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Blockchain and cryptocurrencies have ushered in a digital gold rush. But all that glitters is not gold. The latest fad is the use of non-fungible tokens (NFTs) to purchase and finance real estate. Typically, crypto real estate transactions begin with the transfer of title for a residential property into a dedicated business entity, such as a limited liability company. Thereafter, an NFT is "minted" and used to represent the ownership interest in that entity. The real property is then marketed online specifying that, to acquire it, one simply purchases the relevant NFT via a blockchain transfer. Crucially, buyers are expected to use the NFT as collateral to fund their purchase, rather than obtaining a traditional mortgage. Proponents of this novel structure insist that it yields cheap, fast, and secure real estate transfers, disrupting a sector infamous for its high costs, delays, and labyrinthine bureaucracy.

This Article offers the first exhaustive examination of crypto real estate transactions. We reveal that the NFT financing model is not a mere technological upgrade, but rather transports parties out of the domain of traditional mortgages and into secured transactions law, with significant legal and policy implications. Most worryingly, it exposes borrowers to swift and irreversible home liquidations in cases of default, robbing them of the protections historically afforded to homeowners. As foreclosures already impact minorities disproportionately, crypto real estate transactions risk hurting society's most vulnerable. Our proposed normative framework seeks to address these flaws. We contend that the law should look past technological mechanisms and focus on substance. These dealings are still real property purchases financed with a loan, so courts should offer those in default the same safeguards available under traditional mortgages. Robust public policies on ownership must be upheld, and fair protections for the family home cannot be sacrificed at the altar of innovation.

INTRODUCTION

Nothing stimulates the collective imagination as much as a novel invention. Zealots argue that blockchain is destined to join the ranks of humankind's greatest innovations, alongside the printing press, the steam engine, and the internet.[1] Cryptocurrencies, smart contracts, stablecoins, and non-fungible tokens (NFTs) will free individuals from corrupt governments, parasitic banks and partisan courts, ushering in a utopia of cryptographic trust, disintermediated payments, and algorithmic adjudication.[2] But this vision has

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1. *See generally Exploring the Potential of Cryptocurrencies for Positive Change*, UNITED NATIONS, https://www.un.org/sw/desa/exploring-potential-cryptocurrencies-positive-change [https://perma.cc/F57P-QWH8]; Robert Finlay, *5 Ways Cryptocurrency Will Change the World of Commercial Real Estate*, YAHOO FINANCE (Dec. 11, 2021), https://finance.yahoo.com/news/5-ways-cryptocurrency-change-world-200000124.html [https://perma.cc/2BFX-8KD7].

2. *See Exploring the Potential of Cryptocurrencies for Positive Change*, *supra* note 1.

not yet materialized.[3] Socially positive use cases remain elusive, eclipsed by unregulated trading, rampant speculation, and fraud on a historically unprecedented scale, with no better example than the recent and spectacular implosion of the crypto exchange giant FTX.[4]

The latest frenzy involves crypto real estate transactions.[5] In a typical example, a business entity is established, and title to a real property is transferred to it.[6] The constitution of this company—generally a limited liability company (LLC)—specifies that its ownership is represented by a determinate NFT, again deliberately created for this endeavor.[7] The property is then marketed online, with prospective purchasers informed that if they wish to buy it, they can do so by acquiring the relevant NFT via a blockchain transfer.[8] Crucially, a buyer is expected to use the NFT as collateral to secure a bank loan to fund this acquisition, rather than obtaining a traditional mortgage.[9] Proponents of this structure, such as the IBREA Foundation and Propy, suggest that the use of NFTs to purchase and finance real estate will cut expenses, expedite proceedings, and facilitate access to credit, eliminating many of the transaction costs and frictions associated with the residential housing market and traditional mortgages.[10]

This Article offers the first comprehensive analysis of crypto real estate transactions. We reveal that the structure of these dealings differs profoundly from that of prototypical real estate transactions, both in how the ownership of the relevant property is conveyed and in the manner in which financing is

3. *See, e.g.*, Lorraine McGowen, *2022 Is the Year of Sweeping Changes for Cryptocurrency and Other Digital Asset Transfers*, JDSUPRA (Jan. 14, 2022), https://www.jdsupra.com/legalnews/2022-is-the-year-of-sweeping-changes-9286474 [https://perma.cc/W7XU-SYFT]; *see also* Peter Lane Taylor, *Crypto Just Became Real Estate's Hottest New Thing. Here's What That Means for Buyers, Sellers, and Developers*, FORBES (May 17, 2022), https://www.forbes.com/sites/petertaylor/2022/05/07/crypto-just-became-real-estates-hottest-new-thing-heres-what-the-bitcoin-revolution-means-for-buyers-sellers-and-developers/?sh=3a11959c388b.

4. Diane Lourdes Dick & Christopher K. Odinet, *The Questionable Virtues of Chapter 11 in the FTX Bankruptcy*, COLUM. L. SCH. BLUE SKY BLOG (Dec. 7, 2022), https://clsbluesky.law.columbia.edu/author/diane-lourdes-dick-and-christopher-k-odinet [https://perma.cc/3Y3V-975F]; Diane Lourdes Dick & Christopher K. Odinet, *The Public and the Private of the FTX Bankruptcy*, HARV. L. SCH. BANKR. ROUNDTABLE (Jan. 31, 2023), https://blogs.harvard.edu/bankruptcyroundtable/tag/diane-lourdes-dick [https://perma.cc/9CEQ-AWBN].

5. For a discussion of the ways crypto is being described in the context of improving real estate transactions, see *Blockchain in Commercial Real Estate: The Future Is Here*, DELOITTE, https://www2.deloitte.com/us/en/pages/financial-services/articles/blockchain-in-commercial-real-estate.html [https://perma.cc/Q6A8-ZCZQ]; *see also* Cody Tromler, *Cryptocurrency And Real Estate Transactions: What You Need To Know*, UPNEST (Mar. 1, 2022), https://www.upnest.com/1/post/the-rise-of-cryptocurrency-in-real-estate-transactions [https://perma.cc/Z7TR-2JTV] (describing uses and benefits); Adam Redolfi, *The Future of Real Estate Transactions on the Blockchain*, FORBES (Oct. 27, 2021, 6:45 AM), https://www.forbes.com/sites/forbesbizcouncil/2021/10/27/the-future-of-real-estate-transactions-on-the-blockchain/?sh=4153eaac4938.

6. *See infra* Part I.B.

7. *See infra* Part I.B.

8. *See infra* Part I.B.

9. *See infra* Part I.B.

10. *See infra* Part I.B.

secured.[11] Regarding the latter, using an NFT (representing the ownership interest of a business entity)[12] as collateral is not a mere technological upgrade but rather fundamentally alters the positions of both buyer and lender, exposing them to unforeseen dangers.[13]

Notably, homeowners lured by the advertised benefits of crypto real estate transactions would find themselves facing a swift, harsh enforcement regime in the event of default—one that lacks all the protections of a traditional home mortgage foreclosure.[14] The typical asymmetry of financial knowledge between lender and borrower and the social and cultural importance of the family home have been carefully considered when crafting mortgage laws; for example, a "slowing down" of the foreclosure process is deliberately woven into the consumer protection laws governing residential mortgages to allow those in distress to stabilize their position or make alternate living arrangements.[15] In a crypto real estate transaction, borrowers would be positioning themselves outside that umbrella.[16] The resultant socio-economic harm is only compounded when one considers that a majority of people experiencing foreclosure cite medical debt as the primary cause for their financial distress[17] and that in economic downturns, Black households are on average twice as likely to have their homes repossessed than White households.[18]

Having identified the legal challenges and the potential socio-economic reverberations of crypto real estate transactions and the NFT financing model, this Article proposes normative solutions.[19] We suggest that crypto real estate financing transactions should be treated equivalently to residential mortgage transactions.[20] They may not be structured as such on paper, but they function as such in practice, and therefore the law should (as it does in so many other scenarios) observe *the substance over the form*.[21] This does not mean that the

11. *See infra* Part II and accompanying discussion.

12. For a discussion of the tokenization under the law, see Juliet M. Moringiello & Christopher K. Odinet, *The Property Law of Tokens*, 74 FLA. L. REV. 607, 607–70 (2022).

13. *See infra* Part II and III.

14. *See infra* Part II.

15. ADAM J. LEVITIN, CONSUMER FINANCE LAW: REGULATION AND MARKETS 615 (2018); *see also* Juliet M. Moringiello & Christopher K. Odinet, *Blockchain Real Estate and NFTs*, 64 WM. & MARY L. REV. 1131, 1188 (2023) [hereinafter Moringiello & Odinet, *NFTs*], https://scholarship.law.wm.edu/cgi/viewcontent.cgi?article=3982&context=wmlr [https://perma.cc/6ZUE-7L76].

16. *See infra* Part III.

17. Christina A. Cutshaw et al., *Medical Causes and Consequences of Home Foreclosures*, 46 INT. J. HEALTH SERVS. 36, 40 (2016).

18. *See* Charisse Jones, *Black Homeowners Are Twice as Likely to Have to Return to Renting than Whites*, USA TODAY (Nov. 16, 2020, 8:27 AM), https://www.usatoday.com/story/money/2020/11/16/homes-sale-black-homeowners-more-likely-return-renting/6269978002/ [https://perma.cc/4E7K-5YQJ].

19. *See infra* Part IV.

20. *See infra* Part IV.

21. *See infra* Part IV.

transactional structures are fundamentally invalid or flawed or that they cannot be enforced as set forth in the agreement of the parties.[22]

This Article aims to contribute both to the scholarly debate surrounding crypto tokenizations and ongoing law reform initiatives. Building on a vast and diverse body of literature, our research brings clarity to a novel transactional structure which lies at the intersection of the laws governing digital assets, secured transactions, mortgages, and home ownership.[23] Concurrently, we advance our analysis and normative solutions in the hope that they might inform and, possibly, influence the work of the study committee recently appointed by the Uniform Law Commission to investigate the use of tokens and related crypto devices in real estate transactions.[24]

Part I compares the constituent elements of prototypical and crypto real estate transactions, showing that there are fundamental distinctions in how buyers acquire title from sellers and obtain funding from lenders. In Part II, we explain that the NFT financing model of crypto real estate transactions falls within the purview of Article 9 of the Uniform Commercial Code (UCC) rather than traditional mortgage law; these two bodies of rules diverge dramatically, especially regarding their respective enforcement regimes upon debtor default. Part III meticulously documents the legal implications and conundrums of crypto real estate transactions. We reveal that both buyers and lenders experimenting with this novel structure are exposed to unforeseen dangers. In Part IV, we present our normative solutions to tame crypto real estate transactions.

I. CRYPTO AND REAL ESTATE MARKETS

Companies harnessing blockchain technology have recently set their sights on real estate markets. Their efforts are targeting both the purchase and sale of real property and the financing of these transactions.[25] This Part describes a prototypical residential real estate transaction and then explains how a crypto real estate transaction would differ.

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22. *See infra* Part IV. For examples, see PETER HOLGATE, ACCOUNTING PRINCIPLES FOR LAWYERS 48–55 (2006); FORM AND SUBSTANCE IN THE LAW OF OBLIGATIONS 35–67 (Andrew Robertson & James Goudkamp eds., 2019).

23. *See* Christopher K. Odinet, *Modernizing Mortgage Law*, 100 N.C. L. REV. 89, 103 n.1 (2021) (collecting the literature); *see also* Moringiello & Odinet, *NFTs*, *supra* note 15, at 1135–36 (collecting a sample of some of the most prominent works in the literature); Giuliano G. Castellano & Andrea Tosato, *Commercial Law Intersections*, 72 HASTINGS L.J. 999, 1002–1003 (2021) (highlighting the increasing prevalence of transactions that fall concurrently within the purview of two or more commercial law branches, creating a "commercial law intersection").

24. USE OF TOKENS OR OTHER SIMILAR PRODUCTS IN REAL PROPERTY TRANSACTIONS COMMITTEE, UNIF. L. COMM'N. (2022), https://www.uniformlaws.org/committees/community-home?CommunityKey=cccbc3bb-005e-4bc3-869f-38ff3da99186 [https://perma.cc/T6NW-6VUF].

25. *Id.*

A. The Prototypical Real Estate Transaction

A transfer of residential real estate typically unfolds as follows. A buyer and a seller are brought together by a broker or agent[26] who helps the former find a property that suits their needs, and the latter to market their property to potential purchasers.[27] The transfer transaction commences when the buyer and seller agree to the terms of a purchase agreement (sometimes also called a buy/sell agreement).[28] In this contract, the parties specify the property to be transferred and the price to be paid; they may also include sundry other conditions, such as merchantability of title, physical inspections, and financing.[29]

The signing of this contract kicks off a period during which the buyer undertakes various due diligence tasks, as described in the agreement.[30] The buyer ensures that the property is in an acceptable physical condition;[31] this involves physical inspections which sometimes evolve into an extensive assessment of the structural integrity of the property in question.[32] The buyer also carries out searches to investigate whether the seller has a marketable title to the property, which is free from unacceptable limitations and restrictions.[33] During this time, the buyer will work with a lender to obtain a mortgage loan to enable them to pay the purchase price.[34]

Around the closing table, the parties will exchange documents and funds to complete the transfer of the real property that was first agreed to in the purchase agreement.[35] The conductor of the closing will ensure that the proper documents—specifically, the deed and any mortgage—are properly executed,

26. For a discussion of the history of the role of brokers in real property transactions, see BARLOW BURKE, JR., LAW OF REAL ESTATE BROKERS § 1.01 (2021); DALE A. WHITMAN, ANN M. BURKHART, R. WILSON FREYERMUTH & TROY A. RULE, LAW OF PROPERTY 604 (4th ed. 2019) [hereinafter WHITMAN ET AL., LAW OF PROPERTY]; ANN M. BURKHART, R. WILSON FREYERMUTH, CHRISTOPHER K. ODINET, GRANT S. NELSON & DALE A. WHITMAN, REAL ESTATE TRANSFER, FINANCE, AND DEVELOPMENT: CASES AND MATERIALS 3–24 (10th ed. 2021) [hereinafter BURKHART ET AL., REAL ESTATE TRANSFER].

27. ROBIN PAUL MALLOY & JAMES CHARLES SMITH, REAL ESTATE TRANSACTIONS: PROBLEMS, CASES, AND MATERIALS 27 (5th ed. 2017).

28. SHELTON F. KURTZ, HERBERT HOVENKAMP, CAROL NECOLE BROWN & CHRISTOPHER K. ODINET, AMERICAN PROPERTY LAW 1237 (2019); BURKHART ET AL., REAL ESTATE TRANSFER, *supra* note 26, at 3.

29. JOSEPH WILLIAM SINGER ET AL., PROPERTY LAW: RULES, POLICIES, AND PRACTICES 913–17 (6th ed. 2014).

30. *Id.*; BURKHART ET AL., REAL ESTATE TRANSFER, *supra* note 26, at 129.

31. CHRISTOPHER SERKIN, THE LAW OF PROPERTY 134–35 (2d ed. 2016); BURKHART ET AL., REAL ESTATE TRANSFER, *supra* note 26, at 106.

32. SERKIN, *supra* note 31, at 135.

33. WHITMAN ET AL., LAW OF PROPERTY, *supra* note 26, at 794–95; BURKHART ET AL., REAL ESTATE TRANSFER, *supra* note 26, at 80.

34. WHITMAN ET AL., LAW OF PROPERTY, *supra* note 26, at 604; BURKHART ET AL., REAL ESTATE TRANSFER, *supra* note 26, at 138–49.

35. BURKHART ET AL., REAL ESTATE TRANSFER, *supra* note 26, at 265–66 (describing settlement).

delivered, and recorded in the land records of the proper county.[36] A title policy will be issued in the names of both the new owner and the lender that provided the purchase necessary for the transfer to occur.[37]

All of these activities involve time, energy, multiple parties, and expenses. Buyer and seller will need to pay fees, typically at the closing, for the services provided by (among others) closing attorneys, lenders, title insurers, real estate agents, special inspectors, appraisers, and/or surveyors.[38] The numbers vary, but, by general estimate, the closing costs involved in purchasing a home range from between two to seven percent of the sale price.[39] Thus, the purchase of a home for $250,000 would incur an additional transaction cost ranging between $5,000 and $17,500.[40]

B. *The Crypto Real Estate Transaction*

Advocates for the use of blockchain technology and NFTs in real estate transactions seek to reinvent the buying and selling of property. The core element remains unchanged—the right to possess real property is transferred in return for money.[41] But the methods for (i) conducting and (ii) financing these conveyances are entirely novel.

1. *Real Property Ownership Transfers via Crypto*

Though still in their infancy and fast-evolving, the key steps of crypto real estate transactions can be described as follows. First, a company active in the blockchain space (who we will call the sponsor) creates a business entity, such as an LLC.[42] Simultaneously, the sponsor uses Ethereum, or any other major

36. KURTZ, HOVENCAMP, BROWN & ODINET, *supra* note 28, at 1370.

37. Stewart E. Sterk, *Title Insurance: Protecting Property at What Price?*, 99 WASH. U. L. REV. 519, 521 (2021); JOYCE D. PALOMAR, 1 PATTON AND PALOMAR ON LAND TITLES § 41 (3d ed. 2022).

38. *See generally* Michelle Fox, *Here's How Much You'll Really Need to Buy Your First Home (Hint: It's More Than You Think)*, CNBC (June 22, 2020, 9:27 AM), https://www.cnbc.com/2020/06/22/heres-how-much-money-youll-really-need-to-buy-your-first-home.html [https://perma.cc/54TV-WTF2]; Liz Knueven & Molly Grace, *The Average Mortgage Closing Costs, by State*, INSIDER (July 12, 2023, 5:12 PM), https://www.businessinsider.com/personal-finance/average-closing-costs [https://perma.cc/DBG5-GL8G]; *Industry Research*, AM. LAND TITLE ASS'N, https://www.alta.org/industry-research [https://perma.cc/K3XD-GQ3S].

39. Emily Starbuck Gerson, *How Much Does It Cost to Buy a House*, CREDIT KARMA (Jan. 19, 2023), https://www.creditkarma.com/home-loans/i/cost-to-buy-house [https://perma.cc/F669-CXXW]; Janet Siroto, *How Much Does It Cost to Buy a House Today? The Latest Facts and Figures, Explained*, REALTOR.COM (June 15, 2023), https://www.realtor.com/advice/finance/how-much-does-it-cost-to-buy-house [https://perma.cc/X7CV-FHXW].

40. Tara Mastroeni, *How Much Does It Cost to Buy a Home*, CREDIBLE (Feb. 16, 2023), https://www.credible.com/blog/mortgages/cost-to-buy-house [https://perma.cc/4RYH-HGGU]; *see also* Gerson, *supra* note 39.

41. Moringiello & Odinet, *NFTs*, *supra* note 15.

42. *Id.* at 1167–68.

blockchain network (such as Algorand, Solana, Stellar, TRON, or Avalanche) to "mint" an NFT.[43]

Importantly, the governing documents of this business entity must be drafted so as to indicate that this NFT embodies its ownership interest, or in the case of an LLC, its membership interest.[44] In essence, the NFT is used as a digital share certificate.[45]

Notably, one can only create such a business entity in states where the law allows for the equity interest to be represented by a digital asset, like an NFT.[46] For example, some state LLC statutes, including those of Vermont, provide the required flexibility, while others may not.[47]

Second, the sponsor ensures that title to a piece of real property is transferred to the business entity.[48] This asset may be owned either by a prospective seller or by the sponsor itself.[49] Thereafter, the deed of this transfer is recorded in the proper land records.[50]

Third, the property is marketed to potential buyers through an online platform.[51] At this stage, the sponsor emphasizes that this real estate asset can be purchased simply, quickly, and cheaply by taking advantage of blockchain technology and an NFT transfer.[52] Propy, which uses this transactional setup, claims that it takes the seller and buyer about twenty-two minutes to execute the necessary electronic paperwork, and that smart contracts automatically handle the processing of the buyer's payment to the seller and the transfer of the NFT on the relevant blockchain.[53] Computer code manages all these steps automatically.[54] Crucially, title to the real property does not change hands—it

43. In the Ethereum network, NFTs are generally coded in adherence with the ERC-721 token standard. *See* ETHEREUM, ERC-721 NON-FUNGIBLE TOKEN STANDARD (Mar. 9, 2022), https://ethereum.org/en/developers/docs/standards/tokens/erc-721 [https://perma.cc/88SC-VHPN]. Other blockchain networks have implemented similar token standards. *See generally* Eduard Hartwich et al., *Probably Something: A Multi-Layer Taxonomy of Non-Fungible Tokens*, INTERNET RSCH. (Apr. 12, 2023), https://arxiv.org/ftp/arxiv/papers/2209/2209.05456.pdf [https://perma.cc/6933-UG59].

44. Moringiello & Odinet, *NFTs*, *supra* note 15, at 1167–68.

45. Tokens that embody ownership interests in business entities are often referred to as "security tokens." *See* Yuliya Guseva, *A Conceptual Framework for Digital-Asset Securities: Tokens and Coins as Debt and Equity*, 80 MD. L. REV. 166, 177–79 (2020); *see also* Dafan Zhang, *Security Tokens: Complying with Security Laws and Regulations Provides More Than Token Rewards*, 88 UMKC L. REV. 323, 332–34 (2019); Michael Mendelson, *From Initial Coin Offerings to Security Tokens: A U.S. Federal Securities Law Analysis*, 22 STAN. TECH. L. REV. 52, 56–63 (2019).

46. *Cryptocurrency Laws and Regulations by State*, BLOOMBERG L. (May 26, 2022), https://pro.bloomberglaw.com/brief/cryptocurrency-laws-and-regulations-by-state/.

47. VT. STAT. ANN. tit. 11, §§ 4173–75 (West 2023).

48. Moringiello & Odinet, *NFTs*, *supra* note 15, at 1167.

49. *Id.*

50. *Id.*

51. *Id.* at 1165.

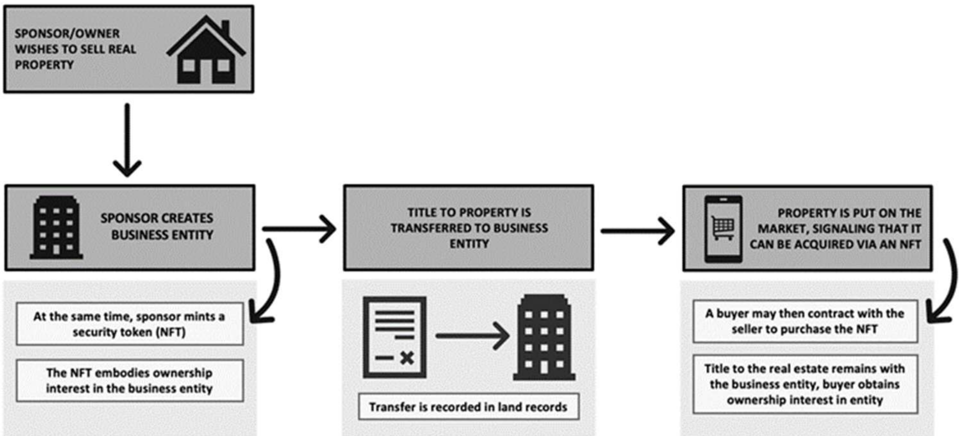
52. *Id.*

53. *Id.* at 1154–56, 1165.

54. *See id.* at 1154.

remains with the holding company.[55] The purchaser is actually acquiring the holding company and, in turn, beneficial ownership in the real property.[56] To complete this transaction, the NFT is handed over by the sponsor to the purchaser because it embodies the ownership interest in the holding company.[57] In practice, the NFT is transferred to the buyer via the relevant blockchain network either directly or by relying on an intermediary, such as a crypto exchange company or a crypto wallet manager.[58] A graphic depiction of the transaction is provided in Figure 1.[59]

FIGURE 1: REAL PROPERTY TRANSFER USING AN NFT



The goal in this structure, to quote Propy's CEO, is to "automate the entire real-estate purchasing process."[60] Notably, the use of this structure is not merely hypothetical. Propy has already sold a $917,000 home in Daly City, California in 2019[61] and a ten-acre tract of land in Kern County, California in 2018.[62] More

55. *See id.* at 1165–67.

56. *See id.*

57. *See id.*

58. *See id.*

59. *See id.*

60. *See* Rachel Wolfson, *Global Real Estate Platform Completes Sale of $1M California Home Using Blockchain Technology*, FORBES (Feb. 7, 2019, 9:00 AM), https://www.forbes.com/sites/rachelwolfson/2019/02/07/global-real-estate-platform-completes-sale-of-1m-california-home-using-blockchain-technology/?sh=3cb199573a92 (quoting Propy's CEO).

61. *Propy Executes Its Second Blockchain-Record Property Deal in California*, CYRPTONINJAS (Feb. 8, 2019), https://www.cryptoninjas.net/2019/02/08/propy-executes-its-second-blockchain-recorded-property-deal-in-california/ [https://perma.cc/94P7-UWQX].

