit profiles from the original borrowers.

Mortgage lenders attempted to prevent mortgage assumption through the use of DOS clauses—triggered by sale or encumbrance—but many states refused to enforce DOS clauses, ultimately resulting in Congressional intervention in the Garn-St. Germain Act. Garn-St. Germain permitted enforcement of DOS clauses generally, but prohibited their enforcement in specific situations, including encumbrance of the collateral property with a junior lien unassociated with a disguised sale.

The intention of the Garn-St. Germain appears to have been to protect legitimate, conservative second mortgage lending, but in so doing Garn-St. Germain unwittingly gave homeowners a unilateral option to increase their mortgage leverage through junior liens, irrespective of the wishes of their existing lender(s). Thus, embedded in every home mortgage is a "leverage option," previously unidentified in the literature. The leverage option is included in every home mortgage irrespective of whether the mortgagor wants or values the option.

The Garn-St. Germain leverage option has several negative effects. It harms first-lien lenders by potentially increasing the riskiness of their loan after it has been priced. It harms many mortgage borrowers by forcing them to purchase an unwanted option. And the leverage option creates negative externalities on neighboring properties and on the financial system and economy as a whole because of the cumulative effects of excessive home mortgage leverage that cannot be monitored or contractually prohibited.

The Garn-St. Germain leverage option disincentives lenders from monitoring leverage in the home mortgage market generally. Because lenders cannot discipline leverage by calling individual loans upon encumbrance with a junior lien, they have less incentive to monitor leverage on these collateral properties, much less to monitor aggregate, marketwide home mortgage leverage.

Yet monitoring aggregate, marketwide leverage is critical for lenders to correctly price for risk on individual loans. Mortgages are a relatively unique asset because of the spatially autocorrelated nature of real estate prices. The leverage on one property affects the value of other properties and thus the leverage on those properties: an increase in the value of one house increases the value of neighboring properties and vice-versa.

On an aggregate level, the overextension of lending threatens the liquidity and solvency of the financial system and future lending. This means that for a lender to understand the real leverage (meaning accounting for inflated home prices) and hence the risk on its own collateral properties, it is necessary to know the aggregate level of mortgage leverage in the economy. Yet there is presently no ability for any single lender to track aggregate market-wide leverage in real time. Garn-St. Germain fostered an informational vacuum about aggregate mortgage-market leverage, which in turn makes it impossible for lenders to accurately know the real risk of their own individual loans.

We argue that the Garn-St. Germain Act prohibition on DOS clauses triggered by junior liens should be repealed. Borrowers should not have an absolute right to increase their home mortgage leverage through junior liens. Instead, the right to increase the leverage on a property should be a bargained for matter between the borrower and lender. The leverage option should be unembedded from the mortgage. This means that borrowers who value the leverage option should have to pay full freight for it, while borrowers who do not value the option should not have to bear the higher mortgage costs that *all* borrowers must currently pay as lenders price to compensate for the risk of junior liens. In other words, borrowers who do not want the option to increase their leverage should not subsidize other, riskier borrowers who wish to have the option.

Making the leverage option a bargained-for contract right, rather than an inalienable property right, would eliminate this cross-subsidy and enable lenders to accurately price for the risks of leverage, both on their own loans and from the spillover effects of leverage on neighboring collateral properties. Just as important as eliminating inefficiencies caused by the Garn-St. Germain DOS prohibition are the regulatory consequences of making leverage a bargained-for contractual matter, rather than an absolute property right of consumers. Private market data is critical for oversight of the mortgage market place because it is the information source for government regulators. Absent the ability to monitor leverage for the private market, it is impossible for regulators to engage in effective oversight of the mortgage market. Thus, repealing the Garn-St. Germain DOS clause enforcement prohibition for junior liens is an important step toward improving regulatory oversight by enabling the production of the information necessary for monitoring the mortgage market.

This Article is organized as follows: Part I presents some evidence regarding the role of second liens in both increasing leverage

during the housing bubble and in subsequently complicating loan restructuring. Part II reviews the regulation of leverage in other sectors of the economy—commercial lending contracts, bank regulation, securities regulation, and commodities regulation. Leverage regulation, whether by contract or public law, is a key feature of these markets. Part II also considers regulation of home mortgage leverage internationally. Outside of the United States, private contractual regulation of home mortgage leverage is standard, and there is far more public regulation of the home mortgage market as well.

Part III explains why and how contractual limitations on leverage are forbidden in the American residential mortgage loans. The absence of leverage regulation for home mortgages arose from a particular historical economic setting and continued in part because of the politics of home mortgage lending, but the result is that borrowers can increase their leverage with junior liens without the consent of the senior lender. As Part III shows, the ability of borrowers to increase their lending ex post distorts the pricing of credit risk and creates a pecuniary externality on the entire economy. Part III also considers the political factors that militate against home mortgage leverage regulation in the United States and discouraged past reconsideration of the Garn-St. Germain provision that embedded the leverage option in American mortgages.

Part IV presents a proposal for addressing the credit risk distortion caused by junior liens. We propose eliminating the Garn-St. Germain Act's current grant of an absolute right for a borrower to increase leverage through junior liens, and instead, would enable ex ante bargaining over the option to increase leverage. We would also couple this bargaining with a mechanism for the effective monitoring of encumbrances so as to enable both private market discipline and more effective regulatory oversight. A conclusion follows.

II. SECOND LIENS AND THE HOUSING BUBBLE

A. Leverage and Default Risk

Increased mortgage leverage increases risk of mortgage default. Excessive leverage has a high correlation with foreclosure: the empirical literature has found that home-equity based borrowing from 2002–06 contributed significantly to an increase in household leverage and to mortgage defaults in 2006–08.[5] This finding is hardly surprising.

---

5. Atif R. Mian & Amir Sufi, *House Prices, Home Equity-Based Borrowing, and the U.S. Household Leverage Crisis*, 101 AM. ECON. REV. 2132, 2132–35 (2011). Mian and Sufi's study does not distinguish lien priority.

Highly leveraged borrowers have, by definition, less equity in their collateral properties. If the value of a borrower's collateral property declines, the borrower ends up owing more on the loans than the property is worth; such a borrower is said to have "negative equity" or to be "underwater." Indeed, given the high costs of selling a house and relocating—perhaps 5% of a home's price—even borrowers with nominal equity may be functionally underwater.

When a borrower ends up underwater, her behavioral incentives change. First, an underwater borrower has little incentive to care for, much less upgrade, the property, because any gain in the property's value goes to the lender(s). Thus, the value of a collateral property—and the lender's ability to be repaid from the collateral's value—may decline if the borrower is overleveraged and lacks an incentive to maintain the property.

Second, a borrower with negative equity may consider defaulting on the loan and abandoning the collateral property for cheaper alternative housing.[6] For example, if an underwater mortgagor's monthly mortgage payment is $2,000, but the borrower can rent an equivalent property for $1,500 per month, the borrower might rationally decide to strategically default and "walk away" from the underwater property.

Third, negative equity can serve as part of a "double trigger" for a default, even when the borrower does not wish to "walk away." When negative equity is combined with a shock to the borrower's income (such as from death, disability, dismissal, or divorce) or when life circumstances dictate that borrower must move (such as for work, health care, or changes in familial situation), then a default, and subsequent foreclosure, is likely.[7] If a borrower has positive equity and runs into financial distress or needs to move, the borrower can either refinance or sell the property. Not so with negative equity: refinancing will be impossible, and a "short sale" for less than the amount owed on the property will require negotiation with the lender. Negative equity, then, is half of the "double trigger" for foreclosure.

Fourth, highly leveraged borrowers may pursue higher-risk, higher-reward employment and investment strategies in an attempt to pay off their borrowings. For example, homeowners might do a cash-out refinancing and invest the cash in risky Internet start-ups or betting on horse races. The result might be that the homeowners lose their money and are unable to repay the loan. The greater volatility from such employment and investment strategies may in fact result in less borrower income and more defaults.

---

6. *See, e.g.*, Susan M. Wachter et al., *Bad and Good Securitization*, WHARTON REAL EST. REV., Fall 2009, at 23, 31.

7. *E.g.*, Christopher L. Foote et al., *Negative Equity and Foreclosure: Theory and Evidence*, 64 J. URBAN ECON. 234, 241 (2008); Christopher L. Foote et al., *Reducing Foreclosures* 17 (Fed. Res. Bank of Bos. Pub. Pol'y Discussion, Working Paper No. 09-2, 2009), https://www.bostonfed.org/ economic/ppdp/2009/ppdp0902.pdf [https://perma.cc/S38L-MJJG].

Finally, increased leverage can act as an unsustainable financial accelerator, resulting in asset price bubbles, particularly in housing.[8] Cheaper or greater leverage eases demand constraints in housing markets. Because the supply of housing is fixed, at least in the short term, it cannot adjust to increases in demand, so cheaper or greater leverage results in housing prices being bid up.

As housing prices get bid up, homeowners' leverage, measured as a loan-to-value (LTV) ratio, *appears* lower. Increased housing prices increase the denominator in the ratio and thus lower the ratio, which makes homeowners appear more creditworthy, enabling them to further increase their leverage.[9] Moreover, because the real estate appraisals are based on the sale prices of comparable properties, leverage-fueled home price increases affect the valuations of even unleveraged properties and enable other homeowners to borrow against inflated collateral values. The financial acceleration cycle of increased leverage and home prices is ultimately unsustainable, however, because there are limits to the supply of leverage and the demand for housing. When this limit is reached, home prices collapse, the true level of leverage becomes manifest and defaults proliferate as homeowners find themselves underwater. These defaults can, in turn, produce spillover effects that harm even prudent borrowers and lenders.

B. Spillover Effects of Leverage in Housing Markets

The effects of excessive home mortgage leverage spill over into the whole housing sector because of both the spatially autocorrelated and serially correlated nature of housing prices.[10] The correlated nature

---

8. *See* Richard J. Herring & Susan Wachter, *Real Estate Booms and Banking Busts: An International Perspective* 2–3, (Wharton Fin. Insts. Ctr., Working Paper No. 99-27, 1999), http://fic.wharton.upenn.edu/fic/papers/99/9927.pdf [http://perma.cc/ZAB8-HDXS]; *see also* Chao He et al., *Housing and Liquidity* 2–4, (July 14, 2013), http://tippie.uiowa.edu/economics/tow/papers/wright-fall2013.pdf [http://perma.cc/V658-QFK6].

9. *See* THORSTEIN VEBLEN, THE THEORY OF BUSINESS ENTERPRISE 105–106, 112–113 (1904) (noting a cycle in which an increase in collateral value increases credit availability, which then further increases collateral value); Nobuhiro Kiyotaki & John Moore, *Credit Cycles,* 105 J. POL. ECON. 211, 211–44 (1997) (theorizing cycle in which increasing collateral value increases credit availability, which then further increases collateral value); Atif Mian & Amir Sufi, *The Consequences of Mortgage Credit Expansion: Evidence from the U.S. Mortgage Default Crisis,* 124 Q.J. ECON. 1449, 1490–92 (2009) (finding empirical support for the Kiyotaki & Moore model).

10. *See, e.g.*, William C. Apgar & Mark Duda, *Collateral Damage: The Municipal Impact of Today's Mortgage Foreclosure Boom*, HOMEOWNERSHIP PRES. FOUND., 5 (2005), http://www.995hope.net/content/pdf/Apgar_Duda_Study_Short_Version.pdf [http://perma.cc/6P6K-ZNVW]; William C. Apgar et al., *The Municipal Costs of Foreclosures: A Chicago Case Study*, HOMEOWNERSHIP PRES. FOUND., 1–38 (2005), http://neighborworks.issuelab.org/resource/municipal_cost_of_foreclosure_a_chicago_case_study [http://perma.cc/3RJD-5PDE]; Dan Immergluck & Geoff Smith, Woodstock Inst., *There Goes the Neighborhood: The Effect of Single-Family Mortgage Foreclosures on Property Values*, WOODSTOCK INSTITUTE 9–11 (2005),

of house prices means that externalities abound in housing markets in a way they do not in other markets, because most asset classes have serially uncorrelated asset prices, and virtually no asset class except real estate has spatially correlated asset prices. For example, if *your* car is damaged and declines in value, it does not affect the value of *my* car, even if we park them next to each other.

Not so for housing. Housing prices are spatially autocorrelated with the prices of nearby properties,[11] as well as serially correlated.[12] If you fail to care for *your* house, for example, it will affect the value of *neighboring* houses. Conversely, if you take great care of your house and it is beautifully landscaped, it will improve the value of neighboring properties.

The serially correlated nature of housing prices presents particular negative externalities when a property goes into foreclosure. Borrowers tend to cease taking care of their properties when they go into foreclosure because it makes no economic sense for a borrower to spend money and effort on a property that is about to be forcibly sold. Thus, when a house goes into foreclosure, repairs are not done, lawns go unmown, and swimming pools stagnate and fester.[13] Vacant foreclosure properties also correlate with higher crime rates.[14] The result is to depress the price of nearby properties.[15] Multiple foreclosures in a neighborhood have even stronger spillover effects.[16] Moreover, because many municipal services are financed through property taxes, foreclosures can trigger a downward cycle of lower housing prices and reduced municipal services.[17] These externalities

---

http://www.woodstockinst.org/sites/default/files/attachments/TGTN_Report.pdf [http://perma.cc/M6HJ-TSDF]; Zhenguo Lin et al., *Spillover Effects of Foreclosures on Neighborhood Property Values*, 38 J. REAL EST. FIN. & ECON. 387 (2009); Charles W. Calomiris et al., *The Foreclosure-House Price Nexus: Lessons from 2007-2008 Housing Turmoil* 25 (Nat'l Bureau of Econ. Research, Working Paper No. 14294, 2008), https://www0.gsb.columbia.edu/mygsb/faculty/research/pubfiles/3306/Foreclosure%20House%20Price%20Nexus.pdf [https://perma.cc/JYX9-GGAQ]; Dennis R. Capozza et al., *Determinants of House Price Dynamics*, (Nat'l Bureau of Econ. Research, Working Paper No. 9262, 2002), http://www.nber.org/papers/w9262.pdf [http://perma.cc/SX78-RQ3W]; Jenny Schuetz et al., *Neighborhood Effects of Concentrated Mortgage Foreclosures* 15 (N.Y.U. Ctr. for L. & Econ., Working Paper No. 08-41, 2008), http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1270121 [http://perma.cc/46L3-Q6EY].

11. Sabyasachi Basu & Thomas G. Thibodeau, *Analysis of Spatial Autocorrelation in House Prices*, 17 J. REAL EST. FIN. & ECON. 61, 82 (1998); Kevin Gillen et al., *Anisotropic Autocorrelation in House Prices*, 23 J. REAL EST. FIN. & ECON. 5, 28 (2001).

12. *See generally* Karl E. Case & Robert J. Shiller, *The Efficiency of the Market for Single Family Homes*, 79 AM. ECON. REV. 125 (1989) (documenting serial price correlation in housing).

13. *See* Daniel DeNoon, *Foreclosures Worsen Spread of West Nile*, CBSNEWS.COM (Oct. 23, 2008, 4:00 PM), http://www.cbsnews.com/stories/2008/10/02/health/webmd/main4495947.shtml [http://perma.cc/GN3A-NNH8].

