How to Build a Stablecoin: Certainty, Finality, and Stability Through Commercial Law Principles

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Abstract

New market practices and business models are emerging around so-called stablecoins, a type of crypto asset with certain features that seek to stabilize the price of the coin. Stablecoins have the potential to offer a borderless and more accessible way to pay, addressing many shortcomings in existing payment systems around the world. Yet, these developments also raise fundamental legal issues. What questions should lawyers and financial advisors be asking to ensure risks are adequately addressed? What answers can stablecoin innovators give to financial authorities and industry stakeholders to provide comfort that there is a sound legal basis for the business models and market practices around their coin? U.S. commercial law, which is chiefly designed to support financial market activities, contains powerful principles that can usefully serve as building blocks for a foundational legal framework to uniquely advance a stablecoin’s economic purpose as a medium of exchange — allowing technologists to move fast, but safely. This Article spells out how to build such a legal basis by leveraging the core commercial law principles of (i) focusing on the principles of settlement finality, (ii) rules for adverse claims, (iii) discharge of the underlying obligation, and (iv) the concept of a security entitlement. It maps out how these principles are embodied under the U.S. commercial laws of investment securities (UCC Article 8) and of payments (UCC Articles 3, 4, and 4A). The goal in doing so is to show how innovators can incorporate novel, technology-driven market practices and business models into the existing financial law framework in a proven and effective way — how to leverage what is working today and does not need to be invented again. Awareness of the availability of these commercial law tools, and their limitations, can provide important help to stablecoin developers and market participants in managing their exposure, designing efficient financial innovations, and controlling the risk to the broader financial market.

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INTRODUCTION

Among the business models and market practices around distributed ledger technology (DLT) emerging today are a number of high-profile projects to create so-called stablecoins. Despite the hype surrounding stablecoin projects like Facebook’s Libra, Fidelity’s Utility Settlement Coin (backed by such banks as UBS, BNY Melon, Barclays, and HSBC), and J.P. Morgan’s JPM Coin, in many respects they are little different from other crypto assets issued via a digital ledger running on a form of blockchain technology.

Crypto assets like bitcoin and ether had originally been envisioned as an accessible and borderless way to pay.1 They offer an alternative to traditional assets recorded on a central ledger maintained by a single trusted entity, relying instead on DLT. However, the market value of crypto assets like bitcoin largely hinges on the amount that a counterparty might be willing to pay in exchange to obtain them — i.e., unanchored expectations as to future purchasing power. As a result, these crypto assets have generally suffered from severe price volatility. Moreover, their transaction processing capacity has not achieved scale, and transaction costs tend to be unpredictable. Given these limitations, the market

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function of crypto assets like bitcoin has largely been confined to risky stores of value and unreliable means to pay. As a result, they are impractical units of account — hardly capable of carrying out the basic economic functions of “money.”

Stablecoins seek to address some of the problems faced by first-generation crypto assets like bitcoin and ether. To reduce volatility, a developer of a given stablecoin would link the coin to a reference asset or basket of assets. Price stability should be achieved, the thinking goes, because the stablecoin is linked to assets with stable value. This price stability, the logic continues, ought to increase the coin’s market acceptance as serving the three basic functions of money: a medium of exchange to facilitate commerce, a store of value that can be counted on for later use, and a unit of account to compare the value of goods and services.

There are a range of options as to the assets a given coin may be linked to and how the linkage is made. For example, a given stablecoin could be said to represent a claim against the entity issuing the coin, such as a promise to pay the stablecoin holder on a one-for-one basis, denominated in the local currency such as euro or U.S. dollars (e.g., JPM Coin). If this promise to pay happens to be made by a bank, it could simply be viewed as the amount of deposits the bank holds for its customer (i.e., the holder of the coin). To reassure the market that its promise to pay is good and, hopefully, help its stablecoin hold a steady price, an issuer could further promise to set aside certain dedicated assets, to be tapped into in the event the promise to pay is called by a coinholder. Those assets could be cash reserves (e.g., Paxos Standard, Gemini Dollar, Circle USDC, and Utility Settlement Coin), but they could be other assets such as physical assets like gold (e.g., Ekon) or a basket of assets like cash reserves of various denominations and short-term government securities (e.g., Facebook’s Libra).

Why do these developments matter? While market adoption of stablecoins as the functional equivalent of money has to date been limited, new stablecoin initiatives backed by large technology companies or financial institutions could have the potential for widespread market uptake. Facebook could leverage its vast existing customer base of 2.4 billion users to rapidly achieve a global presence in payments. From a public policy standpoint, these stablecoin implementations could also promise to deliver greater benefits to users and address shortcomings in existing payment systems. A global stablecoin for retail purposes could be one way to provide for faster and cheaper remittances, spur competition in payment services and thereby lower costs, and support greater

2. Lecture by Mr. Yves Mersch, Member of the Executive Board of the European Central Bank, “Virtual or virtueless? The evolution of money in the digital age,” at the Official Monetary and Financial Institutions Forum (Feb. 8, 2018).
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financial inclusion in many parts of the world. In response, national authorities are beginning to acknowledge that stablecoin initiatives have highlighted the need to step up ongoing public and private efforts to upgrade existing payment systems.

Are stablecoins ready to become the new global payment system? Facebook’s Libra is scheduled for release by the end of 2020. Yet, like other stablecoins, it is built upon nascent technology and has largely been untested in a real-world environment. Apart from these operational hurdles, critical baseline issues remain that, if unresolved, would undermine confidence in a stablecoin’s acceptance and reliability. Key is the need to demonstrate a sound legal basis that supports the stablecoin arrangement, providing legal clarity to market stakeholders and users. In the view of the G7, such legal clarity is “an absolute prerequisite.” At a minimum, issuers of stablecoins must give legal certainty as to the nature of the commitment they are making to the holders of their coins, including the coin’s relation to the underlying assets, the obligations of the issuer as to those assets’ safekeeping and possession, and the terms of redemption for the stablecoin.

From the standpoint of legal clarity and certainty, stablecoins present new challenges on at least two fronts. First, they differ from traditional financial market infrastructures where operations are centralized in a single entity: stablecoin users and market participants take on exposure to more than just the stablecoin issuer’s activities. High-profile stablecoin initiatives, particularly Libra, contemplate a legally complex organizational and technical model under which the issuer and layers of third parties (e.g., validator nodes, institutions holding any assets underlying the stablecoin, participating market makers, exchanges, and possibly stablecoin custodians) play different roles around receiving customer funds, managing assets, and processing transactions. Complicated legal issues tend to arise where a range of operations with complex interdependencies are performed by various market participants in a network. Second, by straddling the divide separating currencies and payment instruments on the one hand, and investment securities and commodities on the other, stablecoins raise foundational legal questions. Stablecoin arrangements, depending on their design and claim structure, might have features of payment systems, bank deposits, foreign currency exchanges, commodities, and

3. See Benoit Coeure, Chair of the Committee on Payments and Market Infrastructures and Member of the Executive Board of the European Central Bank, Update from the Chair of the G7 Working Group on Stablecoins, (July 18, 2019) [hereinafter “G7 Stablecoin Update”].
5. G7 Stablecoin Update, supra note 3.
investment securities. The market behavior around stablecoins and their economic purposes tend to blur the lines between these traditional legal categories.

As a result, it will not be an insignificant lift for private-sector issuers and other stakeholders to sufficiently demonstrate via contract and property law mechanisms a sound legal basis supporting material aspects of their stablecoin. However, commercial law principles can help. It is an existing body of law specifically designed to support commercial transactions by providing a legal foundation of stability, clarity, and predictability. Within such a proven legal framework, if a dispute were to arise between parties to a stablecoin transaction, a substantial body of law would be in place to guide resolution of the dispute.

Awareness of the menu of commercial law tools available to characterize a given stablecoin within well-developed commercial law categories, as well as the market-enhancing set of commercial law rules that go with such legal status, can help technologists developing stablecoins and ancillary products or services. This Article spells out how innovators can leverage the existing legal framework to provide a foundation of legal clarity and certainty that supports their stablecoin’s economic objective. This, in turn, can help drive innovation, facilitate market uptake, and underpin new business models. It is critical, too, to recognize the limitations and trade-offs that accompany specialized commercial law principles.