62. Dennis Lynch, *Propy Records Country's First Blockchain-Only Real Estate Deal Just North of LA County*, THE REAL DEAL (July 30, 2018, 9:00 AM), https://therealdeal.com/la/2018/07/30/propy-records-first-us-real-estate-sale-on-blockchain [https://perma.cc/4ZZJ-XTXM]. Propy had previously created this same holding company–NFT setup (although without a known sale) in 2018 when the firm assisted a property owner in transferring her Vermont real estate into an LLC and then creating an NFT to embody the membership interest. *See* Erin Hudson, *Vermont County and Silicon Valley Startup Close Historic RE Deal Using Blockchain*, THE REAL DEAL (Mar. 25, 2018, 3:31 PM), https://therealdeal.com/new-york/2018/03/25

recently, in February 2022, Propy facilitated the sale of an NFT linked to a house in Gulfport, Mississippi,[63] and in April 2022, a condo in Tampa, Florida.[64]

We conclude this Subpart by emphasizing that the efficiencies the proponents of crypto real estate transactions hope to achieve would ostensibly also extend to subsequent transfers of the property at issue. The structure we discussed above would not have to be confected each time there is a sale. Rather, after the initial setup, any subsequent buyer would merely acquire the business entity through the NFT.[65] In other work by one of us and Juliet Moringiello, the ways in which these hoped-for crypto *transfer* efficiencies are unlikely to come to pass are explored more fully.[66]

2. *Financing Real Estate Transactions via Crypto*

The structure described in the preceding Subpart has profound implications for the financing of real estate transactions.[67] Specifically, the NFT used to embody the ownership interest in the holding company and to market the property in question also plays a key role as collateral in any financing arrangement the buyer might need to fund their purchase.[68] As explained above, in the prototypical real estate transaction, at the moment of purchase, the buyer (mortgagor) grants a mortgage over their new property to a lender (mortgagee), which in turn provides the buyer with a loan to finance part of the purchase price.[69] The law recognizes the mortgagee as a secured creditor, giving them the right to seize and sell the property to satisfy the buyer's debt if they fail to repay the outstanding loan.[70]

/vermont-county-and-silicon-valley-startup-close-historic-re-deal-using-blockchain/ [https://perma.cc/Y948-L428].

63. Veronica Brezina, *Gulfport Property Sells in Historic NFT House Auction*, CATALYST (Feb. 14, 2022), https://stpetecatalyst.com/gulfport-property-sells-in-historic-nft-house-auction [https://perma.cc/2NKW-5YQY].

64. Bernadette Berdychowski, *Tampa Condo the Latest to Sell as NFT as Crypto Real Estate Interest Grows*, TAMPA BAY TIMES (Mar. 23, 2022), https://www.tampabay.com/news/real-estate/2022/03/24/tampa-condo-the-latest-to-sell-as-nft-as-crypto-real-estate-interest-grows [https://perma.cc/P9ND-SEQ8].

65. While beyond the scope of this project, we note that those who offer an NFT to the public in this way may well have to contend with potential violations of securities law. *See* Securities Act of 1933, 17 C.F.R. § 230.144 (2022). This would add yet another level of complexity to the real estate financing that did not otherwise exist. *Id.*; *see also* Gen. Elec. Cap. Corp., SEC Staff No-Action Letter, 1998 WL 727229 (Oct. 19, 1998).

66. Moringiello & Odinet, *NFTs*, *supra* note 15.

67. Hugo Alvarez, *Crypto and NFTs Could Change the Future of Real Estate*, CSK (April 21, 2022), https://csklegal.com/publication/crypto-and-nfts-could-change-the-future-of-real-estate [https://perma.cc/D6PR-CCA5] ("Moreover, the possibility even exists that cryptocurrency-backed mortgages can be issued to purchase those fractionalized shares of real estate ownership that gets recorded on the blockchain . . . . [T]here are already companies in the U.S. that offer residential mortgages as NFTs.").

68. Moringiello & Odinet, *NFTs*, *supra* note 15.

69. *See supra* Part I.A.

70. *See infra* Part II.B.2.

In an idealized crypto transaction to acquire real estate, there would be no need to create a mortgage over the property. Instead, the lender would take a security right in the ownership interest of the holding company embodied by the NFT.[71] As detailed more fully in Part II, this transaction would be governed by Article 9 of the UCC under which the collateral in question would qualify either as a "general intangible" or "investment property," and possibly as a "controllable electronic record" once a state enacts the new 2022 UCC amendments.[72] Pursuant to this body of rules, the buyer and lender would enter into a *security agreement* that adequately describes the NFT and contains the terms and conditions of their financing arrangement.[73] Moreover, the lender would also need to *perfect* its security interest either by filing a financing statement in the jurisdictionally competent registry or by taking *control* of the collateral, pursuant to the applicable rules for investment property or controllable electronic records, as the case may be.[74]

If the debtor were to default on the loan, then the creditor would enforce its security interest in the NFT (which is to say, in the membership interest in the holding company).[75] This would be effectuated through Article 9's enforcement methods,[76] as described in Part II below. As a result of that enforcement process, the person acquiring the NFT would become the owner of the holding company.[77] This, in turn, would give them beneficial ownership of the real property. All of this would occur, at least ostensibly, without the intervention of real property mortgage law and its attendant limitations.

To an untrained eye, choosing whether to fund a real estate transaction through a loan secured by a traditional mortgage or via crypto financing might appear to be purely a matter of technology. Indeed, proponents of this novel transaction structure seemingly suggest that there are no substantive

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71. *See infra* Part II.B.2.

72. Pursuant to U.C.C. § 9-102(42), general intangible "means any personal property, including things in action, other than accounts, chattel paper, commercial tort claims, deposit accounts, documents, goods, instruments, investment property, letter-of-credit rights, letters of credit, money, and oil, gas, or other minerals before extraction. The term includes . . . payment intangibles and, software." U.C.C. § 9-102(42) (AM. L. INST. & UNIF. L. COMM'N 2022). Pursuant to U.C.C. § 9-102(49), investment property "means a security, whether certificated or uncertificated, security entitlement, securities account, commodity contract, or commodity account." U.C.C. § 9-102(49) (AM. L. INST. & UNIF. L. COMM'N 2022). Steven Aquino, *Crypto, Part III: Securing Interests in Digital Assets—The Proposed UCC Article 12*, ABA (May 23, 2023), https://www.americanbar.org/groups/litigation/committees/corporate-counsel/articles/2023/spring2023-crypto-part-iii-securing-interests-digital-assets-proposed-ucc-article-12/ [https://perma.cc/2A95-XMNV]; *see also* Christopher K. Odinet, *Bitproperty and Commercial Credit*, 94 WASH. U. L. REV. 649, 676 (2017) (discussing the need for a new UCC collateral category).

73. *See infra* Part II.B.1.

74. *See infra* Part II.B.1.

75. *See infra* Part II.B.2.

76. *See* U.C.C. § 9-610 (AM. L. INST. & UNIF. L. COMM'N 2022).

77. *See infra* Part II.B.2.

differences.[78] They emphasize the simplicity, intuitiveness, speed, economy, and efficiency of NFTs and blockchain, while criticizing the byzantine complexity, expense, and slowness of the old ways.[79] In Parts II and III, we show that this narrative is deeply flawed. The two financing structures under consideration bear profound legal differences, with significant implications for lenders and, more importantly, potentially unsuspecting home buyers.

II. THE ENFORCEMENT CHASM

Having described how crypto attempts to reinvent the housing finance transaction, the natural question that arises is thus: To what extent, if at all, does this new structure affect the rights and obligations of lenders and buyers, compared to the prototypical mortgage?

The answer has to do with enforcement; the crux of the change goes to the rights of creditors. As this Part explains, the transaction invites the creditor to proceed under the enforcement rules of Article 9 rather than real property mortgage law, even though the true object of the collateralization is possession and control of real property.

A. Mortgage Foreclosures

When a mortgage loan goes into default, the mortgagee may accelerate the maturity of the debt, effectively making the entire balance of the debt immediately due and payable.[80] Under the weight of authority, the mortgagee may then choose, either concurrently or consecutively, to sue for judgment on the debt and to foreclose on the real estate.[81] While on rare occasions a

78. *See* Tim Ventura, *Propy's Mission to Transform the Real Estate Industry*, MEDIUM (June 24, 2020), https://medium.com/@timventura/propys-mission-to-transform-the-real-estate-industry-c03b76d012ba [https://perma.cc/DAN7-A6FR]; *see also* International Blockchain Real Estate Association, LINKEDIN, https://www.linkedin.com/company/international-blockchain-real-estate-association [https://perma.cc/MHT9-GC6A] (discussing the ways blockchain will improve real estate deals by "reducing costs, stamping out fraud, speeding up transactions, increasing financial privacy, globalizing markets, and making real estate a liquid asset.").

79. *See* Ventura, *supra* note 78.

80. Almost inevitably, this acceleration occurs pursuant to a clause in the loan documents authorizing the mortgagee to declare the balance of the mortgage debt immediately due in full on mortgagor default. 1 GRANT S. NELSON, DALE A. WHITMAN, ANN M. BURKHART & R. WILSON FREYERMUTH, REAL ESTATE FINANCE LAW §§ 7:6–7 (6th ed. 2014) [hereinafter 1 NELSON ET AL., REAL ESTATE FINANCE LAW]. For discussion of possible preconditions to and limits on the mortgagee's power to accelerate the mortgage debt, see *id.*

81. *Id.* § 8:1, at 1040; RESTATEMENT (THIRD) OF PROP.: MORTGAGES § 8.2 (AM. L. INST. 1997). *See, e.g.*, Bank of Little Rock v. Casadyne Corp., 197 S.W.3d 37, 40 (Ark. Ct. App. 2004) ("holders of notes secured by a mortgage can both sue the maker of the note and also foreclose on the property, regardless of which action they pursue first"); Mortg. Invs. Corp. v. Battle Mtn. Corp., 70 P.3d 1176, 1184 (Colo. 2003) ("When a debtor defaults on a promissory note, a creditor may elect which remedy the creditor wishes to pursue. A creditor may enforce payment of the debt by: 1) foreclosing on the lien of the deed of trust, 2) pursuing a suit for judgment upon default and filing the transcript of the judgment to obtain a judgment lien that allows

mortgagee may decide to proceed against the mortgagor for an *in personam* judgment on the debt and forgo reliance on the mortgage security,[82] the mortgagee typically chooses—and in some states is required by law[83]—to foreclose the mortgage first.

1. *The Role of Equity*

Foreclosure is an invention of the English courts of equity with ancient roots.[84] The English common law mortgage was a conveyance of fee simple ownership to the mortgagee on condition subsequent.[85] If the mortgagor repaid the loan on the specified day ("Law Day"), the mortgagor could re-enter and terminate the mortgagee's estate.[86] Over time, the condition/right of entry was displaced by a covenant by the mortgagee to reconvey title to the mortgagor following the mortgagor's full performance.[87] This covenant had a double operation; it was effective at law as a condition and was also a promise on which

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for execution upon the judgment of the debtor's property, or 3) both."); Royal Palm Corp. Ctr. v. PNC Bank, 89 So.3d 923, 933 (Fla. Dist. Ct. App. 2012); Kepler v. Slade, 896 P.2d 482, 484 (N.M. 1995) ("The mortgagee may sue either on the note or foreclose on the mortgage, and may pursue all remedies 'at the same time or consequently.'"); DeYoung v. Cenex Ltd., 1 P.3d 587, 593 (Wash. Ct. App. 2000) (dictum); City of St. Paul v. St. Anthony Flats Ltd. Partn., 517 N.W.2d 58, 62 (Minn. Ct. App. 1994); Gottschamer v. August, Thompson, Sherr, Clark & Shafer, P.C., 438 So. 2d 408, 409 (Fla. Dist. Ct. App. 1983); E. Ill. Tr. & Sav. Bank v. Vickery, 517 N.E.2d 604, 605 (Ill. App. Ct. 1987) (a mortgagee "may sue on the note underlying the mortgage and also may sue to foreclose the mortgage, but is limited to one satisfaction; further, . . . electing to pursue one remedy does not bar the other until the underlying indebtedness is extinguished."); First Ind. Fed. Sav. Bank v. Hartle, 567 N.E.2d 834, 837 (Ind. Ct. App. 1991); Siuslaw Valley Bank, Inc. v. Christopher H. Canfield Assocs., Or., Ltd., 667 P.2d 1035, 1038 (Or. Ct. App. 1983); Berg v. Liberty Fed. Sav. & Loan Ass'n, 428 A.2d 347, 348–49 (Del. 1981); Belote v. McLaughlin, 673 S.W.2d 27, 30 (Mo. 1984).

82. This may occur in circumstances where the debt is a recourse debt or a debt on which the mortgagee has secondary recourse against a guarantor but where ownership of the mortgaged property itself would be highly burdensome (e.g., where the land is subject to environmental contamination). For more detailed treatment of the mortgagee's liability regarding environmental problems, see 1 NELSON ET AL., REAL ESTATE FINANCE LAW, *supra* note 80, §§ 4:47–51.

83. The mortgagee must foreclose first in states that have adopted a "one action" rule, such as California, Montana, Nevada, Utah, and Idaho. *Id.* § 8:2, at 1045. In these states, foreclosure is the mortgagee's sole remedy, and the mortgagee can obtain a deficiency judgment only in the context of the foreclosure proceeding (and only to the extent that a deficiency is not precluded by an applicable anti-deficiency statute). *Id.* In California, for example, if the mortgagee obtains a judgment on the mortgage debt without foreclosing first, the mortgagee is deemed to have waived its security in the mortgaged property and cannot thereafter foreclose the mortgage debt. *See* Walker v. Cmty. Bank, 518 P.2d 329, 331 (Cal. 1974).

84. 1 NELSON ET AL., REAL ESTATE FINANCE LAW, *supra* note 80, § 1:2, at 6.

85. *Id.* at 7–8.

86. There were several important attributes to this transaction. The mortgagee received legal title to the land and the normal incidents of that title. *Id.* Further, the mortgagee obtained the incidents of that title even though unnecessary or even antagonistic to the sole purpose of the conveyance (which was security for the mortgagor's repayment). *Id.* The most significant of these incidents was possession. Originally, the mortgagee used possession and the right to collect rents and profits as a method to get a return on the loan, as the taking of any interest was then usurious and unlawful. *Id.* Later, the custom developed to leave the mortgagor in possession, although the mortgagee nevertheless retained the right to obtain possession. *Id.* If the lender did obtain possession, the lender was required to account to the mortgagee for any rents and profits collected (i.e., to apply them against the mortgage debt). *Id.*

87. *Id.*

a court of equity would grant specific enforcement.[88] Regardless of which form was used, if the mortgagor failed to perform by the time specified, the mortgagee's estate became absolute.[89]

Enforcement of a common law mortgage could be especially harsh on the mortgagor, as its operation effected a forfeiture of their interest in the encumbered property.[90] If the mortgagor failed to repay on Law Day, they would lose their interest in the collateral, regardless of the amount of the outstanding indebtedness and the value of the encumbered property. This harshness inevitably yielded to the moderating influence of equity, which began to intervene to aid the defaulting mortgagor who could establish traditional equitable grounds for relief such as fraud, accident, misrepresentation, or duress.[91] By the seventeenth century, the granting of such relief by equity became sufficiently routine that a mortgagor was able to redeem the land from the mortgagee by tendering the principal and interest within a reasonable time after Law Day without having to establish specific equitable grounds for relief.[92] This right became known as the mortgagor's equity of redemption and became recognized as an equitable estate in land.[93]

Once equity established this right, it was necessary to put some time limit on it so that a mortgagee would not have to wait indefinitely to see whether the mortgagor would redeem. To accomplish this, equity began to fix an outside date by which redemption would have to be carried out; if not carried out by that date, the right of redemption would terminate (or literally be "foreclosed").[94] Originally, this foreclosure was "strict," which meant that if the redemption was not carried out by the foreclosure date, the mortgagee retained title to the property free and clear of the mortgage.[95] However, as English mortgage law was transplanted to the United States, strict foreclosure was widely regarded as unduly harsh. It provided the clarity needed to cut off the otherwise indefinite nature of the equity of redemption but did so at considerable risk of the mortgagee's unjust enrichment—especially in circumstances where the value of the mortgaged land exceeded the unpaid

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88. This development coincided with the equity of redemption, *see infra* text accompanying note 80, and its popularity was based upon the practical advantages to the mortgagor of getting back its interest by a reconveyance rather than by reentry. *Id.*

89. GEORGE EDWARD OSBORNE, HANDBOOK ON THE LAW OF MORTGAGES § 5, at 11–12 (2d ed. 1970); WILLIAM F. WALSH, A TREATISE ON MORTGAGES § 2, at 3–6 (1934); Harold D. Hazeltine, *The Gage of Land in Medieval England*, 18 HARV. L. REV. 36 (1904).

90. OSBORNE, *supra* note 89, § 6, at 12–14.

91. *Id.*; WALSH, *supra* note 89, § 3, at 6–13.

92. WALSH, *supra* note 89, § 3, at 6–13.

93. OSBORNE, *supra* note 89, § 7, at 15–16; 1 NELSON ET AL., REAL ESTATE FINANCE LAW, *supra* note 80, § 1:3, at 8–9; WALSH, *supra* note 89, § 3, at 12–13; 1 GARRARD GLENN, MORTGAGES, DEEDS OF TRUST, AND SECURITY DEVICES TO LAND § 4 (1943).

94. 1 NELSON ET AL., REAL ESTATE FINANCE LAW, *supra* note 80, § 1:3, at 8–9.

95. *See id.* § 1:3, at 7.

debt.[96] Thus, most American jurisdictions adopted a requirement (continued today) that foreclosure occur by public auction sale instead.[97] In this form of foreclosure, the property is auctioned to the highest bidder; the proceeds of the sale are then paid to the mortgagee as necessary to discharge the secured debt.[98] Theoretically, foreclosure by sale recognizes the possibility that the high bid may exceed the balance of the mortgage debt (i.e., that the sale produces a "surplus"). If there are no junior liens on the property, this surplus is paid to the borrower and represents a return of the borrower's "equity" in the property.[99]

2. *Judicial vs. Nonjudicial Enforcement*

Traditionally, American mortgage foreclosure was *judicially* supervised.[100] The mortgagee filed a bill in equity to foreclose the mortgage; the borrower was entitled to file an answer, just as in any other civil lawsuit.[101] If the factual allegations in the complaint were contested, the court would conduct a hearing and resolve the dispute.[102] If the court found a proper legal basis for foreclosure, the court would order a judicial sale, typically a public auction conducted by the sheriff as an officer of the court.[103] The sheriff would distribute the proceeds, disbursing them to the foreclosing mortgagee up to the amount of the delinquent debt, then allocating any surplus first to junior lienors (if any) in descending order of their priority, and finally to the borrower.[104] If the sale did not yield enough to cover the debt, the mortgagee could obtain a personal judgment for the deficiency against the mortgagor unless the parties had agreed to the contrary (such as in a nonrecourse loan transaction) or if applicable law prohibited a deficiency judgment.[105] This judicial process is costly and potentially time-consuming.[106] It continues to be available in all American

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96. *Id.*; *see also* 3 JOHN NORTHON POMEROY, JR., POMEROY'S EQUITY JURISPRUDENCE § 1180 (4th ed. 1918) (arguing that equity's intervention was a specific exercise of the general jurisdiction to prevent penalties and forfeitures when they can be compensated by an award of money).

97. 1 NELSON ET AL., REAL ESTATE FINANCE LAW, *supra* note 80, § 1:4; 1 GLENN, *supra* note 93, § 77; WALSH, *supra* note 89, § 67; OSBORNE, *supra* note 89, § 10. Connecticut and Vermont continue to use strict foreclosure. 1 NELSON ET AL., REAL ESTATE FINANCE LAW, *supra* note 80, § 7:11.

98. 1 NELSON ET AL., REAL ESTATE FINANCE LAW, *supra* note 80, § 1:4.

99. *See generally id.* § 7:32 (discussing distribution of surplus).

100. *Id.* § 1:4, at 8.

101. *Id.*

102. *Id.*

103. *Id.*

104. *Id.* §§ 7:12, 7:17; *see also* 3 LEONARD A. JONES, A TREATISE ON THE LAW OF MORTGAGES OF REAL PROPERTY §§ 2010–2198 (8th ed. 1928); 1 GLENN, *supra* note 93, §§ 77–97; WALSH, *supra* note 89, § 67.

105. *See* BURKHART ET AL., REAL ESTATE TRANSFER, *supra* note 26.

106. *See generally* FED. HOUS. FIN. AGENCY, AN OVERVIEW OF THE HOME FORECLOSURE PROCESS (2012), https://www.fhfaoig.gov/Content/Files/SAR%20Home%20Foreclosure%20Process.pdf [https://perma.cc/2KDU-TSBS].

states.[107] In a little under half of the states, it is the required (and thus exclusive) method of foreclosure; in others, it is the customary method.[108]

In a slight majority of states, legislatures have enacted *nonjudicial* foreclosure statutes that have largely supplanted judicial foreclosure, at least in most transactions where the mortgage or deed of trust[109] explicitly contains a "power of sale" authorizing the mortgagee or trustee to sell the mortgaged property following default.[110] While the process varies somewhat among the states that allow it, typically the foreclosing mortgagee must give a notice of default to the mortgagor and the holders of junior interests in the property.[111] If the default

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107. BURKHART ET AL., REAL ESTATE TRANSFER, *supra* note 26.

108. *Id.*

109. In many states the deed of trust represents the most commonly used mortgage instrument. This device normally involves a conveyance of the realty to a third person (often the lender's lawyer, employee, or subsidiary corporation) in trust to hold as security for the payment of the debt to the lender–noteholder whose role is analogous to that of the mortgagee. 1 NELSON ET AL., REAL ESTATE FINANCE LAW, *supra* note 80, § 1:6, at 10. Deeds of trust will almost always contain a power of sale in the trustee to be exercised after a default at the request of the lender–noteholder. *Id.* Such a deed of trust is essentially similar to a mortgage with a power of sale. Indeed, in some states the same statutes regulating foreclosure of power of sale mortgages are applicable to deeds of trust as well. *See, e.g.*, MO. ANN. STAT. § 443.410 (West 2000) ("Deeds of trust in the nature of mortgages of lands may, in addition to being forecloseable by suit, be also foreclosed by trustee's sale at the option of the holder of the debt or obligation thereby secured and the mortgaged property sold by the trustee or his successor in the same manner and in all respects as in case of mortgages with power of sale."); Pinti v. Emigrant Mortg. Co., 33 N.E.3d 1213, 1218 (Mass. 2015) ("[A] mortgagee may conduct a foreclosure by exercise of the statutory power of sale . . . where, as here, the mortgage itself gives the mortgagee a power of sale and includes by reference the statutory power."). In a few states that allow both types of instruments, mortgages are required to be foreclosed by judicial process and only the deed of trust can employ a power of sale. *See, e.g.*, ARIZ. REV. STAT. ANN. § 33-721 (2014) ("Mortgages of real property . . . shall be foreclosed by action in a court."); *id.* § 33-807(A) (power of sale exists and nonjudicial sale permissible under deed of trust). Other differences may also exist in a particular state; for example, deficiency judgments or post-sale redemption may be treated differently with deeds of trust than with mortgages. *See* 1 NELSON ET AL., REAL ESTATE FINANCE LAW, *supra* note 80, § 1.5, at 10.

110. Even in those states that allow nonjudicial foreclosure by statute, the mortgage or deed of trust itself must contain an explicit power of sale. *See, e.g.*, MO. ANN. STAT. § 443.290 (West 2000). When a mortgage or deed of trust lacks such a clause, the lender may foreclose but only through judicial process and a judicial sale. 1 NELSON ET AL., REAL ESTATE FINANCE LAW, *supra* note 80, § 7:12 ("[J]udicial foreclosure is necessary in certain special situations, such as when the mortgage does not authorize a power of sale foreclosure. For example, if a court holds that a document in the form of a deed is actually an equitable mortgage, the deed will not contain a power of sale clause and, therefore, must be foreclosed judicially."). Obviously, any well-drafted mortgage or deed of trust (and even many otherwise poorly drafted ones) will contain a power of sale clause.