14. Ingrid Gould Ellen et al., *Do Foreclosures Cause Crime?* 74 J. URBAN ECON. 59, 65 (2013).

15. John Y. Campbell et al., *Forced Sales and House Prices*, 101 AM. ECON. REV. 2108, 2110, 2128 (2011).

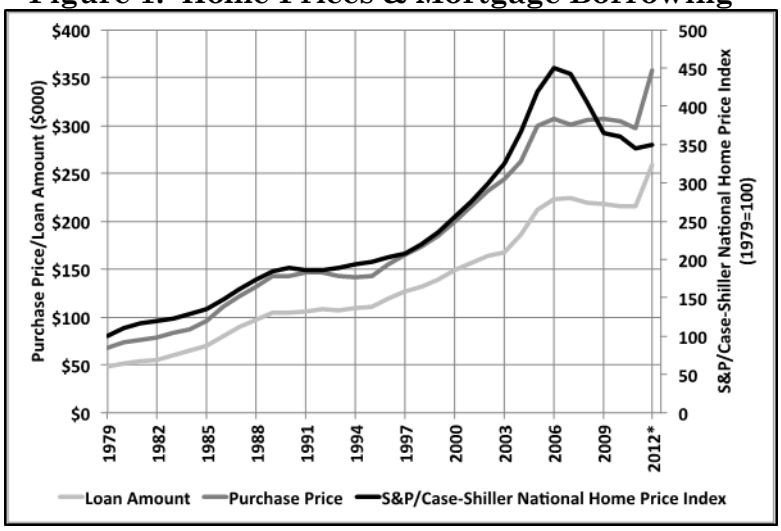
16. *See supra* note 10 and accompanying text.

17. *See* U.S. CONF. OF MAYORS, U.S. METRO ECONOMIES: THE MORTGAGE CRISIS 2 (2007), http://usmayors.org/metroeconomies/1107/report.pdf [http://perma.cc/FR5X-2DZM]; John Kroll, *Foreclosure Study Says Vacant Properties Cost Cleveland $35+ Million*, CLEVELAND.COM (Feb. 19,

are, by definition, not priced in individual lending decisions, but their aggregate effect can be significant. Several studies have found that home sale prices decline an average of 1% for each nearby foreclosure (usually within 0.1 miles).[18]

Excessive mortgage leverage had an enormous impact on the financial crisis. The rise in housing prices from 2003–07 was fueled by increased mortgage borrowing.[19] As Figure 1 shows, as home prices increased, so too did mortgage borrowing. Purchase prices and loan amounts went up in lock step.

Figure 1. Home Prices & Mortgage Borrowing[20]



Moreover, as Figure 2 shows, mortgage defaults and foreclosures increased dramatically starting in 2007 after the decline in housing prices that began in late 2006. The collapse of housing prices left many

---

2008, 12:34 AM), http://blog.cleveland.com/metro/2008/02/foreclosure_study_says_vacant.html [http://perma.cc/439A-73LJ].

18. John Y. Campbell et al., *Forced Sales and House Prices*, 101 AM. ECON. REV. 2108, 2130 (2011) (using Massachusetts dataset); John P. Harding et al., *The Contagion Effect of Foreclosed Properties*, 66 J. URBAN ECON. 164, 177 (2009) (using national dataset); Dan Immergluck & Geoff Smith, *The External Costs of Foreclosure: The Impact of Single-Family Mortgage Foreclosures on Property Values,* 17 HOUSING POL'Y DEBATE 57, 71–72 (2006) (using Chicago dataset); Kristopher Gerardi et al., *Foreclosure Externalities: New Evidence* 33 (Fed. Reserve Bank of Atl., Working Paper 2012-11, 2012), https://www.frbatlanta.org/media/Documents/research/publications/wp/2012/wp1211.pdf [https://perma.cc/PC3G-DBRK] (using national dataset).

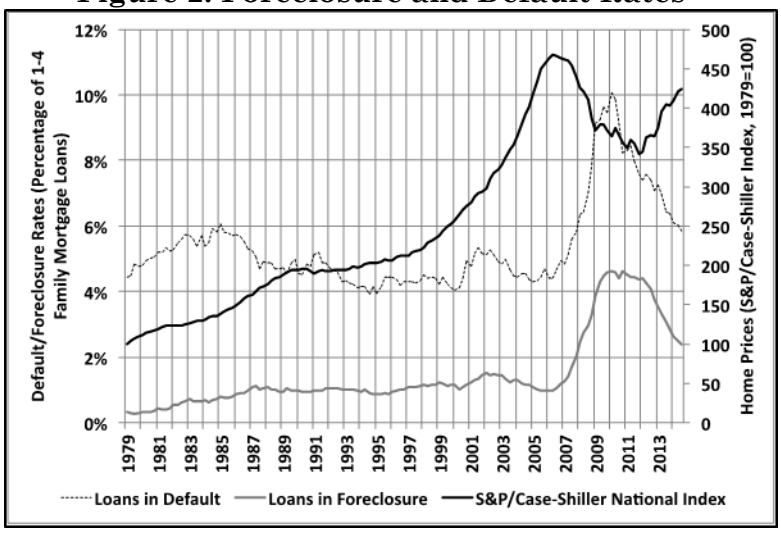
19. Levitin & Wachter, *supra* note 1, at 1232.

20. FED. HOUS. FIN. AUTH., MONTHLY INTEREST RATE SURVEY: ALL HOMES TBL. 9 (2015); S&P DOW JONES INDICES, S&P/CASE-SHILLER NATIONAL HOME PRICE INDEX (August 6, 2015, 3:47 PM), https://us.spindices.com/indices/real-estate/sp-case-shiller-us-national-home-price-index [http://perma.cc/R57J-H8RM].

borrowers—at one point over a quarter of mortgage borrowers—underwater,[21] and contributed to double-trigger defaults and a vicious cycle of foreclosures and declining home prices.

Increased leverage actually contributed to *both* parts of the default "double trigger." The first part is well understood: increased leverage decreases the homeowner's equity in the property, so if asset prices decline, the homeowner is more likely to end up with negative equity. This is particularly the case in a bubble because the numerator (loan amount) in a LTV ratio is real and fixed, but the denominator (value) is artificially inflated. In other words, in a bubble, borrowers are more highly leveraged than they realized.

Figure 2. Foreclosure and Default Rates[22]



Increased leverage also creates systemic risk, which can result in income shocks, creating the second part of the "double trigger," as both the financial sector and household balance sheets can be harmed in systemic crises.[23] In 2007–10, as housing prices collapsed and mortgage defaults rose, financial institutions cut back on lending because of impaired balance sheets and uncertainty about collateral valuation and borrower credit quality. Consumers also cut back on their spending as their real or perceived housing wealth diminished.[24] The decline in home prices starting in late 2006 thereby metastasized into a national (and global) economic contraction. Thus, excessive home mortgage leverage was a critical component of the housing bubble and collapse.

---

21. *See, e.g.*, Press Release, CoreLogic, CoreLogic Reports Equity Improves in Fourth Quarter 2012 3 (Mar. 29, 2013), http://www.corelogic.com/research/negative-equity/corelogic-q4-2012-negative-equity-report.pdf [http://perma.cc/94QR-DR7R].

22. MORTG. BANKERS ASS'N, NATIONAL DELINQUENCY SURVEYS (2015).

23. ATIF MIAN & AMIR SUFI, HOUSE OF DEBT 9 (2014).

24. *Id.* at 5–7.

If buyers were forward-looking, they would see that housing prices would inevitably fall after an easing of demand constraints. Housing prices can be goosed by reducing demand constraints only up to a finite point.[25] Once constraints are reduced to zero, prices cannot be further increased.[26]

The limit on reduction of demand constraints means there is a fundamental instability, as prices will rise and will generate expectations of future price increases. These price increases, however, must themselves eventually plateau. Once rational expectations account for this, prices will actually decrease because previous price expectations were capitalized into prices and will now be deducted. And because of the limit on reducing demand constraints, supply will inevitably overtake unconstrained demand, resulting in a price decline. Indeed, this is exactly what happened in 2007–08: housing prices fell as foreclosure inventories increased (itself driven in part by price declines) and new construction spurred by the 2003–06 leverage-fueled boom came available.

C. The Role of Second Liens in Housing Leverage

Previous analyses of leverage during the United States housing bubble have looked solely at LTV[27] ratios on first-lien loans, as that is the most readily available data.[28] Moreover, first-lien LTV data are what was generally available to commercial participants during the bubble years itself. Figure 3 shows LTV ratios on first-lien loans over time. The data come from the FHFA's Monthly Interest Rate Survey, and include only conventional first-lien purchase money loans.[29] Thus, the data do not capture increased leverage from cash-out refinancings. What Figure 3 shows is that there was no significant change in first-lien purchase-money leverage during the bubble. While there was a slight uptick, from 2003 to 2007, it was well within historical LTV ratio ranges. Thus, both commercial participants looking at LTV ratios during the bubble itself as well as scholars looking at LTV data after the bubble would conclude, from this data, that there was not a significant increase in mortgage leverage during the bubble.

---

25. *See* Levitin & Wachter, *supra* note 1, at 1194, 1999, 1201–02; *see also* Randall Wright & Venky Venkateswaran, *Pledgability & Liquidity: A New Monetarist Model of Financial and Macroeconomic Activity*, 28 NAT'L BUREAU ECON. RES. MACROECONOMICS ANN., 2014 at 227, 262–64 (2014).

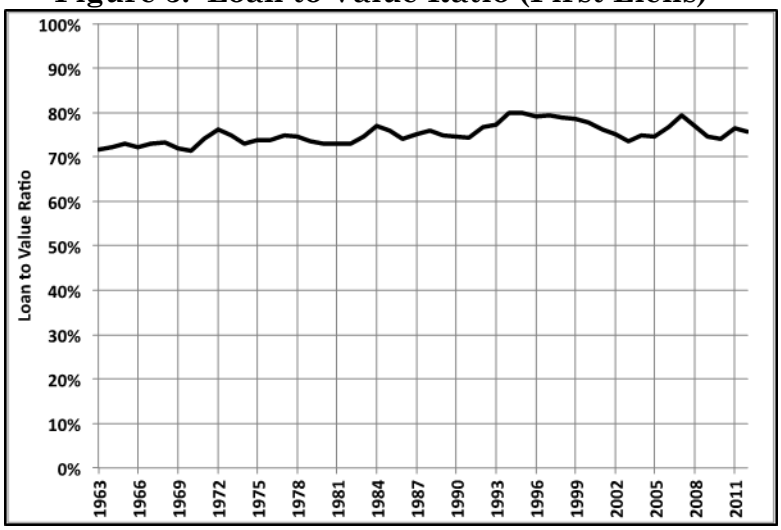
26. Levitin & Wachter, *supra* note 1, at 1201–02.

27. In this article we use "LTV" to refer to first-lien LTV, not cumulative LTV of all liens, unless the context indicates otherwise.

28. *See, e.g.*, John Campbell & João Cocco, *A Model of Mortgage Default* 70 J. FIN. 1495, 1497,.

29. *See* FED. HOUS. FIN. AUTH., *supra* note 20.

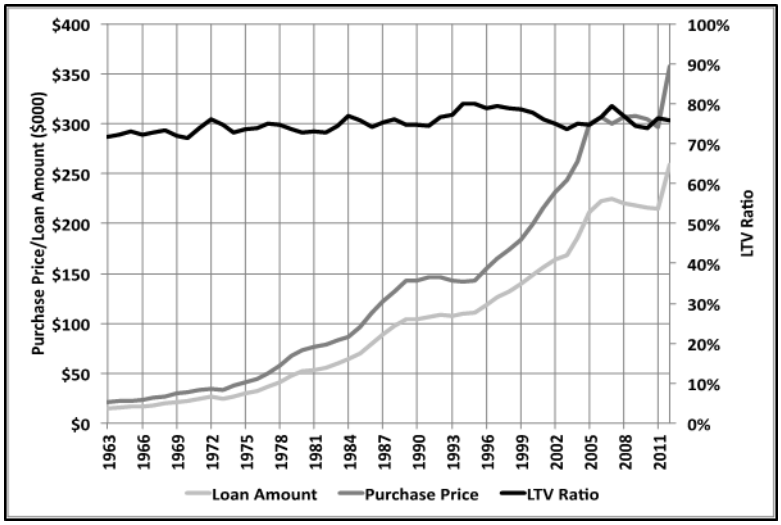
Figure 3. Loan to Value Ratio (First Liens)[30]



Instead, the major observable change was in home prices, and thus, loan amounts; as Figure 4 shows, home prices and first-lien loan amounts surged in lock step, so first-lien LTV ratios remained constant. Thus there would have been no way of identifying an increase in default risk or systemic risk by monitoring purchase-money residential mortgage LTV ratios.

Figure 4. Purchase Price, Loan Amount, and LTV Ratios Over Time[31]

30. *Id.* at tbl. 9.
31. *Id.*



Analyses of the United States housing market that look solely at first-lien LTV ratio data are misleading, however, because they do not capture the total level of mortgage leverage and thus default risk. The total level of mortgage leverage is captured by the combined loan-to-value (CLTV) ratio, which is the loan-to-value ratio for all mortgages on a property combined.

Figure 5 shows both LTV and CLTV ratios over time. Remarkably, Figure 5 represents the first time in the scholarly literature that market-wide LTV and CTLV data have been plotted together over time.[32] The LTV and CLTV data come from different data sets, which may explain why the CLTV ratio is slightly lower than the LTV for some years. The LTV data is again from the FHFA's Monthly Interest Rate Survey, while CLTV data is from Intex, a commercial database of securitized loans. The Intex database has CLTV data for loans at origination only if such data are provided by securitization trustees. While the Intex data is likely to include "piggyback" second mortgages—that is second mortgages made at or around the same time as the first-lien loan—it is unlikely to include "subsequent" seconds, made at some point after the first-lien loan. Thus, the CLTV ratio data we have almost assuredly *understates* CLTV ratios on a market-wide basis. Yet the overall picture is unmistakable.

Figure 5. LTV and CTLV Ratios Over Time[33]

---

32. Andrew Davidson et al., *Mortgage Default Option Mispricing and Procyclicality, in* HOMEOWNERSHIP BUILT TO LAST 207, 290 (Eric S. Belsky et al. eds. 2014) (presenting the CLTV data, but not in relation to the LTV data).

33. *See* FED. HOUS. FIN. AUTH., *supra* note 20.

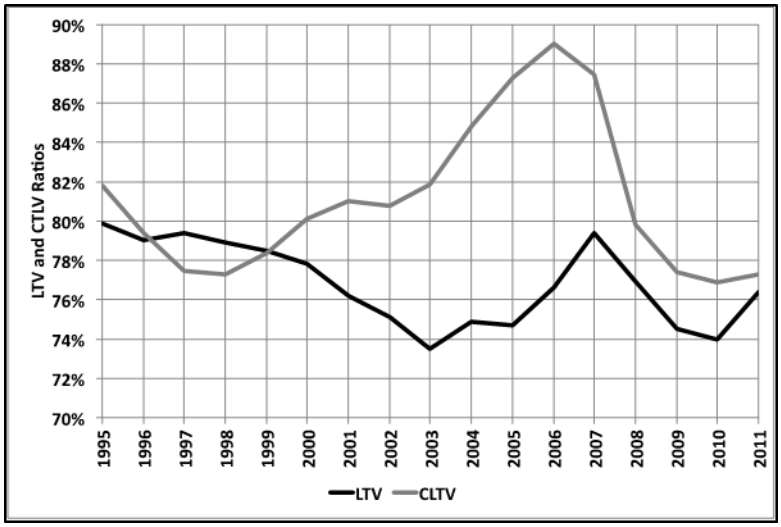
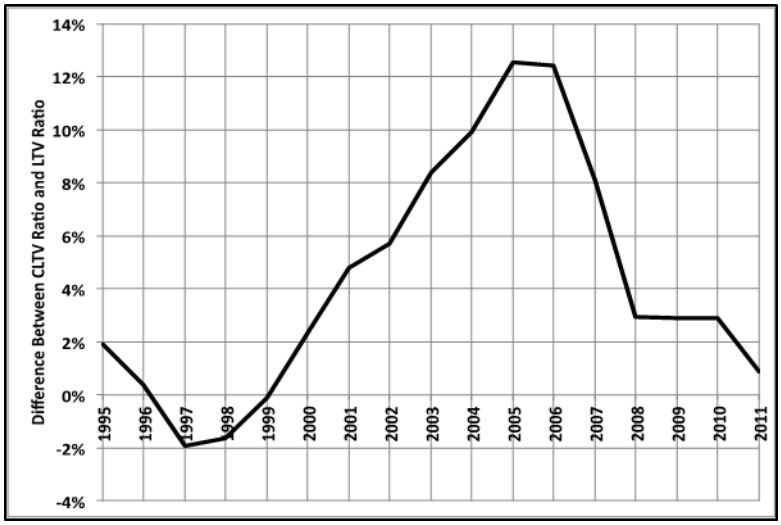


Figure 5 shows that CLTV ratios rose dramatically from 2003–07, even though LTV ratios remained within historical ranges. In other words, what Figure 4 shows is that borrowers became significantly more leveraged during the housing bubble, but that the increased leverage was from *junior liens*, not senior liens. Most of the increase in home mortgage leverage during the bubble, as measured in LTV ratios, was from junior liens. Because market-wide data on junior liens was not readily available to market participants or regulators, no one was able to tell, in real time, just how highly leveraged the mortgage market was becoming. And again, we believe the CLTV data in Figure 5 understates the true market-wide CLTV.