The article proceeds as follows. Part I provides an overview of U.S. commercial law and its place within the broader legal context. Part II illustrates how core principles of U.S. commercial law (namely, settlement finality, rules for adverse claims, discharge of the underlying obligation, and the concept of a security entitlement) can serve as critical building blocks for a foundational legal framework to underpin market practices around stablecoins and uniquely support market activity. Part III discusses the key limitations to leveraging these specialized commercial law principles for stablecoins, but also provides practical tips for stablecoin developers to surmount these challenges and highlights critical areas of focus for law reform initiatives underway to modernize U.S. commercial law.

I. THE COMMERCIAL LAW TOOLKIT

Although the precise designs of stablecoins can vary in technical, functional, and economic terms, they generally tend to be described as crypto assets with value-stabilizing characteristics — i.e., some linkage to a reference asset or basket of assets. The underlying assets themselves are not necessarily anything
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new; they tend to be traditional assets like cash reserves, securities, and commodities. Stablecoin users look to a digital ledger (e.g., DLT), with the understanding that the stablecoin balances digitally recorded on the ledger represent some linkage to those underlying assets. Real-time transactions may be effected simply via update to the digital ledger, enabling a fully digital, borderless, and more efficient and accessible way to transfer and store value.

Technology is enabling these incremental improvements in cross-border payment services, meeting consumer demand. Yet, code alone is not enough. There must be a sound legal basis to support new stablecoin market practices and business models. Technical documentation might specify the mechanical processes occurring over the technology, but it is an enforceable legal basis that gives meaning and legal significance to the steps in that process.

Establishing this legal clarity and certainty is critical for innovators and participants in the digital ecosystem enabled by stablecoins: they have new exposure to each other, and they require clarity and certainty around the risks they take on. Where a stablecoin takes significant scale — e.g., if it is issued by a large technology or financial firm leveraging its vast existing customer base — there is even more at stake. Legal clarity and certainty would be necessary to mitigate risks to financial stability and ensure public trust in the smooth functioning of the global payment system.

Building such a legal foundation from scratch is no easy matter for stablecoin innovators. However, one area of law — commercial law — is specifically designed to support financial market activity by providing a legal foundation of stability, clarity, and predictability. Private-sector parties might be able to supplement or contract out of certain commercial law provisions; all the same, commercial law provides a safety-net set of rules to ensure that the legal underpinnings of certain financial transactions are sound. These principles can help technologists incorporate their new products and services into the existing financial law framework in a proven and effective way — to leverage what is working today and does not need to be invented again. Especially for emerging technologies like stablecoins, this assurance can help catalyze market acceptance of new commercial practices and business models.

A. The U.S. Uniform Commercial Code and its unique legal aspects

From the time it was first proposed nearly eighty years ago, the U.S. commercial law regime has maintained a high degree of clarity and predictability. It has also evolved to accommodate changes in market practices. In recent decades, for example, notable historic advances have been made in the commercial law supporting electronic funds transfers and the immobilization or dematerialization of securities in response to changing market practices that emerged from the availability of computing power and high-speed telecommunications.
The U.S. commercial law regime is centralized in a uniform set of laws, the Uniform Commercial Code (the UCC). Adopted by all fifty states, the UCC aims to provide a consistent and harmonized set of laws governing all commercial transactions in the United States. The rules for each of the transactional areas covered by the UCC are organized into separate sections, each called an Article. This Article will focus on: Articles 3 and 4, which govern negotiable instruments (other than money, payment orders, and securities); Article 4A, which generally governs the rights and obligations of parties to a funds transfer (except for transfers to or from a consumer where Article 4A is displaced by federal consumer protection law); and Article 8, which generally governs the ownership and transfer of investment securities and security entitlements (i.e., the rights and property interest of a person who owns securities by means of an account with securities intermediary).

The UCC’s place within the broader U.S. legal context is important and unique. Specifically with regard to general principles of contract law, it is important and unique in two key aspects. First, the UCC sets out baseline rules that can be supplemented or varied by contract by financial institutions involved in a transaction, although some important exceptions apply. Similarly, systems through which payments and securities transactions are settled, including private-sector systems, may adopt rules governing the rights and obligations of parties using the system. In contrast to payment systems, in the context of investment securities, system rules adopted by securities clearing corporations are subject to regulatory approval by the Securities and Exchange Commission. These system rules are an alternative way to craft commercial terms with greater specificity, flexibility, and efficiency than is possible in legislation like the UCC. For example, these rules could be tailored to the particular system’s processes and market practices of the system participants.

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8. Although outside the scope of this article, UCC Article 7, which governs documents of title and warehouse receipts, may also have some relevance to tokenized assets including stablecoins, particularly those supported by underlying commodities (as opposed to financial assets like cash reserves or liquid securities). Developers of such a token, and ancillary products or services, could leverage the existing legal framework under Article 7 to provide a foundation of legal clarity and certainty that support the coin’s economic objective. Specifically, a stablecoin could be designed to leverage Article 7’s rules with regard to electronic documents of title or electronic warehouse receipts, which already contemplates digital documents (in contrast to Article 3).


11. See Part III for why these rules are important to stablecoin developers and how they can use them to uniquely advance their coin’s economic purpose.

12. For example, Official Comment 1 to § 8-111 states: “The experience of the past few decades shows that securities holding and settlement practices may develop rapidly, and in unforeseeable directions. Accordingly, it is desirable that the rules of Article 8 be adaptable both to ensure that commercial law can conform to changing practices and to ensure that commercial law does not operate as an obstacle to developments in securities practice. Even if practices were unchanged, it would not be
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Second, the UCC grants unique powers to these private-sector system rules, imbuing them with special heft and allowing them to go beyond what ordinary contract can accomplish. Private-sector systems may adopt rules that can automatically bind all system members. In the context of investment securities, securities clearing corporations can adopt rules governing the rights and obligations among the clearing corporation and its participants, including rules that even conflict with Article 8. Likewise, in the context of payments, funds-transfer system rules can also override provisions in Article 4A, unless expressly forbidden.

Beyond varying the rights and obligations of participants using the funds system, private-sector system rules are also explicitly permitted to impact the rights and obligations of remote parties in a transaction — i.e., those sitting down-stream and upstream from the system — and who therefore had not agreed to the rules of the system. The system rules may, for example, choose the law to govern the rights and obligations as between banks participating in the funds-transfer system that is also binding on remote parties with notice. Third parties like payors and payees can also be impacted by the funds-transfer system that banks in their transaction chain use: as discussed further in Part II, the moment in time when the payor’s underlying obligation to the payee is discharged is linked to the concept of final and irrevocable settlement, which can be dependent on the funds-transfer system.

The UCC also has a unique and important relationship with common law and equitable principles: the UCC serves as a shield and displaces common law possible in a general statute to specify in detail the rules needed to provide certainty in the operations of the clearance and settlement system.”