111. About half of the states recognizing nonjudicial foreclosure do not require notice of foreclosure to subordinate interest holders, including Alabama, *see* ALA. CODE § 35-10-13 (2014); the District of Columbia, *see* D.C. CODE ANN. § 42-815 (West 2013); Georgia, *see* GA. CODE ANN. § 44-14-162.2 (West 2013); Maine, *see* ME. REV. STAT. ANN. tit. 14, § 6203-A (West 2003); Minnesota (unless the junior interest holder is in possession), *see* MINN. STAT. ANN. § 580.03 (West 2010); Missouri, *see* MO. ANN. STAT. § 443.310 (West 2000); Nevada, *see* NEV. REV. STAT. ANN. § 116.31162 (West 2013); New Hampshire, *see* N.H. REV. STAT. ANN. § 479:25 (2013); Rhode Island, *see* 34 R.I. GEN. LAWS ANN. § 34-27-4 (West 2023); Tennessee, *see* TENN. CODE ANN. § 45-20-104 (West 2009); Texas, *see* TEX. PROP. CODE ANN. § 209.0091 (West 2023); Utah (although notice posted on the property may come to the attention of junior interest holders in possession), *see* UTAH CODE ANN. § 57–1–25(1)(b) (West 2016); West Virginia (unless the junior interest holder has notified the foreclosing creditor of the interest), *see* W. VA. CODE ANN. § 38-1-4 (West 2002); and Wyoming, *see* WYO. STAT. ANN. § 34-4-104 (West 2007). In some of the jurisdictions mentioned, the absence of required notice is mitigated by the statutory right of any person, including the holder of a subordinate

continues uncured after some grace period—commonly in the range of thirty days to six months—the foreclosing mortgagee (or the trustee if the mortgage instrument is a deed of trust) may schedule a public auction sale and provide notice of that sale to the mortgagor and junior interest holders.[112] Further, the mortgagee or trustee must publish a notice of the auction sale in a newspaper prior to the sale; the contents and frequency of that published notice are dictated by the nonjudicial foreclosure statute.[113] If no cure or redemption occurs prior to the sale,[114] the auction sale takes place; the proceeds are distributed in the same manner as in judicial foreclosure, but without judicial supervision.[115]

Whichever mode of foreclosure the mortgagee uses, the process is not cheap or quick.[116] The process is usually handled by a loan servicer acting as the agent of the debtholder.[117] There are a variety of expenses initially paid by the servicer but ultimately borne by the creditor (although the mortgagor is often obligated for these costs under the loan documents).[118] In a judicial foreclosure, the servicer will nearly always need to retain legal counsel; if the foreclosure is nonjudicial, the servicer will need to pay the fee of the trustee, lawyer, or other individual who conducts the auction.[119] A title examination is necessary to determine the identity of the holders of any junior liens or other subordinate interests and to establish whether the original mortgagor is still the owner of the property.[120] As explained above, notice must be mailed, published in a newspaper, or both, usually at a nontrivial cost.[121] Whether judicial or

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interest, to record a request for notice of the foreclosure of a particular security interest and thereby become entitled to receive one. *See, e.g.*, D.C. CODE ANN. § 42-815 (West 2013); W. VA. CODE ANN. § 38-1-4 (West 2002).

112. *See* FED. HOUS. FIN. AGENCY, *supra* note 106, at 13.

113. *Id.*

114. In some nonjudicial foreclosure states, the borrower need not redeem in order to stop the foreclosure process, but need only cure the existing default, even though the loan has been accelerated. *See* 1 NELSON ET AL., REAL ESTATE FINANCE LAW, *supra* note 80, § 7:7. The standard Fannie Mae/Freddie Mac Uniform Instrument provides both a thirty-day cure period prior to acceleration of the debt (Section 22) and a right to reinstate even after acceleration by curing the defaults that triggered acceleration. *Id.* at 882.

115. *See, e.g.*, ARIZ. REV. STAT. ANN. § 33-812(A) (2014). If the mortgagor and the secured creditors cannot agree regarding the appropriate distribution (for example, if there is a priority dispute between two or more secured creditors), the mortgagee or trustee could deposit the sale proceeds into court and bring an impleader proceeding joining all those who were entitled to notice of the sale. A few states provide a similar process with the sale proceeds being deposited with some other public official. *See, e.g.*, *id.* § 33-812(C), (D) (proceeds deposited with state treasurer prior to institution of civil action in nature of impleader).

116. There is also a broad consensus that foreclosure auctions consistently produce sub-market prices. *See* Grant S. Nelson & Dale A. Whitman, *Reforming Foreclosure: The Uniform Nonjudicial Foreclosure Act*, 53 DUKE L.J. 1399, 1417–25 & nn.91–107 (2004).

117. *See* FED. HOUS. FIN. AGENCY, *supra* note 106, at 5.

118. Amy Loftsgordon, *Challenging Late & Other Fees in Foreclosure*, NOLO, https://www.nolo.com/legal-encyclopedia/challenging-late-other-fees-foreclosure.html [https://perma.cc/8AQ6-VTTT].

119. *See generally* Nelson & Whitman, *supra* note 116, at 1417–25 & nn.91–107.

120. *See id.* at 1467.

121. *See supra* note 111.

nonjudicial, the process is likely to take several months at a minimum.[122] If judicial process is required and court dockets are congested—as they were in many states at the height of the post-2007 mortgage crisis[123]—it may take a great deal longer. If the borrower raises defenses, further time may be occupied with hearings and discovery, even if the defenses are ultimately shown to have no merit and the mortgagee completes the foreclosure. A study by the Federal Housing Finance Agency (FHFA) in 2013 showed that the average total time to obtain marketable title to a vacant home through foreclosure ranged from a low of 240 days (in Alabama and Missouri, two of the states with the most rapid nonjudicial foreclosure timetables) to a high of 850 days (in New York, a judicial foreclosure state) with a national weighted average of 438 days.[124]

3. *Post-Foreclosure Rights*

Furthermore, in approximately one-half of the states, not even the completion of a foreclosure fully extinguishes the mortgagor's interest in the land. Statutes in these states also grant the mortgagor a statutory right of redemption that permits the mortgagor (and in some states junior lienholders whose interests were otherwise extinguished by the sale) to redeem the property for some period even after the foreclosure sale.[125] The parameters of this right (where it exists) vary widely from state to state. In most states, the redemption price is not based on the unpaid balance of the debt (which established the "price" for the mortgagor to exercise its equity of redemption prior to foreclosure). Instead, the statutory redemption price is typically an amount

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122. *See* FED. HOUS. FIN. AGENCY*, supra* note 106, at 19–21.

123. *See* Martha Graybow, *Credit Crisis Spurs More Bank Lawsuits in Courts*, REUTERS (Aug. 6, 2008, 12:06 PM), https://www.reuters.com/article/us-bank-litigation/credit-crisis-spurs-more-bank-lawsuits-in-courts-idUKN0630980620080806 [https://perma.cc/ZBA5-T9ES].

124. FED. HOUS. FIN. AGENCY, STATE-LEVEL GUARANTEE FEE ANALYSIS 20 tbl.2 (2013), https://www.fhfa.gov/AboutUs/Reports/ReportDocuments/20131209_StateLevelGfeeAnalysis_508.pdf [https://perma.cc/FD7Z-QYY6]; *see also* Lisa Prevost, *Paying for Foreclosure Delays*, N.Y. TIMES (Jan. 2, 2014), https://www.nytimes.com/2014/01/05/realestate/paying-for-foreclosure-delays.html.

125. 1 NELSON ET AL., REAL ESTATE FINANCE LAW, *supra* note 80, § 8:4. Statutory redemption exists in Alabama, Alaska, Arizona, Arkansas, California, Colorado, Illinois, Iowa, Kansas, Kentucky, Michigan, Minnesota, Missouri, Montana, New Mexico, North Dakota, Oregon, South Dakota, Tennessee, Utah, Washington, and Wyoming. *See* ALA. CODE § 6-5-248 (2014); ALASKA STAT. ANN. §§ 09.35.220, 09.35.250, 09.45.190 (West 2007); ARIZ. REV. STAT. ANN. §§ 12-1281 to 1288 (2016); ARK. CODE ANN. § 18-49-106(a)(1)–(2) (West 2019); CAL. CIV. PROC. CODE §§ 729.010 to 729.090, 726(e) (West 2015); COLO. REV. STAT. ANN. § 38-38-104(1) (West 2021); 735 ILL. COMP. STAT. ANN. 5/12-122 to 5/12-141 (West 2023); IOWA CODE ANN. §§ 628.1–628.29 (West 2018); KAN. STAT. ANN. § 60-2414 (West 2023); KY. REV. STAT. ANN. §§ 426.220, 426.530 (West 2006); MICH. COMP. LAWS ANN. §§ 600.3140, 600.3240(1) (West 2010); MINN. STAT. ANN. §§ 580.23–580.30 (West 2010); MO. ANN. STAT. §§ 443.410, 443.420 (West 2000); MONT. CODE ANN. § 25-13-801 to 25-13-825 (West 2009); N.M. STAT. ANN. §§ 39-5-18 to 39-5-19, 39-5-21 to 39-5-23 (West 2010); N.D. CENT. CODE ANN. § 32-19-18 (West 2008); OR. REV. STAT. ANN. § 88.106 (West 2021); S.D. CODIFIED LAWS §§ 21-49-11, 21-52-1 to 21-52-32 (2004); TENN. CODE ANN. §§ 66-8-101 to 66-8-114 (West 2020); UTAH R. CIV. P. 69C; WASH. REV. CODE ANN. § 6.23.010–6.23.120 (West 2009); WYO. STAT. ANN §§ 1-18-103 to 1-18-106 (West 2007). Statutory redemption becomes available only when the equity of redemption has been effectively cut off by a valid foreclosure.

equal to the high bid at the foreclosure sale plus interest to the date of redemption.[126] The time for statutory redemption may be as short as a few months or as long as twenty-four months.[127] In some states, the duration of the redemption period varies depending on the nature of the mortgaged property itself;[128] in others, the right of statutory redemption does not apply if the parties have waived it.[129] In a few states, statutory redemption is unavailable following

126. *See, e.g.*, ALASKA STAT. ANN. § 09.35.250 (West 2007); ARIZ. REV. STAT. ANN. § 12-1285(A) (2016); ARK. CODE ANN. § 18-49-106(a)(2) (West 2019); CAL. CIV. PROC. CODE § 729.060(b) (West 2015); IDAHO CODE ANN. § 11-402 (West 2006); MICH. COMP. LAWS ANN. §§ 600.3140(2), 600.3240(2) (West 2010); MINN. STAT. ANN. § 580.23(1) (West 2010); N.M. STAT. ANN. § 39-5-18(A)(1) (West 2010); N.D. CENT. CODE ANN. § 32-19-18 (West 2008); S.D. CODIFIED LAWS § 21-52-14 (2004); TENN. CODE ANN. § 66-8-106 (West 2020); WASH. REV. CODE ANN. § 6.23.020(2) (West 2009); WYO. STAT. ANN. § 1-18-103(a) (West 2007). Most of these statutes also require the redemptioner to reimburse any taxes or assessments paid by the foreclosure sale purchaser during the redemption period. *See* ALASKA STAT. ANN. § 09.32.250 (West 2007); ARIZ. REV. STAT. ANN. § 12-1285(A) (2016); CAL. CIV. PROC. CODE § 729.060(b) (West 2015); IDAHO CODE ANN. § 11-402 (West 2006); MICH. COMP. LAWS ANN. §§ 600.3140(2), 600.3240(2) (West 2010); N.M. STAT. ANN. § 39-5-18(A)(1) (West 2010); S.D. CODIFIED LAWS § 21-52-14 (2004); WASH. REV. CODE ANN. § 6.23.020(2) (West 2009); WYO. STAT. ANN. § 1-18-103(a) (West 2007). By contrast, in Missouri, a mortgagor exercising the right to statutory redemption must pay the entire unpaid balance of the debt owed to the foreclosing mortgagee. MO. ANN. STAT. § 443.420 (West 2000).

127. *See, e.g.*, ALA. CODE § 6-5-248(b) (2014) (one year); ALASKA STAT. ANN. § 09.35.250 (West 2007) (one year); ARIZ. REV. STAT. ANN. § 12-1282(B) (2016) (six months); ARK. CODE ANN. § 18-49-106(a)(2) (West 2019) (one year); CAL. CIV. PROC. CODE § 729.030(a), (b) (West 2015) (one year if sale proceeds do not satisfy secured indebtedness; three months otherwise); IDAHO CODE ANN. § 11-402 (West 2006) (one year); 735 ILL. COMP. STAT. ANN. 5/12-122 (West 2023) (six months); IOWA CODE ANN. § 628.3 (West 2018) (one year); KAN. STAT. ANN. § 60-2414(a) (West 2023) (one year); KY. REV. STAT. ANN. § 426.220(1) (West 2006) (six months); MICH. COMP. LAWS ANN. §§ 600.3140(1), 600.3240(7) (West 2010) (six months); MINN. STAT. ANN. § 580.23(1)(a) (West 2010) (six months); MO. ANN. STAT. § 443.410 (West 2000) (one year); MONT. CODE ANN. § 25-13-802 (West 2009) (one year); N.M. STAT. ANN. § 39-5-18(A)(1) (West 2010) (nine months); N.D. CENT. CODE ANN. § 32-19-18 (West 2008) (sixty days); OR. REV. STAT. ANN. § 18.964(1) (West 2021) (180 days); S.D. CODIFIED LAWS § 21-52-11 (2004) (one year); TENN. CODE ANN. § 66-8-101 (West 2020) (two years); UTAH R. CIV. PROC. 69C(d) (180 days); VT. STAT. ANN. tit. 12, § 4941(d) (West 2023) (six months following strict foreclosure unless court orders shorter period); WASH. REV. CODE ANN. § 6.23.020(1) (West 2009) (eight months); WYO. STAT. ANN. § 1-18-103(a) (West 2007) (three months).

128. *See, e.g.*, ALA. CODE § 6-5-248(b) (2014) (reduced to 180 days for residential property on which homestead exemption was claimed); ARIZ. REV. STAT. ANN. § 12-1282(A) (2016) (reduced to thirty days for abandoned nonagricultural land); IDAHO CODE ANN. § 11-402 (West 2006) (reduced to six months if parcel is twenty acres or less); IOWA CODE ANN. § 628.26 (West 2018) (reduced to six months for parcels less than ten acres and three months if nonagricultural); *id.* § 628.28 (reduced to 180 days for nonagricultural property and certain residential property; reduced to thirty days where residential property is no longer occupied by mortgagor as its dwelling); KAN. STAT. ANN. § 60-2414(a), (m) (West 2023) (only applies to agricultural lands and single- or two-family dwellings; period reduced to three months if less than one-third of original indebtedness has been repaid); MICH. COMP. LAWS ANN. § 600.3240(9) (West 2010) (reduced to one month for abandoned residential property not exceeding four units); MINN. STAT. ANN. § 580.23(2), (4) (West 2010) (expanded to twelve months for agricultural use, but waivable); MINN. STAT. ANN. § 582.032 (West 2010) (reduced to five weeks for certain abandoned properties); N.D. CENT. CODE ANN. § 32-19-18 (West 2008) (expanded to 365 days for agricultural land; eliminated for abandoned parcels); S.D. CODIFIED LAWS § 21-49-38 (2004) (reduced to 180 days where parties explicitly agree to "short" redemption period; further reduced to sixty days if abandoned); WYO. STAT. ANN. § 1-18-103(b) (West 2007) (expanded to twelve months for agricultural property).

129. In a few states, the statutory right of redemption can be waived in the loan documents. *See, e.g.*, 735 ILL. COMP. STAT. 5/15-1603(b) (West 2023); TENN. CODE ANN. § 66-8-101(3) (West 2020). In California, no right of statutory redemption exists if the mortgagor is not liable for a deficiency judgment or if the mortgagee agrees not to pursue a deficiency judgment. CAL. CIV. PROC. CODE §§ 726(e), 729.010 (West

nonjudicial foreclosure.[130] In most states allowing statutory redemption, the mortgagor remains entitled to possession of the land during the entire statutory redemption period.[131]

These statutes serve two primary purposes. The first is to place pressure on the foreclosing mortgagee to bid the fair market value of the property at the foreclosure sale, at least up to the amount of the mortgage debt.[132] To enforce this purpose, the statutes typically set a redemption price equal to the foreclosure sale price, rather than the full amount of the mortgage debt as would have been required to exercise the equity of redemption prior to sale.[133] The second purpose of these statutes, at least in some states, is to allow an additional period of possession and a final chance at redemption to a hard-pressed mortgagor.[134] Where such a redemption right exists and where the borrower has not validly waived it, it further extends the time before the mortgagee can obtain a marketable title for and liquidate the property.[135]

2015). In Iowa, the redemption period is shortened to three months where the mortgagee agrees to waive a deficiency judgment. IOWA CODE ANN. § 628.28(1) (West 2018).

130. *See, e.g.*, ARIZ. REV. STAT. ANN. § 33-811(E) (2014); IDAHO CODE ANN. § 45-1508 (West 2006); MONT. CODE ANN. § 71-1-228 (West 2009) (inapplicable to deed of trust foreclosure sales under state Small Tract Financing Act of Montana); UTAH CODE ANN. § 57-1-28(3) (West 2016); WASH. REV. CODE ANN. § 61.24.050(1) (West 2023).

131. 1 NELSON ET AL., REAL ESTATE FINANCE LAW, *supra* note 80, § 8:4. In Alabama, the mortgagor cannot exercise its right of statutory redemption without surrendering possession within ten days after the foreclosure sale. ALA. CODE § 6-5-251(a)–(c) (2014); Richardson v. Stanford Props., LLC, 897 So. 2d 1052, 1053, 1055 (Ala. 2004). In Missouri, the mortgagor cannot retain possession without posting a bond to secure the mortgagor's payment of the redemption amount. MO. ANN. STAT. § 443.410 (West 2000).

132. 1 NELSON ET AL., REAL ESTATE FINANCE LAW, *supra* note 80, § 8:4.

133. *Id.* In a foreclosure of the senior mortgage, if there is no equity in the property over the balance due on the senior mortgage, the foreclosure sale may not attract third-party bidders, who may well be discouraged by the reality that the foreclosing mortgagee will almost certainly be the successful bidder. This may create a sale environment where the foreclosing lender can, in the absence of third-party bidders, acquire the property for below the property's fair market value—inflating the deficiency amount and enabling the lender to obtain a higher deficiency judgment. If the lender could resell the land at a profit and still collect its deficiency from the borrower's other assets, the lender would recover more than the balance of the unpaid debt. By setting the statutory redemption price by reference to the foreclosure sale price, statutory redemption statutes effectively discourage such behavior; the lender is unlikely to tender a "low-ball" bid if the state will allow the mortgagor to redeem the property at the same bargain price following the sale. *See, e.g.*, Brown v. Trujillo, 88 P.3d 881 (N.M. Ct. App. 2004); Marshall E. Tracht, *Renegotiation and Secured Credit: Explaining the Equity of Redemption*, 52 VAND. L. REV. 599, 608 (1999). Of course, while statutory redemption may incentivize the foreclosing secured party to bid fair market value for the property, it may also discourage third-party bidders from bidding fair market value. Because the availability of statutory redemption effectively lengthens the time it takes for the buyer to obtain marketable title following the foreclosure sale, third parties may tend to discount their foreclosure sale bids accordingly. 1 NELSON ET AL., REAL ESTATE FINANCE LAW, *supra* note 80, § 8:4. The Uniform Nonjudicial Foreclosure Act, promulgated by the Uniform Law Commission in 2002, rejected statutory redemption but has not been enacted in any state. *See Nonjudicial Foreclosure Act*, UNIF. L. COMM'N, https://www.uniformlaws.org/committees/community-home?CommunityKey=d873f0fc-d9eb-41b3-a6d2-e006e07a1f2c#:~:text=Description,-Scroll%20up%20Scroll&text=The%20Model%20Nonjudicial%20Foreclosure%20Act,borrower%20and%20the%20foreclosing%20lender. [https://perma.cc/XJV2-LNQG].

134. 1 NELSON ET AL., REAL ESTATE FINANCE LAW, *supra* note 80, § 8:4.

135. *See supra* note 124 (discussing FHFA timetables for obtaining marketable title in foreclosure).

B. UCC 9 Enforcement

By comparison, the enforcement procedures under Article 9 may be viewed as an improvement over the process under mortgage law because they provide creditors with so much more flexibility in conducting the disposition of the collateral. Once the security interest is attached,[136] which means that it has become effective between the parties to the transaction, then Article 9 provides broad discretion to the creditor when it comes to enforcing the security interest.

The Article 9 enforcement framework for security interests differs markedly from that described above for mortgages. Under this statute, upon default, secured creditors are afforded broad discretion and can generally liquidate the collateral expeditiously.[137] Debtors are afforded limited options to delay or halt this process and only maintain a residual interest in the collateral.[138] This marked divergence with the mortgage foreclosure regime is due to the nature and purpose of Article 9. This statute is designed to facilitate the use of personal property—both tangible and intangible—as collateral to finance operational and capital expenditures for businesses and, to a smaller degree, individuals' personal consumption.[139] In these transactions, upon debtor default, a swift liquidation of the collateral is necessary to incentivize lenders to provide financing and enable them to mitigate eventual losses.[140] Notably, the economic and individual interests at stake are fundamentally different from those present in the financing of real estate—particularly when that real estate is a home.

1. Attachment and Perfection

For purposes of this Article, we confine our discussion to Article 9 security rights taken in ownership interests of juridical entities, such as corporations and LLCs. In other words, we seek to address situations where the collateral consists of *securities*,[141] which will often fall under the Article 9 umbrella term of *investment property* or, in some cases involving LLCs, *general intangibles*.[142] Also, although the

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136. *See* U.C.C. §§ 9-203, 9-308(a) (AM. L. INST. & UNIF. L. COMM'N 2022); *see also In re* WL Homes, LLC, 452 B.R. 138, 145–48 (Bankr. D. Del. 2011) (finding attachment satisfied).

137. *See infra* Part II.B.

138. *See infra* Part II.B.

139. *See infra* Part II.B.

140. *See infra* Part II.B.

141. U.C.C. § 8-103(a) (AM. L. INST. & UNIF. L. COMM'N 2022); *id.* § 9-102(b) (connecting the provisions in Article 8 to those of Article 9). But take note that not all shares of stock are necessarily securities. *See* Thomas C. Thompson Sports, Inc. v. Farmers & Merchs. Bank of Long Beach (*In re* Turley), 172 F.3d 671, 674 (9th Cir. 1999).

142. U.C.C. § 9-102(a)(4) (AM. L. INST. & UNIF. L. COMM'N 2022); *see also* Adam B. Strauss, *Reviewing Revised Article 8 of the Uniform Commercial Code*, 44 WAYNE L. REV. 203, 214–16 (1998); Russell A. Hakes, *UCC Article 8: Will the Indirect Holding of Securities Survive the Light of Day?*, 35 LOY. L.A. L. REV. 661, 664 (2002); Francis J. Facciolo, *Father Knows Best: Revised Article 8 and the Individual Investor*, 27 FLA. ST. U. L. REV. 615, 616

current amendments have not yet been adopted, we briefly address how digital assets of this kind will likely be collateralized in the near future under UCC Article 12's new collateral category: *controllable electronic records*.[143]

In general, the method of attachment and, at least in part, perfection for securities largely comes down to what form the security at issue takes. Sometimes securities are only in book-entry form—meaning that there is no certificate, but rather the existence and ownership of the security is evidenced only on the books and records of the entity (including electronic records).[144] Many interests in limited liability companies are in book-entry form.[145] But many business entities, including public corporations, still issue to some degree or another paper stock certificates, although they are often held by a single clearing house.[146] In these cases, individuals only indirectly hold an interest in these certificated securities through entitlement accounts with stockbrokers.[147]

For our purposes, we will explore the perfection and then enforcement of security rights in uncertificated securities of LLCs, as these are most likely to be the form used in the crypto real estate transactions described in Part I. In other words, the sponsor of the crypto transaction will have the ownership interest in the LLC evidenced by an uncertificated security in the form of an NFT, reference to which would be made in the LLC's operating agreement (again, taking note of potential state law limitations on tokenizing a business entity in the form of an NFT).[148]

a. NFT as Investment Property

At the onset, we note that a party may generally perfect a security interest in a security by simply filing a financing statement that meets the relatively barebones requirements dictated by Article 9.[149] Such being the case, the creditor in the crypto real property finance transaction above could simply file a financing statement in the proper office against the NFT. The description of the collateral, which is required for a financing statement to be effective, could simply reproduce the NFT's token name, ID, and metadata, as well as other information such as the relevant blockchain where it exists and the minting

(2000); Peter Siviglia, *Perfecting Security Interests in Investment Property: 1994 Revisions to Articles 8 and 9 of the Uniform Commercial Code*, N.Y. ST. B.J., Jan. 1995, at 66, 66–68.

143. This new term can be found in the new Article 12 of the UCC. *See* U.C.C. § 12-102 (AM. L. INST. & UNIF. L. COMM'N 2022).

144. *See* RICHARD D. FREER & DOUGLAS K. MOLL, PRINCIPLES OF BUSINESS ORGANIZATIONS 218–19 (2d ed. 2018); JEFFREY J. HAAS, CORPORATE FINANCE 109 (2d ed. 2020).

145. *See* STEPHEN M. BAINBRIDGE, AGENCY, PARTNERSHIP & LLCS 219 (2018).

146. *See* FREER & MOLL, *supra* note 144, at 218.

147. *See* JAMES J. WHITE ET AL., PRINCIPLES OF SECURED TRANSACTIONS 202–04 (2d ed. 2018).