Figure 6 shows the difference between CLTV and LTV ratios over time. It shows that CLTV ratios were more than 12% higher than LTV ratios during the height of the bubble. In other words, a first-lien lender might have thought it was making an 80% LTV ratio loan, but the borrower's total LTV ratio might have been 92%, meaning that the borrower would have little equity in the property after accounting for sale and moving costs. Thus, even a small decline in property values would put the borrower underwater on a CLTV ratio basis, even if the first-lien loan was still above water.

Figure 6. Difference Between CLTV Ratio and LTV Ratio[34]

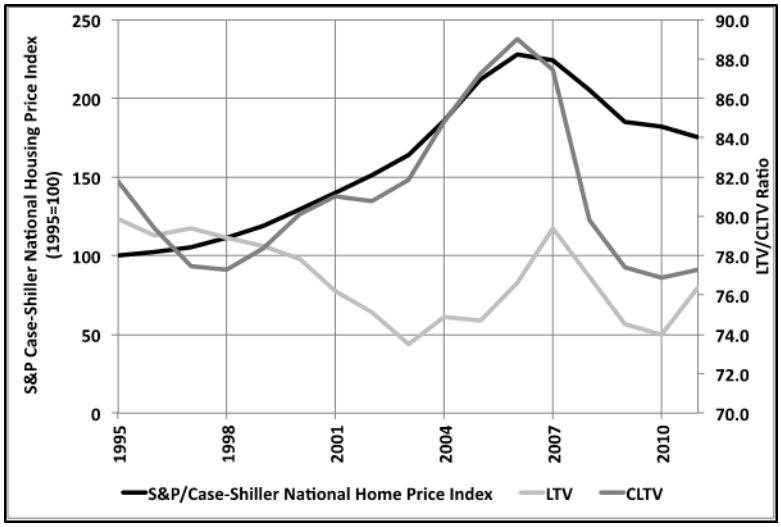
34. *See id.*



The contribution of second liens to the United States housing bubble has not previously been fully appreciated by market participants or the scholarly literature. But as Figure 7 indicates, the increase in CLTV ratios at purchase closely tracked the increase in housing prices. This increase was attributable in large part to second-lien lending because mean first-lien LTV ratios did not grow nearly enough during the bubble to account for the increase and in fact remained within their historical range.

Figure 7. LTV Ratio, CLTV Ratio, and Home Prices[35]

35. *Id.*; S&P DOW JONES INDICES, *supra* note 20 (monthly June index values, 1979=100).



We emphasize that the data we present was not available to most market participants during the bubble. No one—neither market participants nor regulators—had a market-wide view of total mortgage leverage.[36] To be sure, during the housing bubble there was anecdotal information available about loosened credit standards and an expansion of mortgage credit, including through second-lien lending. But lenders did not know exactly how much additional mortgage credit was in the economy, nor did they know whether the additional leverage was sustainable, much less for how long. More importantly, competitive pressures prevented lenders from pricing adversely to this risk; any individual lender that responded by tightening credit would lose market share in the short term for an uncertain long-term benefit. Publicly traded firms, be they lenders or secondary market institutions, could not afford to tighten credit without losing market share and having their stock prices suffer.[37]

Given that housing prices are spatially autocorrelated—a unique feature of housing as an asset—as well as serially correlated,[38] even if a lender has made a loan that is sound when viewed in isolation, the loan's performance may still be affected by the performance of other loans made by other lenders. Thus, total housing market leverage is actually hugely important for a lender to know when deciding how to price for risk.

---

36. Economists John Geanakoplos and Lasse Heje Pedersen claim that "[m]onitoring leverage is 'easy' " in that there are clear, observable measures such as loan-to-value ratios, that do not depend on models. John Geanakopolos and Lasse Heje Pedersen, *Monitoring Leverage* 2 (Cowles Found., Discussion Paper No. 1838, 2013). We are less sanguine. Measures like loan-to-value ratios are dependent upon valuations and appraisals, which are often model-dependent. But more importantly for our purposes here, even if leverage metrics are less manipulatable than other metrics, they are not necessarily observable.

37. *See* William W. Bratton & Michael L. Wachter, *The Case Against Shareholder Empowerment*, 158 U. PA. L. REV. 653, 717–26 (2010).

38. *See supra* Part I.B.

Even today, there is still no complete source for market-wide CLTV data, including in commercial databases.[39] CLTV ratios remain largely untrackable and unmonitorable because there is no duty for lenders to report junior lien lending on any source that matches the junior lien with any senior liens. The junior lien will be filed (typically on paper) in the local county recording office, where it can be matched with any senior liens, but turning such data into a commercially useable electronic database would involve a tremendous effort.

Not only was a market-wide picture unavailable during the bubble, but first-lien lenders were often unaware of the CLTV picture for their own collateral properties.[40] In some circumstances, the first-

---

39. There are four major mortgage datasets used commercially: CoreLogic, McDash, Intex, and ABSLoanNet. There are differences in the make-up of the loans in each database, but a common feature is that they all lack reliable and complete CLTV data. For example, CoreLogic's database is missing CLTV data for 65% of prime loans and has no CLTV data whatsoever for subprime loans. E-mail from Dr. Laurie Goodman, Dir., Hous. Fin. Pol. Ctr., Urban Inst., to Professor Adam J. Levitin (Dec. 31, 2014) (on file with authors); e-mail from Dr. Sam Khater, CoreLogic, to Professor Adam J. Levitin, Professor, Georgetown (Jan. 7, 2015) (on file with authors). Likewise, the McDash loan level database has the most complete coverage of the Agency market (loans owned or guaranteed by Fannie Mae, Freddie Mac, or Ginnie Mae), but lacks CLTV data. E-mail from Larry Cordell, Vice President, RADAR Grp., Fed. Reserve Bank of Phil., to Professor Adam J. Levitin (Jan. 3, 2015) (on file with authors). The Intex database, which is primarily a tool for conducting valuations of structured securities, has CTLV data, but only for securitized loans (agency and non-agency), and has limited coverage of subprime securitizations. *Id*; *see also Global Regions*, INTEX, http://www.intex.com/main/ solutions_markets.php (last visited July 6, 2015) [http://perma.cc/W26Q-3YFA]. Similarly, ABSNet Loan HomeVal had CLTV data, but only for non-agency securitizations. ABSNET LOAN HOMEVAL, http://www.lewtan.com/products/absnetloan_homeval.html (last visited July 6, 2015) [http://perma.cc/6VED-VE5R].

It is possible to match credit reporting bureau data with mortgage databases, but this is a difficult task that federal regulators have only done post-crisis, and this data-matching still is not a complete market-wide picture. Moreover, it is necessarily inexact because credit reports do not indicate collateral property locations or lien priority. Thus, a borrower could have two mortgages, and it would be impossible to tell from a credit report, whether they were a first and second lien on the same property or both first liens on different properties.

40. Thus, a study by economists John Griffin and Gonzalo Maturana finds that over 13% of loans securitized in private-label securitizations between 2002 and 2007 were incorrectly reported as having no second lien. John M. Griffin & Gonzalo Maturana, *Who Facilitated Misreporting in Securitized Loans* J. FIN. (forthcoming) (manuscript at 2); *see also* Tomasz Piskorski et al., *Asset Quality Misrepresentation by Financial Intermediaries: Evidence from the RMBS Market*, 70 J. FIN. (forthcoming 2015). Many of these unreported second liens were in fact made by the first-lien lender!

While 13% may not appear to be a particularly high percentage, these liens increased leverage on a dollar-for-dollar basis. Moreover, the article only addresses private-label securitizations. Private-label securitizations are not, however, where one would expect to find large numbers of undisclosed second liens. Many second-lien loans were piggybacks, undertaken to enable GSE purchase of the first-lien loan. Thus, the economy-wide incident of undisclosed second liens is likely substantially higher than in Griffin and Maturana's sample.

Griffin and Maturana's article shows that it is possible to discover the existence of second liens, but it also demonstrates how difficult it is. Griffin and Maturana had to "marry" two separate databases, which do not use the same unique loan-level identifier. This meant that they had to

lien lender would know of a simultaneous piggyback second mortgage, but not all piggybacks were known to first-lien lenders, and subsequent seconds (so-called "silent seconds") were by definition unknown to first-lien lenders. Thus, a first-lien lender could believe it was lending at 80% LTV (and CLTV), but within days or months hence, the CLTV could have soared to 100% without the first-lien lender being aware.

Even when first-lien lenders knew of piggybacks, they often had no reason to care. As we shall see, first-lien lenders are legally prohibited from taking meaningful action against borrowers who increase CLTV by means of junior liens.[41] Thus, knowledge of specific cases of increased CLTV was not actionable by first-lien lenders other than to adjust pricing for future mortgages, which would do little to rectify the problem for existing loans. By the time lenders adjust, it might be too late to avoid a junior-lien fueled bubble.

Moreover, first-lien mortgages that had a piggyback mortgage were likely to be sold to Fannie Mae and Freddie Mac, so the first-lien mortgage loans' performance was not a concern of the first-lien lender. The reason for a borrower doing a piggyback second-lien mortgage rather than just having a first-lien mortgage for a larger amount (and higher LTV ratio) is that Fannie Mae and Freddie Mac are statutorily forbidden from purchasing mortgages with LTV ratios above 80% unless there is private mortgage insurance (PMI) on the loan.[42] PMI premia add to the cost of borrowing for higher LTV ratio loans. Thus, a borrower who wanted to borrow above 80% LTV ratio without paying for PMI would get a first-lien loan for 80% LTV ratio and a piggyback second-lien loan for the additional amount. In such cases, the first-lien lender would have no reason to care about the CLTV ratios because the loan would be sold to Fannie Mae or Freddie Mac.[43]

---

engage in an address-matching protocol with the data. Even if one can do such matching well, the data is not available in real time. The second-lien data comes from a database drawn on county real estate records. These records are often recorded with a significant lag, thus frustrating any sort of real-time analysis. Moreover, by definition, a second lien is recorded after the first lien. Thus, the first-lien lender can never know before lending with certainty about the extent of second liens that will be subsequently placed on the property. Most importantly, Griffin and Maturana's data was not available during the bubble.

We have been able to identify only one source in the entire literature that indicates an awareness of rising CLTV prior to 2008. The source is a chart reprinted in several sources that attribute it to an April 2007 "Lunch and Learn" presentation given by Thomas Zimmerman at UBS. We have been unable to track down the original source. This chart indicates that there was rising CLTV on adjustable rate mortgages along with a decline in other indicators of the quality of mortgage lending declined. While the reprinted chart indicates that the data is from Loan Performance (now CoreLogic), this database does not have CLTV data for subprime loans, and has it for only about two thirds of prime loans. Most importantly, by the time this data started to become available, the housing market was already in decline; this data was too late to foster market discipline.

41. *See infra* Part III.A.

42. 12 U.S.C. § 1454(a)(2) (2012) (Freddie Mac); 12 U.S.C. § 1717(b)(2) (2012) (Fannie Mae).

43. Michael LaCour-Little, Wei Yu, and Libo Sun have found that a substantial part of the growth of junior mortgages were home equity lines of credit (HELOCs), but that these HELOCs were used to fund downpayments on investment properties, rather than to pay down other higher interest rate debts. Michael LaCour-Little et al., *The Role of Home Equity Lending in the Recent Mortgage Crisis*, 42 REAL EST. ECON. 153, 187 (2014).

Fannie Mae and Freddie Mac, in turn, could not know about the piggyback second. Even if they did, they would not have cared because they would have assumed that they were protected from losses in a foreclosure because of the cushion of the borrower's equity and the second-lien mortgage; the first-lien mortgage owned by Fannie or Freddie did not go above 80% LTV because of the statutory restrictions on Fannie and Freddie. The behavioral effects of negative equity were simply not a concern for Fannie Mae and Freddie Mac during the bubble, in part because it was a largely unknown phenomenon, and in part because large-scale negative equity seemed such a remote possibility given the past movement of housing prices.

All in all, then, junior liens added significantly to total mortgage market leverage during the housing bubble and thus were an important contribution to the bubble. Market participants, however, were typically unaware of the CLTV ratios on their first-lien loans and had no recourse if they did not want increased CLTV ratios. Moreover, neither market participants nor regulators were aware of market-wide CLTV ratios, even though market-wide CLTV ratios affect loan performance because of the serially correlated nature of housing prices. Thus, even as total housing leverage soared during the housing bubble, neither market participants nor regulators were able to observe the change, and the first-lien LTV ratio information that was readily available was in fact misleading because the increase in CTLV ratios was from second liens, not first liens.

Second liens not only contributed to increased leverage, but also contributed to subsequent defaults.[44] Studies have also found that the presence of a junior lien increase default risk on the first lien.[45] Indeed, the growth in second-lien lending in general,[46] and of piggyback lending in particular,[47] is associated with higher subsequent default rates.

---

44. The problems created by second liens should not have been surprising. In 1936, Marriner S. Eccles, the Chairman of the Board of Governors of the Federal Reserve, wrote that "the second mortgage is unsound from the point of view of the borrower, unsound from the point of view of the first-mortgage lender, and unsound from the point of view of the mortgage system as a whole." Letter from Marriner S. Eccles to Edward E. Brown, President, The First Nat'l Bank of Chi. 3 (June 25, 1936) (on file with the University of Utah). Unfortunately, many of the lessons of the pre-New Deal mortgage market were forgotten during the housing bubble. *See* Adam J. Levitin & Susan M. Wachter, *The Public Option in Housing Finance*, 46 U.C. DAVIS L. REV. 1111, 1170 (2013).

45. Laurie Goodman et al., *Second-liens: How Important?*, 20 J. FIXED INCOME, Fall 2010, at 19, 30.

46. LaCour-Little, *supra* note 43, at 187.

47. Michael LaCour-Little et al., *What Role Did Piggyback Lending Play in the Housing Bubble and Mortgage Collapse?*, 20 J. HOUS. ECON. 81, 82 (2011).

Second-lien lending played a large and underappreciated role in the housing bubble in the United States.[48]

D. Second Liens and Restructuring

The presence of second liens can also inhibit loan restructuring, which may have exacerbated the collapse of the housing bubble. First-lien lenders are often loathe to make concessions to a borrower if there is a junior lien on the property because the benefits inure to the junior lienholder as well as to the borrower. Indeed, this is particularly the case with principal reductions.