13. UCC §§ 1-302(b), 4-103, 4A-501, 8-111.
14. UCC § 8-111. The versions of this particular provision vary slightly across states, with important practical consequences. New York’s Article 8 provides as above. N.Y. UCC LAW § 8-111 (Consol. 1964). In contrast, Illinois’ 8-111 is more expansive and provides that clearing corporation rules may override any provision of the UCC, including Article 9’s perfection rules. § 810 ILL. COMP. STAT. 8-111 (1996).
15. As Official Comment 1 to § 4A-501 states: “This section is designed to give some flexibility to Article 4A. Funds transfer system rules govern rights and obligations between banks that use the system. They may cover a wide variety of matters such as form and content of payment orders, security procedures, cancellation rights and procedures, indemnity rights, compensation rules for delays in completion of a funds transfer, time and method of settlement, credit restrictions with respect to senders of payment orders and risk allocation with respect to suspension of payments by a participating bank.
16. UCC §§ 4A-501(b); 8-111. For example, as explained in Official Comment 1 to § 4A-501: “Funds transfer system rules can be very effective in supplementing the provisions of Article 4A and in filling gaps that may be present in Article 4AFalse § 4A-501 goes furtherFalse Since funds transfer system rules are defined as those governing the relationship between participating banks, a rule can have a direct effect only on participating banks. But a rule that affects the conduct of a participating bank may indirectly affect the rights of nonparticipants such as the originator or beneficiary of a funds transfer, and such a rule can be effective even though it may affect nonparticipants without their consent. For example, a rule might prevent execution of a payment order or might allow cancellation of a payment order with the result that a funds transfer is not completed or is delayed.”
17. UCC § 4A-507. Official Comment 4 to § 4A-507 notes that subsection (c) may be the most important provision in regard to creating uniformity of law in funds transfers: “The ability of a funds transfer system to make a choice of law by rule is a convenient way of dispensing with individual agreements and to cover cases in which agreements are not feasible.”
claims inconsistent with its provisions. Because commercial law embodies a
delicately balanced and specialized statutory scheme, the possibility that other
conflicting principles of law or equity — and, in particular, conflicting case law
— might come into play would undermine its predictability, coherence, and, as
a result, effectiveness. 18 Therefore, principles of common law and equity may
supplement the UCC’s provisions, but they cannot be used to supplant its
provisions, unless a specific provision of the UCC provides otherwise. 19 In the
absence of such a provision, the UCC pushes aside principles of common law
and equity that are inconsistent with its provisions or its purposes and policies. 20

Indeed, much litigation around Article 4A revolves around the question of
the extent to which its provisions limit the judicial remedies available under other
law in a dispute involving a funds transfer (e.g., negligence and fraud), with
differing results. 21 As a policy matter, the drafters of Article 4A sought to imbue
it with unique status and exclude the application of remedies inconsistent with
the rights and obligations it creates — including claims that may be asserted by
third parties who are not themselves participants in the funds-transfer system or
transacting directly with a bank in the funds transfer chain. 22 As a result, the
UCC’s rules (as they might be supplemented or varied by contract, as permitted)
take on heightened importance as the primary bases for liability.

B. The UCC within the broader legal and policy context

Taken together, these unique aspects of commercial law make the legal
certainty and clarity that it brings quite powerful. Confidence in the
trustworthiness and reliability of financial products and services allows markets

18. As Official Comment to UCC 1-103(b) states: “The Uniform Commercial Code was drafted
against the backdrop of existing bodies of law, including the common law and equity, and relies on those
bodies of law to supplement it provisions in many important ways. At the same time, the Uniform
Commercial Code is the primary source of commercial law rules in areas that it governs, and its rules
represent choices made by its drafters and the enacting legislature on the appropriate policies to be
furthered in the transactions it covers. Therefore, while principles of common law and equity may
supplement provisions of the Uniform Commercial Code, they may not be used to supplant its provisions,
or the purposes and policies those provisions reflect, unless a specific provision of the Uniform
Commercial Code provides otherwise. In the absence of such a provision, the Uniform Commercial Code
preempts principles of common law and equity that are inconsistent with either its provisions or its
purposes and policies.”

19. UCC §1-103(b) and Official Comment 2 to § 103.

20. Id.

first Article 4A case in which a court declined to dismiss a complaint based on conversion, tortious
interference with contract, and unjust enrichment).

22. As Official Comment to UCC § 4A-102 explains: “Funds transfers involve competing
interests—those of the banks that provide funds transfer services and the commercial and financial
organizations that use the services, as well as the public interest. These competing interests were
represented in the drafting process and they were thoroughly considered. The rules that emerged represent
a careful and delicate balancing of those interests and are intended to be the exclusive means of
determining the rights, duties and liabilities of the affected parties in any situation covered by particular
provisions of the Article. Consequently, resort to principles of law or equity outside of Article 4A is not
appropriate to create rights, duties and liabilities inconsistent with those stated in this Article.”
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to thrive. Legal certainty and clarity contribute to this confidence, and it is
commercial law that is designed to provide this foundation of stability and
predictability. The overarching policy goal of the UCC is to provide a clear set
of rules governing the mechanical processes of clearance and settlement. Where
operations are highly automated, as in the areas of securities transfer and
payments, legal clarity and certainty are critical. Particularly in times of stress in
the financial markets, the UCC’s legal clarity and certainty provide assurance to
market participants of continued safe operation.

For example, the principle of settlement finality (discussed further in Part II)
gives parties that receive payment or acquire securities comfort that they do not
need to worry about the insolvency of their counterparty or parties earlier in the
transfer chain. Commercial law cannot protect against the failure of a
counterparty, but by ensuring finality it can protect against the risk that a party
will unexpectedly suffer as a result of the failure of its counterparty — i.e., that
a deficiency of one firm will spread to others. In times of financial market stress,
the assurance provided by these commercial law principles is critical to
preventing gridlock.

One might query, though, why commercial law is needed as a policy matter
when parties to a transaction may agree to terms under private contracts. Could
legal certainty and clarity not be achieved that way, without the burden of
enacting legislation? In the absence of a clear and consistent unified set of
commercial law rules, transactional relationships would be governed by different
private contract terms and subject to potentially different judicial interpretations.
Resulting gaps and inconsistencies under this approach would make transacting
slow and costly. Commercial law, therefore, brings expediency: it serves as a
predictable safety-net to private agreements. The availability of a catch-all body
of commercial law terms lowers transaction costs between counterparties. The
added benefit of the freedom for parties to vary some, though not all, provisions
of the UCC by agreement provides flexibility to the market where needed.

Commercial law also supports important public policy goals. Where there
are disparities in negotiating power with consequences from a public interest
standpoint (e.g., the allocation of responsibility for losses), there may be an
important role for specialized commercial law principles to play. One
mechanism through which it does so, for example, is by setting boundaries on
the liabilities that can be excluded or limited by parties by contract.23
Additionally, as a practical matter, one would not expect transacting parties to
negotiate contract terms that, in the same manner as financial sector legislation,
serve to assure the broader financial sector’s safe and efficient operation. In
contrast, the drafting process of specialized commercial law statutes typically
considers competing interests among market stakeholders (e.g., financial

23. E.g., UCC §§ 4A-202(f), 305(f).
institution providers of the service and their customers), as well as the public interest, to produce rules that represent a careful and delicate balancing of policy goals.

It is important to keep in mind that commercial law generally operates within an industry where many, though not all, of the key players are subject to financial regulation. While beyond the scope of this Article, other key components of financial law include the regulatory and oversight system (e.g., ensuring that regulated financial institutions and intermediaries have sufficient assets to satisfy customer claims and, in the context of securities holding, that custodians do not use customers’ securities for their own proprietary business without customer consent) and insurance systems that provide customer protection (e.g., the Securities Investor Protection Corporation, or SIPC, and the Federal Deposit Insurance Corporation, or FDIC, in the United States). Commercial law frameworks are concerned with the smooth and efficient operation of clearing and settlement, less so the regulation of securities brokers vis-à-vis their customers or banks vis-à-vis depositors. Rather, commercial law serves to grease the wheels of financial transactions, and it does so by giving special obligations and protections to regulated entities.

II. BUILDING A LEGAL BASIS FOR STABLECOINS FROM COMMERCIAL LAW PRINCIPLES

This Part focuses on four core principles of U.S. commercial law: settlement finality, rules for adverse claims, discharge of the underlying obligation, and the concept of a security entitlement. It maps out how these principles are embodied under the U.S. commercial laws of investment securities (UCC Article 8) and of payments (UCC Articles 3, 4, and 4A), as well as how technologists can leverage these principles to give the market legal clarity and certainty to advance their coin’s economic objective.

In the areas of investment securities transfer and payment settlement, these core principles are critical to ensuring that the legal underpinnings of market activity are sound and that parties have clarity as to the key risks they have taken on and when those risks are transferred. Technologists developing stablecoins — as well as ancillary stablecoin products or services — can leverage these legal building blocks to move fast, but safely.