148. *See supra* Part I.B.1.

149. U.C.C. §§ 9-301(a), 9-312(a) (AM. L. INST. & UNIF. L. COMM'N 2022).

platform that facilitated its creation.[150] However, this method, although simple and effective, is not preferred. While perfecting in this way is sufficient to create priority in the security over the claims of lien creditors, such priority is defeated by a creditor who perfects an Article 9 security interest in this same collateral using the preferred methods described below—methods involving possession, control, or both, of the security.[151]

To perfect a security interest in an uncertificated security through the preferred method, the creditor must take *delivery* of the security.[152] The term delivery, as used in this context, is misleading. Of course there can be no manual delivery, as there is nothing physical to hand over—the security is *not* certificated. Instead, the UCC provides that delivery occurs when the issuer registers the creditor as the owner of the security on the issuer's books.[153] The difficulty here is that while the security is indeed uncertificated, it does not exist solely on the books of the issuer. Instead, the issuer's governing documents will point to the NFT as the place where one should go for information about the security. In this way, there would be no "registration on the books of the LLC" that would make sense in this context, having one person registered as the owner of the NFT on the token's given blockchain and another person registered as the owner on the issuer's books.

The more likely scenario, if one were to attempt to perfect in this way, would be to have the NFT transferred on its blockchain to the creditor's public cryptographic key and kept record of in the creditor's digital wallet. This would most likely approximate the concept of the issuer registering the security in the name of the creditor because the issuer's governing documents would indicate that the person associated with the NFT on the relevant blockchain would be tantamount to the person in whose name the security is registered with according to the books of the issuer. An alternative way to accomplish this form of preferred perfection might be to address the issue in the design of the NFT on the front end. Specifically, the sponsor of the cryptoization could create a fillable line in the NFT's metadata where a secured creditor's name and other relevant information could be later included. In this way, one might say that including the creditor's name in the NFT's metadata (to the extent that the NFT is the security) is a way of having the NFT registered in the name of the secured party.

There is one other preferred way to perfect an interest in an uncertificated security, but the mechanics of this process as set forth in the UCC do not align well with how tokens are minted and held. This method requires the owner of

150. For a complete discussion of how NFTs are created, see Moringiello & Odinet, *NFTs*, *supra* note 15, at 24.

151. U.C.C. § 9-328(1) (AM. L. INST. & UNIF. L. COMM'N 2022).

152. *Id.* §§ 8-106(b)–(c), 8-301(b).

153. *Id.* § 8-301(b).

the security, the creditor, and the issuer to enter into a triparty agreement,[154] much akin to what is done to perfect an interest in a bank deposit account.[155] In this agreement, the issuer agrees to abide by the orders of the creditor in the event there is a default on the underlying obligation by the debtor.[156] Here, however, the issuer is not in control of the security because the entity's books and records are not the place where the security exists—rather, it exists on a distributed ledger in the form of an NFT. Further, the NFT is registered in the name of the debtor (through cryptographic keys in a crypto wallet). Thus, there would not be anything the issuer could do at the behest of the creditor. One possibility, although untested like many of these projected deal structures, would be to lock the NFT in a smart contract (i.e., a computer script) agreed on in a triparty contract. The debtor/holder of the NFT, the LLC as the issuer of the security, and the secured party would agree that if the debtor defaulted, then only the signature of the lender would be needed to unlock the smart contract and thus enable a sale of the NFT.

We note here, again, that all of these techniques to approximate the typical preferred methods for perfecting collateral in a security are untested and speculative. The UCC, as currently drafted, does not envision these technologies or arrangements.

b. NFT as General Intangible

But, having set this foundation for attachment and perfection, it is important to note that interests in LLCs are not always considered securities.[157] This means that if the LLC interest is not a security, then the methods of perfection provided above would largely not apply.

Article 9 provides a set of circumstances under which an LLC interest will be considered a security.[158] If the LLC interest is traded on an exchange or some other kind of securities market, then it is considered a security for Article 9 purposes.[159] The same is true if the LLC interest qualifies as an *investment company security*,[160] which means that the LLC is registered as an investment company with the Securities and Exchange Commission (these usually consist of mutual

154. *Id.* § 8-106(c)(2).

155. *Id.* § 9-104(a)(2).

156. *Id.* § 8-106(c)(2) ("A purchaser has 'control' of an uncertificated security if . . . the issuer has agreed that it will comply with instructions originated by the purchaser without further consent by the registered owner.").

157. *See supra* Part II.B.1.b.

158. U.C.C. § 8-103(c) (AM. L. INST. & UNIF. L. COMM'N 2022).

159. *Id.* ("An interest in a . . . limited liability company is not a security unless it is dealt in or traded on securities exchanges or in securities markets . . . .").

160. *Id.* ("An interest in a . . . limited liability company is not a security unless . . . it is an investment company security.").

funds and other kinds of companies that are in the business of investing in securities).[161]

Neither of these circumstances would likely exist for our crypto scenario. The LLC would be a special purpose entity formed for the sole purpose of holding real estate. As such, the interest in the LLC wouldn't be traded on a stock exchange or on some other kind of market for readily tradable securities, and it certainly wouldn't be a company that is itself in the business of investing in securities.[162] Instead, the final circumstance would be the most likely: there is a provision in the LLC's governing documents or in the security itself that opts into UCC Article 8, which governs securities.[163] But this means that the sponsor of the crypto transaction (i.e., the one who formed the LLC) would have to ensure that there is an opt-in clause contained in the LLC's governing documents (the articles of organization or the operating agreement) and likely also in the metadata of the NFT itself.

If none of these circumstances exist, then the LLC interest (which again, will be in the form of an NFT) is not considered a security for Article 9 purposes. It, therefore, falls back into the general catch-all category of *general intangibles*.[164] And to perfect a security interest in a general intangible, one must file a financing statement.[165] The collateral description would be the same as noted above—information about the NFT and where to find it.[166]

c. NFT as Controllable Electronic Record

A final method, as we mentioned above, is not yet available but should be soon—the *controllable electronic record*.[167] As we noted in the Introduction, the American Law Institute and Uniform Law Commission are in the process of promulgating revisions to the UCC, including the introduction of a new Article 12 that creates the concept of a controllable electronic record and attendant rules.[168] Only eleven states have enacted the 2022 UCC amendments at the time of this writing, but, because it is anticipated that most if not all states will enact

161. *See Investment Company,* INVESTOR.GOV, https://www.sec.gov/fast-answers/answersmfinvcohtm.html [https://perma.cc/UCH5-79WR].

162. *See supra* Part I.B.1.

163. U.C.C. § 8-103(c) (AM. L. INST. & UNIF. L. COMM'N 2022) ("An interest in a . . . limited liability company is not a security unless . . . its terms expressly provide that it is a security governed by this Article . . . .").

164. *Id.* § 9-102(a)(42) (providing a statutory definition). See Odinet, *supra* note 72, at 649, and Juliet M. Moringiello, *False Categories in Commercial Law: The (Ir)relevance of (In)tangibility*, 35 FLA. ST. U. L. REV. 119, 125 (2007), for a discussion of the use of digital assets in secured transactions.

165. U.C.C. § 9-310(a) (AM. L. INST. & UNIF. L. COMM'N 2022).

166. *See supra* Part I.B.1.

167. *See also* U.C.C. § 1-201(b)(31) (AM. L. INST. & UNIF. L. COMM'N 2022) (definition of a record).

168. *See supra* Introduction.

them in the coming years, we explain their application to the crypto real estate transactions here.[169]

A controllable electronic record is defined as "a record stored in an electronic medium that can be subjected to control."[170] This is a technology-neutral definition that encompasses a range of digital assets with specific features, including virtual currencies, stablecoins, and importantly for our purposes, NFTs.[171] Because a critical component of the crypto real estate transaction involves collateralizing the NFT entity interest, the new rules of controllable electronic records and the mechanism for granting a security interest over them will be important for all crypto financers.

Notably, the definition of a controllable electronic record is predicated on the ability to take control of it.[172] The new rules set up a three-prong test for control: the person claiming control must have the power to enjoy "substantially all the benefit" of the controllable electronic record, must be able to prevent others from enjoying "substantially all the benefit," and must have the power to transfer control to someone else.[173] Importantly, the person claiming control must have the ability to identify to a third party that all three components are satisfied.[174]

To be sure, the drafters of the amendments did not use crypto-specific terms like blockchains and NFTs in the definitions provisions; however, these are certainly the kinds of technologies that were at the front of mind.[175] For example, an NFT will typically meet the definition of a controllable electronic record.[176] The reason for this is because, aside from consisting of an electronic record, one whose public cryptographic key is identified with the NFT on that NFT's particular blockchain will meet the necessary control prerequisites. That person can claim substantially all of the benefits of the NFT (whatever they may be) to the exclusion of others because no other person has a claim to the asset on the relevant blockchain. Moreover, typically through the use of a digital

169. As of September 2023, Alabama, California, Colorado, Delaware, Hawaii, Indiana, Nevada, New Hampshire, New Mexico, North Dakota, and Washington have enacted the 2022 amendments. An enactment map is available on the ULC website. *See 2022 Amendments to the Uniform Commercial Code*, UNIF. L. COMM'N, https://www.uniformlaws.org/committees/community-home?communitykey=1457c422-ddb7-40b0-8c76-39a1991651ac [https://perma.cc/SAW5-44N6].

170. U.C.C. § 12-102(a)(1) (AM. L. INST. & UNIF. L. COMM'N 2022). The definition explicitly excludes certain kinds of electronic records, including a "controllable account, a controllable payment intangible, a deposit account, an electronic copy of a record evidencing chattel paper, an electronic document of title, electronic money, investment property, or a transferable record.").

171. Edwin E. Smith & Steven O. Weise, *The Proposed 2022 Amendments to the Uniform Commercial Code: Digital Assets*, BUS. L. TODAY (Mar. 25, 2022), https://businesslawtoday.org/2022/03/proposed-2022-amendments-uniform-commercial-code-digital-assets [https://perma.cc/JE39-LURV]. *See generally* Kara J. Bruce, Christopher K. Odinet & Andrea Tosato, *The Private Law of Stablecoins*, 54 ARIZ. ST. L.J. 1073 (2022).

172. U.C.C. § 12-105(a) (AM. L. INST. & UNIF. L. COMM'N 2022).

173. *Id.* § 12-105(a)(1)(A)–(B).

174. *Id.* § 12-105(a)(2).

175. Smith & Weise, *supra* note 171.

176. *Id.*

wallet and through a crypto exchange company, the individual can transfer these powers over the NFT to someone else. Lastly, the ability to identify oneself as having such control can be achieved by sharing the public cryptographic key or other relevant identifying, cryptography-based information. Therefore, in the crypto real estate transaction described in Part I, the NFT that is the interest in the LLC would almost certainly qualify as a controllable electronic record.

In terms of transferring property rights in an NFT to another person (such as through the granting of a security interest or by conveying the ownership of an NFT following a foreclosure sale), the new rules provide for attachment, perfection,[177] priority, and take-free acquisition.[178] Specifically, the attachment process would not materially change because the NFT entity interest, now considered a controllable electronic record, is still considered to be a type of general intangible.[179] So, the collateral description in the security agreement could describe the specifics of the NFT (metadata, identifying information, etc.) or could merely list all general intangibles of the debtor. But, the new rules do modify the process of perfection. To be sure, one could still simply file a financing statement and perfect the security interest in the NFT, just as before the new rules became effective.[180] However, the new rules also create a preferable alternative. Perfection can also occur simply by taking control of the NFT.[181] This brings one back to the definition of what constitutes control of a controllable electronic record (the three-part test with the ability to convey satisfaction of this test to third persons).[182] For example, a secured creditor could perfect a security interest in the NFT by having the debtor transfer the asset to the creditor by associating the asset with the creditor's cryptographic key on the relevant blockchain, in addition to other methods (such as those described in Part II on NFTs as securities) that use specific NFT metadata configurations or smart contracts. This is, in essence, the value of the broad standards-based framework for control—it allows parties to harness whatever technology might be available to achieve satisfaction of the three-pronged control test.

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177. U.C.C. §§ 9-306(B), 9-310(b)(8), 9-312(a), 9-314(a) (AM. L. INST. & UNIF. L. COMM'N 2022).

178. *Id.* § 12-317. *See generally* Christopher K. Odinet & Andrea Tosato, *Floating Liens Over Crypto-in-Commerce*, 99 IND. L.J (forthcoming 2024) (SSRN).

179. *Id.* § 9-102(a)(42). See Odinet & Tosato, *supra* note 178 (manuscript at 20–21), for an overview of the rules that apply to the creation of a security interest in an NFT. Prospective secured lenders have two avenues to create a security interest in a CER. First, as these digital assets are a subset of the broader "general intangibles" category, a creditor and debtor can create a security interest with a signed agreement that adequately describes the collateral. *Id.* The second avenue leverages the concept of control and provides that a security agreement can be created between debtor and creditor if "the collateral is . . . controllable electronic records… and the secured party has control under Section . . . [12-105] . . . pursuant to the debtor's security agreement." *Id.*

180. *Id.* § 9-312(a). *See* Odinet & Tosato, *supra* note 178.

181. *Id.* § 9-314(a). *See* Odinet & Tosato, *supra* note 178.

182. *Id.* §§ 9-314(a), 107A(a); *id.* § 12-105 (providing for the definition of control of a controllable electronic record).

Creditors in crypto real property financings like that described in Part I will likely want to achieve perfection by control for two reasons. First, the new rules introduce a special, non-temporal priority rule to rank competing security interests over controllable electronic records. A secured creditor who perfects by control "has priority over a conflicting security interest held by a secured party that does not have control."[183] The second reason why crypto real property financiers will want to perfect by control stems from the so called *take-free* rules.[184] Under these rules, a person who acquires a controllable electronic record for value, in good faith, and without notice of any conflicting property claims takes it free from any pre-existing property claims, including security interests.[185] The name the new rules give to such individuals is that of a *qualifying purchaser*.[186] It follows that if a crypto real property financier obtained a security interest in an NFT and only perfected by filing, they would be at risk of the debtor disposing of the NFT and transferring control to a qualifying purchaser that would take it free from their security interest.[187]

To make this more concrete, consider the following example: Debtor grants a security interest in her NFT to Creditor One in exchange for a loan. Creditor One perfects by filing a financing statement. Then, Debtor grants a security interest in the same NFT to Creditor Two in exchange for another loan. Creditor Two, however, perfects by taking control of the NFT. This is accomplished by Debtor transferring the NFT to Creditor Two, which Creditor Two maintains a record of in its own digital wallet. Under the normal first-in-time, first-in-right rules, Creditor One's security interest should be superior. However, the effect of the new priority rule makes Creditor Two the victor—Creditor Two is a qualifying purchaser. Creditor Two took control by having the NFT transferred to its own cryptographic key, gave value to Debtor in the way of the loan, acted in good faith, and took control without knowledge of the interest held by Creditor One. The reason for the satisfaction of this final *no-knowledge* requirement is that the new rules mimic the rules for security interests in investment property and negotiable instruments in stating that the mere filing of a financing statement does not impart knowledge to someone claiming to be a qualifying purchaser.[188]

183. *Id.* § 9-326(A). *See* Odinet & Tosato, *supra* note 178.

184. *Id.*; *id.* §§ 12-102(a)(2), 12-104(e). *See* Odinet & Tosato, *supra* note 178.

185. *Id.* §§ 12-102(a)(2), 12-104(e). *See* Odinet & Tosato, *supra* note 178.

186. *Id.* § 12-102(a)(2). Note that although the term uses the word *purchaser*, legally it encompasses both purchasers of controllable electronic records as well as those who take a security interest in the asset. *Id.*

187. *See* Odinet & Tosato, *supra* note 178.

188. U.C.C. § 12-104(h) (AM. L. INST. & UNIF. L. COMM'N 2022). *See* Odinet & Tosato, *supra* note 178.

2. *Enforcement*

Having so attached and perfected, we come to the sought-after benefit—Article 9's enforcement provisions. Article 9 provides a host of options to secured parties when it comes to dealing with the collateral after a default occurs, including selling, leasing, and licensing the collateral.[189] The major limitation is that, whichever method the creditor decides, it must be done *in every aspect* in a commercially reasonable manner.[190] We will assume for our purposes that the secured party in our crypto transaction will want to sell the NFT (which, in a practical sense, will result in the sale of control over the entity-held real property).

a. *Standards and Creditor Discretion*

Article 9 allows for both a judicial and nonjudicial method of enforcement. In most cases creditors choose to go through the nonjudicial process.[191] Through this method, the creditor handles the enforcement rather than an officer of the court. Article 9 provides that the creditor has the choice of proceeding through either a public or a private sale.[192]

A public sale, though not defined in the statutory text, is generally considered to be one where the price is generated from a "meaningful opportunity for competitive bidding."[193] This has generally been understood to mean that there has been sufficient advertising of the sale to the public and that the public has access to the sale.[194]

With this in mind, a private sale is simply considered to be one that is not otherwise public. In other words, it is one where the public is not generally invited nor is the sale advertised to the general public. A common example involves cars—a secured party often will conduct a sale of the car collateral by holding an auction where only car dealers are invited.[195] Courts have said that this constitutes a private sale under Article 9.[196]

Whether to use a public or a private sale is not entirely in the creditor's discretion, however, as the decision itself must be commercially reasonable.[197]

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189. *Id.* § 9-610(a).

190. *Id.* § 9-610(b); *see also* Michael Korybut, *Searching for Commercial Reasonableness Under the Revised Article 9*, 87 IOWA L. REV. 1383, 1397 n.50 (2002).

191. LYNN LOPUCKI ET AL., SECURED TRANSACTIONS: A SYSTEMS APPROACH 79–80 (9th ed. 2019).

192. U.C.C. § 9-610(b) (AM. L. INST. & UNIF. L. COMM'N 2022).

193. *Id.* § 9-610 cmt. 7.

194. *Id.*

195. *See* John Deery Motors, Inc. v. Steinbronn, 383 N.W.2d 553, 554 (Iowa 1986).

196. *Id.* at 556; Morrell Emps. Credit Union v. Uselton, 1979 WL 30030, at *274 (Tenn. Ct. App. Nov. 19, 1979); Union Nat'l Bank of Wichita v. Schmitz, 853 P.2d 1180, 1185 (Kan. Ct. App. 1993)*; see also* Gen. Elec. Cap. Corp. v. Stelmach Constr. Co., No. CIV.A. 00-2026-CM, 2001 WL 969052, at *7 (D. Kan. Aug. 15, 2001) (dealing with construction equipment).

197. U.C.C. § 9-610(b) (AM. L. INST. & UNIF. L. COMM'N 2022).

For example, if a creditor has reason to believe that the collateral will sell for a higher price at a private sale but conducts a public sale instead where the bidding is much lower, then the creditor will have violated Article 9[198] and can be subject to various liabilities.[199] In essence, the creditor must choose the method that is likely to "result in higher realization on collateral for the benefit of all concerned."[200] As noted above, a sale of a car to auto dealers—individuals who are in the business of acquiring and selling cars—is likely to generate a higher bid price than open bidding at a public auction.[201] The same can be said of a private sale of the equity interests in a hotel where the auction audience consisted of hotel companies.[202] The more idiosyncratic the collateral, the more likely the creditor will need to tailor the private sale (in terms of the place where notice is given, how long notice is provided, and those invited) in order to optimize the sale price—in other words, for the sale to be commercially reasonable.

A major limitation in choosing to go the private-sale route is that it eliminates the ability of the creditor to make a bid for the collateral. At a public sale, the creditor itself can attempt to purchase the collateral.[203] But at a private sale, the creditor is only allowed to do so if the thing is "customarily sold on a recognized market or the subject of widely distributed standard price quotations."[204] Such property is of quite a limited nature. It generally is restricted to items like stocks or commodities, both of which are sold on a recognized market.[205]

b. Online Auctions

Regarding the use of online auctions, there was a move in 2010 to provide some clarity on whether such venues were commercially reasonable for Article 9 purposes.[206] Additional guidance was added to Comment 2 to Section 610 of Article 9, providing that online auctions could be valid, either as public or private sales, provided they were commercially reasonable.[207] Another hedge against a possible *ex post* finding of unreasonableness would be where the

198. *See, e.g.*, United States v. Willis, 593 F.2d 247, 259 (6th Cir. 1979).

199. U.C.C. § 9-625 (AM. L. INST. & UNIF. L. COMM'N 2022) (setting forth a variety of repercussions, ranging from actual damages, statutory damages, injunctive relief, and the inability to obtain a deficiency judgment, in whole or in part).

200. *Id.* § 9-610 cmt. 2.

201. *John Deery Motors, Inc.*, 383 N.W.2d at 556.

202. D2 Mark LLC v. OREI VI Invs. LLC, No. 652259/2020, 2020 WL 3432950, at *2 (N.Y. Sup. Ct. June 23, 2020).

203. U.C.C. § 9-610(c)(1) (AM. L. INST. & UNIF. L. COMM'N 2022).

204. *Id.* § 9-610(c)(2).

205. *Id.* § 9-610 cmt. 9.

206. *See generally* Stephen S. Gilstrap, Comment, *Refreshing the Page on Online Collateral Auctions*, 120 YALE L.J. 679 (2010).

207. U.C.C. § 9-610 cmt. 2 (AM. L. INST. & UNIF. L. COMM'N 2022).

creditor and the debtor agree ahead of time that the online auction would be a commercially reasonable method for disposing of the collateral.[208] However, there is a limitation to this freedom of standard-setting by contract—the agreement cannot be "manifestly unreasonable."[209] Such might be the case where the auction designed by the creditor is inappropriate for the type of collateral at issue. While there has been very limited caselaw concerning the use of online auctions in UCC 9 sales, a number of courts have approved of their use when the circumstances are such that the use of the online setting is likely to reach potential buyers.[210] For example, the court in the 2009 case of *Moore v. Wells Fargo Construction* approved of the online auctioning of an excavator,[211] and in the more recent 2021 case of *United States Bank Equipment Finance v. Windy City Drilling*, the court held that an eBay auction of drilling equipment was commercially reasonable because "that method reaches more potential customers . . . than in-person or other online sites."[212]

In terms of timeline, commercial reasonableness governs overall, but Article 9 also provides a general guideline of allowing for notice to the debtor and any other interested parties ten days before the sale takes place.[213] Taking into account any extra time that may be needed for advertising of the sale in the proper venues and for conducting a search for any interest holders, the overall number of days from default to sale can be as quick as about a month.[214]

c. Transfer Restrictions

There is a final but critical component of enforcing security rights in an equity interest in an LLC (whether represented by an NFT, a paper certificate, or otherwise). As is often the case with interests in corporations, LLC interests are not freely alienable.[215] In other words, the ability to transfer an interest in an LLC is limited by state statute, and those limitations can be either loosened

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208. *Id.* § 9-603(a) (allowing parties to "determine by agreement the standards measuring the fulfillment of . . . the duties of a secured party").

209. *Id.*

210. *See* D2 Mark LLC, 2020 WL 3432950, at *6; *see also* 1 DAVID A. REED, COLLECTIONS MANUAL FOR CREDIT UNIONS § 11.09.

211. Moore v. Wells Fargo Constr., 903 N.E.2d 525, 533 (Ind. Ct. App. 2009). The auction took place on the website www.salvagesales.com. *Id.* at 529.

212. U.S. Bank Equip. Fin. v. Windy City Drilling, No. 19-CV-2291, 2021 U.S. Dist. LEXIS 120397, at *10 (C.D. Ill. Apr. 26, 2021).

213. U.C.C. § 9-611(c)(3)(B), (C) (AM. L. INST. & UNIF. L. COMM'N 2022).

214. Regina Stango Kelbon & Jillian Zvolensky, *A Look at the Friendly Foreclosure Option*, JDSUPRA (June 2, 2015), https://www.jdsupra.com/legalnews/a-look-at-the-friendly-foreclosure-36640 [https://perma.cc/43X5-FEDW]; W. Bryan Rakes, *Foreclosure Remedies: Knowing Them Is the First Step*, VENABLE LLP (July 31, 2009), https://www.venable.com/insights/publications/2009/07/foreclosure-remedies-knowing-them-is-the-first-ste [https://perma.cc/ZF5T-HPMU].

215. ROBERT R. KEATINGE ET AL., KEATINGE AND CONAWAY ON CHOICE OF BUS. ENTITY § 8:1 (2022 ed.) (discussing the assignability differences between incorporated and unincorporated business entities).

or tightened by agreement of the LLC's members.[216] The idea is that no one should be forced to be in a business venture with a stranger.

An essential concept to understand in this context is the idea that an equity interest in an LLC carries with it two types of rights. The first are governance rights, which give the holder the power to elect management, vote on important matters, have access to company information, and otherwise participate in the running of the business.[217] Economic rights entitle the holder to distributions of profits and losses and the right to payment in the event of a liquidation and winding-up of the company.[218] Typically, one who holds an LLC interest holds both these rights—the right to govern and the right to payments.[219] But, that is not always the case. LLC law prohibits someone from freely transferring their governance rights in an LLC without some kind of agreement or permission from the other LLC members.[220] The economic rights, however, can be transferred without permission.[221] This creates the default rule. Then, the LLC's governing documents might provide something different—perhaps even free alienability of the governance rights or at least a lower threshold for permission to transfer or perhaps the right to transfer but only to certain types of persons, like family or other LLC members.