If a first-lien mortgage is refinanced, it goes to the back of the line in terms of priority: the first lien will become the junior-most lien, and the second lien will become the senior-most lien. This result can be avoided if the junior lienholder(s) agree to subordinate their liens to the refinanced first-lien mortgage, but they have little reason to do so absent payment. Even if the junior lien is out of the money, it still has hold-up option value. Thus, junior mortgages can frustrate refinancings that would benefit both borrowers and first-lien lenders.

Similarly, a second-lien lender can effectively veto a short sale that would benefit a first-lien lender by refusing to release its lien without being paid in part or full. Suppose that a property had a first lien for $160,000 and a second lien for $40,000, but that the property's value had fallen to $150,000. A sale of the property would not satisfy the first lien, much less the second. The first-lien lender might consent to a short sale, in which it would get the $150,000 sale proceeds, but the second-lien lender would likely not consent to the sale unless it received some of the proceeds, even though it would receive nothing if the first lien foreclosed (and its lien would be discharged). Because of the holdout problems caused by second-lien lenders, the federal government's mortgage modification program pays a special bounty for the forgiveness of underwater second liens.[49] An underwater second-lien lender can thus holdup a short sale.

All of these problems existed following the collapse of the housing bubble; they were often exacerbated by a principal-agent problem in mortgage servicing,[50] as the servicers of first-lien loans sometimes owned the second-lien loans, and were incentivized to either modify first-lien loans in a way that benefitted the second-lien loans or failed to undertake modifications at all lest they be accused of self-

---

48. It bears emphasis that our discussion of the importance of junior liens is restricted to the U.S. housing bubble. There were parallel housing bubbles in Ireland, Spain, and the UK, none of which involved second mortgages. These countries have different housing finance systems than the United States, but the expansion of credit in all cases occurred through a relatively unregulated financing channel (*cajas* in Spain; securitization in Ireland and the UK). The point here, however, is simply that there is more than one way for a bubble to develop.

49. *Second Lien Modification Program*, MAKINGHOMEAFFORDABLE.GOV, http://www.makinghomeaffordable.gov/programs/lower-payments/Pages/lien_modification.aspx (last visited July 6, 2015) [http://perma.cc/7TUZ-KLUC].

50. *See generally* Adam J. Levitin & Tara Twomey, *Mortgage Servicing*, 28 YALE J. ON REG. 1 (2011).

dealing.[51] Because second liens inhibit loan restructuring, they contribute to the likelihood of foreclosure and thus all of the attendant externalities that result from foreclosures.

All in all, we see that borrowers' ability to lever up with second liens creates problems for their first-lien lenders as well as a range of undesirable spillover effects. Not surprisingly, as the following section discusses, second liens are commonly regulated either by contract or statute, in most markets. The United States housing market, however, is a $10 trillion outlier.

III. REGULATION OF SECOND LIENS

Increased borrower leverage is a common concern for creditors in all financing transactions because it reduces a creditor's likelihood of repayment. For secured creditors—those creditors whose loans are secured by collateral—the possibility of competing liens presents a particular type of leverage concern.

A lien can be thought of as giving a creditor "dibs" on the pledged collateral asset—the right to collect from the value of that asset before other competing creditors. Although a secured creditor might have "first dibs," it might still not want anyone else to even have "second dibs" on its collateral. First, additional liens on an asset reduce the borrower's equity in the asset. The debtor's behavior, such as care for the asset, may change as the debtor's equity in the property diminishes. Thus, a secured creditor might not want additional leverage on the asset.

Second, the secured creditor must also always worry whether its lien is "perfected," meaning that the lien gives it dibs against other creditors, not just against the debtor. Perfection turns on technical legal details, and if a secured creditor's lien turns out to be unperfected, and there is a perfected junior lien on the asset, the junior lienholder will be able to recover the asset's value before the unperfected senior creditor. Finally, a junior lienholder can complicate the sale, refinancing, or foreclosure of the asset by refusing to re-subordinate or release its lien absent a payoff.

It is not surprising, then, that covenants restricting additional debt and liens are a standard feature of commercial financing agreements.[52] Likewise, leverage is regulated in key financial

---

51. Vicki L. Been et al., *Sticky Seconds: The Problems Second Liens Pose to the Resolution of Distressed Mortgages*, 9 N.Y.U. J. L. & BUS. 71, 100–02 (2012).

52. WILLIAM W. BRATTON, CORPORATE FINANCE: CASES AND MATERIALS 270 (6th ed. 2008).

markets—banks and other financial institutions,[53] securities markets,[54] and commodities markets[55] all have leverage regulation, be it by federal law or by self-regulation. All four cases—commercial lending, financial institutions, securities lending, and commodities contracts—involve regulation by the parties that bear the risk of financial failure, namely private creditors in commercial loans, and the government for financial institutions, including those that make margin loans. In other words, the ability to regulate leverage is understood as being a central feature of financial risk regulation by private and public parties.

Internationally, too, leverage regulation is common, both in private contracts and in public regulation. Yet, as we shall see, this fundamental tool is surprisingly forbidden for residential mortgage lenders in the United States and is virtually absent from public regulation.

---

53. 12 U.S.C. §§ 1426 (2012) (Federal Home Loan Banks required to have a debt to asset ratio of 95%); 12 U.S.C. § 1790d (2012) (insured credit unions); 12 U.S.C. § 1831o (2012) (depositories); 12 U.S.C. § 3907 (2012) (depositories and international banks); 12 U.S.C. § 4612 (2012) (Fannie Mae & Freddie Mac required to have debt to asset ratio of 97.5% with additional 45 basis points of capital for off-balance sheet guarantees); 12 U.S.C. § 5371 (2012) (leverage regulations for bank holding companies and certain nonbank financial companies); 12 C.F.R. pt. 3, App. A (2015) (regulatory implementation for National Banks); 12 C.F.R. pt. 567 (2015) (regulatory implementation for federal thrifts); 12 C.F.R. pt. 702 (2015) (insured credit unions); 17 C.F.R. § 240.15c3-1(a)(1)(i) (2015) (restricting broker-dealers' aggregate indebtedness is limited to 1500% of its net capital, meaning a debt to asset ratio of 93.75%); 17 C.F.R. § 240.15c3-1(a)(6), (9) (2015) (additional leverage requirements for market markets, specialists and reverse repo transactions); *Risk-Based Capital*, NATIONAL ASSOCIATION OF INSURANCE COMMISSIONERS (Feb. 27, 2015), http://www.naic.org/cipr_topics/topic_risk_based_capital.htm [http://perma.cc/ G6QR-NUAR] (National Association of Insurance Commissioner risk-based capital guidelines for insurance companies).

54. Federal law restricts leverage on margin loans used as purchase money financing for securities. 15 U.S.C. § 78g (2012); 12 C.F.R. pt. 221 (2015) (Regulation T, applying to margin loans by broker-dealers against exchange-traded securities). The Federal Reserve Board subsequently adopted regulations that extended Regulation T to bank security lending (Regulation U), securities lending by all other domestic lenders (former Regulation G, combined into Regulation U in 1998), and securities lending by foreign lenders (former Regulation X).

Under Regulation T, the Federal Reserve Board sets the initial margin requirement, which is a maximum leverage level permitted at the time the loan is made. Since 1974, the initial margin or equity in a security position required under Regulation T is has been set at 50%, which is the same as limiting the initial loan-to-value ratio for securities at 50%. 15 U.S.C. § 78g; 12 C.F.R. § 220.12 (2015) (margin limits); Simon Kwan, *Margin Requirements as a Policy Tool?*, FEDERAL RESERVE BANK OF SAN FRANCISCO (Mar. 24, 2000), http://www.frbsf.org/economic-research/publications/economic-letter/2000/march/margin-requirements-as-a-policy-tool/ [http://perma.cc/QL3E-QQ8C].

Additionally, exchanges and clearinghouses impose their own leverage restrictions on margin loans and commodities futures contracts. *See, e.g.*, NYSE Rule 431(c), http://www1.nyse.com/nysenotices/nyse/rule-interpretations/pdf?number=191 [http://perma.cc/26RA-5DQ2]; FINRA Rule 4210(c), https://www.finra.org/sites/default/files/Industry/p122203.pdf [http://perma.cc/26RA-5DQ2]; Adam J. Levitin, *The Tenuous Case for Derivatives Clearinghouses*, 101 GEO. L.J. 445, 451–53 (2013).

55. Federal law also restricts leverage for some commodities futures contracts, 7 U.S.C. § 23 (2012); 17 C.F.R. §§ 31.7–.8 (2015) (margin requirements for "leverage transactions" contracts for the delivery of silver or gold bullion, bulk silver or gold coins, or platinum); 17 C.F.R. § 41.45(b) (2015) (securities futures). For commodities futures, margin requirements are set by private boards of trade and clearinghouses. Levitin, *supra* note 54, at 451–53.

A. Contractual Regulation

Commercial lending contracts of all sorts typically have some sort of limitation on debt or liens. Three types of contractual restrictions are common. First is a covenant prohibiting or restricting borrowers from incurring additional debt in order to protect the lender against claim dilution.[56] Sometimes the prohibition will be absolute, but typically additional debt will be allowed as long as certain financial ratios, such as total debt to net assets and debt service coverage, are maintained or other conditions are met.[57] Debt covenants will also often restrict transfers that are functional equivalents of borrowing, such as financial leases and guaranties.[58]

The second type of contractual limitation is a covenant to maintain various financial conditions. Typical financial conditions include a minimum level of net worth, as either a dollar amount or ratio.[59] Such a covenant frequently dovetails with a debt restriction. In any event, it is designed to ensure a sufficient equity cushion to protect the creditor, either in absolute or percentage terms.

The third type of covenant is a covenant restricting liens, mortgages, and other encumbrances, including functional equivalents, such as sale and leasebacks, again with the goal of preventing dilution of the creditor's claim.[60] To the extent that the debtor permits or suffers a lien to be incurred on its property, the lienholder may have a prior claim to that property over the latter lender.[61] Another type of lien restriction is a "negative pledge" clause, in which the debtor covenants that it will not allow any lien to be created unless the lender is also equally and ratably secured.[62]

These covenants are all negotiated contractual provisions; there are no legal restrictions on what can or cannot be in such covenants. If a covenant is breached in a commercial lending agreement, the result is an event of default that permits the lender to exercise any remedies permitted under the contract or at law. These might include accelerating the loan and repossessing and foreclosing on any collateral, exercising a right of setoff, or obtaining a judgment and executing on it. Notably, the remedies do not invalidate the additional, offending debt

---

56. BRATTON, *supra* note 52, at 270.
57. *Id.*
58. *Id.* at 271.
59. *Id.* at 273.
60. *Id.* at 271.
61. *Id.*
62. *Id.*

or avoid the liens created.[63] Absent unusual circumstances, that debt and those liens are still valid; at best, the aggrieved lender might be able to get an equitable lien[64] or have the offending debt equitably subordinated, but the burden for doing so is high.[65]

These various leverage-limiting covenants are common because they protect the lender's ability to be repaid. To the extent there are other creditors, it means that the borrower has more obligations relative to its cash flows and asset base. To the extent there are other, competing claims on the borrower's limited pool of assets, there is the possibility that other creditors will be repaid instead of the lender. Obtaining a security interest in collateral will increase a lender's chance of being repaid, but competing claims for that collateral reduce this benefit. Furthermore, to the extent that the borrower's equity in the collateral is diminished by greater leverage, the borrower will have a reduced incentive to care for and maintain the collateral.[66] Moreover, increased leverage can alter borrower behavior by incentivizing borrowers to pursue riskier, higher-return investments.[67]

B. Home Mortgage Leverage Regulation Outside of the United States

Outside of the United States second-lien leverage is regulated by private contract through various forms of negative pledge clauses. Additionally, second liens are limited through regulation of LTV ratios for particular financing channels and through system-wide LTV ratio regulation. The United States is unique in that it lacks either contract-level or broader macro-level LTV regulation.

Negative pledge clauses are a standard feature of mortgages in most parts of the world. To our knowledge, the United States is the only country in the developed world that prohibits negative pledge clauses on residential mortgages. For example, mortgages from Australia,[68]

---

63. *See, e.g.*, U.C.C. § 9-401(b) (AM. LAW INST. & UNIF. LAW COMM'N 2013) ("An agreement between the debtor and secured party which prohibits a transfer of the debtor's rights in collateral or makes the transfer a default does not prevent the transfer from taking effect.").

64. *See, e.g.*, Coast Bank v. Minderhout, 392 P.2d 265, 265–69 (Cal. 1964), *overruled by* Wellenkamp v. Bank of Am., 582 P.2d 970 (Cal. 1978) (en banc), *superseded by regulation*, 12 CFR § 545.6-11(f) (1982).

65. Hechinger Liq. Tr. v. BankBoston Retail Fin. Inc., Civ. No. 00-973-SLR, 2004 U.S. Dist. LEXIS 5537, at *20–21 (D. Del. Mar. 28, 2004).

66. *See supra* Part I.A.

67. *See id.*

68. *See, e.g.*, HSBC, HSBC HOME AND INVESTMENT PROPERTY LOANS, BOOKLET OF STANDARD TERMS AND CONDITIONS § 8(k) (Aug. 23, 2014), https://www.hsbc.com.au/1/PA_ES_Content_Mgmt/content/australia/common/pdf/personal/homeloans-tandc.pdf [https://perma.cc/E8XC-2BL8].

Canada,[69] England and Wales,[70] India,[71] Ireland,[72] New Zealand,[73] Scotland,[74] Singapore,[75] and South Africa[76] all contain negative pledge clauses that would enable the lender to foreclose if a junior lien were created.[77]

Moreover, many countries have some form of LTV ratio regulation for particular financing channels.[78] For example, the

---

69. *See, e.g.*, HOME TR. CO., LAND REGISTRATION ACT, SET OF STANDARD CHARGE TERMS, NO. 200727 § 8.4(c), http://www.hometrust.ca/documents/StandardChargeTermsON.pdf [http://perma.cc/UQV9-9N5A]; MACQUARIE FIN. LTD., LAND REGISTRATION REFORM ACT, SET OF STANDARD CHARGE TERMS, NO. 201036 § 11(A)(6) (Dec. 8, 2010), http://www.greatlaw.ca/sct/201036%20MacQuarie%20Financial%20Ltd.pdf [http://perma.cc/E9XK-Z84G]; SCOTIABANK, RETAIL COLLATERAL MORTGAGE, LAND REGISTRATION REFORM ACT, SET OF STANDARD CHARGE TERMS, NO. 201405 § 6, http://www.scotiabank.com/ca/common/pdf/solicitor_forms/Ontario/2153912_(05-14)_Active.pdf [http://perma.cc/8QR8-UWV6] ("You agree not to further mortgage, charge, hypothecate or encumber the property without our prior written consent.").

70. *See, e.g.*, KENSINGTON GEN., MORTGAGE CONDITIONS BOOKLET 2009, ENGLAND AND WALES ¶¶ 2.14, 6.3 (2009), http://www.kmc.co.uk/content/dam/kmc/new-documents/Intermediary%20Literature/General%20Mortgage%20Conditions.pdf [http://perma.cc/XUT7-NW35].

71. HSBC, AGREEMENT FOR HOME LOAN § 2.2 (Aug. 2014), http://www.hsbc.co.in/1/PA_ES_Content_Mgmt/content/website/pdf/personal/legal-kits/legal_kits_3states_nonstaff_homeloan.pdf [http://perma.cc/4RG6-GXZP].

72. *See, e.g.*, IRISH BANKING FED'N, STANDARD GENERAL HOUSING LOAN MORTGAGE CONDITIONS § 11.4 (2011), https://www.permanenttsb.ie/media/permanenttsb/pdfdocuments/IBF-General-Housing-Loan-Mortgage-Conditions.pdf [http://perma.cc/BU8R-BE9C].