This Part will proceed by identifying key areas of legal uncertainty posed by stablecoins and then explaining the commercial law core principles available to help resolve those issues. It will also highlight important policy and practical considerations in extending these traditional commercial law principles to fully digital market activity around stablecoins.
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A. Settlement finality

Consider the following fact pattern for a hypothetical stablecoin, loosely based on the classic case Delbrueck v. Manufacturers Hanover Bank.24

Delbrueck, a German banking house, entered into contracts with Bankhaus I.D. Herstatt, consisting of two transfers: (1) Herstatt would deliver deutsche marks to Delbrueck’s German account and (2) Delbrueck would deliver $12.5 million in FastPay Coins (hypothetical stablecoins pegged to the U.S. dollar and issued by payment system FastPay) to Herstatt’s stablecoin service provider. Specifically, Delbrueck would instruct its stablecoin service provider to initiate a transfer via the DLT on which FastPay Coins are recorded. Ideally, either both the deutsche marks and FastPay Coin transactions would occur or neither would. Naturally, something else happened.

Herstatt was closed by the German banking authorities around 10:30am EST in the morning of the execution date, before Herstatt delivered the deutsche marks to Delbrueck. With the first leg of the transaction not occurring, could Delbrueck stop the second leg — the delivery of FastPay Coins — from happening?

Suppose Delbrueck becomes aware of Herstatt’s closing around 10:45am EST, but it is not until noon that Delbrueck requests its stablecoin service provider to stop its order to transfer FastPay Coins (which it had authorized the day before). By noon, however, its stablecoin service provider has already submitted the transaction to the FastPay Coin DLT. It is not until late in the evening that Herstatt sees an increased FastPay Coin balance with its stablecoin service provider from the transaction. There could be a further layer of complexity if FastPay Coin were running on a public blockchain that relies on a proof-of-work model such that settlement is probabilistic,25 and it would be longer yet until the transaction has been confirmed a sufficient number of times on the ledger that one could conclude it is unlikely that a longer rival chain without the transaction exists.26

Given the number of critical steps and decision points in this hypothetical FastPay Coin transaction sequence,27 was Delbrueck’s stop order to its stablecoin

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24. 609 F.2d 1047 (2d Cir. 1979).
25. Proof-of-work is a common form of consensus that requires nodes to agree on the transactions being added to the ledger. In general, the mechanism waits for a majority of nodes to agree on a transaction before adding it to the ledger. See, e.g., BIS COMM. ON PAYMENTS & MKT. INFRASTRUCTURES, Distributed Ledger Technology in Payment, Clearing and Settlement: An Analytical Framework (Feb. 2017), https://www.bis.org/cpmi/publ/d157.pdf.
26. See, e.g., Raphael Auer, Beyond the Doomsday Economics of “Proof-of-Work” in Cryptocurrencies (BIS Working Papers No 765, 2019) (“In a cryptocurrency, finality is a starkly different concept. Broadly, it signifies that once a transaction is included in the blockchain, there is certainty that it will not be undone later by the emergence of an alternative "longer" blockchain which does not include the subject transaction.”).
27. In the real-life Delbrueck fact scenario, Delbrueck became aware of Herstatt’s closing around 10:45am EST, but it was not until noon that it requested its U.S. bank to stop the transfer of U.S. dollars
service provider at noon effective to revoke the FastPay Coin payment to Herstatt — or is Delbrueck left with a $12.5 million gap in its balance sheet and, without the liquidity it thought it would have, be forced to default on its obligations?

Framing the question a bit differently: How can legal rules, with certainty and clarity, mitigate the risk that failure by one counterparty to settle its side of the deal will start a chain reaction of cascading defaults that can spread across the banking sector? Without a clear and predictable legal solution, the prospects for FastPay Coin are quite dim and, at worst, a threat to financial stability.

Although the commercial law principle of settlement finality cannot ensure against the failure of a party like Herstatt, it nevertheless serves to provide a baseline foundation of clarity and certainty with regard to the rights and relationships between parties (e.g., as to revocation), allowing parties like Delbrueck to gauge and manage their risk exposure ex ante. Specifically, finality rules provide for the specific moment in time when payment between particular parties to a transaction is considered irrevocable by each party, including when and if stipulated by governing system rules.

The U.S. commercial law of payments provides basic backstop finality rules as to the moment after which the parties cannot recall the transaction. In payments, these basic rules are supplemented by references to “final settlement” through a funds transfer system and, for checks, failure to revoke a “provisional settlement” consistent with clearing-house rule or agreement. The commercial law of investment securities is generally similar, referring to acquisition of a security entitlement based on, among other ways, when a securities intermediary becomes obligated under other rules to credit a financial asset to the person’s securities account.

(which it had authorized the day before). 609 F.2d 1047, 1049-51. By then, however, its U.S. bank had already entered the payment order through the CHIPS (a U.S. interbank payment system) and the payment order had already been automatically released over the CHIPS system. Id. It was not until late in the evening that Herstatt’s New York bank formally credited its account with the payment. Id. Moreover, at that time, net positions across all CHIPS participants over the course of the day were settled on the books of the Federal Reserve Bank of New York on the following day. Id.

28. In the actual Delbrueck case, Delbrueck unsuccessfully argued that the transfers were revocable until late in the evening, when Herstatt’s bank formally credited its account. Id. The court held otherwise, relying on the market practices of banking transactions at the time, as well as common law and analogies to other law, in holding that when the payment order was released over the CHIPS system, it was final and could not be revoked. Id. It observed that at the time, the payment system rules did not contain a specific provision concerning the finality of CHIPS transfers. Id. The case, which predates Article 4A (the commercial law dedicated to funds transfers), highlights the importance of a legal ruleset as to settlement finality. The outcome hinged on the question of when the payment orders became irrevocable; lack of clarity as to that issue created uncertainty in the broader market. 609 F.2d at 1049, n. 2 (“If the credit transfers were irrevocable this appeal must fail, for the contract between [Delbrueck’s U.S. bank] and Delbrueck requires that any stop order issued by Delbrueck be received by [its U.S. bank] at a time when [its U.S. bank] still had power to revoke the transfers”).

29. UCC §§ 4-215; 4A-103.
30. UCC § 8-501(b).
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The clarity and predictability of finality rules serve several key functions. First, the rules define the insolvency estate, as between the payor and the payee in a transaction (e.g., Herstatt and Delbrueck): a final payment is an asset of an insolvent payee’s estate and no longer an asset of an insolvent payor’s estate. Second, they are closely tied to the commercial law principle as to “discharge” of the underlying obligation (discussed later in Part II), compartmentalizing disputes. Third, finality rules specify how claims arise and obligations are discharged between parties in a payment transaction chain, serving as risk allocation rules. Such clarity and predictability — as to which party will bear the losses in the event of another party’s failure to settle its obligation — create economic efficiencies.31 In circumstances where a party need not worry about being allocated the risk of loss, it can make outgoing payments on the strength of incoming payments, which they can be confident are irrevocable. Well-calibrated loss allocation provisions under finality rules (i.e., that assign the risk of loss to the party in the best position to control it or to spread the loss as widely as possible) can help minimize the chance of the loss occurring in the first place or the costs of settlement failure born by each party.32

As illustrated by the hypothetical Delbrueck-based FastPay Coin scenario, stablecoin participants and transaction parties can usefully leverage the UCC’s principle of settlement finality, supplemented with private-sector system rules and contract (see Part I), can provide critical granularity in legal certainty and clarity. Moreover, the market can confidently rely on the soundness of the legal foundation provided by private-sector system rules recognized by the UCC. In jurisdictions like the United States, commercial law is generally harmonized with insolvency and other laws that may have repercussions that threaten the transfer’s irrevocability and finality. Avoidances or rescission, for example, might still apply to the transaction, but these legal principles would not call into question whether the transfer occurred at all or the irrevocability of payment orders that have entered the system — rather, it is still “final,” and the question is whether a subsequent transfer must be made to reverse its effects.33