So, putting this in the context of secured financing, the result is that any single member of a multi-member LLC cannot freely collateralize their interest—at least not the governance portion of it. And, in the case of our crypto transaction, it is the governance right that the foreclosing creditor would want because this is the right that would allow for control of the LLC's assets—in our case, the real estate.

Article 9 does have two provisions that override anti-transfer rules for general intangibles,[222] but they do not apply or are not availing in this case. The most applicable part of the first provision—Section 9-406(d)—only applies to invalidate restrictions on the transfer of economic rights.[223] The second provision—Section 9-408—does invalidate anti-assignment provisions more broadly, including those relative to governance rights, but it has significant limitations.[224] It does nothing to invalidate restrictions that are imposed by agreement of the LLC's co-members (as opposed to being in the LLC's governing documents).[225] It also does nothing to invalidate a restriction that requires other members to consent to a transfer (as opposed to needing the

216. BAINBRIDGE, *supra* note 145, at 219.

217. *Id.* at 228.

218. *Id.* at 219.

219. KEATINGE ET AL., *supra* note 215, §§ 8:1, 8:6.

220. *Id.*§ 8:1; BAINBRIDGE, *supra* note 145, at 227–28.

221. *See, e.g.*, OR. REV. STAT. ANN. § 63.249(3) (West 2023); KEATINGE ET AL., *supra* note 215, § 8:1.

222. U.C.C. §§ 9-406(d), 9-408 (AM. L. INST. & UNIF. L. COMM'N 2022).

223. *Id.* § 9-406(d).

224. *See id.* § 9-408.

225. *See id.*

consent of the LLC itself).[226] As a practical matter, if an LLC operating agreement has a consent requirement for transfers, the needed consent will be that of the members, therefore making this provision in Article 9 quite useless. And, as mentioned at the start, none of these override rules apply if the LLC interest at issue is a security.[227] The overrides only work in instances where the LLC interest is a general intangible.[228]

Moreover, although they have not been enacted in many states as of this writing, 2018 amendments to Article 9 would make the overrides described above inapplicable to a security interest taken in, among other things, a limited liability company.[229] All of this means that the sponsor of the crypto-financing transaction would have to be very careful about how the LLC holding company's governing documents are drafted because it can have an effect on the ability of the buyer of the NFT (the real estate) to obtain financing—or, said another way, the ability of the buyer's lender to obtain an effective security interest in the NFT.

III. Legal Implications and Conundrums of Crypto Real Estate Financing

A creditor who chose to provide crypto financing of a real estate purchase would presumably have the following objectives upon default: (1) to foreclose on the NFT through an Article 9 foreclosure sale of the NFT that functions as a token of control of the ownership entity; (2) to have that sale deliver ownership of the NFT (and thus control of the ownership entity) to the purchaser free and clear of subordinate interests arising under Article 9; and (3) for the purchaser at that sale to thus be in a position to use its control of the ownership entity as a means to obtain possession and control of the real estate through the state's available judicial remedies for summary possession (unless the possessor voluntarily surrenders possession of the real estate). Further, if the crypto financer expects to have senior lien priority, the crypto financer will also presumably expect that the purchaser would have priority over conflicting interests in the real estate that might arise under real estate law. In other words, the purchaser would, at least in accordance with the expectations of buyers in the more typical real estate market, not want to have to contend with any land title claims by others in the property just purchased.

226. *See id.*

227. *See supra* Part II.B.1.b.

228. *See supra* Part II.B.1.b.

229. U.C.C. §§ 9-406(k), 9-408(f) (Am. L. Inst. & Unif. L. Comm'n 2022); *see also 2022 Amendments to the Uniform Commercial Code*, *supra* note 169 (showing enactment map).

A. The "Two-Systems" Problem

Commercial law has at times struggled with the so-called *two-systems problem* with respect to items such as fixtures, crops, timber, and minerals. This problem exists because real estate law has traditionally treated these items as part of the real estate—at least to the extent that a deed to a parcel of land presumptively delivers title to such items (which it does, except in those cases where the deed expressly or impliedly reserved those items to the grantor or a prior conveyance legally severed those interests).[230] At the same time, commercial actors tend to view these items as capable of being severed and thus as more or less temporarily attached to the land.[231] For this reason, the Uniform Commercial Code recognizes the ability of an owner of land to enter into agreements assigning such items either outright or as security for a debt.[232]

This gives rise to a two-systems problem: one can have conflicting interests in the same item whereby those rights arise in favor of two creditors—one whose interest arises under *real estate/mortgage law*, and another whose interest arises in a transaction governed by the *Uniform Commercial Code*. In this situation, commercial law must resolve which system controls and thus which creditor will prevail. As a general rule, the Uniform Commercial Code defers to real estate law through its scope provisions, which generally exclude real estate

230. *See* U.C.C. § 9-102(a)(41) (AM. L. INST. & UNIF. L. COMM'N 2022) ("'Fixtures' means goods that have become so related to particular real property that an interest in them arises under real property law."). As to the concept that a deed will pass ownership of a fixture to the grantee unless the deed provides otherwise, see 5 RUSSELL D. NILES & JOHN HENRY MERRYMAN, AMERICAN LAW OF PROPERTY § 19.1 (A. James Casner ed.,1952); 5 THOMPSON ON REAL PROPERTY § 46.01 (David A. Thomas et al. eds., 2d Thomas ed. 2007); 8 POWELL ON REAL PROPERTY § 57.04[2] (Michael A. Wolf ed., 2023 ed.); *see also* 5 NILES & MERRYMAN, *supra*, § 19.15 (growing timber presumptively passes with deed); *id.* § 19.16 (growing crops presumptively pass with deed); 2 THOMPSON ON REAL PROPERTY, *supra*, § 13.06(a) (same); 11 THOMPSON ON REAL PROPERTY, *supra*, § 96.07 (same); 2 VICTOR H. KULP, AMERICAN LAW OF PROPERTY § 10.6, at 515–19 (A. James Casner ed., 1952) (transfer or assignment of oil/gas or mineral rights governed by principles of real estate conveyances); 2 THOMPSON ON REAL PROPERTY, *supra*, § 14.03(c)(2) ("Royalty interests in mineral rights are personal property, but where the mineral interest in land and the surface rights are owned separately each interest is regarded as realty."). For general discussion of some of the problems associated with the differentiation of real and personal property, see 2 THOMPSON ON REAL PROPERTY, *supra*, § 14.03(c)(1)–(2).

231. Alphonse M. Squillante, *The Law of Fixtures: Common Law and the Uniform Commercial Code Part II: The UCC and Fixtures*, 15 HOFSTRA L. REV. 535, 539–40, 543 (1987) (explaining that commercial acts and code consider fixtures as severable and that most fixtures "can be the subject of an enforceable security interest").

232. *See, e.g.*, U.C.C. § 9-109(a)(1) (AM. L. INST. & UNIF. L. COMM'N 2022) (Article 9 governs transactions that create security interest in personal property and fixtures); *id.* § 9-102(a)(34)(A) (defining "farm products" to include "crops grown, growing, or to be grown"); *id.* § 9-102(a)(44) (defining "goods" to include "fixtures" and "standing timber that is to be cut and removed under a conveyance or contract for sale"); *id.* § 9-102(a)(6)(A)(i)–(ii) (defining "as-extracted collateral" to mean "oil, gas, or other minerals that are subject to a security interest that . . . is created by a debtor having an interest in the minerals before extraction . . . and attaches to the minerals as extracted"); *see also* Stiles v. Gordon Land Co., 44 So. 2d 417, 420 (Fla. 1950) (contract for the sale and removal of a fixture is a contract for the sale of goods).

interests and real estate transactions from its scope.[233] By way of exception—as with crops (in all states) and manufactured homes (in nearly all states and situations)—Article 9 expressly recognizes the ability of a personal property creditor to obtain priority over a conflicting creditor holding a real estate encumbrance (such as a mortgage lender).[234]

In an ideal world, the crypto financer who establishes control over an NFT that tokenizes control over an ownership entity that owns land might like to be assured of priority over subsequent creditors without having to take a mortgage on the land. Certainly, as explained in Part II.B, such an outcome could reduce the transaction costs associated with the negotiation, execution, and recording of a mortgage. But this outcome is a mirage; tokenizing legal control over the ownership entity is not certain to preclude a variety of conflicting interests from attaching to the land under real property law. To see our point in more practical terms, we discuss below several potential conflicts between the crypto financer's security interest in the ownership interest of the holding company embodied in the NFT and other creditors that could obtain security rights in the underlying real estate, and we explain why these effects would frustrate the effectiveness of a crypto real estate financing transaction secured only by the NFT.

233. U.C.C. § 9-109(d)(11) (AM. L. INST. & UNIF. L. COMM'N 2022) (Article 9 "does not apply to . . . the creation or transfer of an interest in or lien on real property . . . ."). Thus, for example, while a creditor could take an Article 9 security interest in timber to be cut or as-extracted collateral, the secured party would have to perfect that interest by filing a financing statement in the real property records in the county where the relevant land is located. *Id.* § 9-501(a)(1)(A). Whether that perfected interest would have priority over a conflicting interest of a party holding an encumbrance on the real estate is governed under real property law by the first-in-time principle as modified by the real property recording statute. *See, e.g.*, Feliciana Bank & Tr. v. Manuel & Sessions, L.L.C., 943 So. 2d 736, 740 (Miss. Ct. App. 2006) (where bank had recorded mortgage on parcel before buyer purchased and cut timber from the parcel, mortgage covered the timber and established bank's priority vis-à-vis buyer).

234. *See* U.C.C. § 9-334(i) (AM. L. INST. & UNIF. L. COMM'N 2022) ("A perfected security interest in crops growing on real property has priority over a conflicting interest of an encumbrancer or owner of the real property if the debtor has an interest of record in or is in possession of the real property."). The applicable priority rule with respect to conflicting interests in manufactured homes depends on whether the home is covered by a certificate of title, as is required in more than forty states. Mark R. Koontz, *Manufactured Homes Under U.C.C. Revised Article 9: A New Conflict Between Certificates of Title and Financing Statements*, 80 N.C. L. REV. 1829, 1841 n.60 (2002). In those states, a security interest in the manufactured home that is perfected by notation on the title certificate has priority over the conflicting interest of an encumbrancer or owner of the real property. U.C.C. § 9-334(e)(4) (AM. L. INST. & UNIF. L. COMM'N 2022). In a state where manufactured homes are not covered by title certificates, a secured party with a purchase-money security interest in the manufactured home can obtain priority over the conflicting interest of an encumbrancer or owner of the real property if the secured party satisfies the requirements for purchase-money priority in a fixture under U.C.C. § 9-334(d). As to fixtures generally, Article 9 generally subordinates an Article 9 fixture security interest to the conflicting rights of an encumbrancer or owner of the land, *id.* § 9-334(c), but then provides a number of exceptions under which the Article 9 fixture secured party may nevertheless obtain priority. *Id.* § 9-334(d)–(g).

1. The Crypto Financer vs. the IRS

We first consider the most ubiquitous of creditors, the Internal Revenue Service (IRS). Suppose that Josephine purchases an NFT pursuant to which she can exercise control over CryptoHome1 LLC, which holds title to a home that Josephine will occupy as her personal residence. Crypto Bank, which finances the purchase, takes an Article 9 security interest in the NFT and properly perfects its security interest. Thereafter, Josephine fails to pay her personal income taxes, giving rise to a lien on all of Josephine's "property" and "rights to property" under the Internal Revenue Code.[235] At that point, the IRS issues a notice of tax lien and begins the process of attempting to enforce that tax lien against the home via sale.[236] You can anticipate Crypto Bank's argument:

> The IRS doesn't have a lien against the home. CryptoHome1 LLC owns the home, not Josephine. The IRS can only assert a lien against Josephine's ownership rights in the LLC, but those rights are already subject to our perfected, first priority lien.[237]

Unfortunately for Crypto Bank, the ship containing this argument sailed with the Supreme Court's 2002 decision in *United States v. Craft*.[238] In *Craft*, the IRS asserted a federal tax lien against the proceeds of the sale of the marital home of Don and Sandra Craft on account of Don's individual federal tax liabilities.[239] The Crafts had owned the home (located in Michigan) as "tenants by the entirety."[240] Under Michigan law, as a tenant by the entirety, Don had no individual interest in the home capable of being attached by an individual creditor of Don—as distinct from a joint creditor of both spouses.[241] The Crafts thus argued that the IRS, as an individual creditor of Don, stood in the same

235. 26 U.S.C. § 6321 ("If any person liable to pay any tax neglects or refuses to pay the same after demand, the amount . . . shall be a lien in favor of the United States upon all property and rights to property, whether real or personal, belonging to such person.").

236. *See, e.g.*, 26 U.S.C. § 6335 (sale of seized property).

237. The first-in-time, first-in-right principle provides the baseline for establishing the priority of conflicting property interests, including federal tax liens. 1 NELSON ET AL., REAL ESTATE FINANCE LAW, *supra* note 80, § 9:9. Thus, as a general matter, if an Article 9 security interest is perfected before the federal tax lien arises and the IRS files notice of that lien, 26 U.S.C. § 6323(a), the Article 9 security interest will have priority over the federal tax lien.

238. United States v. Craft, 535 U.S. 274 (2002).

239. *Id.* at 276.

240. *See* Walters v. Leech, 761 N.W.2d 143, 146–47 (Mich. Ct. App. 2008) ("In a tenancy by the entirety, the husband and wife are considered one person in the law. They cannot take the property in halves. Rather, the property is seised by the entirety. The consequence is that neither the husband nor the wife can dispose of the property without the assent of the other and the whole property must remain to the survivor. . . . As a general proposition under the common law, property that is held as a tenancy by the entirety is not liable for the individual debts of either party.") (citations omitted). Michigan has codified this principle as to judgment liens. *See* MICH. COMP. LAWS ANN. § 600.2807(1) (West 2010) ("A judgment lien does not attach to an interest in real property owned as tenants by the entirety unless the underlying judgment is entered against both the husband and wife.").

241. *See* MICH. COMP. LAWS ANN. § 600.2807(1) (West 2010).

position as any other creditor and could not lien the home for a tax debt for which both spouses were not jointly liable.[242] Prior to *Craft*, federal courts had consistently ruled that in states such as Michigan, a federal tax lien could not attach to entireties property to satisfy an individual spouse's tax liability.[243] These rulings reflected the underlying view that a federal tax lien could attach only to "property" as defined by state law—and that in Michigan and other states where entireties property is owned by the marital unit,[244] neither spouse had any individual "property" right in entireties property during marriage.[245]

In *Craft*, however, the Court rejected these prior decisions, noting that while state law may control "which sticks are in a person's bundle," whether those state-law-defined sticks qualify as "property" or "rights to property" for purposes of the federal tax lien statute is a question of federal law.[246] Turning to the nature of Don Craft's rights regarding the home, the Court noted Don Craft's "sticks" included:

> [T]he right to use the property, the right to exclude third parties from it, the right to a share of income produced from it, the right of survivorship, the right to become a tenant in common with equal shares upon divorce, the right to sell the property with the respondent's consent and to receive half the proceeds from such a sale, the right to place an encumbrance on the property with the respondent's consent, and the right to block respondent from selling or encumbering the property unilaterally.[247]

The Court characterized these rights as "property" or "rights to property" belonging to Don Craft for purposes of the federal tax lien statute, reasoning that a contrary result would facilitate abuse of the federal tax system.[248] As a

242. *See Craft*, 535 U.S. at 287.

243. *See, e.g.*, IRS v. Gaster, 42 F.3d 787, 789–92 (3d Cir. 1994) (Pennsylvania and Delaware law); Pitts v. United States, 946 F.2d 1572, 1573 (4th Cir. 1991) (Virginia law); United States v. Am. Nat'l Bank of Jacksonville, 255 F.2d 504, 507 (5th Cir.), *cert. denied*, 358 U.S. 835 (1958) (Florida law); Raffaele v. Granger, 196 F.2d 620, 623 (3d Cir. 1952) (Pennsylvania law); United States v. Hutcherson, 188 F.2d 326, 331 (8th Cir. 1951) (Missouri law); United States v. Nathanson, 60 F. Supp. 193, 194 (E.D. Mich. 1945) (Michigan law); Shaw v. United States, 94 F. Supp. 245, 246 (W.D. Mich. 1939) (Michigan law); Benson v. United States, 442 F.2d 1221, 1224–25 (D.C. Cir. 1971) (D.C. law); Cole v. Cardoza, 441 F.2d 1337, 1343 (6th Cir. 1971) (Michigan law). As noted by Justice Thomas in his dissent in *Craft*, prior to *Craft*, the IRS had consistently recognized "that a federal tax lien against one spouse cannot attach to property or rights to property held as a tenancy by the entirety." *Craft*, 535 U.S. at 300 (Thomas, J., dissenting).

244. *See infra* note 251 and accompanying text.

245. *See, e.g.*, *Cole*, 441 F.2d at 1343 ("In Michigan tenants by the entirety hold under a single title. Neither spouse has the power without the concurrence of the other to alienate the estate or any interest therein . . . ."); *Hutcherson*, 188 F.2d at 330 (declining to depart from "the long established rule in Missouri that neither spouse individually has such an interest in an estate by the entirety as will permit the adherence thereto of only one spouse").

246. *Craft*, 535 U.S. at 278–79 (majority opinion) ("A common idiom describes property as a 'bundle of sticks'—a collection of individual rights which, in certain combinations, constitute property. State law determines only which sticks are in a person's bundle. Whether those sticks qualify as 'property' for purposes of the federal tax lien statute is a question of federal law.") (citations omitted).

247. *Id.* at 282.

248. *Id.* at 285 ("That the rights of respondent's husband in the entireties property constitute 'property' or 'rights to property' 'belonging to' him is further underscored by the fact that, if the conclusion were

result, the Court held that the IRS's tax lien attached to one-half of the sale proceeds of the Craft home.[249] If the Crafts had attempted to convey the home to a third party without the IRS having agreed to release its lien, the third party would have taken the home subject to the IRS's lien claim encumbering a one-half interest in the real estate.[250]

In our CryptoHome1 example, of course, Josephine is not an entireties tenant. Nevertheless, in most significant respects, her relationship to the LLC is analytically comparable to Don Craft's relationship to the marital unit that "owned" the Craft home under Michigan law.[251] Josephine's position as the sole member of the LLC provides her with equivalent (if indirect) rights to possess and manage the home. Unless the LLC agreement provides otherwise, she will have use of the home, the right to exclude others, the right to collect rents generated by the home, and the right to encumber the home by directing the LLC to grant a mortgage loan.[252] She would even have a right of survivorship of a sort; if the LLC failed to remain in good standing and was dissolved under applicable law, ownership of the home would vest in Josephine as the LLC's sole member.[253] In *Craft*, the IRS was allowed to pierce the veil that state law otherwise provided to the entireties tenancy, thereby making the Craft home lienable (at least in part) for Don Craft's individual tax liability. In the Josephine/CryptoHome1 transaction, would the IRS likewise be allowed to pierce the veil that the organic LLC statute would otherwise provide?

Presumptively, the law would respect the distinction between an LLC and its sole member. Under state law, this means that the assets of CryptoHome1

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otherwise, the entireties property would belong to no one for the purposes of § 6321. Respondent had no more interest in the property than her husband; if neither of them had a property interest in the entireties property, who did? This result not only seems absurd, but would also allow spouses to shield their property from federal taxation by classifying it as entireties property, facilitating abuse of the federal tax system."). Of course, one can characterize the Court's policy justification for refusing to define property based on state law as somewhat underwhelming. Presumably, Congress could have chosen to (but did not) require that taxpayers who hold assets as tenants by the entirety must file a joint return.

249. *Id.* at 288 ("We therefore conclude that respondent's husband's interest in the entireties property constituted 'property' or 'rights to property' for the purposes of the federal tax lien statute."). Prior to the litigation in *Craft*, the Crafts had entered into a contract to sell the home in fee simple to a third party; the IRS had agreed to consent to the sale and release its lien claim against the home as long as the Crafts agreed to place one-half of the net sale proceeds in escrow. *Id.* at 276–77.

250. *See* IRM 5.17.2.5.2.4(2)(f) (Mar. 5, 2019) ("Where there has been a sale or other transfer of entireties property subject to the federal tax lien that does not provide for the discharge of the lien, whether the transfer is to the non-liable spouse or a third party, the lien thereafter encumbers a one-half interest in the property held by the transferee."); *see also* I.R.S. Notice 2003-60, 2003-39 I.R.B. 643.

251. This point is implicit in the dissents of Justices Scalia and Thomas in *Craft*: "[A] State's decision to treat the marital partnership as a separate legal entity, whose property cannot be encumbered by the debts of its individual members, is no more novel and no more 'artificial' than a State's decision to treat the commercial partnership as a separate legal entity, whose property cannot be encumbered by the debts of its individual members." *Craft*, 535 U.S. at 289 (Scalia, J., dissenting).

252. *See, e.g.*, MICH. COMP. LAWS ANN. § 450.4401 (West 2011) (management of business vested in members); *id.* § 450.4406 (managers' authority to act as agent of LLC).

253. *See, e.g.*, *id.* § 450.4808(1)(b), (c) (providing for residual distribution of assets to members following payment of creditor claims).

(i.e., the home) would not be subject to the claims of Josephine's individual creditors (absent a contrary agreement) and that the assets of Josephine would not be subject to the claims of CryptoHome1's creditors (again, absent a contrary agreement).[254] But the protection offered by this formal separation is not absolute. Where a legally distinct entity functions as a mere "alter ego" of an individual, a court may permit the assets of the entity to be used to satisfy the debts of the individual under the doctrine of "reverse veil-piercing."[255]

Of course, the mere fact that Josephine is the sole member of the LLC is not a sufficient reason to disrespect the formal distinction between herself and the LLC. If Josephine acquired the home in the LLC for investment or business purposes—for example, if she were renting the home to tenants rather than occupying it as her personal residence—there is substantial reason to respect the distinction and not consolidate the personal assets and liabilities of Josephine with those of the LLC. Under such circumstances, it would be improper for a court to allow an individual creditor of Josephine (such as the IRS) to reach the assets of the LLC (the home).[256]

But if Josephine is the sole member, the LLC exists solely to hold title to the home, and Josephine occupies the home as her personal residence, the IRS seems certain to argue—successfully—that the LLC is merely the alter ego of Josephine. Under IRS rules, "alter ego situations typically involve one or more of the following: . . . (c) The taxpayer is a shareholder, director, or officer of the corporation, or otherwise exerts substantial control over the corporation. . . . (f) A failure to disregard the corporate fiction presents an element of injustice or 'fundamental unfairness.'"[257] These two factors have special salience as applied to Josephine and CryptoHome1 LLC. Not only would Josephine control the LLC as its sole member, but the IRS's creditor remedy against

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254. *See, e.g.*, *id.* § 450.4501(4) (providing that, unless otherwise provided by a contrary agreement, members are "not liable for the acts, debts, or obligations" of the LLC).

255. The doctrine of "piercing the veil" customarily refers to a court's decision not to respect entity form in a case where a creditor of the entity is seeking to enforce its claim against the assets of a person holding an ownership share in the entity (e.g., a creditor of a corporation attempting to enforce its claim against the assets of a corporate shareholder). *See, e.g.*, C.F. Tr., Inc. v. First Flight Ltd. P'ship, 306 F.3d 126, 134 (4th Cir. 2002); Perpetual Real Est. Servs., Inc. v. Michaelson Props., Inc., 974 F.2d 545, 548 (4th Cir. 1992). Conveniently, "reverse veil-piercing" describes the reverse situation in which a court chooses to allow a creditor of the person holding an ownership share in the entity to enforce its claim against the assets of the entity. *See, e.g.*, *C.F. Trust*, 306 F.3d at 134; Goya Foods, Inc. v. Unanue, 233 F.3d 38, 43 (1st Cir. 2000); 718 Arch St. Assocs. v. Blatstein (*In re* Blatstein), 192 F.3d 88, 100 (3d Cir. 1999).

256. *See, e.g.*, *Perpetual Real Est. Servs.*, 974 F.2d at 548 (noting that "proof that some person 'may dominate or control'" a corporate entity as an individual is "not enough to pierce the veil," absent additional proof that the individual used the entity to conceal wrongdoing).

257. IRM 5.17.2.5.7.1(4) (Mar. 19, 2018). Under IRS rules, "[n]o one factor determines whether an alter ego situation is present, but a number of factors taken together may." *Id.* Situations typically involve one or more of the following: "(c) The taxpayer is a shareholder, director, or officer of the corporation, or otherwise exerts substantial control over the corporation. . . . (f) A failure to disregard the corporate fiction presents an element of injustice or 'fundamental unfairness.'" *Id.* Under the rationale expressed in *Craft*, there seems little doubt that a court would treat Josephine's single-member LLC as her alter ego for purposes of the federal tax lien statute.