73. *See, e.g.*, HSBC, HOME LOAN STANDARD TERMS AND CONDITIONS § 7(k) (Feb. 1, 2015), https://www.hsbc.co.nz/~/media/new-zealand/personal/pdf/home-loan-standard-terms-and-conditions [https://perma.cc/WVW7-GQNW].

74. *See, e.g.*, ROYAL BANK OF SCOT., STANDARD MORTGAGE CONDITIONS FOR SCOTLAND § 17.1 (Feb. 2009), http://www.oneaccount.com/conveyancers/firstactive/pdfs/FAUK%20EW%20SMC%20Feb%2009.pdf [http://perma.cc/98ZX-VPMQ].

75. *See, e.g.*, DBS, STANDARD TERMS AND CONDITIONS APPLICABLE TO BANKING FACILITIES GRANTED BY DBS BANK LTD. SECURED BY MORTGAGE OF RESIDENTIAL PROPERTY AND/OR COMMERCIAL PROPERTY ¶ 44.1 (2014), https://www.dbs.com.sg/iwov-resources/pdf/loan/tnc_mortgageloan.pdf [https://perma.cc/ACW3-ZZ72] (applicable only to corporations).

76. FIRSTRAND BANK, SPECIAL TERMS AND CONDITIONS §§ 3.23.1.5, 3.27, https://www.fnb.co.za/downloads/terms/FNB-General-Terms-and-Conditions.pdf [https://perma.cc/CBF8-Z3F9]; STANDARD BANK, FREEHOLD MORTGAGE BOND TERMS AND CONDITIONS FOR NATURAL PERSONS FALLING WITHIN THE NCA AND CPA § 11.2.9.1 (2012), https://www.standardbank.co.za/secure/applications/hlpp/Freehold%20mortgage%20bond%20terms%20and%20conditions%20Aug%202010%20(web).pdf [https://perma.cc/7E4T-6KAU].

77. Mortgage documentation is often less standardized outside of the United States. Moreover, the method of documentation and terminology varies considerably by country, and the availability of mortgage forms on the Internet is spotty. Therefore, we have restricted our search to English-language common law countries. Anecdotally, however, we are told that negative pledges are standard throughout the developed world and that second mortgage markets are a relative rarity.

78. A number of countries have also adopted or at least authorized national-level LTV regulation as a macroprudential tool. Denmark, Hong Kong SAR, Hungary, Latvia, Lithuania, the Netherlands, Norway, Romania, Slovakia, South Korea, and Sweden all have some form of a residential mortgage LTV cap as a macroprudential measure. *See* EUR. CENT. BANK, FINANCIAL STABILITY REVIEW 113–26 (May 2014), https://www.ecb.europa.eu/pub/fsr/shared/pdf/

European Union's covered bond directive caps LTV ratios at 80% for inclusion in a covered bond's cover pool.[79] Other countries accomplish LTV regulation indirectly through insurance regulation and pricing. For example, in Canada, all mortgage loans of over 80% LTV must be insured.[80] There are only three mortgage insurers allowed to operate in Canada: the governmental Canadian Mortgage and Housing Corporation (CMHC) and two regulated private insurers.[81] By regulating insurance pricing and eligibility, the Canadian government can effectively regulate mortgage leverage above an 80% LTV ratio.

Additionally, bank capital requirements in nearly all developed countries depend on residential mortgage LTV. In many countries bank balance sheet lending plays a much more important role in mortgage finance than in the United States; for instance, under the Basel bank capital regime, banks are required to have capital in relation to their risk-weighted assets. The risk weighting assigned to residential mortgages varies by national implementation, but most of the developed world has differential bank capital requirements for high and low LTV ratio mortgages.[82] In the United States, however, the regulatory capital treatment of mortgages depends on lien position, not specifically on LTV ratios, although the implementation of the Basel III capital regulations is based on ill-defined prudent underwriting standards, including LTV ratios.[83]

---

sfafinancialstabilityreview201405en.pdf [https://perma.cc/PR2P-C6S7]; *see also* H.K. Monetary Auth., *Loan-to-Value Ratio as a Macroprudential Tool – Hong Kong SAR's Experience and Cross-Country Evidence* 163–68 (BIS Research Papers, Working Paper No. 57, 2011), http://www.bis.org/publ/bppdf/bispap57k.pdf [http://perma.cc/RV5E-WZ4Z]; Deniz Igan & Heedon Kang, *Do Loan-to-Value and Debt-to-Income Limits Work? Evidence from Korea* (Int'l Monetary Fund, Working Paper Series No. 11/297, 2011), https://www.imf.org/external/pubs/ft/wp/2011/wp11297.pdf [https://perma.cc/Q4RX-NFRT]; Choongsoo Kim, *Macroprudential Policies in Korea: Key Measures and Experiences*, 18 FIN. STABILITY REV., April 2014, at 121, 121–29. The Bank of England has recently requested macroprudential LTV regulation authority. Szu Ping Chan, *Bank of England Calls for Legal Power to Cap Loan-to-Value Ratio on Mortgages*, TELEGRAPH, (Oct 2, 2014, 10:09 PM), http://www.telegraph.co.uk/finance/bank-of-england/11135234/Bank-of-England-calls-for-legal-power-to-cap-loan-to-value-ratio-on-mortgages.html [http://perma.cc/C66Y-XDAV]. There is no authority for U.S. regulators to engage in macroprudential LTV regulation.

79. Council Regulation 575/2013 on Prudential Requirements for Credit Institutions and Investment Firms and Amending Regulation, 2013 O.J. (L 176) 84 (EU).

80. Ivo Krznar & James Morsink, *With Great Power Comes Great Responsibility: Macroprudential Tools at Work in Canada* 2–16 (Int'l Monetary Fund, Working Paper WP/14/83, 2014), http://www.imf.org/external/pubs/ft/wp/2014/wp1483.pdf [http://perma.cc/SY4H-ZQE6].

81. DAVID MIN, CTR. FOR AM. PROGRESS, TRUE NORTH: THE FACTS ABOUT THE CANADIAN MORTGAGE BANKING SYSTEM 9 (2010).

82. BASEL COMM. ON BANKING SUPERVISION, BASEL CAPITAL FRAMEWORK NATIONAL DISCRETIONS 16–19 (Nov. 2014), http://www.bis.org/bcbs/publ/d297.pdf [http://perma.cc/2M8L-YBEN].

83. 12 C.F.R. pt. 3, app. A, § 3(a)(3)(iii) (2015). The U.S. implementation of Basel III provides for a 50% risk-weight for a first-lien residential mortgage that "[i]s made in accordance with prudent underwriting standards, including standards relating to the loan amount as a percent of the appraised value of the property." 12 C.F.R. § 3.32(g)(1)(ii) (2015); 12 C.F.R. § 208.32(g)(1)(ii) (2015); 12 C.F.R. § 324.32(g)(1)(ii) (2015). Any mortgage that does not qualify receives a 100% risk weighting. 12 C.F.R. § 3.32(g)(2) (2015); 12 C.F.R. § 208.32(g)(2) (2015); 12 C.F.R. § 324.32(g)(2) (2015). To date, regulators have not explicated the LTV standards. The Interagency Guidelines for Real Estate Lending Policies specifically do not prescribe a maximum LTV for owner-occupied 1-4 family property loans and home equity loans. 12 C.F.R. § 365, app. A (2015). Instead, the

The only area in which the United States closely regulates LTV is for the government-sponsored entity (GSE) financing channel (Fannie Mae and Freddie Mac) and for loans insured by the Federal Housing Administration or guaranteed by the Veterans Agency. In particular, the GSEs are generally forbidden from purchasing loans with an LTV above 80%, but this prohibition does not prevent second-lien lending.[84] In fact, this prohibition has probably done more than any other factor in encouraging the use of second liens as a way of accessing GSE financing without having to pay for private mortgage insurance via piggyback second-lien mortgages.

IV. CREATION OF THE LEVERAGE OPTION

Limitations on second liens exist in all sorts of commercial financing contracts. Their absence from home mortgage contracts, given the size and financialization of the home mortgage market, is surprising.[85] Home mortgages are a major financial asset class: there is nearly $10 trillion in home mortgage debt in the United States.[86] Most home mortgages in the United States are now financed by securitization, rather than balance sheet lending by banks,[87] so mortgage loans are transformed into traded financial assets of a scale equivalent to other securities and commodities.

Home mortgage debt is a uniquely large and important connection between the financial economy and the real economy. Problems in the mortgage financing market affect home prices, which in turn affect household balance sheets because home equity is most consumers' largest single asset.[88] An increase or decrease in home

---

Guidelines indicate that for LTVs at or above 90% "an institution should require appropriate credit enhancement in the form of either mortgage insurance or readily marketable collateral." *Id.* These Guidelines apply only to depositories, however, and not to non-bank lenders.

84. 12 U.S.C. § 1717(b)(2) (2015) (Fannie Mae); 12 U.S.C. § 1454(a)(2) (2015) (Freddie Mac). FHA and VA are permitted in certain circumstances to insure loans with much higher LTV ratios.

85. Leverage limitations are generally absent in the consumer finance market. Consumer lenders do not attempt to control formal household leverage, much less household leverage in general: credit card issuers and student lenders do not forbid borrowers from opening up further lines of credit or from taking out further loans, even though these lenders all rely on the borrower's general assets, not collateral. Similarly, auto lenders do not limit household leverage, or even junior liens on the cars that serve as their collateral. (Second-lien car loans are virtually non-existent because most car loans are "underwater" as the car is driven off the dealer's lot. There is an auto title lending industry, but auto title lenders always require a clean title with no existing liens.)

86. FED. RES. BD., STATISTICAL RELEASE Z.1, tbl. L.101, l. 27 (June 11, 2015).

87. INSIDE MORTG. FIN., MORTGAGE MARKET STATISTICAL ANNUAL (2015) (on file with authors).

88. *See* Jesse Bricker et al., *Changes in U.S. Family Finances from 2010 to 2013: Evidence from the Survey of Consumer Finances,*100 FED. RES. BULL., 2014, at 1, 16 tbl. 3, http://www.federalreserve.gov/pubs/bulletin/2014/pdf/scf14.pdf [http://perma.cc/3XUK-M27R].

equity can affect consumer spending behavior because of perceived and real wealth effects.[89] Given housing finance's role as a unique transmission channel between the financial economy and the real economy, one would expect similar leverage regulations to those in commercial lending, capital markets, and financial institutions. Yet junior-lien leverage limitations are surprisingly absent in the American home mortgage market.[90]

A. The Garn-St. Germain Act

The absence of junior-lien leverage restrictions on home mortgages is because of a provision in the federal Garn-St. Germain Depository Institutions Act of 1982 that prohibits the exercise of a DOS clause upon "the creation of a lien or other encumbrance subordinate to the lender's security instrument which does not relate to a transfer of rights of occupancy in the property."[91] This type of DOS clause, triggered by the creation of a junior lien, functions as a type of negative pledge clause.[92]

A DOS clause is a clause providing that the lender may declare the entire balance of the loan due and payable if a defined trigger event, such as a sale, alienation, encumbrance, or other disposition occurs. The acceleration of the loan balance would either result in the loan being paid off or a default, which would then give the lender the right to foreclose.

Garn-St. Germain's prohibition on DOS clauses triggered by the incurrence of a junior lien deprives lenders of the ability to prevent borrowers from subsequently pledging their collateral to secure additional financing from other lenders. Garn-St. Germain means that a lender cannot call its loan if the collateral is encumbered by a junior lien. Thus, first-lien lenders are not able to control the CLTV ratio on their collateral properties. This effect was an unintended consequence of Garn-St. Germain, which was focused on dealing with a very particular type of problem in the early 1980s real estate market: assumable mortgages.

1. Background to the Garn-St. Germain Act

From the 1960s to the early 1980s, the United States economy experienced significant inflationary pressures, with daily Federal

---

89. MIAN & SUFI, *supra* note 23, at 38–44.

90. Leverage limitations abound in financial markets. Banks, insurance companies, and other financial institutions, such as the government-sponsored enterprises (GSEs) Fannie Mae and Freddie Mac and the Federal Home Loan Banks, are all subject to leverage regulation.

91. 12 U.S.C. § 1701j-3(d)(1) (2012). States could regulate LTV ratios, at least in regard to state-chartered lenders, but only Texas has pursued any sort of LTV ratio regulation. *See* TEX. CONST. art. XVI, § 50(a)(6)(B) (prohibiting enforcement of junior liens with CLTV ratios at origination above 80%). Notably, despite the presence of many "subprime" borrowers, Texas avoided a housing price bubble, unlike other sun-and-sand belt states.

92. *See supra* Part II.A.

Funds rates topping out at 22.36% on July 22, 1981.[93] Rising prices made homeownership increasingly difficult for consumers. Consumers came up with a variety of transactional solutions to the problem of rising prices, collectively known as "creative financing."[94] By one estimate, 50% of home sales in 1980 involved some form of "creative" seller financing.[95]

Foremost among the creative financing arrangements was for the buyer to assume the seller's mortgage. Virtually all mortgages at the time were fixed-rate loans, so in a rising rate environment, the buyer would be assuming a below-market-rate mortgage loan that would help offset the higher house price. Thus, buyers would often formally assume sellers' mortgages—the buyer would buy both the house and the now-below-market-rate mortgage from the seller. If the borrower still needed to borrow additional funds to finance the purchase, that could be done with a market-rate second mortgage.[96] Thus, the borrower would have assumed a below-market-rate first mortgage and supplemented it with a market-rate second mortgage.

Other forms of "creative financing" included the installment "land contract" (also known as a "contract for deed" or "installment land contract") or a "wraparound mortgage." In a land contract arrangement, a buyer would make a down payment substantially equal to the seller's equity and receive possession of the property (and equitable title thereto), but the seller would continue to hold legal title to the property and remain the obligor on the mortgage.[97] The seller would then make the mortgage payments from the payments received from the buyer. This arrangement allowed the buyer to functionally (although not formally) assume the seller's below-market-rate mortgage.

A related arrangement was the "wraparound mortgage."[98] In a wraparound mortgage arrangement the buyer would make a down payment for less than the seller's equity in the property. The seller would make the buyer a second-lien mortgage loan for the remaining amount of the seller's equity. The buyer would receive possession of the property and equitable title thereto, but the seller would still hold legal

---

93. FED. RES. BD., STATISTICAL RELEASE H.15, http://www.federalreserve.gov/releases/h15/data.htm (last visited July 6, 2015) [perma.cc/EN74-HVB3] (providing historical data and Daily Federal Funds rate).

94. Donald L. Koch et al., *The Risks of Creative Financing,* 67 FED. RES. BANK OF ATL. ECON. REV., Dec. 1982, at 4, 11.

95. Donald L. Koch & Delores W. Steinhauser, *Will Second-Mortgage Financing Be the REITs of Today?*, 66 FED. RES. BANK OF ATL. ECON. REV., Oct. 1981, at 4, 5.

96. Howard Esaki, *Economic Effects of Enforcing Due-on-Sale Clauses*, 7 FED. RES. BANK OF N.Y. Q. REV., Winter 1982–83, at 33, 35 (1983); Koch & Steinhauser, *supra* note 95, at 6.

97. Richard W. Thornburg, *The Due-on-Sale Clause: Current Legislative Actions & Probable Trends*, 9 FLA. ST. L. REV. 645, 645 n.1 (1981).

98. *Id.*

title to the property and remain the obligor on the first mortgage. The buyer would make payments to the seller that would be sufficient to cover both the first-lien mortgage, on which the seller was the obligor, and the second mortgage, on which the buyer was the obligor. This arrangement allowed the buyer to functionally (although not formally) assume the seller's below-market-rate mortgage, while providing the buyer with additional financing at market rates.