33. Note, however, that insolvency law in certain other jurisdictions may potentially allow insolvency administrators to effectively void payments that otherwise appear to have been settled and were thought to be final (e.g., zero-hour rules that back-date the effects of insolvency decisions to the first hour of the date the institution was declared insolvent). BANK INT’L SETTLEMENTS & INT’L ORG. SEC. COMMISSIONS, Principles for Financial Market Infrastructures (Apr. 2012), https://www.bis.org/cpmi/publ/d101a.pdf. In effect, insolvency law would override the finality provisions of commercial law and private-sector system rules. Id. Such rules have a chilling effect on the market: if a party receiving a payment has concerns about its counterparty’s solvency, then that party would likely be less inclined to transact with the funds it has just received, lest a zero-hour rule were to apply and it finds that it has transferred funds it did not have (and possibly, to its surprise, have overdrawn its account). Id. Uncertainty in incoming flows freezes up outgoing flows, resulting in gridlock and systemic risk. Id.
B. Rules for adverse claims

Similar to settlement finality, the commercial law rules for adverse claims provide clarity and certainty to facilitate financial transactions. Just as settlement finality gives parties that receive payment comfort that they do not need to worry about the insolvency of their counterparty or parties earlier in the transfer chain, the rules for adverse claims limit the risk of repercussions from the nefarious deeds of counterparties or upstream parties. To illustrate the market frictions that commercial law rules for adverse claims can help solve in the context of stablecoins, consider the following example.

FastPay Coins are stolen from its True Owner by Thief (e.g., Thief obtains True Owner’s private key through nefarious means). Thief then makes a transfer out of its wallet of the ill-gotten FastPay Coins to Innocent Transferee, who is unaware of the earlier theft. Can True Owner assert a claim against Innocent Transferee to recover her stolen FastPay Coins?

Under the most basic principle for property transfers (i.e., nemo dat quod non habet), one can transfer no greater title than one has — in other words, a transfer could be unwound on the grounds that the transferor had acted wrongfully. Applying that general principle here, Innocent Transferee can obtain no better interest in the transferred FastPay Coin than her transferor, Thief, had. Because True Owner has legal title to the FastPay Coin and Innocent Transferee had taken it from Thief who did not, Innocent Transferee in turn cannot, and therefore does not, have title. Thus, True Owner has a claim to recover the stolen FastPay Coin from Innocent Transferee — i.e., he can assert an adverse claim to the FastPay Coin in the hands of Innocent Transferee.

Though this application of the general nemo dat principle for property transfers provides legal clarity and certainty to stablecoin transaction parties, it also has the side effect of creating market frictions. It allows a problem between True Owner and Thief (i.e., the theft of the FastPay Coin) to spread and become a problem for innocent third parties (e.g., Innocent Transferee), as well as any counterparties to whom Innocent Transferee subsequently transfers the FastPay Coin. Although the FastPay Coin transaction between Thief and Innocent Transferee might have settled, the risk would otherwise remain that a subsequent transaction reversing its effects could be ordered if True Owner successfully asserts that Thief had acted wrongfully.

34. Though out of scope for the purposes of this article, similar considerations apply to lien claims in a secured transaction and breaches of duties by trustees and bailees.

35. Unlike the principle of settlement finality, the principles for adverse claims are anchored in property law, which covers tangible property (e.g., banknotes and paper checks) and intangible property (e.g., security entitlements). It is entirely unrelated however to claims, which are contractual relationships (e.g., funds, which is debt of a bank). The critical threshold issue of legal recognition for a given stablecoin—is it intangible property (e.g., uncertificated securities) or a claim (e.g., bank deposits)—is addressed in the Conclusion.
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As a result, there are exceptions to the general nemo dat principle, and removing this market friction is where specialized commercial law rules for adverse claims come in. The UCC (among other laws) provides an exception to the general nemo dat property rule for certain transfers, under which the transferee would take the item free of most claims and defenses. Where the item is a check or other negotiable instrument, then if Innocent Transferee is a holder in due course (i.e., a good faith purchaser that, among other things, does not have notice of the facts that are the basis of True Owner’s claim), then True Owner cannot recover the item from Innocent Transferee. Similarly, where the item is an investment security or a security entitlement, then if Innocent Transferee takes delivery of the securities for value and without notice of the adverse claim (and assuming the transfer mechanism meets all formalities), then Innocent Transferee is the modern commercial law equivalent of a bona fide purchaser and takes the item free from any adverse claim. True Owner cannot unwind the transfer on the grounds that Thief acted wrongfully.

These adverse claim rules are also an important example of the distinction between the principle of negotiability under commercial law and mere assignment under contract law. Under these commercial law principles, good title may be derived even from a thief. The traditional rationale for giving Innocent Transferee complete assurance that she takes the item free from any possible adverse claims reflects a trade-off: greater ease of transferability, at the expense of less security. That is, requiring a potential transferee to undertake a burdensome investigation of the item’s provenance (e.g., the longer the chain of title, the higher the cost of inquiry) would hamper market practices and undercut the specialized economic objectives for investment securities, negotiable instruments, and money. If a given stablecoin like FastPay Coin were designed to fit within such commercial law categorizations, then it could potentially enjoy this special, market-enhancing commercial law treatment for adverse claims.

In the context of U.S. payments and settlement systems, the UCC’s rules for adverse claims serve an additional purpose in practice: protecting intermediaries. In check collections, the holder in due course doctrine serves to protect intermediaries like a depositary bank that is negotiated a check (i.e., whose limited role in the transaction is crediting its customer’s account for the check)

36. For example, a long-held principle is that if Innocent Transferee had received the stolen banknotes for value, then True Owner cannot recover it from her. H.D. Warren, Annotation, Nature of Property or Rights Other Than Tangible Chattels Which May Be Subject Of Conversion, 44 A.L.R.2d 927 (1955) (citing Miller v. Race, 1 Burr. 452, 97 Eng. Rep. 398 (K.B. 1758)).
37. UCC § 3-202.
38. UCC § 8-105.
39. UCC §§ 8-303, 8-502.
40. Although outside the scope of this article, UCC Article 9, which governs secured transactions, contains similar rules that strip security interests from money or from funds transferred from a deposit account, in each case so long as the transferee does not act in collusion with the transferor to violate the rights of secured party. UCC § 9-332.
from the risk of nefarious deeds associated with the underlying transaction. In investment securities, commercial law rules similarly generally protect securities intermediaries (e.g., clearing corporations, securities depositaries, or broker dealers) from adverse claims.\textsuperscript{41} Analogies can be drawn to providers of stablecoin services (e.g., custody or transaction execution) and other business models that assist clients in carrying out their stablecoin transactions under their instructions. Such service providers could likewise benefit from the protection of these well-developed, market-enhancing commercial rules.

\textbf{C. Discharge of the underlying obligation}

A critical aspect of what makes a transaction a \textit{payment} is its effect, under commercial law, of discharging an underlying obligation \textit{as though} it were payment in money. To illustrate this legal mechanism — and the important role commercial law plays — consider the following hypothetical.

Patron commissions a work of art from Painter, and they agree that Painter will draw up one painting for Patron in exchange for payment upon delivery. Painter delivers the work of art; Patron realizes at delivery that it is far more convenient to make payment to Painter in FastPay Coins. Patron makes the transfer of FastPay Coins, but she be confident that she has squared up her end of the bargain? What if Painter later insists that payment of the underlying obligation had not in fact been discharged and demands payment in U.S. banknotes (perhaps, for example, if the market for FastPay Coins were to suddenly collapse)?