Josephine's rights in the LLC would be entirely inadequate to protect the government's interest in tax collection. Under organic LLC laws, if the debtor is a member of an LLC, a judgment creditor cannot lien the debtor's control rights but may only obtain a charging order against member distributions.[258] Josephine would remain the sole member of the LLC, with all of the rights to manage and control the LLC, including the right to decide whether and when any distributions would ever be made. Because these two factors, when combined, would entirely frustrate the government's substantial interest in tax collection (as recognized in *Craft*), there seems little doubt that a court would treat CryptoHome1 LLC as Josephine's alter ego for purposes of the federal tax lien statute. Further, even if a state's LLC statute accords single-member LLCs the same protection from veil-piercing as is customarily ascribed to multiple-member LLCs, this protection would not apply against the IRS, which takes the position (again, bolstered in *Craft*) that federal common law, rather than state law, governs alter-ego analysis for purposes of federal tax lien disputes.[259]

If the IRS can lien the home to facilitate collection of Josephine's tax liability, it can conduct a sale of the home to satisfy that lien, and the sale will pass title to the home—potentially cutting off the LLC's title to the home and vesting fee simple title to the purchaser, notwithstanding Crypto Bank's control of the NFT.[260] The only way that Crypto Bank could structure its financing

258. *See, e.g.*, CAL. CORP. CODE §§ 17704.07, 17705.02–17705.03 (West 2014).

259. IRM 5.17.2.5.7.1(3) (Mar. 19, 2018).

260. *See* 26 U.S.C. § 6339(c) ("A . . . deed to real property executed pursuant to section 6338 shall discharge such property from all liens, encumbrances, and titles over which the lien of the United States with respect to which the levy was made had priority."). The analysis in support of this conclusion is more nuanced than the statement in the text. First, it is possible that a court might decide that Crypto Bank had no security interest in the home at all because it took only a pledge of Josephine's equity interest in the LLC and never took a mortgage on the land. In that case, a sale of the land would pass to the buyer the LLC's full title to the home. Crypto Bank would retain its perfected security interest in Josephine's equity interest in the LLC, but that would be valueless as the LLC would no longer own any property. The more likely result, we suspect, is that a court would treat Crypto Bank's equity pledge of Josephine's LLC interest as an equitable mortgage on the land. *See infra* notes 312–19 and accompanying text. In this situation, the question would be the relative priority of Crypto Bank's equitable mortgage vis-à-vis the IRS tax lien. A security interest arising under state law is deemed to exist for purposes of the Federal Tax Lien Act (FTLA) only if the collateral is "in existence" and the interest "has become protected under local law against a subsequent judgment lien arising out of an unsecured obligation." 26 U.S.C. § 6323(h)(1)(A). This provision means that a secured party with an unperfected security interest under Article 9 effectively is deemed not to have a security interest at all vis-à-vis the IRS. *See* U.C.C. § 9-317(a)(2)(A) (AM. L. INST. & UNIF. L. COMM'N 2022) (unperfected security interest subordinate to interest of judgment lien creditor). "By contrast, the priority of an unrecorded mortgage vis-à-vis a federal tax lien depends on [the language and judicial interpretation of] the state's recording statute." 1 NELSON ET AL., REAL ESTATE FINANCE LAW, *supra* note 80, § 9.9, at 931. If the state's recording statute provides (or is interpreted to provide) that an unrecorded mortgage is invalid as against a later-judgment creditor, then Crypto Bank's equitable mortgage would not be a "security interest" under the FTLA and would be extinguished by the sale to enforce the tax lien. *Id.* at 1354–55; *see also* Citizens State Bank v. United States, 932 F.2d 490, 494 (6th Cir. 1991) (applying Kentucky law). "In many states, however, even an unrecorded mortgage is effective against later judgment creditors, either because the judgment creditor is not considered to have paid value . . . [as required by] the recording act or because the judgment lien statute imposes a lien only on the judgment debtor's actual real property, not [its] ostensible property as disclosed by a title examination." 1 NELSON ET AL., REAL ESTATE FINANCE LAW, *supra* note 80, § 9.9, at 931. "In those states, an unrecorded mortgage would still have priority against a later-filed federal tax lien." *Id.*

transaction to be *certain* of preventing this outcome is by also taking and recording a direct lien on the land itself, i.e., to have the LLC grant a mortgage on the home and to record that mortgage prior to Josephine's taxes becoming delinquent.[261] This, of course, would defeat a significant objective of the tokenized financing—to avoid the transaction costs associated with the taking, recording, and enforcement of a mortgage. And indeed, from the crypto financer's perspective, it would increase the overall costs of the transaction.

2. The Crypto Financer vs. the Judgment Creditor

The prior discussion regarding the IRS also has salience with respect to nongovernmental creditors who might reduce otherwise unsecured claims to judgment (whether those claims arise in tort or contract). Suppose that Alice, a tort or contract creditor with an unsecured claim against Josephine, reduces that claim to a judgment and then asks the court to allow the enforcement of the judgment against the home. If the court respects the veil between Josephine and CryptoHome1 LLC, Alice's judgment will not constitute a lien against the home. Alice can obtain a charging order against distributions made to members of the LLC, but Alice (as a judgment creditor) could not "step into Josephine's shoes" as a member of the LLC. Josephine would remain a member of the LLC with all of the same rights to manage and control its actions.[262] By contrast, if the court engages in reverse veil-piercing, Alice's judgment will constitute a lien against the home under real estate law, and Alice (like the IRS as described above) could force a sale of the home to satisfy the judgment.

In several cases involving non-tokenized transactions, courts have manifested a willingness to consider reverse veil-piercing where the circumstances potentially justified such equitable intervention. For example, in *Curci Investments, LLC v. Baldwin*,[263] James Baldwin formed JPBI, a Delaware LLC, for the purpose of holding and investing the cash balances of Baldwin (who had a 99% interest in JPBI) and his wife (who held a 1% interest).[264] After forming JPBI, Baldwin borrowed $5.5 million on an unsecured promissory note.[265] The loan eventually went into default, and in 2012, Curci Investments, LLC (Curci), which held the note, obtained a judgment on the note in the amount of $7.2 million (including unpaid interest and attorney fees) and a charging order against JPBI.[266] However, though Baldwin had caused JPBI to distribute over $178 million to himself and his wife between 2006 and 2012, no such distributions were made after 2012, so Curci received no money as a result

261. *See supra* note 248 and accompanying text.
262. *See supra* note 248 and accompanying text.
263. Curci Invs., LLC v. Baldwin, 221 Cal. Rptr. 3d 847 (Cal. Ct. App. 2017).
264. *Id.* at 849.
265. *Id.*
266. *Id.*

of the charging order.[267] In 2015, Curci moved to add JPBI as a judgment debtor, basing its motion on the reverse veil-piercing doctrine.[268] The trial court denied the motion, ruling that reverse veil-piercing was unavailable in California.[269] The California Court of Appeal reversed, concluding that third-party reverse veil-piercing of an LLC was possible and remanding the case for a factual hearing, noting that the circumstances merited consideration of veil-piercing:

> With Baldwin's possession of near complete interest in JPBI, and his roles as CEO and managing member, Baldwin effectively has complete control over what JPBI does and does not do, including whether it makes any disbursements to its members (he & his wife). Since the time judgment was entered in Curci's favor, Baldwin has used that power to extend the payback date on loans made to ultimately benefit his grandchildren . . . and to cease [having JPBI] making distributions to . . . himself and his wife . . . .[270]

More recently, in *Blizzard Energy, Inc. v. Schaefers*,[271] the California Court of Appeal for the Second District reaffirmed that the organic LLC statute does not preclude a judgment creditor of an LLC member from adding the LLC as a judgment debtor on an alter-ego theory where the circumstances justify reverse veil-piercing.[272] Further, the drafters of the Revised Uniform Limited

267. *Id.* at 850.

268. *Id.*

269. *Id.* The court based this ruling on its interpretation of *Postal Instant Press, Inc. v. Kaswa Corp.*, in which the California Court of Appeal for the Fourth District held that "a third party creditor may not pierce the corporate veil to reach corporate assets to satisfy a shareholder's personal liability." 77 Cal. Rptr. 3d 96, 97 (Cal. Ct. App. 2008). The court based this conclusion, which it limited to corporations, on concerns associated with allowing judgment creditors to bypass standard judgment collection procedures, harming innocent shareholders and corporate creditors, and using an equitable remedy in situations where legal theories or legal remedies are available. *Id.* at 98.

270. *Curci*, 221 Cal. Rptr. 3d at 853. The court distinguished *Postal Instant Press*, holding that the decision was limited to corporations and not LLCs. *Id.* at 852. The court noted that the distinction between LLCs and corporations merited a distinction as to the availability of reverse veil-piercing, noting that while a general creditor of a corporate shareholder could attach the shareholder's shares, a general creditor of an LLC member could obtain only a charging order against distributions made to the member, not the member's actual membership interest. *Id.* at 852–53. The court also noted that reverse veil-piercing would not affect any innocent LLC member, since Baldwin and his wife were both liable for the debt to Curci and were the only LLC members. *Id.* at 852. Finally, the court noted that the California LLC statute was based on the Revised Uniform Limited Liability Company Act, the comments of which stated that while the Act limits the creditor to a charging order against the member's right to distributions, this limitation was "not intended to prevent a court from effecting a 'reverse pierce' where appropriate." *Id.* at 853 (quoting REVISED UNIF. LTD. LIAB. CO. ACT § 503 cmt. to subsection (g) (UNIF. L. COMM'N, amended 2013)).

271. Blizzard Energy, Inc. v. Schaefers, 286 Cal. Rptr. 3d 658 (Cal. Ct. App. 2021).

272. *See id.* at 671–76. In *Schaefers*, Blizzard Energy obtained a $3.825 million fraud judgment against Bernd Schaefers in Kansas, and then entered the judgment in California pursuant to the Sister State Money Judgments Act. *Id.* at 666. Blizzard then moved to amend the judgment to add BKS Cambria, LLC—which owned thirty-four acres of land in California on which Schaefers resided with his son (without payment of rent) and which were also leased to wireless carriers for the erection and maintenance of cell towers. *Id.* at 665–66. The trial court granted Blizzard's motion on an alter-ego theory. *Id.* at 666. The court of appeal agreed that the evidence was sufficient to support the trial court's finding that BKS Cambria, LLC was Schaefers's alter ego but remanded the case for the trial court to reconsider whether Schaefers's wife (who

Liability Company Act (RULLCA) made clear that the Act—and in particular, its provision limiting a general creditor of a member to a charging order—was not intended to prevent a court from allowing a third-party creditor to reverse veil-pierce an LLC to reach the LLC's assets on an alter-ego theory where the circumstances justify that result.[273] Thus, absent an explicit statutory provision barring a court from reverse veil-piercing, the remedy appears available (at least conceptually) in states with organic LLC statutes based on RULLCA.

The foregoing is not to suggest that courts can or should pierce the veil in any transaction in which control of an LLC that owns real estate is tokenized. In many cases, there will be compelling reasons to respect the legal separation of the LLC and its member(s). As noted previously, if Josephine acquires the token for CryptoHome1 LLC and proceeds to use the home as a rental property, the transaction structure facilitates Josephine's ability to separate legal affairs relating to the home from her other personal assets and liabilities. Reverse veil-piercing in that circumstance would be entirely inappropriate absent failure to maintain the requisite LLC formalities. If the LLC has 100 members who have essentially pooled their capital and appointed an agent to manage the economic use of the home as a rental, courts should likewise respect the veil (again assuming requisite LLC formalities are maintained). But if Josephine is the sole member of the LLC, the LLC exists solely to hold title to the home (i.e., it is a single-asset entity), and Josephine occupies the home as her personal residence, a successful alter-ego argument by Alice as an individual creditor of Josephine is possible, and Crypto Bank disregards that possibility at its own risk.[274] If Alice can lien the home, she can conduct a sale of the home to satisfy that lien, cutting off the LLC's title to the home and vesting fee simple title to the purchaser, notwithstanding Crypto Bank's control of the NFT. Again, the only way that Crypto Bank can eliminate this risk altogether is to collateralize not just the token, but the land itself by having the LLC grant a

held a 50% membership interest in the LLC) was an "innocent party" whose interest would preclude a reverse pierce of BKS Cambria, LLC. *Id.* at 665.

273. REVISED UNIF. LTD. LIAB. CO. ACT § 503 cmt. to subsection (g) (UNIF. L. COMM'N, amended 2013) ("This subsection is not intended to prevent a court from effecting a 'reverse pierce' where appropriate. In a reverse pierce, the court conflates the entity and its owner to hold the entity liable for a debt of the owner." (citing Litchfield Asset Mgmt. Corp. v. Howell, 799 A.2d 298, 312 (Conn. App. Ct. 2002), *overruled on other grounds*, Robinson v. Coughlin, 830 A.2d 1114 (Conn. 2003))); *see also Litchfield*, 799 A.2d at 312 (approving a reverse pierce where a judgment debtor had established a limited liability company in a patent attempt to frustrate the judgment creditor).

274. To some extent, whether a court should pierce the veil of the LLC has a similar historical flavor to the impact of the Statute of Uses on land held by one person to the use of one or more others. *Compare Curci*, 221 Cal. Rptr. 3d at 853–54 (reasoning that reverse veil-piercing of an LLC may be possible where the LLC's CEO and managing members have, in essence, complete control over what the LLC does and how money is disbursed from the LLC and concluding that, if the LLC veil were pierced, an LLC could be added as a judgment debtor), *with* Anthony Haswell & Barbara B. Levine, *The Illinois Land Trust: A Fictional Bestseller*, 33 DEPAUL L. REV. 277, 280 nn.13–14, 291–92 (1984) (distinguishing between "active" and "passive" trusts and discussing the impact of the Statute of Uses with respect to a trustee or beneficiary as a judgment debtor).

mortgage on the home and recording that mortgage (thereby establishing priority over future judgment-lien creditors).

3. *The Crypto Financer vs. the Mechanics' Lienholder*

Next, we move to a conflict involving a statutory lienholder. On occasion, a landowner may fail to pay for the materials or labor incorporated into the construction or repair of real property. All states provide the unpaid material supplier or laborer with a statutory mechanism for claiming, publishing, and enforcing a lien against the real property, commonly known as a "mechanics' lien," to secure unpaid sums properly due.[275] What are the implications of mechanics' lien statutes for the tokenized financing posited here?

Again, suppose that Josephine buys an NFT pursuant to which Josephine can exercise control over CryptoHome1 LLC, which owns a home that Josephine will occupy as her personal residence. Now suppose that Josephine subsequently enters into an agreement in her own name with Painter to repaint the home. Painter completes the work for the contract price of $4,500 but Josephine does not pay the bill, so Painter attempts to assert a mechanics' lien. Under each state's law, a mechanics' lien requires that the material/labor supplier have an enforceable contract with the "owner" of the land.[276] Painter argues that Josephine is the "owner" of the land and Painter has a valid lien against the home. By contrast, Crypto Bank argues that CryptoHome1 LLC is the "owner" of the home and that, because Painter's agreement is with Josephine and not the LLC, Painter cannot lien the home and is simply an unsecured creditor.

At first blush, there is an appealing formality to Crypto Bank's position; the LLC owns the home and Painter could have confirmed this through a record title search before contracting with Josephine. Thus, one might argue that if Painter wanted the ability to assert a statutory lien against the real estate, Painter could have and should have ensured that Painter's agreement was with the LLC, not Josephine. Yet the appeal begins to collapse under scrutiny. First, because Josephine is the sole member of the LLC, there is little question that Josephine

275. *See generally* 1 NELSON ET AL., REAL ESTATE FINANCE LAW, *supra* note 80, § 12:4. The LLC holding title in a crypto transaction is, by way of analogy, holding that title to the use of its members. If Josephine uses the home as an investment and uses the LLC structure appropriately to separate her personal and business assets and liabilities, that is an "active" use, and its form should be respected in the same way that the Statute of Uses did not "execute" active uses where the feoffee to uses held title to land subject to active duties. *See* Lummus v. Davidson, 76 S.E. 474, 476 (N.C. 1912). Likewise, the same is true if the LLC has 100 members who contract to have a manager operate the LLC-owned property for their collective economic benefit. By contrast, if Josephine is the sole member of the LLC, the LLC exists solely to hold title to the home and no other asset, and Josephine occupies the home without payment of rent, the LLC appears to be the functional equivalent of the feoffee to uses that owed no active duties. The Statute of Uses executed these "passive uses," vesting legal title in the equitable beneficiary of the use (the cestui que uses). *See id.*

276. 1 NELSON ET AL., REAL ESTATE FINANCE LAW, *supra* note 80, § 12.4, at 233–35.

has both the actual and apparent authority to bind the LLC.[277] Therefore, even if Painter knows that the LLC owns the home, Painter is likely to conclude that contracting with Josephine is sufficient to bind the LLC and to preserve the contractor's ability to lien the home if unpaid.[278] Further, in several states, the owner's acquiescence in or knowledge of construction is a sufficient basis for the contractor to assert a lien, at least where the owner does not timely record a notice of its nonresponsibility.[279] Thus, it seems likely that if unpaid, Painter could lien the home (and not just Josephine's equity interest in the LLC).

A similar outcome is reflected in analogous cases involving Illinois land trusts. For those unfamiliar with this peculiar device:

> A typical Illinois land trust is a revocable inter vivos trust, the corpus of which usually consists solely of real estate. In contrast to a conventional trust, however, the Illinois land trust gives the beneficiary full and complete control over the management, use, and disposition of the property, just as if [the beneficiary] had legal title. During the life of the land trust, the trustee can act only upon the direction of the beneficiary. The trustee's role is thus reduced to that of a nominee or bare legal titleholder.[280]

The beneficiary's interest is nominally personal property, i.e., the beneficial interest in the trust, and this interest can be transferred by an assignment without the need for delivery of a deed conveying the real property.[281] So let's suppose that Josephine was the beneficiary of an Illinois land trust that held title to her primary residence and that she entered the agreement with Painter without the trustee joining in that agreement. If form were respected, a court would rule that Painter could not lien the home unless the trustee (the legal titleholder) was also a counterparty to the agreement. Yet Illinois courts have consistently held that "a holder of an equitable interest in the land, including a

277. *See supra* note 272 and accompanying text.

278. It bears noting here that courts frequently state that mechanics' lien statutes are remedial in nature and thus will be construed broadly to protect workers and materials suppliers. Bailey v. Call, 767 P.2d 138, 140 (Utah Ct. App. 1989). *But see, e.g.*, Brown Com. Constr. Co. v. Corbin Park, L.P. (*In re* Corbin Park, L.P.), 470 B.R. 573, 580–89 (B.A.P. 10th Cir. 2012); KAZ Constr., Inc. v. Newport Equity Partners, 275 P.3d 602, 606 (Ariz. Ct. App. 2012); May Constr. Co. v. Town Creek Constr. & Dev., LLC, 383 S.W.3d 389, 395 (Ark. 2011); Robertson v. Ridge Env't, LLC, 737 S.E.2d 578, 581 (Ga. Ct. App. 2013); Big Lake Lumber, Inc. v. Sec. Prop. Invs., Inc., 836 N.W.2d 359, 365–66 (Minn. 2013).

279. 1 NELSON ET AL., REAL ESTATE FINANCE LAW, *supra* note 80, § 12.4, at 233–35 & nn.38–42; Falcon Holdings, Ltd. v. Isaacson, 675 P.2d 501, 504–05 (Or. Ct. App. 1984); *Bailey*, 767 P.2d at 140; Crowley Bros. v. Ward, 54 N.E.2d 753 (Ill. App. Ct. 1944) (mem.) (per curiam).

280. Haswell & Levine, *supra* note 274, at 278–79 (footnotes omitted). Such a purely passive trust under which the trustee has no active duties and serves merely as a functional placeholder is, of course, functionally indistinguishable from a passive use and would appear to be subject to execution by the Statute of Uses, but Illinois court decisions have construed the land trust as an active trust unaffected by the Statute of Uses. *See, e.g.*, *id.* at 280 ("Because of its active beneficiary and passive trustee characteristics, a land trust would appear to be vulnerable to execution by the Statute of Uses as a 'dry' or 'passive' trust. The Illinois courts, however, liberally construing the statute, have consistently held that even the minimal duties of a land trust trustee are sufficient to constitute an 'active' trust. The Statute of Uses has thus been made inapplicable to Illinois land trusts.") (footnotes omitted); Robinson v. Chicago Nat'l Bank, 176 N.E.2d 659, 661 (Ill. App. Ct. 1961).

281. *See* Haswell & Levine, *supra* note 274, at 285 & n.37.

beneficiary under a land trust, is an 'owner' within the meaning of the Illinois Mechanics' Lien Act."[282] As such, Painter's contract with Josephine is a contract with the "owner" that would entitle Painter to lien the home (assuming timely compliance with the mechanics' lien statute). A sale enforcing that lien would pass title to the home and would render valueless the beneficial interest in the land trust itself.

Holding land in an Illinois land trust is analytically similar in all essential respects to holding land in a single-member LLC in the Propy transaction described in Part II.B. It seems likely that courts will treat Josephine's member interest in the LLC as an equitable interest in land and her contract with Painter as a sufficient foundation for Painter to lien the home if Josephine does not pay the agreed price. A sale of that lien would not extinguish Crypto Bank's security interest in the NFT, but it would render that interest valueless if the LLC no longer has title to the real estate.

We also note that some mechanics' lien statutes actually take a rather broad view of who constitutes an owner without the need to resort to equitable arguments. Consider the same situation as above, but this time let us assume that the land trust argument is not applicable and that the transaction occurs in Louisiana. In that state, like in others, the mechanics' lien statute provides that the lien only attaches to "the interest in . . . the [real estate] enjoyed by the owner."[283] Yet here, *owner* is defined to include not only the owner in the traditional sense but also anyone "having the right to use or enjoy" the real estate.[284] Now, it seems clear that any applicable mechanics' lien resulting from Josephine's nonpayment would encumber, at the very least, her right to possess the property by virtue of being the sole member of the LLC that holds the realty. If the NFT were auctioned off by Crypto Bank, the purchaser would therefore seem to acquire the real property subject to the mechanics' lienholder's rights. Although the interest in the entity may be unencumbered in the hands of the purchaser, the real estate that the entity holds would still be subject to the lien.

Again, in either situation, the only way that Crypto Bank could structure the transaction to prevent these risks would be to obtain and record a mortgage on the home itself and thereby establish record priority under the state's recording act, in addition to taking the security interest in the NFT. And here again, the transaction would become more costly and complicated.

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282. Dunlop v. McAtee, 333 N.E.2d 76, 78 (Ill. App. Ct. 1975); *see* Matthews Roofing Co. v. Cmty. Bank & Tr. Co. of Edgewater, 550 N.E.2d 1189, 1192 (Ill. App. Ct. 1990); Hill Behan Lumber Co. v. Am. Nat'l Bank & Tr. Co. of Waukegan, 427 N.E.2d 1325, 1327 (Ill. App. Ct. 1981); Williamson v. PVOrbit, Inc., 263 P.3d 77, 80–81 (Ariz. Ct. App. 2011) (trustees of trust that held title to land were "owners").

283. LA. STAT. ANN. § 9:4806(C) (2020).

284. *Id.* § 9:4806(A).

B. Clogging and Equitable Doctrines

As explained in the prior Subpart, the two-systems problem practically compels the crypto financer into the position of taking and recording a mortgage on the land rather than merely collateralizing the token that embodies control of the ownership entity. As a result, a pair of related questions arise. First, if the crypto financer has taken a mortgage, does the crypto financer's taking of a security interest in the token serve any purpose different from the mortgage? Stated differently, does a security interest in the token create an equitable mortgage on the land? Second, under what circumstances, if any, does the security interest in the token (or the enforcement of that security interest) constitute an invalid clog on the mortgagor's equity of redemption? In this Subpart, we explore these issues, concluding that it is more than likely that some courts would find the substance of crypto-collateralized transactions like the one between Josephine and Crypto Bank to be substantially similar to the underlying aspects of a typical residential mortgage transaction.