Mortgage lenders balked at mortgage assumptions and associated transactional devices, which deprived them of the ability to be repaid upon sale of the collateral property and thus relend their funds at market rates. Lenders were also concerned about differences in the credit profile of the buyers assuming their mortgages and the sellers. Even in land contract and wraparound situations, where the seller remained the obligor on the mortgage, the seller's incentive to repay changed, as the seller was no longer concerned about loss of his or her residence upon default.[99]

Until the 1980s most lenders were statutorily forbidden from making adjustable-rate loans.[100] Lenders thus had few options to protect themselves from assumption in a rising rate environment; the most common solution was to insert DOS clauses into mortgages that allowed the lender to accelerate the loan and demand repayment upon sale of the property or to shift to short-term mortgages.[101] While these clauses can be found in mortgages back to the early part of the twentieth century, they were rarely litigated prior to the early 1960s.[102] As litigation of DOS clauses increased in the 1960s and 1970s, states split regarding whether they would enforce DOS clauses. As of 1981, fourteen states held the clauses to be enforceable, at least in some circumstances, while eighteen refused to enforce them.[103] Mixed in with the DOS clause litigation was the occasional case on due-on-encumbrance clauses, that allowed acceleration of the loan if the property was encumbered with a junior lien.

The leading case on due-on-encumbrance clauses was (and is) *LaSala v. American Savings and Loan Association*, decided by the California Supreme Court in 1971, which held that a due-on-encumbrance clause was not inherently an unlawful restraint on alienation,[104] just as the California Supreme Court had previously held

---

99. *See* Cherry v. Home Sav. & Loan Ass'n, 276 Cal. App. 2d 574, 578–79 (Cal. Ct. App. 1969) *overruled by* Wellenkamp v. Bank of Am., 582 P.2d 970 (Cal. 1978) (en banc), *superseded by regulation*, 12 CFR § 545.6-11(f) (1982) ("Lenders run the risk that security may depreciate in value, or be totally destroyed. This risk of loss is reduced in the lender's viewpoint if the borrower is known to be conscientious, experienced and able. . . . If a borrower were able to sell the security without concern for the debt, he may take the proceeds of the sale, leaving for parts unknown, and the new owner of the property might permit it to run down and depreciate.").

100. Levitin & Wachter, *supra* note 44, at 1151 n.187 (history of U.S. ARM regulation).

101. Fannie Mae and Freddie Mac would only purchase mortgages that were callable after seven years in states that did not enforce DOS clauses. Thornburg, *supra* note 97, at 650.

102. *Id.* at 648.

103. *Id.* at 649.

104. La Sala v. Am. Sav. & Loan Ass'n., 489 P.2d 1113, 1121–22 (Cal. 1971), *superseded by statute*, 12 U.S.C. § 1701j–3 (1982).

regarding a DOS clause.[105] Instead, the California Supreme Court held that the legality of enforcement of a due-on-encumbrance clause depends on whether "enforcement is reasonably necessary to protect the lender's security."[106] The California Supreme Court explained:

> A sale of the property usually divests the vendor of any interest in that property, and involves the transfer of possession, with responsibility for maintenance and upkeep, to the vendee. A junior encumbrance, on the other hand, does not terminate the borrower's interests in the property, and rarely involves a transfer of possession. A junior lien does, of course, create a possibility of future foreclosure and thus of future transfer of possession. But the risk of future foreclosure—a risk which reaches fruition in only a minority of cases—cannot justify an endowment to a lender of an uncontrolled discretion to accelerate upon the making of a junior encumbrance. A right to accelerate when foreclosure occurs, or looms imminent, would fully protect the lender.[107]

The California Supreme Court also rejected the mortgagee's contention that any junior mortgage necessarily increased its risk:

> Defendants argue that whenever a borrower takes out a second-lien, his very conduct demonstrates that he has become financially irresponsible or at least a poor credit risk. Such an assertion, however, is an over generalization, a proposition true of some borrowers but not of others. Moreover, [defendant] American does not claim a right to accelerate merely upon learning that the borrower has encountered economic adversity. In light of these considerations we find no justification in American's arbitrary seizure of the making of a second-lien, a fact not necessarily indicative of declining credit ability, as a basis for acceleration[108]

In *LaSala* the California Supreme Court did, however, recognize that there were situations in which encumbrance with a junior lien could endanger the senior lienholder's security interest, including when the second lien was used to effectuate a wraparound mortgage:

> We recognize, however, . . . that instances may occur when the institution of a second-lien does endanger the security of the first-lien. In some cases the giving of a possessory security interest, e.g., a conveyance to a mortgagee in possession, would pose the same dangers of waste and depreciation as would an outright sale. In other cases a second-lien may be employed as a guise to effect a sale of the property. In still others a bona fide second loan may still leave the borrower with little or no equity in the property.[109]

The California Supreme Court also rejected the mortgagee's claim that the determination of whether a junior lien increases the senior mortgagee's risk was a matter committed solely to the senior

---

105. The California Supreme Court had previously allowed the foreclosure of an equitable mortgage based on a violation of a DOS clause in an instrument that accompany an unsecured promissory note. Coast Bank v. Minderhout, 392 P.2d 265, 266–69 (Cal. 1964), *overruled by* Wellenkamp v. Bank of Am., 582 P.2d 970 (Cal. 1978) (en banc), *superseded by regulation*, 12 CFR § 545.6-11(f) (1982). The court held that it was not unreasonable to condition an extension of credit on the borrowers' continued residence in the collateral property. *Id.* at 268. California subsequently reversed itself and held that a DOS clause was in fact an unenforceable restraint on alienation when applied to an outright sale. *Wellenkamp*, 582 P.2d at 971–72.

106. *La Sala*, 489 P.2d at 1121.

107. *Id.* at 1123.

108. *Id.* at 1124.

109. *Id.*

mortgagee's discretion lest it allow the senior mortgagee to extract monopoly rents:

> Such an uncontrolled power, however, creates too serious a potential of abuse. Even when the lender's security has not been exposed to danger, the lender, by threatening to accelerate, could compel the borrower to pay a fee or give other valuable consideration for the waiver. The Attorney General, as amicus curiae, charges that as a matter of practice American requires waiver fees whenever a borrower makes a junior encumbrance. Defendants deny this charge yet seek from us a declaration that a lender enjoys an unconditional right to enforce the due-on-encumbrance clause and, as a necessary corollary the unconditional right to obtain from a borrower whatever consideration it can exact for the waiver, however inequitable such exaction may be.[110]

Subsequent to *LaSala*, there was no major litigation over due-on-encumbrance clauses. Instead, it appears to have been accepted that due-on-encumbrances clauses were enforceable in at least some circumstances, including to prevent wraparound mortgages. Confusingly, however, mortgages often did not distinguish between DOS and due-on-encumbrance clauses. Instead, DOS clauses could be triggered by a number of conditions, including encumbrance.[111] Thus, the enforceability of due-on-encumbrance clauses was often enmeshed with the question of DOS clauses, even if not specifically litigated.

Adding to the variation in enforceability of DOS clauses, in 1976, the Federal Home Loan Bank Board (FHLBB) adopted regulations allowing enforcement of DOS clauses for federally regulated savings and loan associations.[112] The FHLBB regulations, however, prohibited the exercise of DOS clauses because of "the creation of a lien or encumbrance subordinate to the association's security instrument."[113] The FHLBB did not explain why it excluded creation of junior liens from allowed DOS triggers beyond noting that the exclusion tracked Covenant 17 in the then current version of the Fannie Mae/Freddie Mac Uniform Security Instrument.[114] The wisdom of the exclusion of the creation of junior liens from permitted DOS triggers was apparently self-evident. The FHLBB regulations only extended to federally chartered savings and loans, leaving the status of DOS clauses for other lenders uncertain.

2. The Effect of the Garn-St. Germain Act

Finally, in 1982, as part of a major financial regulatory reform act, the Garn-St. Germain Depository Institutions Act of 1982, Congress addressed DOS clauses, creating a national standard for their enforceability.[115] Congress was concerned that without allowing lenders to enforce DOS clauses, that fixed-rate mortgage lending would

---

110. *Id.*

111. In title theory states—roughly half of the country—an encumbrance involves a sale and repurchase device rather than a lien, so an encumbrance could actually be a type of sale.

112. Amendments Relating to Late Charges and Due-On-Sale Clauses, 41 Fed. Reg. 18,286, 18288 (May 3, 1976) (codified at 12 C.F.R. § 545.8-3(f) – (g) (1980)).

113. 12 C.F.R. § 545.8-3(g) (1980).

114. 41 Fed. Reg. 6,283, 6,285–86 (Feb. 12, 1976).

115. Pub. L. No. 97-320, 96 Stat. 1469, 1505 (codified at 12 U.S.C. § 1701j-3 (2012)).

disappear.[116] Thus, the Garn-St. Germain Act provides that "notwithstanding any provision of the constitution or laws (including the judicial decisions) of any State to the contrary, a lender may . . . enter into or enforce a contract containing a due-on-sale clause with respect to a real property loan."[117]

The Garn-St. Germain Act, however, also *expressly forbids* the enforcement of DOS clauses on 1-4 family residences in any of nine conditions. These conditions include death, divorce, and short-term leases as well as "*the creation of a lien or other encumbrance subordinate to the lender's security instrument which does not relate to a transfer of rights of occupancy in the property*."[118] As with the FHLBB regulations, the legislative history of the Garn-St. Germain Act is uninformative about the reason for the particular exclusion of junior liens from allowed DOS triggers, other than to emphasize that DOS could be triggered by junior liens as part of assumption arrangements.[119] Thus, while the Garn-St. Germain Act generally overrode state law restrictions on the enforcement of DOS clauses, it also carved out a subset of situations in which DOS clauses would not be enforceable.

The Garn-St. Germain Act's treatment of due-on-encumbrance provisions represents a policy that allowed lenders to prevent wraparound mortgages, but not to prevent traditional home equity loans and lines of credit. Thus, the regulations implementing the Garn-St. Germain Act's DOS provisions for federal thrifts provide that a DOS clause is enforceable if a junior lien is "created pursuant to a contract for deed."[120] Similarly, the regulatory definition of "assumed" includes "transfers of real property subject to a real property loan by assumptions, installment land sales contracts, wraparound loans, contracts for deed, transfers subject to the mortgage or similar lien, and other like transfers."[121]

The target of Garn-St. Germain was mortgage assumption, and second liens were excluded only to the extent that they were not a vehicle for mortgage assumption. This left borrowers free to borrow against the equity in their home, as long as they remained the legal and equitable owners of the property. Thus, if a borrower's equity in a home has increased either as a result of paying down a mortgage or as a result

116. Mark A. Burnheimer, Comment, *Shared Appreciation Mortgages*, 14 U. TOL. L. REV. 1427, 1443–44 (1983) (noting Senate concern that restrictions on DOS clauses would result in "the complete disappearance of that traditional mainstay of American homeowners—the long-term, fixed-rate mortgage").

117. 12 U.S.C. § 1701j-3(b)(1) (2012).

118. 12 U.S.C. § 1701j-3(d)(1) (emphasis added).

119. *See* S. REP. NO. 97-536, at 57 (1982).

120. 12 C.F.R. § 591.5(b)(1)(i) (2015).

121. 12 C.F.R. § 591.2(a).

of property appreciation, or even if the borrower's equity has not increased, but the borrower simply wishes to borrow more against the existing equity, the borrower is free to borrow against that equity with a junior mortgage under the Garn-St. Germain Act.

Second mortgages were an afterthought to Garn-St. Germain because the second mortgage market was different and limited at the time. The Garn-St. Germain Act did not contemplate the later phenomenon of piggyback mortgages or of cashout home equity loans being used to finance down payments on investment properties. Similarly, the Garn-St. Germain Act did not contemplate an increase in housing prices for reasons other than a change in fundamentals, such as decreased interest rates.

B. The Relational Lending World of Garn-St. Germain

The Garn-St. Germain Act was enacted right at the time that securitization markets were beginning to take off.[122] Modern mortgage securitization only began in 1971,[123] and in 1981 securitization only accounted for 16% of all residential mortgage debt outstanding, roughly double the level from five years prior.[124] Garn-St. Germain was enacted against a backdrop of a lending industry dominated by community-based balance sheet lending, which was 64% of the market in 1981.[125] In such a world, informal coordination between lenders was much more feasible and would have likely limited the expansion of the use of junior lien financing.

For example, suppose Betty Borrower wanted to get a second mortgage to finance the remodeling of her kitchen. Betty has a first mortgage with Bob's Bank. Interest rates have gone up since Betty got her first mortgage, so she is not interested in a roll-up refinancing. Betty has applied for a second mortgage from Hank's Housing Bank. Hank plays 18 holes every week with Bob. Hank mentions the loan application to Bob and asks him if he's all right with it. When Bob hesitates, Hank decides not to make the loan, knowing that Bob could start making second mortgages on the properties where he holds a first mortgage. In essence there is mutually assured destruction, and thus in a repeat game there is stable lender détente.

We can understand Hank and Bob's relationship in terms of game theory: they are in a game in which they can either cooperate (meaning one forbears from lending when the other has made a loan) or

---

122. Increased securitization was itself a response to the problems inflation posed for depositories making fixed-rate mortgage loans.

123. Ginnie Mae undertook the first modern mortgage securitization in 1971. Kenneth A. Snowden, *Mortgage Securitization in the United States: Twentieth Century Developments in Historical Perspective*, *in* ANGLO-AMERICAN FINANCIAL SYSTEMS: INSTITUTIONS AND MARKETS IN THE TWENTIETH CENTURY 261 (Michael D. Bordo & Richard Sylla eds., 1995). Fannie Mae did not begin securitizing mortgages until 1981. Levitin & Wachter, *supra* note 44, at 1161.

124. *See* FED. RES. BD., *supra* note 86, at tbl. L.218 (quotient of line 19 over line 5 for column 1981).

125. *Id.* (quotient of line 11 over line 5 for column 1981).

not. In a single-stage game, there would be no incentive to cooperate; there would always be a second-lien loan made if the underwriting made sense. But in a multi-stage game, the threat of retaliation changes the equilibrium to cooperation. Thus, neither Hank nor Bob will lend to a borrower if the other has already made a loan.

Let's imagine, now, that instead of taking a second mortgage to remodel her kitchen, Betty Borrower buys a house from Sammy Seller. She gets a first mortgage from Hank's Housing Bank, but she needs a bit more financing than Hank will provide. Sammy Seller is eager to sell the housing and offers to make Betty a second mortgage himself. Thus we have a seller-financed second mortgage—a second-mortgage loan made by the seller of the property, rather than an institutional lender like Bob's Bank or Hank Housing Bank. When Garn-St. Germain was enacted, some 7% of all mortgage debt was held by households, part of which was seller financing.[126]

Seller-financed second mortgages changed the game from being a repeat game to a single-stage game: the seller was not a repeat player and was probably not playing golf with Bob and Hank. In the single-stage game, there is no incentive for the seller to cooperate, so the seller would lend irrespective of the first-lien loan. The Garn-St. Germain Act eliminated seller financing and thus restored the cooperation equilibrium to the game by making it multi-stage again.

Yet even as Garn-St. Germain attempted to restore equilibrium to the mortgage market, the market was itself shifting with the expansion of securitization (driven by the interest rate pressures on depository lenders). With the advent of securitization, Betty's first mortgage is no longer on Bob's Bank's balance sheet. Instead, it is held by a trust.[127] Hank does not know the trust, and of course the trust does not play golf. Hank will go ahead and make the second mortgage because he is not worried about relationships or retaliation. Like seller financing, securitization thus upsets the game's equilibrium by making the game single stage and thus eliminating the benefits from cooperation.

At the same time, the investors in the trust that holds the first mortgage have a different pricing incentive than Bob's Bank. The investors do not have the protection and information of relationships or the threat of retaliation, because they are not lending in Hank's community. Once aware of the threat, first-lien lenders will either demand a higher price to compensate for the risk or will simply not

126. *Id.* (quotient of line 6 over line 5 for column 1982).