The concept of “discharge” of a contract obligation means that the legal duty of a party has been “annulled or extinguished,” such that no legal obligation of performance remains and the correlating right is negated — Patron owes nothing to Painter, and Painter can demand nothing of Patron.\textsuperscript{42} In this context, money serves as an \textit{ultimate} discharger of obligations.\textsuperscript{43} Where the terms of the agreement provide for payment in cash, performance by money payment discharges the \textit{primary} contractual duty.\textsuperscript{45} Even where the terms of the

\begin{itemize}
\item \textsuperscript{41} \ UCC § 8-115.
\item \textsuperscript{42} \textsc{Arthur Linton Corbin, Corbin on Contracts} § 67.2 (Joseph M. Perillo ed., 2003); UCC § 2-720.
\item \textsuperscript{43} \textsc{F.A. Mann, The Legal Aspect of Money} Part III (5th ed., 1992) (“Thus, in the last resort, money becomes capable of discharging all obligations; it is the subsidiary means of performance.”).
\item \textsuperscript{44} The UCC defines “money” relatively narrowly as “a medium of exchange currently authorized or adopted by a domestic or foreign government” — i.e., physical banknotes. UCC § 1-201(b)(24). The Official Comment further notes: “The test is that of sanction of government, whether by authorization before issue or adoption afterward, which recognizes the circulating medium as a part of the official currency of that government.”
\item \textsuperscript{45} Under the principle of nominalism, the obligation to pay a certain amount of money is discharged regardless of how the value of the currency might fluctuate, unless the parties include contractual clauses providing otherwise. Mann, \textit{supra} note 43. If Patron agreed simply to pay Baker $10, his obligation is discharged when Baker receives $10, regardless of the purchasing power of U.S. currency at the time of performance. However, this principle may not necessarily hold true in all circumstances (e.g., Weimar}

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agreement provide otherwise, money payment can satisfy the secondary contractual duty of performance by compensating or making restitution after a breach of the contract.46

Yet, awards of damages are not paid in duffle bags of banknotes. Rather, the commercial law of payments contains mechanisms (e.g., check or funds transfer) by which obligations can be discharged to the same extent as money payment. A fundamental role of payments law is to provide legal clarity and certainty as to precisely what these payment mechanisms are, how they discharge the underlying obligation, and the effect of that discharge — i.e., as though it were payment in money.

Where Patron makes payment by ordinary check or funds transfer, payments law essentially provides that the underlying obligation of Patron to Painter is replaced with the obligation of Painter’s bank to pay Painter (i.e., an increase in his bank account balance) — Patron is now out of the picture, having discharged her obligation. Specialized payment law rules provide the precise legal mechanism linking the interbank processes in the check or funds transfer system to the underlying obligation between the payor and payee.

For the check system, Article 3’s rules on discharge provide that acceptance by a payee like Painter of an ordinary check does not discharge the underlying obligation of a payor like Patron but merely suspends it.47 If Patron pays Painter by check and Patron’s check is dishonored, Painter can still bring action to enforce the underlying obligation. If Patron’s bank honors the check and makes final payment, then the UCC provides that Patron’s underlying obligation to Painter is discharged to the same extent as payment in money.48 At that same moment in time, the UCC provides that the provisional credit given by Painter’s bank to Painter on the check’s forward collection become final.49 The underlying obligation of Patron to Painter is swapped out with the obligation of Painter’s bank to pay Painter (i.e., an increase in his bank account balance).

Similar rules apply for funds transfer systems, with slight differences. Article 4A’s rules on discharge provide that the underlying obligation of an originator/payor like Patron to a beneficiary/payee like Painter is discharged, to the same extent as payment in money, when the beneficiary’s bank accepts its sender’s payment order.50 At that same time, the UCC provides that Painter’s bank becomes obligated to pay Painter (e.g., by credit to Painter’s account or

hyperinflation or the value of foreign-denominated debt where the foreign country is subject to an extreme internal monetary event).

46. CORBIN, supra note 42, at § 67.3.
47. UCC § 3-310.
48. Id.; UCC § 4-215.
49. UCC § 4-215.
50. UCC § 4A-406.
other mechanism specified in Article 4A). Like with checks, the underlying obligation of Patron to Painter is swapped out with the obligation of Painter’s bank to pay Painter (i.e., an increase in his bank account balance). There is an important exception, however, to this general discharge rule for funds transfers. If Patron and Painter had agreed by contract for payment to be by some other mechanism like cashier’s check or cash and Painter is injured because payment was made by wire transfer (e.g., Painter’s bank becomes insolvent), then Patron’s underlying obligation is not discharged.52

This important exception to the general discharge rule highlights a key distinction between payment by paper check and by funds transfer: the ability of the payee to choose whether to accept or reject the payment method. Checks and other debit transfers (i.e., pull transactions) contain implicit consent by the payee, who must take action to accept it. In contrast, wire transfers and other credit transfers (i.e., push transactions) can occur without the payee’s acquiescence — a credit is made to the payee’s bank account. Perhaps a payee might not want a large-value wire transfer into her account with a seedy but convenient bank. The exception to the general discharge rule for funds transfers would be available for such a payee.

This distinction would have critical bearing in the FastPay Coin scenario. The typical stablecoin payment (and transfers of crypto assets more generally) tend to be analogous to credit transfers: balances can go up in one’s wallet without one’s consent to accept. Leveraging these carefully designed and well-established payment rules for the discharge of the underlying obligation can powerfully help advance a stablecoin’s economic purpose as a medium of exchange. Importantly, these payment rules do not box in payors and payees to use a particular payment method: the UCC’s provisions on the discharge of the underlying obligation may be varied by agreement between the payor and payee.53 That said, the commercial law of payments may not be a perfect fit for all stablecoin arrangements.54 Moreover, useful legal tools can also be found in the commercial law of investment securities.

D. The concept of a security entitlement

For certain stablecoins — specifically, those that reference a basket of assets or an asset other than cash deposits denominated in the local currency — there

51. UCC § 4A-404; 405. Article 4A further provides that if the beneficiary’s bank is obligated to make payment to the beneficiary and fails to do so, it may face liability for consequential damages if it had notice of the circumstances. UCC § 4A-404. Moreover, this liability cannot be varied or disclaimed by agreement. UCC § 4A-404(c).
52. UCC § 4-406(b).
53. UCC § 3-310; § 4A-406(d).
54. Part III infra discusses these limitations and areas of legal uncertainty.
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could be something more going on in their market usage than merely as a medium of exchange.

For example, suppose that the issuer of FastPay Coin broadly asserts that the coin is backed by a reserve of assets — a basket of various liquid securities is held in this reserve for every FastPay Coin that is created, building trust in its intrinsic value. That may be smooth marketing material, but legal questions abound. What exactly is the legal nature of the issuer’s commitment to the holders of FastPay Coin in relation to the underlying assets? What are the issuer’s obligations as to safekeeping and management of those assets? What are the terms of redemption for holders of FastPay Coin? Without legal clarity on these baseline questions, a stablecoin like FastPay Coin may be built on thin air and be dangerous for market usage.55

Building legal terms to address these questions from a blank canvas is no small undertaking. However, the commercial law of investment securities contains carefully designed and well-established concepts that can serve as useful building blocks for technologists to leverage — specifically, the legal foundation for the modern indirect securities holding system under the law of securities transfers (i.e., where ownership of securities is no longer evidenced by paper certificates, but by balances on the records of securities intermediaries).

The commercial law of securities transfers, particularly the 1994 revisions to Article 8, addresses the legal recognition and treatment of the indirect holding patterns for financial assets. Article 8 was revised in 1994 to create a sui generis form of property interest: the concept of a “security entitlement.”56 This commercial law concept refers to the rights and property interest of a person who holds a position in a security or financial asset through an account with an intermediary. These rights and interests run bilaterally vis-à-vis the customer and her own intermediary, as opposed to third parties like the issuer.57

55. In October 2019 the Financial Stability Board (FSB), which coordinates at the international level the work of national financial authorities and international standard-setting bodies in order to develop and promote the implementation of effective regulatory and other financial sector policies, published a note that sets out key regulatory issues of stablecoins. FIN. STABILITY BOARD, Regulatory Issues of Stablecoins, FIN. STABILITY BOARD (Oct. 18, 2019), https://www.fsb.org/wp-content/uploads/P181019.pdf. The paper was delivered to G20 Finance Ministers and Central Bank Governors, responding to the G20 Leaders’ Osaka Declaration, which noted the importance of monitoring developments in crypto assets and remaining vigilant to existing and emerging risks. Id. In the note, the FSB highlights: “An effective regulatory and supervisory approach needs to be able to identify, monitor and address potential risks in a reasonable range of scenarios and use cases. Such an approach requires a clear understanding of the individual components of a stablecoin arrangement and their interaction, including from a legal point of view. These components could include: entities/structures involved in issuing stablecoins; entities/structures that manage assets linked to the coins; infrastructure for transferring coins; market participants/structures facing users (e.g. platforms/exchanges, wallet providers) and the governance structure for the arrangement, including the role and responsibilities of a possible governance body and the underlying stabilisation mechanism used for the stablecoin.” Id. at 2-3 (emphasis added).