1. The Equity of Redemption and the "Clogging Rule"

Equity courts created the equity of redemption in violation of the explicit, formal intention of the parties to early mortgage contracts.[285] In essence, equity courts allowed a mortgagor to redeem real property by performing the secured obligation even though absolute legal title to that property had ostensibly vested in the mortgagee.[286] When a borrower/owner grants an interest in real property to secure payment of a debt, the lender cannot extinguish the owner's title without going through the foreclosure process dictated by the law of the state where the property is located.[287] As explained in Part II.A, that process requires (with rare exceptions) a public auction sale of the land.[288] Until that process is completed, the owner retains its equitable interest in the land (its "equity of redemption").[289]

As soon as equity courts established the equity of redemption, creditors began devising strategies to circumvent it.[290] In response, equity courts developed a doctrine prohibiting agreements that "clogged" the mortgagor's equity of redemption.[291] As the *Restatement (Third) of Property: Mortgages* recognizes, until a mortgage is foreclosed, the mortgagor has the right to redeem the land from the mortgage and "[a]ny agreement in or created

285. *See* Odinet, *supra* note 23, at 155.
286. *Id.*
287. *See* 3 JONES, *supra* note 104, at 7.
288. *See supra* Part II.A.2.
289. *See supra* Part II.A.1.
290. Odinet, *supra* note 23, at 155.
291. *See id.* at 155–56.

contemporaneously with a mortgage that impairs the mortgagor's right [of redemption] is ineffective."[292]

Under this doctrine, courts have treated as invalid certain transfers of the mortgaged property or agreements to transfer the mortgaged property in circumstances where they served no purpose other than to circumvent the foreclosure process and the mortgagor's redemption right.[293] For example, courts have used the "clogging rule" to invalidate the following creditor devices:

- *Waiver of the right of redemption in the mortgage documents*. Courts have invalidated agreements in the loan documents whereby the borrower waived or agreed not to assert the right of redemption.[294]
- *Contractual time limits on the right of redemption*. Courts have also invalidated agreements in the loan documents that placed time limits on the borrower's ability to redeem after default, such as a provision that "[m]ortgagor agrees that the right to redeem [the property] shall terminate four months after [m]ortgagee declares a default under this mortgage."[295]
- *The contemporaneous deed or the "deed in escrow."* Suppose that Bank loans $200,000 to Josephine, the owner of Blueacre, with Josephine granting a mortgage on Blueacre to secure repayment of the debt. As part of their agreement, Josephine also contemporaneously delivers to Bank a deed purporting to transfer title to Blueacre to Bank, with the understanding that Bank will either (a) return the deed to Josephine if she timely repays the debt, or (b) record the deed if Josephine defaults. The unanimous weight of authority treats such a deed as void as an invalid clog on the equity of redemption.[296] Likewise, courts have held the

292. RESTATEMENT (THIRD) OF PROP.: MORTGS. § 3.1(b) (AM. L. INST. 1997).

293. Bruce Wyman, *The Clog on the Equity of Redemption,* 21 HARV. L. REV. 459, 462 (1908).

294. *See, e.g.*, Peugh v. Davis, 96 U.S. 332, 337 (1877) (right of redemption "cannot be waived or abandoned by any stipulation of the parties made at the time, even if embodied in the mortgage"); Kawauchi v. Tabata, 413 P.2d 221, 227 (Haw. 1966) (A "mortgagor is not allowed to renounce beforehand his privilege of redemption." (quoting 1 JONES, *supra* note 104, § 302, at 58)); RESTATEMENT (THIRD) OF PROP.: MORTGS. § 3.1 cmt. b, illus. 1 (AM. L. INST. 1997); CAL. CIV. CODE § 2889 (West 2012) ("[C]ontracts in restraint of the right of redemption from a lien[] are void"). Illinois law provides a limited exception to this rule, permitting waiver of the equity of redemption by the mortgagor in a commercial transaction. *See infra* notes 344–45.

295. RESTATEMENT (THIRD) OF PROP.: MORTGS. § 3.1, cmt. b, illus. 2 (AM. L. INST. 1997); *see also, e.g.*, Frazer v. Couthy Land Co., 149 A. 428, 429–30 (Del. Ch. 1929); Bradbury v. Davenport, 46 P. 1062, 1063–64 (Cal. 1896).

296. *See, e.g.*, C. Phillip Johnson Full Gospel Ministries, Inc. v. Invs. Fin. Servs., LLC, 12 A.3d 1207, 1216–22 (Md. 2011); Panagouleas Interiors, Inc. v. Silent Partner Grp., Inc., No. 18864, 2002 WL 441409, at *8–13 (Ohio Ct. App. Mar. 22, 2002); Oakland Hills Dev. Corp. v. Lueders Drainage Dist., 537 N.W.2d 258, 263–64 (Mich. Ct. App. 1995); Vitvitsky v. Heim, 860 N.Y.S.2d 305, 306–08 (App. Div. 2008); Basile v. Erhal Holding Corp., 538 N.Y.S.2d 831, 833 (App. Div. 1989); *see also* Greene v. E. Coast Mktg., Inc. (*In re* Greene), No. 06-33611, 2007 WL 1309047, at *7 (Bankr. E.D. Va. May 3, 2007); RESTATEMENT (THIRD) OF PROP.: MORTGS. § 3.1 cmt. b, illus. 3 (AM. L. INST. 1997); 1 NELSON ET AL., REAL ESTATE FINANCE LAW, *supra* note 80, § 3:1. One might also reason that a contemporaneous deed is void because its context demonstrates that the deed was not executed and delivered with the intent that it be effective immediately to transfer to Bank a present possessory estate in the land.

contemporaneous deed as equally invalid where it is instead delivered to an escrow agent to hold on behalf of the mortgagee.[297]

- *The contemporaneous option.* Suppose that Bank loans $200,000 to Josephine, the owner of Blueacre, with Josephine granting a mortgage on Blueacre to secure repayment of the debt. As part of their agreement, Josephine also delivers a written agreement (either in the mortgage itself or in a separate agreement) granting Bank an option to purchase the mortgaged property that is exercisable by Bank upon default by Josephine. The significant weight of authority treats a contemporaneous option as an invalid clog on the equity of redemption.[298] Such a result is plainly justified if the option can be exercised only in the event of default and for an amount equal to or below the balance of the debt.[299] Such an agreement could be explained only on the ground that it would permit the mortgagee to acquire a possessory right after default but without the obligation to foreclose the mortgage.[300]

2. *"Clogging" and the "Equitable" Mortgage*

In the preceding examples, the parties openly execute a mortgage but then enter into a contemporaneous agreement designed to obviate the need for the mortgagee to foreclose following the borrower's default. Sometimes, creditors go to even greater lengths to use legal forms to hide the true nature of the transaction, i.e., the fact that they are using title to real property to secure a debt.[301] For example, suppose that Josephine owes Creditor $50,000 that is due and payable immediately. Creditor agrees not to institute a collection lawsuit and to give Josephine another nine months to pay the debt if Josephine will

297. *See, e.g.*, Pollak v. Millsap, 122 So. 16, 22 (Ala. 1928); Larson v. Hinds, 394 P.2d 129, 133–34 (Colo. 1964); Batten v. Fallgren, 467 P.2d 882, 883–84 (Wash. Ct. App. 1970); Marple v. Wyo. Prod. Credit Ass'n, 750 P.2d 1315, 1320 (Wyo. 1988); John C. Murray, *Mortgage Workouts: Deeds in Escrow*, 41 REAL PROP. PROB. & TR. J. 185, 187–90 (2006); RESTATEMENT (THIRD) OF PROP.: MORTGS. § 3.1 cmt. b, illus. 5 (AM. L. INST. 1997).

298. *See, e.g.*, Humble Oil & Refin. Co. v. Doerr, 303 A.2d 898, 905–13 (N.J. Super. Ct. Ch. Div. 1973); Lewis v. Frank Love Ltd. [1961] 1 All ER 446, 455 (Ch); Barr v. Granahan, 38 N.W.2d 705, 707–08 (Wis. 1949); Hopping v. Baldridge, 266 P. 469, 470–72 (Okla. 1928); Samuel v. Jarrah Timber & Wood Paving Corp. [1904] AC 323 (HL) (appeal taken from Ch) (UK).

299. RESTATEMENT (THIRD) OF PROP.: MORTGS. § 3.1(c) (AM. L. INST. 1997).

300. *Id.* (to violate the clogging rule, contemporaneous agreement's effectiveness must be "expressly dependent on mortgagor default"). For further discussion of the distinction between invalid options that violate the clogging doctrine as distinguished from enforceable contemporaneous options that do not, see generally 1 NELSON ET AL., REAL ESTATE FINANCE LAW, *supra* note 80, § 3:2; John C. Murray, *Clogging Revisited*, 33 REAL PROP. PROB. & TR. J. 279, 282–87 (1998); James D. Cooper-Hill & Joseph J. Slama, *The Convertible Mortgage: Can It Be Separated from the Clogging Rule?*, 27 S. TEX. L. REV. 407, 410–26 (1986). For decisions upholding the enforceability of options against clogging attacks on the ground that the option was not being used to circumvent foreclosure, see, e.g., MacArthur v. N. Palm Beach Utils., Inc., 202 So. 2d 181, 186 (Fla. 1967); Blackwell Ford, Inc. v. Calhoun, 555 N.W.2d 856, 860–62 (Mich. Ct. App. 1996).

301. BURKHART, FREYERMUTH, ODINET, NELSON & WHITMAN, *supra* note 26, at 273 (discussing mortgage substitutes).

immediately execute and deliver to Creditor a deed purporting to convey fee simple absolute title to Blueacre (a parcel of unencumbered land worth $100,000) to Creditor. Creditor and Josephine agree that during the ensuing nine months, Josephine will remain in possession of Blueacre, and that if Josephine repays the debt during those nine months, Creditor will tear up the deed and return it to Josephine. By contrast, if Josephine defaults, Creditor will record the deed and institute a summary proceeding to dispossess Josephine. Their agreement to this effect, however, does not appear on the face of the Josephine-to-Creditor deed, which is absolute on its face.

In this situation, Creditor is using title to Blueacre (as ostensibly conveyed by the absolute deed from Josephine) to secure Josephine's continuing obligation to repay the debt. Notwithstanding the absolute nature of the deed, the intent of the parties to use title to secure Josephine's debt is reflected by their agreement as well as (a) Josephine's retention of possession of Blueacre, (b) the fact that Josephine and Creditor were in a debtor–creditor relationship prior to the execution and delivery of the deed, and (c) the fact that Blueacre is worth two times the amount Josephine owes to Creditor (why, after all, would Josephine have rationally agreed to sell a parcel of land worth $100,000 for a payment of only $50,000?).[302] Under the weight of significant authority, presuming Josephine can demonstrate the true character of the transaction by clear and convincing evidence, courts will exercise the equitable authority to recharacterize the deed as an equitable mortgage.[303] If Creditor attempts after Josephine's default to use summary process to dispossess Josephine, the court will deny this remedy and instead hold that Creditor has only a mortgage lien on Blueacre—and cannot extinguish Josephine's equity of redemption without completing a foreclosure.[304] By declaring the deed to be an equitable mortgage

302. RESTATEMENT (THIRD) OF PROP.: MORTGS. § 3.2(b)(1)–(6) (AM. L. INST. 1997) provides that the parties' intent that the deed serve as security "may be inferred from the totality of the circumstances, including the following factors: (1) statements of the parties; (2) the presence of a substantial disparity between the value received by the grantor and the fair market value of the real estate at the time of the conveyance; (3) the fact that the grantor retained possession of the real estate; (4) the fact that the grantor continued to pay real estate taxes; (5) the fact that [the] grantor made post-conveyance improvements to the real estate; and (6) the nature of the parties and their relationship prior to and after the conveyance."

303. BURKHART ET AL., REAL ESTATE TRANSFER, *supra* note 26, at 273.

304. *See, e.g.*, RESTATEMENT (THIRD) OF PROP.: MORTGS. § 3.2(a) (AM. L. INST. 1997); Smith v. Player, 601 So. 2d 946, 949 (Ala. 1992); Davis v. Davis, 890 S.W.2d 280, 282 (Ark. Ct. App. 1995); Brenneman Mech. & Elec., Inc. v. First Nat'l Bank of Logansport, 495 N.E.2d 233, 240–41 (Ind. Ct. App. 1986); Bouffard v. Befese, LLC, 976 N.Y.S.2d 510, 514–15 (App. Div. 2013); *see also* 1 NELSON ET AL., REAL ESTATE FINANCE LAW, *supra* note 80, §§ 3:4–3:8; Roger A. Cunningham & Saul Tischler, *Disguised Real Estate Security Transactions as Mortgages in Substance*, 26 RUTGERS L. REV. 1 (1972); Martin Fogelman, *The Deed Absolute as a Mortgage in New York*, 32 FORDHAM L. REV. 299 (1963); T.A. Smedley & F. Stewart Blunk, *Oral Understandings at Variance with Absolute Deeds*, 34 ILL. L. REV. 189 (1939-1940). In this situation, the necessary foreclosure would have to be a judicial foreclosure proceeding, even in states that would otherwise allow nonjudicial foreclosure of a mortgage. By disguising the transaction as an absolute deed (which would not articulate the "power of sale" necessary to authorize a nonjudicial foreclosure), the creditor would be unable to pursue a nonjudicial foreclosure even in states that would otherwise permit nonjudicial mortgage foreclosure. *See* Stephens v. Stephens, 232 S.W. 979, 982 (Mo. 1921).

and requiring its enforcement via foreclosure, the court vindicates the equity of redemption.[305]

Likewise, suppose that Josephine and Creditor make a slightly different agreement, under which Creditor will again give Josephine nine additional months to repay the $50,000. In turn, Creditor has Josephine execute and deliver a deed conveying title to Blueacre to Creditor, which deed Creditor will immediately record. Simultaneously, Creditor agrees to grant Josephine a lease of Blueacre for the nine-month period, along with an option by which Josephine may repurchase Blueacre for $50,000. If Josephine fails to exercise the option in a timely fashion, Creditor (as record title holder) appears to be positioned to institute summary process to dispossess Josephine, whose nominal lease has now expired. Again, Creditor is using title to Blueacre to secure Josephine's continuing obligation to repay the debt—but is disguising the transaction to make it appear that Josephine possesses no legal obligation that can be characterized as a debt.[306] In this way, Creditor may argue that mortgage law does not apply and that Josephine holds no equity of redemption requiring foreclosure. Under the weight of significant authority, however—once again presuming Josephine can demonstrate the true character of the transaction by clear and convincing evidence—courts will exercise the equitable authority to recharacterize the agreement as an equitable mortgage.[307] If Creditor attempts to use summary process to dispossess Josephine, the court may deny this remedy and instead rule that Creditor merely holds a mortgage lien which Creditor must foreclose.[308]

3. The Equity Pledge and the Clogging Doctrine

In our hypothetical crypto transaction, Josephine acquires ownership of the token that embodies ownership of CryptoHome1 LLC and grants Crypto Bank a security interest in the token. If Josephine had acquired title to the home and had granted the lender a mortgage, then as discussed in Part II.A, Josephine would have had extensive protections available to her as a mortgagor. These would have included (a) the requirement of a public auction sale and (b) a relatively extended period prior to that sale in which to exercise her equity of redemption.[309] They might also have included, in some states, a requirement

305. *See* RESTATEMENT (THIRD) OF PROP.: MORTGS. § 3.2, Reporters' Note cmt. a (AM. L. INST. 1997) ("This section is consistent with the rule against clogging a mortgagor's equity of redemption.").

306. BURKHART ET AL., REAL ESTATE TRANSFER, *supra* note 26, at 273.

307. RESTATEMENT (THIRD) OF PROP.: MORTGS. § 3.3(a) (AM. L. INST. 1997).

308. *See, e.g.*, *Bouffard*, 976 N.Y.S.2d at 514–15; Rice v. Wood, 346 S.E.2d 205, 209–10 (N.C. Ct. App. 1986); Johnson v. Cherry, 726 S.W.2d 4, 7 (Tex. 1987); *see also* RESTATEMENT (THIRD) OF PROP.: MORTGS. § 3.3, Reporters' Note (AM. L. INST. 1997) (collecting cases). Again, the necessary foreclosure would have to be a judicial foreclosure proceeding, even in states that would otherwise allow nonjudicial foreclosures of a mortgage. *See supra* note 306.

309. *See supra* Part II.A.

that the foreclosure occur through judicial process and a right of post-sale statutory redemption even after the foreclosure occurred.[310] By contrast, as explained in Part II.B.2, if the law fully honors the form of the collateralized token transaction, Article 9 would appear to permit Crypto Bank to enforce its security interest in the token without this panoply of mortgage law protections.[311] But is Crypto Bank's taking of a security interest in the token just a formal device to permit Crypto Bank to use land as security while circumventing mortgage law's pro-mortgagor conventions? Can or should courts treat this collateralized token transaction as an equitable mortgage on the land so as to protect the equity of redemption?

In many respects, the collateralized token transaction in which Josephine grants an Article 9 security interest in the token bears an analogy to the equity pledge customary in mezzanine financing and other commercial real estate loan transactions.[312] In the typical mezzanine loan, the property is subject to a senior mortgage loan held by one lender, with another "mezzanine" lender taking an Article 9 security interest in the ownership interests of the entity that owns the real estate (an "equity pledge").[313] The mezzanine lender and the senior mortgagee will generally enter an intercreditor agreement acknowledging the mezzanine lender's subordinate position.[314] While a foreclosure by the senior mortgagee would not extinguish the mezzanine lender's lien under the equity pledge, it would render that lien worthless if the mortgagor is a single-asset real estate entity, as the foreclosure sale would deprive the mortgagor of its only asset.[315]

Does this equity pledge on a single-asset real estate entity constitute a clog on the equity of redemption or an equitable mortgage? On the one hand, the entity has no assets other than the real estate and no obligations other than those related to the real estate. Several recent decisions involving single-asset real estate entities reflect the willingness of courts to characterize analogous transactions as ones creating equitable interests in real property. For example, in *Bayview Loan Servicing LLC v. Fogarty (*In re *Fogarty)*,[316] the United States Court of Appeals for the Second Circuit held that a Chapter 7 debtor nearly identical to Josephine in our hypothetical held an equitable interest in property based on

310. *See supra* Part II.A.

311. *See supra* Part II.B.2.

312. For a thoughtful discussion of the equity pledge and whether it is a clog on the equity of redemption, see Brian D. Hulse, *Can a Pledge of Equity Interests Be a Prohibited Clog on the Equity of Redemption?*, 56 REAL PROP. TR. & EST. L.J. 301 (2021).

313. J. Dean Heller, *Short of Foreclosure: Less Drastic Remedies for the Real Estate Mezzanine Lender*, PRAC. REAL EST. LAW., May 2010, at 51, 51.

314. *See, e.g.*, Andrew R. Berman, *Risks and Realities of Mezzanine Loans*, 72 MO. L. REV. 993, 1018–22 (2007) (discussing the utility and limitations of intercreditor agreements).

315. *See id.* at 1022–25.

316. Bayview Loan Servicing LLC v. Fogarty (*In re* Fogarty), 39 F.4th 62, 71–73 (2d Cir. 2022).

her right to possession,[317] meaning that a lender who sold her LLC interest in an Article 9 foreclosure sale willfully violated the automatic stay. Likewise, in a recent dispute over the exercise of a buy-out provision in the shareholder agreement of a closely held corporation, which was also a single-asset real estate entity, a New York Supreme Court decision struck down an oral settlement of the buy-out provision as a violation of the Statute of Frauds, effectively treating the agreement as one in which the shareholder exercising the alleged buy-out was acquiring an equitable interest in real property.[318] Consistent with this perspective, one might argue that the equity pledge just enables the mezzanine lender to obtain control over the real property without having to go through the foreclosure process that would have been required if the lender had taken a junior mortgage lien. As Brian Hulse has noted, one might also point to the fact that the true nature of the transaction as a real estate transaction is reflected by the fact that mezzanine lenders customarily publish advertisements for UCC sales of mezzanine loan collateral in the commercial real estate sections of financial publications.[319]

On the other hand, however, the equity pledge serves an important and functional purpose in the context of a mezzanine loan. First, it facilitates the mezzanine lender's ability to obtain control over a defaulting mortgagor's decision-making prior to the senior mortgagee's foreclosure. Because the mezzanine lender effectively occupies a subordinate position vis-à-vis the senior mortgagee, that control is critical to the mezzanine lender's ability to exercise the mortgagor's equity of redemption or otherwise take the steps needed to protect it prior to a foreclosure of the senior mortgage (such as by negotiating a modification of the senior mortgage debt).[320] Second, in commercial loan transactions, the mortgagor effectively cannot obtain junior mortgage financing. The senior mortgagee can prevent the mortgagor from granting a subordinate mortgage by the threat to enforce the due-on-encumbrance clause typically included in every senior mortgage document.[321]

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317. The debtor in *Fogarty* was an individual who owned a 99% ownership interest in an LLC that owned the home that the debtor occupied as her personal residence. *Id.* at 67. The Second Circuit characterized the debtor as a tenant and held that her "mere possessory interest in real property, without any accompanying legal interest" was protected by the automatic stay. *Id.* at 71 (quoting 48th St. Steakhouse, Inc. v. Rockefeller Grp., Inc. (*In re* 48th St. Steakhouse), 835 F.2d 427, 430 (2d Cir. 1987)).

318. Kaloidis v. Kaloidis, No. 654632/2021, 2023 WL 3094539, at *3 (N.Y. Sup. Ct. Apr. 25, 2023). The *Kaloidis* court believed that the exercising shareholder's ability to control the corporation (which he would have acquired with ownership of 75% of the shares if the settlement agreement was enforceable) was the practical equivalent of control of the real property—and thus apparently constituted an equitable interest in the real property. *Id.* In this regard, the reasoning resembles the reasoning in *United States v. Craft*, 535 U.S. 274 (2002). *See supra* notes 234–49 and accompanying text.

319. Hulse, *supra* note 312, at 326 n.148.

320. *See id.* at 325.

321. By contrast, where the mortgage collateral is a single-family residence, the exceptions to the Garn Act would prevent the senior lienholder from exercising a due-on-encumbrance clause to prevent or discourage the mortgagor from granting a junior mortgage. *See* 12 U.S.C. § 1701j-3(d)(1) ("With respect to a real property loan secured by a lien on residential real property containing less than five dwelling units . . . a

Accordingly, the equity pledge to a mezzanine lender constitutes a practical way for the owner of the land to obtain credit against the residual value of the land other than on a purely unsecured basis. Under these circumstances, a court should not treat the mezzanine lender's mere taking of the equity pledge as an invalid "clog" on the equity of redemption, nor should it per se recharacterize the equity pledge as an equitable mortgage requiring foreclosure under real estate law.

The equity pledge becomes more complicated where the same lender takes both a mortgage lien on the real estate and an Article 9 equity pledge—a situation sometimes referred to as a "dual collateral" loan.[322] If the Article 9 security interest is valid, the lender now appears to have a choice of remedies in the event of borrower default: (a) foreclose the mortgage on the real estate, or (b) conduct an Article 9 foreclosure sale of the ownership rights in the borrowing entity.[323] In a formal sense, of course, these are distinct remedies. A foreclosure of the mortgage does not extinguish the lien created by the equity pledge; the mortgagor would continue to exist as an entity while it remains in good standing under governing law. But after the foreclosure, both the mortgagor and the equity pledge are worthless—absent redemption prior to foreclosure, the mortgagor will lose title to the real estate (which is its only asset). Likewise, if the lender forecloses on the equity pledge under Article 9, that sale does not formally extinguish the mortgage. The buyer at the sale acquires control of the mortgagor (which still holds title to the mortgaged land); thus, the mortgagor still retains the right to redeem title to the real estate from the mortgage lien by paying off the mortgage debt.

So, does the equity pledge constitute an "end run" around the equity of redemption in a dual collateral loan? To date, cases involving dual collateral loans have not produced a clear consensus. In *HH Cincinnati Textile L.P. v. Acres Capital Servicing LLC*,[324] the lender held both a mortgage and assignment of rents on two commercial parcels (each owned by a separate borrowing entity) and an equity-pledge agreement granting the lender a security interest in the equity interests of both mortgagors.[325] Roughly seven months after default, the lender gave notice of a UCC public sale of the equity interests, and the borrower sought a preliminary injunction against the sale on the ground that "by taking a pledge of the Borrowers' equity interest in the ownership of the underlying properties . . . the Lender impermissibly vitiated the Borrowers' equitable right

lender may not exercise its option pursuant to a due-on-sale 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 . . . .").

322. Hulse, *supra* note 312, at 303, 319.

323. *See id.* at 312–13.

324. HH Cincinnati Textile L.P. v. Acres Cap. Servicing LLC, No. 652871/2018, 2018 WL 3056919 (N.Y. Sup. Ct. June 20, 2018).

325. *Id.* at *1.

of redemption."[326] After briefing, the court denied the preliminary injunction, holding that any loss to the Borrowers was compensable by money damages.[327] In the process, the court explained:

> [Borrowers'] equitable right of redemption has not been, as they assert, "clogged" by the operative agreements. [Borrowers], at this very moment, retain a right of redemption under UCC § 9-623, which provides that redemption may occur at any time before a secured party disposes of the collateral at a foreclosure sale. Thus, the UCC provides a right of redemption if [Borrowers] can fulfill their obligations under the applicable agreements.[328]

This ruling led to a flurry of speculation among commentators that the court had validated the full enforceability of the equity pledge, but this turned out to be premature.[329] The parties ultimately stipulated to dismissal of the lawsuit without prejudice prior to a ruling on the merits.[330] Seven months later, some of the original plaintiffs (comprised of those pledging equity interests and guarantors) filed another suit seeking damages based on a claim alleging that the equity pledges clogged the equity of redemption.[331] When the lender moved to dismiss, the court refused to dismiss the clogging claim and noted that the court "'had not ruled on the merits' of that claim in . . . the [prior] case."[332] The parties ultimately settled the dispute and entered a stipulation, pursuant to which the court dismissed the complaint with prejudice.[333] Ultimately, *HH Cincinnati* provides no definitive confirmation of the full enforceability of an equity pledge in a dual collateral loan.