127. For a more detailed explanation of mortgage securitization, see Levitin & Twomey, *supra* note 50, at 13–16.

make the loan. In the long run, non-cooperation is not a stable equilibrium.

The Garn-St. Germain Act was enacted against the background of community-based, balance-sheet lending that limited high CLTV second-lien lending through relational pressures. With the rise of securitization, the game has changed.

C. Economic Distortion Caused by the Leverage Option

The leverage option embedded in American mortgages by the Garn-St. Germain Act caused several economic distortions. First, Garn-St. Germain disabled the market discipline of leverage by first-lien lenders. If DOS clauses triggered by encumbrance with a junior lien were enforceable, first-lien lenders would have a veto over increased leverage. Under Garn-St. Germain, it is instead the second lender who decides on CLTV. Ultimately, however, things do not even stop with the second-lien lender because behind the second-lien lender could be a third-lien lender, etc. No one except the borrower, therefore, has a say about total leverage on the property.

This situation is likely to be inefficient, as lenders have to price their loan without knowing whether the borrower will increase leverage on the home and when. Whether a borrower will increase the leverage on the property depends on the borrower's own consumption demands and on changes in the property's value. Neither can be easily predicted at the time a lender makes a loan. Because of the paucity of information, lenders are likely to either underprice or overprice for leverage risk. If the lender underprices for risk, the result is an inefficiently high level of leverage with potential externalities for owners of other properties and lenders secured by those properties. Yet if the lender overprices for risk, the result will be too little credit provision.

Second, increased home mortgage leverage also produces a negative externality on all other mortgages and the economy in general because of the serially correlated nature of housing prices. An increase in leverage on one property increases the risk on mortgages on other properties. The increased leverage increases the default risk of the first homeowner, increasing the risk of that property's value dropping and dragging down other properties' values. At the same time, the increased leverage on the first homeowner's property may temporarily push up housing prices, thereby creating artificially inflated prices and artificially low LTV ratios on other properties, further causing other lenders to allow more real leverage on their properties than they actually intend to. Either way, increased home mortgage leverage produces a negative externality on other home mortgage loans and ultimately on the economy as a whole by contributing to greater

economic fragility and instability. Individual lenders, however, will, by definition, never properly price in these externalities.[128]

Third, the leverage option that the Garn-St. Germain Act embedded in American mortgages also forces some borrowers to overpay for an option they do not want, subsidizing those (riskier) borrowers who would exercise the option. This subsidization of higher-risk borrowers by lower-risk borrowers is inefficient, as higher-risk borrowers do not internalize the costs of exercising the leverage option.

D. The Politics of Second Lien Mortgage Leverage

Since the enactment of the Garn-St. Germain Act's DOS provisions, virtually all mortgages in the United States now contain a DOS clause and prohibitions on assumption.[129] By the time the Garn-St. Germain Act was enacted, DOS was primarily an issue about actual transfer of the collateral property, not encumbrance.[130] The exclusion of encumbrance by junior liens from the permitted triggers of DOS clauses generally passed without remark. By 1982, due-on-encumbrance clauses were no longer common and were seldom litigated.[131] These clauses have gone virtually unremarked in case law and the secondary literature since the Garn-St. Germain Act.

Garn-St. Germain represented a compromise between the interests of the lending industry—which feared being decapitalized because of mortgage assumption, sometimes facilitated by junior-lien seller financing—and traditional conservative home equity lending. Garn-St. Germain's passage also coincided with the end of the inflationary economy in the United States. But the policy it espoused of prohibiting limitations on home mortgage leverage may have remained popular for other reasons.

There are several politically powerful constituencies that oppose limitations on total home mortgage leverage for various reasons. First are middle class homeowners. Home equity is the single most important asset class for the American middle class.[132] In particular, home equity

---

128. *See, e.g.*, Javier Bianchi & Enrique G. Mendoza, *Overborrowing, Financial Crises, and "Macro-Prudential" Taxes* 1–54 (Nat'l Bureau of Econ. Research, Working Paper No. 16091, 2010), http://www.nber.org/papers/w16091 [http://perma.cc/9S6H-DHGL].

129. *See, e.g.*, *Security Instruments*, FANNIE MAE, https://www.fanniemae.com/singlefamily/security-instruments#standard [http://perma.cc/3VLP-3YLE] (providing links to standard instruments by state). Fannie/Freddie Uniform Instruments had prohibited assumption even before Garn-St. Germain. Assumption was permitted on new FHA-insured and VA-guaranteed mortgages until the late 1980s.

130. Edward J. Murdock, Note, *The Due-on-Sale Controversy: Beneficial Effects of the Garn-St. Germain Depository Institution act of 1982*, 1984 DUKE L.J. 121, 121 n.2 (1984).

131. Thornburg, *supra* note 97, at 646.

132. *See* Bricker et al., *supra* note 88, at 16 tbl. 3.

is the leading source of Americans' retirement savings.[133] Policies that cause nominal home prices to decline are, therefore, politically toxic because they erode the wealth of a broad political constituency. Mortgage leverage restrictions could place downward pressure on home prices by limiting the ability of buyers to bid up prices using borrowed funds.

While the maintenance of current home prices is politically important, so too is home price stability. Leverage regulations would encourage greater home price stability. However, even a one-time price adjustment is politically unpalatable. Moreover, political considerations favor maintenance of current prices, even at unsustainable or unstable levels because elected officials are incentivized to adopt policies that goose or support home prices in the present, even at the expense of home prices in the future.[134]

A second important political constituency that opposes home mortgage leverage restrictions, especially when house prices are rising, are those groups that benefit from increased volume of home sale and financing transactions. These groups include realtors, homebuilders, and home furnishing providers, as well as mortgage lenders.[135] All of these housing industry groups are quite concerned about maintaining a demand for housing and for their products. These groups should be concerned about housing market stability, but stability may take a backseat to their immediate concern of maintaining home prices in the short run.

A third constituency opposed to home mortgage leverage regulation, including junior-lien regulation, is affordable housing advocates. Affordable housing concerns militate against restricting homeowner leverage, particularly at times of increasing prices and lending. Additional leverage increases buying power, which is especially important for consumers, particularly first-time homebuyers, who may find it challenging to save up sufficient funds for a large down payment.[136]

---

133. William C. Apgar & Zhu Xiao Di, *Housing Wealth and Retirement Savings*, *in* THE OXFORD HANDBOOK OF PENSIONS AND RETIREMENT INCOME 618, 618–37 (Gordon L. Clark et al., eds. 2006). Home equity can be used to provide actual cash income via sale, home equity loan, or reverse mortgage, or to provide imputed cash income in the form of rental payments to oneself.

134. This public choice economics observation is an application of the "fiscal illusion" idea pioneered by James Buchanan and Richard Wagner. *See* JAMES M. BUCHANAN & RICHARD E. WAGNER, DEMOCRACY IN DEFICIT: THE POLITICAL LEGACY OF LORD KEYNES 128–30 (1977); Richard E. Wagner, *Revenue Structure, Fiscal Illusion, and Budgetary Choice*, 25 PUB. CHOICE 45, 47 (1976).

135. To the extent that lenders are able to shift credit risk to investors through securitization, lenders may not be particularly concerned with the sustainability of loans; instead, volume concerns take front-seat, and this may be exacerbated by agency problems within lending firms because compensation may be linked to sales volume, not loan performance. Indeed, even for lenders that do retain credit risk, agency problems may still encourage volume over sustainability.

136. Too much leverage is, of course, incompatible with *sustainable* homeownership, but the risks posed by higher LTVs can often be offset by compensating factors. Indeed, the loans that were at the epicenter of the financial crisis were not fixed-rate, fully-amortized, fully-documented FHA-insured loans at 97% LTV, but adjustable rate, interest-only, undocumented loans made at 90% LTV or higher.

The combination of these political constituencies may have meant that home mortgage leverage regulation of any type, much less repeal of the Garn-St. Germain DOS clause enforcement prohibition, was never even part of the policy discussion between 1982 and the collapse of the housing bubble.[137]

E. Lack of Contractual Adaptation

Creative lawyers could easily draft around Garn-St. Germain. For example, Garn-St. Germain does not itself define "due-on-sale" clauses, leaving open a question of what it actually prohibits. Similarly, Garn-St. Germain prohibits enforcement of DOS clauses triggered by encumbrance, but would it also prohibit enforcement of a DOS clause triggered by a change in CLTV beyond a certain threshold? As far as we

---

137. The confluence of these constituencies is still so powerful that it thwarted the two post-2008 attempts to regulate LTV in the home mortgage market. First, the U.S. implementation of Basel III capital standards originally contemplated risk weights adjusted by LTV. 78 Fed. Reg. 62,018, 62,022, 62,025, 62,087 (Oct. 11, 2013). This was largely dropped in the final rule, *see supra* note 83, in response to significant criticism. 78 Fed. Reg. 62,018, 62,087–88 (Oct. 11, 2013).

Second, the Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010 mandated that securitizers retain credit risk of securitized assets unless exempted by regulation. 15 U.S.C. § 78o-11 (2012). The credit risk retention regulations promulgated by a college of financial regulators originally proposed exempting residential mortgage securitization from credit risk retention only if the LTVs of the mortgages were under 80%. 76 Fed. Reg. 24,090, 24,167 (Apr. 29, 2011).

In the face of pushback from both the financial services industry and affordable housing advocates, 78 Fed. Reg. 57,927, 57,988 (Sept. 20, 2013), the regulators revised their proposal to eliminate all LTV references for residential mortgages, 78 Fed. Reg. 57,927 (Sept. 20, 2013); 79 Fed. Reg. 77,601,77,686–88 (Dec. 24, 2014), and for all Fannie Mae/Freddie Mac securitizations, 79 Fed. Reg. 77,601, 77,749–50, (Dec. 24, 2014) (codified at 17 C.F.R. § 246.8 (2015)), even while including them for commercial mortgage securitization, 79 Fed. Reg. 77,601, 77,759 (Dec. 24, 2014) (codified at 17 C.F.R. § 246.17(a)(5) (2015) (capping LTV at 65% and CLTV at 70% in most cases)), and auto loan securitization. 79 Fed. Reg. 77,601, 77,760 (Dec. 24, 2014) (codified at 17 C.F.R. § 246.18(a)(3) (2015) (requiring that for a loan to qualify for a risk retention exemption, the borrower must pay 100% of the taxes, title costs, and fees, in addition to 10% of the net purchase price (gross price less manufacturer and dealer discounts) of the car)). Moreover, for commercial loan securitizations, the loan documentation must impose limits on "[t]he creation or existence of any other security interest or lien with respect to the borrower's property that serves as collateral for the loan." 79 Fed. Reg. 77,601, 77,756–57 (Dec. 24, 2014) (codified at 17 C.F.R. § 246.16(a)(3)(A)(iii) (2015)). Similarly, for commercial real estate securitization, an exemption from credit risk retention requires that "[t]he loan documentation for the CRE loan prohibits the borrower and each operating affiliate from obtaining a loan secured by a junior lien on collateral for the CRE loan [unless CLTV remains below the prescribed limits]." 79 Fed. Reg. 77,601, 77,758 (Dec. 24, 2014) (codified at 17 C.F.R. § 246.17(a)(4) (2015)). The regulators noted that although they were eliminating an LTV requirement for residential mortgages exempt from risk retention that, "[t]he agencies continue to believe that both LTV and borrower credit history are important aspects of prudent underwriting and safe and sound banking." 78 Fed. Reg. 57,927, 57,992 n.2 (Sept. 20, 2013). Whatever the merits of the credit risk retention rulemaking, it illustrates the political complications of attempts to regulate home mortgage leverage in the United States.

can determine, however, there were never attempts to adapt contractual language to circumvent the Garn-St. Germain prohibitions.

Three factors help to explain the lack of contractual adaptation. First, there was no need to adapt contracts because once DOS clauses became enforceable nationwide, the assumable mortgage problem disappeared, and with it the corresponding problem of widespread seller financing. There was thus no impetus to draft mortgage contracts to circumvent the Garn-St. Germain prohibition, as the leverage option did not manifest itself as a problem until the mid-2000s, and even then the extent of the problem was not fully understood.[138] Indeed, the lack of prior work in this area underscores that the leverage option has still not become a concern for mortgage lenders.

Second, almost all American mortgages are written using standard documentation developed by Fannie Mae and Freddie Mac.[139] Freddie Mac requires use of the standardized documentation as a precondition for purchasing a loan;[140] while Fannie Mae does not formally require use of the standardized documentation, it does require loan sellers who use non-standard documentation to provide an additional set of warranties about loan documentation, including regarding DOS clauses.[141] As a result, lenders prefer to use the standard Fannie Mae and Freddie Mac documentation.[142] The near universal adoption of Fannie Mae/Freddie Mac Uniform Instruments meant that there was no space for contract experimentation with mortgage documentation in the United States.

Third, the Fannie Mae/Freddie Mac Uniform Instruments are the product of a complex political bargaining process,[143] and, as noted above, both borrower and lender constituencies had reasons to oppose leverage limitations of any sort.[144] The complex political pressures on Fannie Mae and Freddie Mac continue to inhibit contractual experimentation to address second-mortgage lending.

---

138. *See supra* Part I.C.

139. Julia Patterson Forrester, *Fannie Mae/Freddie Mac Uniform Mortgage Instruments: The Forgotten Benefit to Homeowners*, 72 MO. L. REV. 1077, 1085 (2007).

140. FED. HOME LOAN MORTG. CORP., SINGLE-FAMILY SELLER/SERVICER GUIDE §§ 6.7–6.8 (Jan. 1, 2013) (requiring use of Uniform Instruments, but authorizing specific variations).

141. FED. NAT'L MORTG. ASS'N, SELLING GUIDE § A2-2.1-03 (Aug. 20, 2013) (document warranties).

142. *See* Forrester, *supra* note 139, at 1086–87 (noting estimates of over 90% of mortgages being documented with Fannie Mae/Freddie Mac Uniform Instruments).

143. *See* Peter M. Carrozzo, *Marketing the American Mortgage: The Emergency Home Finance Act of 1970, Standardization and the Secondary Market Revolution*, 39 REAL PROP. PROB. & TR. J. 765, 797–99 (2005); Raymond A. Jensen, *Mortgage Standardization: History of Interaction of Economics, Consumerism and Governmental Pressure*, 7 REAL PROP. PROB. & TR. J. 397, 399–415 (1972); Arthur W. Leibold, *Uniform Conventional Mortgage Documents: FHLMC Style*, 7 REAL PROP. PROB. & TR. J. 435, 437–40 (1972); James E. Murray, *The Developing National Mortgage Market: Some Reflections and Projections*, 7 REAL PROP. PROB. & TR. J. 441, 441–50 (1972).

144. *See supra* Part III.D.

V. UNEMBEDDING THE LEVERAGE OPTION

The Garn-St. Germain Act's prohibition on the enforcement of DOS clauses was a response to a particular set of economic problems at a particular historical moment.[145] The Garn-St. Germain Act's prohibition, however, had an unfortunate unintended consequence of facilitating the housing bubble by allowing homeowners to lever up with junior liens.[146]

Our concern here is not high LTV-lending per se. As long as homeowners have positive equity, the precise level of LTV should not be of particular concern. Instead, our concern is lack of *knowledge* of the real LTV on loans and hence mispricing of leverage risk, particularly if the real LTV is near or over 100%. The problem is that while the "L" in LTV is a known and fixed amount, the "V" is based on appraisals that can be wrong and may vary, both because of exogenous shocks to the economy and because it is affected by the aggregate amount of home mortgage leverage in the economy because prices can be bid up when there is easy credit, which in turn affects appraisals on comparable properties. Thus, even if other underwriting factors compensate for high LTV on individual loans, there is still the problem of aggregate LTV in the economy artificially inflating the "V" in all LTV ratios to the point that homeowners have no equity in their properties. It is not possible to track aggregate home mortgage in the economy without tracking CLTV on individual mortgages. Such tracking is not possible as long as homeowners have an absolute right to leverage up with junior liens because there will be no way to ensure that the senior lienholder knows about the junior liens.[147]

A. The Leverage Option as Contract Right, Not Property Right

We suggest that the Garn-St. Germain Act's prohibition on DOS clause enforcement be modified, at least as applied to voluntary junior liens. A lender should be able to call its loan if the homeowner willingly encumbers the property with a junior lien.[148]

---

145. *See supra* Part III.A.