56. See James S. Rogers, Policy Perspectives on Revised U.C.C. Article 8, 43 UCLA L. REV. 1431 (1996).

57. UCC § 8-102(a)(17).
Importantly, an entitlement holder has rights under commercial law that exceed an ordinary contract claim against the intermediary. To the extent necessary for an intermediary to satisfy the claims of all its custodial customers with respect to a particular financial asset, all interests in that financial asset held by the securities intermediary are held for the entitlement holders. That is, they are not treated as property of the securities intermediary and, therefore, are outside the reach of its general creditors.\textsuperscript{58} Moreover, under certain circumstances, the claims of entitlement holders for a particular financial asset have a higher priority claim than even creditors of the intermediary with a security interest in that financial asset.\textsuperscript{59}

What flows from the clear legal recognition of a “security entitlement” (i.e., property rights that substantiate a claim against an intermediary) is also a clear market-enhancing set of commercial law rules. In particular, Article 8 specifies the basic core duties of the securities intermediary or system operator (e.g., legal obligations to hold sufficient financial assets to support the entitlements that it created\textsuperscript{60}) and provides a standard against which performance of these duties is to be measured.\textsuperscript{61}

Technologists can leverage Article 8’s robust and reliable rules to provide assurance to stakeholders and market participants that their coin is underpinned by clear legal terms that define and govern, with certainty and predictability, the individual components of a stablecoin arrangement (e.g., entities or structures involved in issuing stablecoins or managing assets linked to the coins) and their interaction with a certain level of protection.\textsuperscript{62}

Moreover, this key, overarching commercial law framework for security entitlements has for decades provided a robust and flexible legal foundation that accommodates market developments in securities holding and trading patterns. Efforts to further clarify the extension of this commercial law framework to support transactions and relationships between virtual currency businesses and consumers are also underway. The Supplemental Commercial Law for the Uniform Regulation of Virtual Currency Businesses Act (Supplemental Act) aims to provide certainty and finality to virtual currencies by adapting the well-established duties and rights of securities intermediaries and their customers

\textsuperscript{58} UCC § 8-503(a).
\textsuperscript{59} UCC § 8-511.
\textsuperscript{60} UCC § 8-504.
\textsuperscript{61} Like many other provisions in the UCC, these Article 8 provisions are intended to serve as a legal safety net: parties (i.e., the entitlement holder and the securities intermediary) may choose to diverge from its provisions by private contract and agree to their own terms as to the duties of the securities intermediary and manner of performance. UCC § 1-302. Article 8’s approach, therefore, is to provide a catch-all body of clear baseline commercial law terms, while granting some flexibility to commercial parties to support the development of nonstandard custodial arrangements.
\textsuperscript{62} Overlying Article 8’s provisions is the general provision under Article 1 that “every . . . duty within [the UCC] imposes an obligation of good faith in its performance,” which requires not only “honesty in fact” but also “observance of reasonable commercial standards of fair dealing.” UCC §§ 1-201; 1-304; 3-103; 4A-105; 8-102.
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under Article 8. This approach, if adopted by any state, would explicitly treat virtual currency as a financial asset and as investment property for purposes of Article 8 and Article 9 (the specialized articles of the UCC governing secured transactions) — leveraging what is working today and does not need to be invented again. As reflected in the Supplemental Act’s approach of leveraging the existing UCC definitions of “financial asset” and “investment property,” the UCC’s core principles were designed to grow with the market. They were uniquely built to have a long shelf-life and be flexible enough to support more than the specific market practices of its time.63

III. LIMITATIONS OF COMMERCIAL LAW AND THE ROAD AHEAD FOR LAW REFORM

Commercial law provides powerful tools for stablecoin innovators to build a sound legal basis for their coin, but it does not have all the answers and the solutions it contains may not always be a perfect fit. As discussed in Part I, private-sector system rules have an important role to play. This Part will spell out what that means for stablecoin innovators and how they can leverage publicly-available payment rules (i.e., those of systemically important U.S. payment infrastructures) as a starting point to build a sound and robust rule set tailored to the particularities of their coin and the market practices around it.

Additionally, important law reform projects are underway to consider modernizing the UCC to address areas of legal uncertainty. The extension of the market-enhancing commercial law principles discussed in Part II to new market practices emerging around stablecoins is not airtight. Roles and mediums in the stablecoin world can be different from the traditional financial system, and they may not easily fit within long-established commercial law concepts. Lingering legal uncertainty may also remain from the unexpected application of bankruptcy or insolvency law, particularly in the event of a stablecoin issuer’s bankruptcy or the insolvency of banks holding the coin’s underlying assets. This Part will also highlight these areas of legal uncertainties and the law reform projects underway to address them.

A. The role for private-sector system rules for stablecoins

The commercial law principles discussed in Part II provide important component parts to build a sound legal framework for stablecoins, but there are still foundational pieces missing. Particularly where a stablecoin is backed entirely by bank deposits denominated in the local currency, Article 8’s concept

63. UCC § 1-103(a) (“[The Uniform Commercial Code] must be liberally construed and applied to promote its underlying purposes and policies, which are: (1) to simplify, clarify, and modernize the law governing commercial transactions; (2) to permit the continued expansion of commercial practices through custom, usage, and agreement of the parties; and (3) to make uniform the law among the various jurisdictions.” (emphasis added)).
of securities entitlement may introduce more complexity than needed. How, then, could the basic legal structure of the assets underlying the stablecoin be built? To build a sound legal basis, stablecoin developers can usefully consider the mechanism of system rules (see Part I), tailored to the nuances of the coin.

In creating such a set of system rules, innovators do not necessarily have to start from a blank canvas — and overly creative drafting may undercut legal predictability and stability. Instead, stablecoin developers can look to established private-sector system rules as a starting point to conceptualize basic legal structures.

For one thing, the concept of linking numbers on a digital ledger with assets is nothing new — the ledger for the Clearing House Interbank Payments System (CHIPS, the U.S. private-sector large-value wire transfer system), digitally records the positions of participant banks that reflect the amounts that the participants may be paid out of a prefunded balance account maintained with the Federal Reserve Bank of New York, pursuant to terms in the publicly available CHIPS Administrative Rules and Procedures (CHIPS Rules). Under the CHIPS Rules, the prefunded balance account is not the settlement asset: finality for payment messages occur as they are released under a protocol, unrelated to disbursements from the prefunded balance account. Indeed, no participant has a direct claim to any part of the balance in the prefunded balance account.65

From this CHIPS structure, useful analogies to stablecoins can be drawn. The CHIPS ledger could be analogous to the DLT recording stablecoin balances. The balance in the prefunded balance account could be analogous to the asset underlying a stablecoin. The CHIPS operator could be analogous to a stablecoin issuer. The CHIPS participants could be analogous to coin holders. On the basis of these analogies and with some tailoring, one can find a starting point to build a set of system rules for a given stablecoin that defines the basic legal structure of the assets underlying the coin and details of the rights of coin holders. Leveraging the basic legal structure, with appropriate adjustments, of the robust, well-founded, and clear legal basis of the CHIPS Rules can help payments technologists to move fast but safely.

B. Remaining definitional challenges and threshold questions in commercial law

Stablecoins are not only changing business models and opening up new methods for commercial transactions, they are also beginning to challenge some of the foundational concepts that underpin commercial law. For example, is

64. CHIPS Rules and Administrative Procedures, Rule 13; see also CLEARING HOUSE INTERBANK PAYMENTS SYSTEM (“CHIPS”), Public Disclosure of Legal, Governance, Risk Management, and Operating Framework (June 2018).