More recently, in *Atlas Brookview Mezzanine LLC v. DB Brookview LLC*,[334] a New York Supreme Court judge ruled on a lender's motion to dismiss a clogging claim raised by the borrower on a $65 million dual collateral loan secured by Illinois land and an equity pledge of the interests in the borrowing entity.[335] Following default, the lender scheduled and completed an Article 9 foreclosure sale of the equity interests.[336] As in *HH Cincinnati*, the borrower

326. Verified Compl. ¶ 68, HH Cincinnati Textile L.P. v. Acres Cap. Servicing LLC, No. 652871/2018, 2018 WL 3056919 (N.Y. Sup. Ct. June 20, 2018). Having couched the argument this way, the Borrowers also argued that the court should treat the loan documents as entirely void. *Id.* ¶¶ 67–69.

327. *HH Cincinnati*, 2018 WL 3056919, at *2.

328. *Id.*

329. Hulse, *supra* note 312, at 322.

330. *Id.* at 323.

331. *Id.*

332. *Id.* at 324 (citing HH Mark Twain LP v. Acres Cap. Servicing LLC, No. 656280/2019, 2020 WL 2857649, at *2 (N.Y. Sup. Ct. June 2, 2020)).

333. *Id.* at 324 & n.146.

334. Atlas Brookview Mezzanine LLC v. DB Brookview LLC, No. 653986/2020, 2021 N.Y. Misc. LEXIS 15472 (N.Y. Sup. Ct. Nov. 16, 2021).

335. *Id.*; *see also* Transcript of Oral Argument at 4, 9, Atlas Brookview Mezzanine LLC v. DB Brookview LLC, No. 653986/2020, 2020 N.Y. Misc. LEXIS 22444 (N.Y. Sup. Ct. Oct. 15, 2020).

336. Transcript of Oral Argument at 4–5, Atlas Brookview Mezzanine LLC v. DB Brookview LLC, No. 653986/2020, 2020 N.Y. Misc. LEXIS 22444 (N.Y. Sup. Ct. Oct. 15, 2020).

sought a preliminary injunction against the sale, which was denied.[337] Following the sale, the borrower continued to pursue the claim for a declaratory judgment to set aside the sale on the theory that providing a pledge agreement in connection with a mortgage loan violates the borrower's equity of redemption.[338] In dismissing the claim, the court emphasized two points. First, it noted that significant time had passed after default before the UCC foreclosure occurred—approximately eight months in total—during which time the borrower retained a right of redemption under U.C.C. § 9-623 and could have prevented the foreclosure by paying off the loan.[339] Second, it emphasized that accepting the borrower's argument would require the court to hold the transaction was void despite the fact that the borrower had "entered into the structure voluntarily with this advice of good counsel."[340] The borrower appealed the trial court's ruling but subsequently withdrew the appeal.[341]

The ruling has again produced great enthusiasm among advocates of the equity pledge,[342] but those advocates should pump the brakes a bit. Most importantly, the property in question was located in Illinois, and thus the question of whether the equity pledge was a clog on the equity of redemption is a question of Illinois law.[343] Importantly, Illinois is the ***only*** state in the country that has adopted (by statute) the position that the borrower in a commercial real estate transaction may waive the equity of redemption,[344] and

337. *Id.* at 5.

338. *Id.* at 11.

339. *Id.* at 11, 15–17.

340. *Id.* at 17–18.

341. Atlas Brookview Mezzanine LLC v. DB Brookview LLC, No. 2022-02421, 2022 WL 2924802 (N.Y. App. Div. July 26, 2022).

342. For a non-exhaustive set of media and blog posts on *Atlas Brookview*, see, e.g., Jeffrey B. Steiner & Scott A. Weinberg, *'Atlas Brookview' and 'Clogging' the Equity of Redemption*, N.Y. L.J. (Jan. 18, 2022, 12:19 PM), https://www.law.com/newyorklawjournal/2022/01/18/atlas-brookview-and-clogging-the-equity-of-redemption/?slreturn=20230828145716 [https://perma.cc/E93Q-8F4R]; Sulie Arias, *Further Developments in Mezzanine Foreclosures*, CADWALADER: REF NEWS AND VIEWS, https://www.cadwalader.com/ref-news-views/index.php?nid=43&eid=192 [https://perma.cc/5UMR-7PU2]; Janice Mac Avoy et al., *New York Supreme Court Casts Doubt on Viability of Claims that a Pledge Agreement Clogs the Equity of Redemption,* FRIED FRANK (Dec. 13, 2020), https://www.friedfrank.com/index.cfm?pageID=25&itemID=13891 [https://perma.cc/2S3D-ZK37]; Joshua Stein, *Maybe We Don't Have to Worry About Clogging the Equity of Redemption*, FORBES (May 16, 2022, 11:33 AM), https://www.forbes.com/sites/joshuastein/2022/05/16/maybe-we-dont-have-to-worry-about-clogging-the-equity-of-redemption/?sh=6a3d97001162.

343. In his recent article, Brian Hulse correctly notes that while the parties in *HH Cincinnati* assumed that New York law governed the clogging issue, this conclusion was incorrect because neither parcel was located in New York and conflict of laws principles make clear that the local law of the situs of the property would control the question of whether an equity pledge or other legal form violated the borrower's equity of redemption in land. Hulse, *supra* note 312, at 328; *see also* RESTATEMENT (SECOND) OF CONFLICT OF L. § 229 (AM. L. INST. 1971) ("The method for the foreclosure of a mortgage on land and the interests in the land resulting from the foreclosure are determined by the local law of the situs."); *id.* cmt. d ("The courts of the situs would apply their own local law to determine such questions as the power of the mortgagor to redeem the mortgaged land and the time during which this power may be asserted.").

344. 735 ILL. COMP. STAT. 5/15-1601(b) (West 2023) ("A mortgagor of real estate other than a mortgagor of residential real estate or other mortgagor who is not otherwise so prohibited by this Article may

the mortgage executed by the borrower in *Atlas Brookview* expressly waived any and all rights of redemption from sale.[345] Thus, the equity pledge in *Atlas Brookview* could not "clog" an equity of redemption that the borrower had validly waived (and thus no longer existed). In all other states, including New York,[346] background law is clear that the mortgagor may not waive the equity of redemption contemporaneously with the mortgage.[347] Thus, the case cannot be relied on to establish that an equity pledge is fully enforceable to permit the lender in a dual collateral loan from the need to comply with the state's mortgage law—other than as to land in Illinois to which the mortgagor has validly waived the equity of redemption.

More importantly, the decisions in *HH Cincinnati* and *Atlas Brookview* oversimplify the nature and nuance of the clogging principle. Some legal forms (such as the deed in escrow) are void ab initio as clogs on the equity of redemption.[348] Others are not void ab initio but nevertheless remain subject to equitable recharacterization if the borrower can establish by clear and convincing evidence that the form is being used to circumvent the borrower's equity of redemption.[349] The courts in *HH Cincinnati* and *Atlas Brookview* appear to have presumed that a successful "clogging" challenge would have required a conclusion that the equity pledge was void ab initio.[350] But if so, they are profoundly incorrect.

To demonstrate why, assume that Lender makes a dual collateral loan to Borrower, taking both a mortgage on the land and an equity pledge of the interests in Borrower. Further, assume that Borrower defaults and Lender conducts an Article 9 sale of the equity interests. If the buyer at that sale is a third party, *the distinction between Lender's mortgage and Lender's equity pledge is substantive and not purely formal*. The third-party buyer of the token cannot clear title to the real estate without paying off the mortgage loan or otherwise reaching a negotiated settlement with the mortgagee to obtain a release of the mortgage. By contrast, if the buyer at the Article 9 foreclosure sale is the mortgagee, *the distinction between Lender's mortgage and Lender's equity pledge is purely formal and not substantive*. The mortgagee obtains total dominion and control of the real property without having complied with the real estate foreclosure process and the pro-mortgagor protections incorporated into real property law.

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waive the mortgagor's right of redemption (i) by express waiver stated in the mortgage or (ii) by any other waiver in writing which has been acknowledged by the mortgagor and recorded.").

345. Hulse, *supra* note 312, at 324 n.147.

346. *See, e.g.*, Mooney v. Byrne, 57 N.E. 163, 165 (N.Y. 1900).

347. *See supra* Part III.B.1.

348. *See supra* Part III.B.1. This is because these forms never serve any purpose other than to circumvent the foreclosure process.

349. *See supra* Part III.B.2. For example, the "absolute deed" is not considered void ab initio, but the court may recharacterize it and conclude that it created only a mortgage lien in the grantee rather than delivering fee simple absolute title. *See supra* note 304.

350. *See supra* Part III.B.3.

As such, a court should not view the dual collateral lender's taking of an equity pledge, ab initio, as an invalid clog on the equity of redemption. As noted above, at the time the equity pledge is taken, it is quite possible that the equity pledge can serve a function separate from the real estate mortgage—most obviously, if a third party purchases the equity interests in an Article 9 sale. By contrast, the mortgagee's purchase of the equity interests after default is functionally an end-run around the mortgagor's redemption rights—or at least potentially so if the Article 9 sale of the equity interests fails to accord the mortgagor with the protections required by mortgage law (or protections that a court deems sufficiently comparable to protect the mortgagor's redemption right under real property law). Rather than ask whether the equity pledge is void ab initio, courts should instead focus on whether the lender can exercise the equity pledge to acquire control of the real estate—and if so, what protections are sufficient to conclude that the borrower's right of redemption has not been waived.

* * *

So what are the implications of the preceding analysis for our hypothetical crypto transaction in which Josephine acquires a token that embodies ownership of the LLC that owns the home in which she lives, and in which Crypto Bank takes an Article 9 security interest in the token? As discussed previously, if Crypto Bank takes only a security interest in the token, the sale of that token in an Article 9 sale will give the purchaser full dominion and control over the home and place the purchaser in a position to dispossess Josephine from her residence with none of the protections of mortgage foreclosure law. This is, in effect, an end-run around Josephine's right of redemption. In a transaction involving Josephine's personal residence, it seems profoundly unlikely that a court in a judicial-foreclosure-only state is going to allow Josephine to be displaced from possession following an Article 9 sale that occurred outside of the judicial process.

Furthermore, as discussed in Part III.A, if Crypto Bank takes only a security interest in the token, Crypto Bank leaves itself subject to the risk that other creditors of Josephine may obtain rights that permit them to lien the land itself, not just the entity rights embodied in the token. The only way Crypto Bank can effectively protect itself against this risk would be for Crypto Bank to structure the loan as a dual collateral loan—taking both a mortgage on the land and a security interest in the token. Assuming the mortgage is timely recorded, this would be sufficient (to the extent possible) to give Crypto Bank effective priority vis-à-vis these other creditors. However, in this crypto transaction, the ownership entity is a single-member LLC (with Josephine as the sole member) with a single asset (her personal residence). Under the circumstances, the security interest in the token serves absolutely no purpose not already served by the mortgage, other than to obviate the need to use applicable mortgage foreclosure law to extinguish Josephine's right to possess the home. Accordingly, it seems likely that courts will recharacterize the security interest in the token as an equitable mortgage, especially in states where the Article 9 disposition process does not accord Josephine with the pro-mortgagor protections of applicable mortgage law.

IV. TAMING CRYPTO REAL ESTATE TRANSACTIONS

The preceding Parts have revealed that the financing structure of crypto real estate transactions differs markedly from that of traditional mortgages, with substantial legal implications and challenges. Under current law, there are material dangers for those who choose to experiment with blockchain technology and NFTs when purchasing and financing real property.

The impact is most acute for buyers—particularly first-time buyers—who often negotiate from a position of weakness, have limited funds, and have minimal financial know-how. The loss of a family home inflicts huge personal harm and painfully disbands local communities.[351] Systemically, it causes house values to fall for entire neighborhoods, potentially dragging other homeowners into negative equity, precluding their ability to refinance their own loans and increasing the chance of default.[352] To make matters worse, there is abundant empirical data showing that foreclosures disproportionately impact racial minorities and the economically vulnerable.[353] For example, during the Great Recession, home foreclosures decimated the household wealth of communities of color to a far greater degree than it did for White families. While White housing equity wealth fell by 41%, it dropped 53% for Black households and 70% for Hispanic households.[354]

Regarding lenders, while they admittedly occupy a less sympathetic position, it cannot be overlooked that the downfall of these market participants

351. G. THOMAS KINGSLEY, ROBIN SMITH & DAVID PRICE, URB. INST., THE IMPACTS OF FORECLOSURES ON FAMILIES AND COMMUNITIES 11–12, 16 (2009), https://www.urban.org/sites/default/files/publication/30426/411909-The-Impacts-of-Foreclosures-on-Families-and-Communities.PDF [https://perma.cc/4TSZ-22WU].

352. *Id.* at 16–17.

353. *See* Amir Kermani & Francis Wong, *Racial Disparities in Housing Returns* 2 (Nat'l Bureau of Econ. Rsch., Working Paper No. 29306, 2021), https://www.nber.org/papers/w29306 [https://perma.cc/45R9-MTDE]; Patrick Bayer, Fernando Ferreira & Stephen L. Ross, *What Drives Racial and Ethnic Differences in High-Cost Mortgages? The Role of High-Risk Lenders*, 31 REV. OF FIN. STUD. 175 (2018); DEBBIE GRUENSTEIN BOCIAN ET AL., CTR. FOR RESPONSIBLE LENDING, FORECLOSURES BY RACE AND ETHNICITY: THE DEMOGRAPHICS OF A CRISIS (2010), https://www.responsiblelending.org/mortgage-lending/research-analysis/foreclosures-by-race-and-ethnicity.pdf [https://perma.cc/2UBZ-AY4Y].

354. *Racial Differences in Economic Security: Housing*, U.S. DEP'T OF TREASURY (Nov. 4, 2022), https://home.treasury.gov/news/featured-stories/racial-differences-in-economic-security-housing#_ftnref27. [https://perma.cc/K46A-G8AM].

can quickly escalate into a financial crisis, with painful and far-reaching consequences for the broader society.[355]

Mindful of these grave socio-economic risks, we now turn to our normative contribution. We consider first the position of home buyers and subsequently that of lenders, proposing solutions that courts and lawmakers should adopt to tame crypto real estate financing transactions.

A. Normative Solutions to Safeguard Home Buyers

To a prospective home buyer, crypto real estate transactions may have significant appeal. The lure of reduced cost, simplicity, rapid completion, and a supposedly seamless user interface can serve as a powerful draw for those seeking to acquire a home, particularly for digital natives and those purchasing for the very first time. As we have described above, however, when prospective homeowners finance their home purchase by using an NFT (which embodies an ownership interest in a business entity) as collateral, they expose themselves to the Article 9 enforcement regime, which is far more aggressive and swifter than that for traditional mortgages. Indeed, the enforcement methods afforded to creditors under Article 9 are significantly more flexible and almost completely within the control of the creditor.

This outcome is highly problematic. It undermines the policy choices at the heart of residential mortgage law and rides roughshod over the rights and protections afforded to homeowners. Most worryingly, the social hazards of these negative outcomes are doubly insidious when coupled with the knowledge that, on average, Black people have their homes foreclosed on at twice the rate of White people.[356] Studies also suggest that up to 57% of people experiencing foreclosure cite medical debt as the primary reason for their financial distress.[357] The last thing these people need is harsher, faster enforcement proceedings due to purchasing their family home via a crypto real estate transaction. In fact, a central tenet of consumer protection laws in the residential mortgage market is that a foreclosure process is deliberately slowed down for the purpose of giving homeowners breathing room and the ability to either work something out with their lenders or find an alternative place to live.[358]

Based on these considerations, we propose that crypto real estate financing transactions should be treated as equivalent to residential mortgage transactions. They may not be formally structured as such, but in effect that is what they are. Taking a functional approach, the law should give primacy to

355. *See generally* CHRISTOPHER K. ODINET, FORECLOSED: MORTGAGE SERVICING AND THE HIDDEN ARCHITECTURE OF HOMEOWNERSHIP IN AMERICA (2019) (describing the financial crisis of 2008 and the role of mortgage originators and servicers in the housing economy).

356. *See* Jones, *supra* note 18.

357. *See* Cutshaw et al., *supra* note 17.

358. ADAM J. LEVITIN, CONSUMER FINANCE LAW: REGULATION AND MARKETS 615 (2018).

substance over form. We do not claim that these transactions are void or avoidable; equally, we do not suggest that the parties' agreement is unenforceable. Rather, we assert that any such enforcement must conform or even yield to the jurisdiction's residential mortgage law and the rights and protections it affords to homeowners.

Let us return again to Josephine and assume that she acquires a membership interest in an LLC in the form of an NFT. That LLC holds residential real estate, the home in which Josephine will reside as her personal residence. To finance her purchase, Josephine obtains a loan from Crypto Bank, which, in exchange, takes a UCC security interest in the LLC membership interest embodied in the NFT. Sometime later, Josephine defaults on the loan, and Crypto Bank proceeds to enforce its security interest. The proper legal treatment of this effort is as follows.

1. *Judicial Foreclosure States*

If the transaction occurs in a state that requires judicial foreclosure of a mortgage on residential real estate, we start from the premise that the public policy of the locale is that foreclosures of home mortgages—these being the primary means by which one voluntarily encumbers residential real property—must be conducted under the supervision of the court. These policies have roots in the perceived importance of judicial supervision over foreclosure (a process originating in equity), due to the unequal bargaining power between debtors and creditors and the axiom that a person's home deserves special protection.[359]

With that in mind, a court should require Crypto Bank to act in one of two ways. First, the bank could proceed as though the security interest in the NFT is really an equitable mortgage, in which case it would move to judicially foreclose on that mortgage as any mortgagee in that jurisdiction typically would. In this way, the public policy of the jurisdiction would not be offended because Josephine would receive no fewer protections than the legislature intended for all mortgagors.

Alternatively, a court could allow Crypto Bank to enforce its security interest under UCC Article 9 but compel it to do so through a judicial enforcement procedure. This judicial process should be required because it will, in effect, provide all of the same procedural and substantive protections that the mortgagor would otherwise receive in a real estate mortgage foreclosure. For example, as described above, the UCC Article 9 judicial foreclosure process requires that the secured party do everything in a commercially reasonable

359. *See, e.g.*, Massey v. Neill, No. 35395-8-III, 2018 WL 5095864, at *1 (Wash. Ct. App. Oct. 18, 2018) (requiring a judicial foreclosure for agricultural property); Secor Bank v. Hackle, 94-0158 (La. App. 4 Cir. 10/27/94), 644 So. 2d 1138, 1141 (rejecting efforts to expand mortgage creditors' rights to include self-help).

fashion.[360] This requirement will thereby ensure that the sale process is comparably (if not more) robust than the process for execution sales applicable to judicial mortgage foreclosures.

One additional note of caution, however, involves the question of whether the jurisdiction provides for a statutory right of redemption in favor of the mortgagor which (importantly) *cannot be waived*. If this is the case, then Crypto Bank should be required to proceed under the mortgage foreclosure process. This is because, if the bank used the UCC Article 9 judicial process, however similar in notice and sale it might be, the process would deprive the mortgagor of the statutory right of redemption because no such right exists in any state under UCC law. Therefore, the combined public policy of the state to require both judicial foreclosure and a non-waivable statutory right of redemption should disallow any kind of process under UCC Article 9.

2. *Nonjudicial Foreclosure States*

Our suggested normative approach is slightly altered if the transaction occurs in a jurisdiction that allows for nonjudicial foreclosures of residential mortgages. Here, public policy favors achieving a potentially higher sale price on foreclosure by using a nonjudicial process.[361] In such a jurisdiction, the requirement that the process be supervised by the court is dispensed with in exchange for certain statutory requirements that mimic the judicial process (but do not replicate it) and that are undertaken by private parties.[362]

Where this policy operates, courts should allow Crypto Bank to use the UCC 9 nonjudicial enforcement process subject to the following substantive proviso. Crypto Bank should be required to implement processes that are no less robust than those a foreclosing mortgagee must adhere to under that state's applicable nonjudicial mortgage foreclosure law. In doing so, a court should find that the creditor has satisfied the commercial reasonableness standard required under the UCC because the substance of the transaction (being that of a residential mortgage) would, in effect, be replicated. Secondly, since the nonjudicial enforcement provides no fewer protections in its design than would be enjoyed by the mortgagor otherwise, the court should conclude that the Article 9 nonjudicial foreclosure process is sufficiently respectful of the mortgagor's equity of redemption.

However, here again we provide a word of caution. If the applicable laws of the jurisdiction afford the mortgagor a non-waivable statutory right of redemption, then the court should recharacterize the transaction as one

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360. *See supra* Part II.B.2.

361. *See, e.g.*, Kennebec, Inc. v. Bank of the W., 565 P.2d 812, 816 (Wash. 1977); Macklin v. Deutsche Bank Nat'l Tr. Co. (*In re* Macklin), No. 10-44610-E-7, 2011 WL 2015520, at *12 (Bankr. E.D. Cal. May 19, 2011).

362. *See, e.g.*, *Kennebec*, 565 P.2d at 815–16.

involving an equitable mortgage and therefore require the creditor—Crypto Bank in this case—to proceed under the state's nonjudicial foreclosure process. To do otherwise and proceed under Article 9 would rob the mortgagor of the post-sale right of redemption even if all other safeguards were observed.

B. Normative Solutions to Safeguard Lenders

Lenders financing a crypto real estate transaction face a crucial challenge: taking security in the ownership interest of a holding company (embodied by an NFT) does not fully insulate them against competing claims to an underlying real property.

The above examination of *Craft* demonstrated that if a person owns their home through an LLC and has outstanding tax liabilities, the IRS is likely able to attack this real property asset to satisfy those liabilities, with primacy over a lender that has taken the ownership interest of the holding company in question as collateral.[363] Further caselaw has shown that a judgment creditor can reverse veil-pierce the LLC to reach its assets, and an unpaid supplier or laborer can similarly subject the real estate held by an LLC to a lien as a remedy for nonpayment.[364] In each of these cases, the lender's interest would take priority if they had a mortgage over the property rather than a security interest in an NFT.

But why bemoan the fate of the inattentive lender? Though to the cursory observer they may not cut a sympathetic figure, instability and uncertainty in real estate lending can have dire consequences. The risks of real estate lenders losing priority in a variety of scenarios (and the resulting deterioration of their balance sheets) are further compounded if banks have resold such loans or securitized them and sold them in financial markets, as vividly demonstrated by the sub-prime mortgage crisis of 2008.[365]

In our view, the only way for a lender to deploy the crypto-centric financing we described in Part I and retain confidence in the priority of their interest is to take double security. In other words, the lender would have to take a belt-and-suspenders approach by obtaining both an Article 9 security interest in the NFT (embodying the LLC ownership interest) and a mortgage over the real estate itself. In this way, as long as the lender's position vis-à-vis each of the items of collateral (i.e., the NFT and the real estate) enjoyed first priority, no court would subsequently disregard or otherwise recharacterize their position to such a degree that the lender's lien is subordinated or otherwise compromised. Although the intended primary collateral may indeed be the NFT under Article 9, if a court nevertheless required the lender to proceed

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363. *See supra* Part III.A.1.

364. *See supra* Part III.A.2.

365. *See* ODINET, *supra* note 355.

under state mortgage foreclosure law, then it could do so without worrying that a subsequent lien may have attached to the real property because the first-position mortgage would serve as a back-up security.

We do observe, however, that from a lender's perspective, the need to engage in double security will raise costs and complexity. And it may be the case that such an increase will outweigh whatever efficiencies are gained. Yet, if a lender desires to undertake this type of crypto- and blockchain-centered transaction—whether for purposes of creating benefits for the borrower or demonstrating its own ability to keep pace with new financial innovations—this kind of private-ordering solution is the preferable approach.

CONCLUSION

The continued desire among those in the real estate market to harness the power of NFTs and attendant blockchain technologies shows no signs of abating. Even now, the Uniform Law Commission has committed to a formal study process for interrogating whether uniform or model legislation is necessary or desirable for giving more legal certainty and recognition to the kinds of structures described in Part I. We have shown in this project how a number of policy considerations—many if not all of which are little appreciated or discussed—are inherently bound up in the use of tokens and distributed ledger technologies, not to mention a number of legal uncertainties. Most of all, we have argued that the fast and furious efficiencies that crypto promoters advocate may actually be quite undesirable when it comes to respecting the long-standing rights of homeowners—particularly mortgagors—that have long animated real property law in the United States.