146. *See supra* Part I.C.

147. Reporting of junior liens by itself would enable lenders to price based on historical rates of junior encumbrance, but that is not necessarily predictive of future rates. Moreover, real time reporting is unlikely to occur without some sort of effective penalty. Accordingly, we believe a contract right solution, rather than assigning the leverage option as a property right to the borrower (with a reporting requirement) is the best solution.

148. Involuntary liens, such as tax liens, homeowners' association liens, and judgment liens present more complex issues that we do not address here.

To this end, we suggest that the Garn-St. Germain Act be amended to allow lenders to enforce DOS clauses upon encumbrance of a property with a voluntary lien. Such an enforcement right would not be meaningful, however, unless a first-lien lender were to know of the junior lien. Accordingly, we also suggest that the Garn-St. Germain Act be amended to prohibit the enforcement of *junior* liens absent proof that the first lienholder has been notified of the junior lien. If the first lienholder does not exercise its DOS power within a reasonable time after learning of the junior lien, then enforcement of the first lienholder's DOS clause based on encumbrance by the junior lien should be prohibited.[149] In essence, there should be a specifically enforceable, but waivable, negative pledge clause built into the first-lien mortgage. The situation that should result, then, is that a potential junior lender will not actually lend until the first lienholder has been notified and consented by waiving its right to call the loan on account of the junior lien. Presumably, such consent would become a standard part of a second-lien mortgage's closing package.

In essence what we are proposing with a repeal of Garn-St. Germain's DOS prohibition for encumbrances is that the mortgage contract contain an explicit and separate option for the homeowner to subsequently increase leverage via a junior lien either by an unlimited amount or up to a defined CLTV based on a new appraisal approved by the first mortgagee. The consumer would either pay for this optionality up front or negotiate for it later.

This "leverage option" is currently bundled into the mortgage contract by way of Garn-St. Germain. We believe that the "leverage option" should be unbundled and separately negotiated. Separating out the "leverage option" would allow homeowners who value it to still be able to obtain it, while not forcing other homeowners to purchase an option that they may neither want nor need. Thus, mortgage prices should be lower with the leverage option unbundled, as there will not be a cross-subsidy built into mortgage pricing from those who do not exercise the leverage option to those who do.

We thus propose to transform the leverage option from a property right to a contract right. Garn-St. Germain creates a property right regime by assigning mortgagors an absolute right to lard up on junior lien leverage. Our proposal would return this right to the realm of contract.

B. Coasean Bargaining over the Leverage Option

Following Coase, we do not believe it matters whether the leverage option is initially assigned to borrowers or lenders, although

149. The regime we propose is slightly different from the one that currently exists for commercial real estate. In commercial real estate, DOS clauses and negative pledge clauses are common and enforceable, but there is no system for notification regarding junior liens. Because of the larger size of commercial real estate mortgages, lenders have a greater incentive to monitor for junior liens than with residential mortgages.

we believe in practice it will be initially assigned to lenders, who will then allow borrowers to bargain for it.[150] Coasean solutions, of course, do not work in all markets. In the presence of transaction costs, informational problems, and wealth and liquidity constraints, the initial allocation of a right may matter, as the parties may not be able to bargain so as to allocate it to the party that values the right the most.[151] In this particular application, however, we do not believe that these standard critiques of Coasean solutions have purchase.

1. Transaction Costs

Transaction costs do not present a particular concern with the initial mortgage transaction. The initial mortgage transaction itself has significant transaction costs relating to the application for financing and the closing of the transaction, but the marginal increase in transaction costs from bargaining over the leverage option is near zero. We would expect the price of the leverage option to be on a standardized scale for lenders. Thus, the lender might offer the consumer a mortgage at rate *X* with the leverage option and at lower rate *Y* without the leverage option. All the consumer has to do is pick between these two choices, which could be as simple as checking a box on the loan application.

Suppose, however, that the borrower did not bargain for the leverage option initially, but later decides that it wants to have the option. At this point, the first-lien lender has an absolute veto over the creation of a junior lien, and can exercise a bilateral monopoly. Indeed, this concern was flagged by the California Supreme Court in *La Sala*.[152]

While a first-lien lender will probably price more for the leverage option at this point, we should not automatically assume that the first-lien lender is abusing its bilateral monopoly power. The borrower has already received a benefit in the form of a cheaper mortgage for the time during which he or she eschewed the leverage option. So the total cost for the leverage option might not actually be higher. Moreover, the borrower's subsequent request for the leverage option indicates a high likelihood of the option being exercised, which should raise the price of the option.

More importantly, however, is to recognize that the lender does not in fact have an absolute bilateral monopoly. The bilateral monopoly is only over the leverage option, but there is a substitute good:

---

150. Ronald H. Coase, *The Problem of Social Cost*, 3 J.L. & ECON. 1, 6–8 (1960).

151. *See generally* Steven G. Medema & Richard O. Zerbe, Jr., *The Coase Theorem*, ENCYCLO. OF L. & ECON. 836, 877 (1999).

152. 489 P.2d 1113, 1124 (Cal. 1971), *superseded by statute*, 12 U.S.C. § 1701j–3 (1982).

refinancing. Instead of bargaining with the lender subsequently for the leverage option, the homeowner can always refinance the first lien.[153] If interest rates have gone up, the first-lien lender will be happy for the borrower to refinance because it will get out of a below-market-rate loan. If interest rates have gone down, the first-lien lender could attempt to keep the borrower by refinancing, but for a larger amount. To be sure, there are transaction costs for refinancing, but they are unlikely to exceed those for exercising the leverage option, which means borrowing for a separate second mortgage.[154] Thus, we do not see transaction costs as standing in the way of efficient allocation of the leverage option between borrowers and homeowners.

2. Information Problems and Discounting

The dynamics of contract standardization present another concern about whether the leverage option could be truly bargained for. The documentation for American mortgages is highly standardized.[155] This standardization has important benefits in terms of reduced information costs for both lenders and borrowers.

Yet even standardized mortgage documentation still allows for some variation. Both fixed- and adjustable-rate mortgages are common in the United States.[156] Fixed-rate mortgages vary by term, while a range of adjustable-rate structures exist. And riders are common for properties with attached rental units.[157] Too much variation undermines the benefits of mortgage documentation standardization, but it is not obvious to us how adding one additional check-the-box

---

153. We recognize that the United States is basically unique in allowing free prepayment of long-term fixed-rate mortgages.

154. Our proposal for making the right to increase leverage a bargained-for term of the mortgage contract, rather than the absolute and indefeasible right of the consumer parallels that of Professors Christopher Mayer, Tomasz Piskorski, and Alexei Tchistyi ("MPT") for prepayment rights for fixed-rate mortgages. Christopher Mayer et al., *The Inefficiency of Refinancing: Why Prepayment Penalties Are Good for Risky Borrowers*, 107 J. FIN. ECON. 694 (2013). MPT have proposed that as a default, fixed-rate mortgages should not be prepayable or should include a prepayment penalty. For borrowers with no interest in prepayment, this mortgage would be cheaper, while borrowers who want the prepayment option can pay for it.

Consumers may not be able to properly value their repayment option at the time they enter into the mortgage contract because they cannot predict interest rate movements or their future life events. Lenders, in contrast, are better equipped to make such predictions across large portfolios; lenders have an actuarial advantage consumers lack. Moreover, the right to prepay produces an increase in value for a consumer that is able to refinance into a lower cost mortgage. This is an increase in value that comes at the expense of the lender. MPT, then is proposing a recalibration of a zero sum game as between borrowers and lenders.

We believe our proposal differs from MPT's in a significant manner, however. We believe that MPT's proposal deprives the consumer of a valuable option, whereas we believe that our proposal deprives the consumer of a right to take a risky, externality-producing gamble. Instead, we allow the consumer to have the option, but only if it is freely bargained for.

155. *See supra* text accompanying notes 140–43.

156. While most American mortgages are fixed-rate, in some years as much as a third of mortgage originations have been of adjustable-rate mortgages. Inside Mortg. Fin., Mortgage Market Statistical Annual, Market Share of FRMs vs. ARMs EV.xls (on file with authors).

157. *See Riders & Addenda,* FANNIE MAE, https://www.fanniemae.com/singlefamily/riders-addenda (last visited July 7, 2015) [https://perma.cc/45HZ-PE59].

variation to the mix would render variation regarding the leverage option infeasible.

Lender and borrower informational problems and time inconsistent valuations are unlikely to affect Coasean bargaining overall because they should largely cancel out. Lenders will inherently undervalue the leverage option because they cannot account for the systemic externality created by excessive leverage and because of the lure of definite short-term benefits over uncertain long-term benefits. The systemic effects of excessive leverage are hard to predict and, in any case, will not be not felt immediately, even to the extent they reverberate back to any given lender. Therefore, lenders will be too willing to bargain away the leverage option to gain greater market share in the present.

Borrowers, too, will not account for the systemic externality of excessive leverage. Borrowers, however, are unlikely to engage in inverse hyperbolic discounting of the leverage option. The benefit to a borrower of the leverage option is in the future and uncertain, while its cost is immediate and definite. Therefore, most borrowers are likely to undervalue the leverage option and be more willing to bargain it away (and those who do value it signal an adverse selection to lenders). Both borrowers and lenders are likely to undervalue the leverage option. While it is possible that one group will undervalue it more consistently or greater than the other, the effects should cancel each other out, at least in part.

3. Wealth and Liquidity Constraints

Finally, wealth and liquidity constraints might affect consumer choices regarding the leverage option,[158] but we would not expect the option's price to be large in relation to the mortgage amount or to materially affect the borrower's monthly payment. Thus, wealth and liquidity constraints are unlikely to affect borrowers' ability to engage in Coasean bargaining with lenders. Unembedding the leverage option enables it to be efficiently allocated through Coasean bargaining between borrowers and lenders.

---

158. *See* Yeon-Koo Che et al., *Efficient Assignment Mechanisms for Liquidity-Constrained Agents*, 31 J. INDUS. ORG. 659, 60 (2013) (noting that liquidity constraints create frictions for Coasean bargaining); Edward H. Frech, III, *The Extended Coase Theorem and Long Run Equilibrium: The Non-Equivalence of Liability Rules and Property Rights*, 27 ECON. INQUIRY 254, 254 (1979) (noting that Coase theorem holds true only in absence of wealth effects).

C. Distributional Consequences

The embedded leverage option allows Americans to freely convert home equity into cash through second mortgages. Second mortgages enable homeowners to realize the benefits of home price appreciation without selling their properties.

Unembedding the leverage option would not deprive homeowners of these important benefits. It would merely unwind the cross-subsidization of the leverage option by homeowners who do not use it for those who do. Those who utilize the leverage option would have to pay for it, but those who do not would benefit from lower costs of homeownership, and the possibility of refinancing rather than taking out a second mortgage ensures that all homeowners would still be able to access the appreciation in their home price. Unembedding the leverage thus, should actually make homeownership more affordable to those who do not purchase the leverage option.

Moreover, to the extent that a bargained-for leverage option improves financial stability, there could be a market-wide stability dividend of lower interest rates *and* higher home prices. Stability need not be the antithesis of growth.

D. Positive Externalities: Enabling Regulatory Oversight and Macroprudential Regulation

Enabling first-lien lenders to limit CLTV would enable contractual leverage regulation. This would not only benefit individual first-lien lenders, but would have market-wide positive externalities.

Requiring the reporting of junior liens to first-lien lenders would also help facilitate market-wide leverage information. To know the risk on an individual mortgage, it is necessary to know the aggregate level of mortgage leverage in the economy. Market-wide CLTV is impossible to determine, however, unless it is tracked for individual properties.

Any sort of effective regulatory oversight, whether prudential stress tests and capital requirements or explicitly macroprudential market-wide regulation of CLTVs, requires being able to account not only for the underwriting of individual loans in a vacuum, but also for how they will be affected by the general underwriting ecosystem.[159] For example, the Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010 created a new macroprudential regulatory body, the Financial Stability Oversight Council (FSOC),[160] as well as a new Office of Financial Research (OFR) in the Treasury Department that is tasked with providing financial analysis in support of the FSOC.[161] For the

159. To the extent that formal leverage regulation is not politically possible in the United States, market-based leverage regulation through enforceable due-on-encumbrance provisions would still be an improvement on the current situation.

160. Pub. L. 111–203, § 111, 124 Stat. 1376, 1392 (2010) (codified as amended at 12 U.S.C. § 5321 (2012)).

161. Pub. L. 111–203, § 153, 124 Stat. 1376, 1415 (2010) (codified as amended at 12 U.S.C. § 5342 (2012)).

FSOC to even consider addressing excessive leverage in the housing market, it would need supporting research from the OFR. The OFR cannot gauge market-wide leverage, however, without some way of tracking CLTV. The easiest way to force production of such information is to ensure that first-lien lenders are informed about junior liens on their collateral properties. The OFR can then aggregate market-wide CLTV information from first-lien lenders' regulatory call reports.

Whether and how such regulatory oversight should be exercised goes beyond the scope of this Article; our point is simply that it cannot be exercised effectively without the information that would be produced by our proposed amendment of the Garn-St. Germain Act. Amending the Garn-St. Germain Act is a precondition for enabling banks to learn the CLTV on their own collateral properties, which is, in turn, a precondition for any sort of effective regulatory oversight.

VI. CONCLUSION

This Article has identified a previously unremarked option in the home mortgage contract, the "leverage option." In the United States, unlike in the rest of the developed world, this option is embedded in the mortgage. Borrowers are compelled to purchase (but not exercise) the option, irrespective of whether they value it. The result is an inequitable and inefficient cross-subsidy among borrowers. The embedded leverage option also makes it impossible for first-lien lenders to accurately price for leverage risk on home mortgages or even determine the leverage on their loans, much less on a system-wide basis. The consequences of underestimating, and thus underpricing, system-wide leverage were manifest during the housing bubble. As we demonstrated, the increase in home prices during the bubble was disproportionately driven by junior-lien lending, and these junior liens then frustrated loan restructuring efforts after the bubble burst.

The embedded nature of the American mortgage's leverage option is an unintended consequence of regulation dealing with creative financing arrangements that arose in reaction to the inflationary economy of the 1970s and early 1980s. This regulation prohibits private contractual limitations on home mortgage leverage and undermines public oversight of the role of second liens in systemic risk.

The shift in regulation occurred at the same time that relational constraints on junior-lien home mortgage leverage were loosened because of the shift in mortgage financing from balance sheet lending to securitization. The result was an increase in mortgage leverage through junior liens that were popular with a variety of political constituencies, but which ultimately increased home price instability.

Our solution is simple: make the leverage option a bargained-for contract right, rather than a mandatory property right. This is the situation that exists in all other asset markets and in the rest of the developed world for home mortgages. Doing so will enable better market discipline for mortgage lending and will generate the information necessary for effective regulatory oversight of mortgage leverage.

It is astounding that the United States still lacks regulation of home mortgage leverage even seven years after a severe financial crisis caused by excessive home mortgage leverage. If we want to ensure continued stability of the home mortgage market, it is necessary to enable better market discipline and regulatory oversight of home mortgage leverage, and that requires unembedding the leverage option.