65. Also, the New York Federal Reserve has no obligation to pay any amount except under limited circumstances in accordance with instructions from the CHIPS operator, the Clearing House. Rule 12(a).
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FastPay, the issuer of this Article’s hypothetical FastPay Coin pegged to the U.S. dollar, a “bank” under the UCC? For such a fundamental legal question, the answer is surprisingly unclear for edge cases that sit outside the core activities of taking deposits, making loans, and engaging in payments activities.

In the context of wire transfers, Article 4A’s circular definition is of limited help: “banks” are defined by their “engag[ement] in the business of banking,” which itself is not defined but reinforced by non-exclusive examples of traditional institutions (e.g., a savings bank, savings and loan association, credit union, and trust company) and specific activities (e.g., acting on behalf of customers in funds transfers).66 While these examples provide illustrative value, they reveal little substantive guidance as to what exactly constitutes the “business of banking.” Moreover, most of the case law addressing Article 4A involve traditional banks which are unequivocally within the scope of the “bank” definition.

The challenges raised by the UCC’s fuzzy definition of “bank” are not new or unique to stablecoins.67 However, this legacy issue will become thornier as the involvement of non-bank entities continues to grow in the retail payments space,68 including as stablecoin issuers and stablecoin service providers. This question has important practical consequences: the inclusion of a bank in a transaction can affect the rights of the parties and dictate whether a UCC article even applies.69

The application of the UCC can be limited by another fundamental legal question: is a stablecoin like FastPay Coin “money” under the UCC? The UCC defines “money” essentially as a currency issued by a central bank.70 Can the scope of this term be interpreted to include stablecoins that are linked to a currency issued by a bank or, moving further to the edge, a basket of different currencies issued by various central banks? And what if that basket also holds government securities? A transfer denominated in something other than a currency issued by a central bank — i.e., the transfer of something other than the UCC’s definition of “money” — may void the UCC’s application and reintroduce uncertainty.71

66. UCC § 4A-105; Official Comment 1 to 4A-105.
67. See, e.g., Whitaker v. Wedbush Sec., Inc., No. 1-18-1455 (Ill. App. Ct. 2019). In the context of checks, the definition of “bank” in Articles 3 and 4 is similar to the Article 4A definition. Yet, courts have generally found that broker dealers or investment managers are banks for Article 3 and 4 purposes. Treating such entities as banks for these purposes may be sensible, but the strange result is that a given entity may be considered a “bank” for Article 3 and 4 purposes but not for Article 4A purposes.
68. See COMMITTEE ON PAYMENTS AND MARKET INFRASTRUCTURES, Non-banks in Retail Payments (Sept. 2014).
69. See e.g., UCC § 4A-103 (defining payment order as an instruction to a bank).
70. UCC § 1-201(b)(24).
71. See, e.g., UCC §§ 4A-104(a),4A-103(a)(1) (defining “funds transfer” and “payment order,” respectively, in reference to money).
Recently launched law reform initiatives reflect the recognition that there is a need for commercial law to grow with the market. A study committee sponsored by the Uniform Law Commission and American Law Institute\(^72\) to examine the UCC and identify areas where amendments might be needed to accommodate new market practices around emerging technological developments is in its early stages.\(^73\) The United States is not alone in considering whether existing commercial law is in need of clarification and adjustment. In the United Kingdom, an industry-led task force has recently issued a statement with the goal of resolving uncertainty on the legal status of crypto assets under English law and Welsh law.\(^74\)

**C. Protection from insolvency**

Suppose a stablecoin issuer like FastPay were to build a robust and clear legal framework for its coin, leveraging the commercial law principles discussed in this Article. Each FastPay Coin issued is linked on a one-for-one basis to U.S. dollars that FastPay has set aside in an account with its bank under an escrow or trust arrangement, supported by precise contract terms. Can holders of FastPay Coin be confident that a coin is as good as a U.S. dollar?

Until a FastPay Coin holder cashes out its coin holdings and exchanges them for commercial bank money (i.e., deposits at a U.S. commercial bank) or physical cash, probably not. If a stablecoin issuer like FastPay were to enter into bankruptcy, there may be some legal uncertainty as to whether the U.S. dollar funds underlying FastPay Coins would be included in FastPay’s bankruptcy estate (with pro rata satisfaction or participation of all other creditors of FastPay), or if they can be excluded from the estate or segregated (thereby allocated in whole to FastPay Coin holders). In the event of the insolvency of banks holding the U.S. dollar funds underlying FastPay Coins, there may also be legal

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\(^72\) The Uniform Law Commission and American Law Institute are non-legislative bodies that provide U.S. states with draft legislation on substantive areas of commercial law.

\(^73\) The study committee was launched in recognition that technological developments (e.g., blockchain and DLT) have created the potential for commercial transactions that may not be adequately addressed by the current Official Text of the UCC. **PERMANENT EDITORIAL BOARD FOR THE UNIFORM COMMERCIAL CODE, Proposal of the Permanent Editorial Board for the Uniform Commercial Code for a Committee to Examine the Uniform Commercial Code for Changes Appropriate to Recognize Technological Developments** (Dec. 18, 2018).

\(^74\) In May 2019, the task force launched a public consultation with an end goal of preparing an authoritative legal statement that will “either demonstrate that English private law already provides sufficiently certain foundations in relation to the relevant issues, or will highlight particular areas of uncertainty that may be ripe for further clarificatory steps to be taken. **UK JURISDICTION TASK FORCE OF THE LAW TECH DELIVERY PANEL, Public Consultation: The Status of Crypto Assets, Distributed Ledger Technology, and Smart Contracts under English Private Law** (May 2019). In November 2019, it issued a legal statement concluding that, though highly dependent on particular circumstances, as a general matter under English law crypto assets are to be treated in principle as property (though they cannot be physically possessed) and smart contracts can be, or be part of, binding legal contracts. **UK JURISDICTION TASK FORCE OF THE LAW TECH DELIVERY PANEL, Legal Statement on Crypto Assets and Smart Contracts** (Aug. 2019).
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uncertainty as to whether trust or escrow case law or equitable principles of fiduciary duties and agency would give priority for those underlying assets to coin holders.\textsuperscript{75}

In other words, it may be unclear whether the assets underlying FastPay Coin are insulated from the outside world: commercial law, though precise and predictable, sits within a broader legal context that usually is not so clear and certain.\textsuperscript{76} If such risk exists, the legally imprecise stability marketed by stablecoin issuers like FastPay will leave coin holders in for a bad surprise when they realize the extent of their exposure to the issuer’s or custodian banks’ financial health. Even ambiguity as to this risk can make stablecoin arrangements vulnerable to a loss in confidence.

With the goal of reducing legal risk to the payment system, the Executive Committee of the Uniform Law Commission established a separate study committee in July 2019 to consider the need and feasibility of uniform state legislation on special deposits. Generally speaking, special deposits are account arrangements that resemble a prefunded letter of credit with three parties: a funder (e.g., perhaps, a stablecoin issuer like FastPay), a bank (e.g., perhaps, a bank holding assets underlying FastPay Coins), and a beneficiary (e.g., perhaps, a FastPay Coin holder that seeks to cash out its coin holdings with the issuer). Any uniform or model act on special deposits that may emerge from this law reform initiative could provide critical greater legal clarity that a special deposit is not assignable, is not subject to legal process, and may not by offset by the bank\textsuperscript{77} — creating important legal certainty that could help offer useful legal certainty and protection to certain stablecoin arrangements like FastPay Coin’s.

CONCLUSION

The legal questions this Article raises are not necessarily novel, but their solutions draw upon commercial law tools that have traditionally been siloed under different bodies of law and have undergone separate paths of development. Commercial law relies upon the different legal labels of investment securities and payments — and a different commercial law treatment flows from that categorization. However, the economic realities emerging from technological developments like stablecoins are blurring the boundaries between these legal categories. Arguably, one could characterize a given crypto asset as an investment security — e.g., bitcoin could be viewed as a zero-coupon perpetual

\textsuperscript{75} For the seminal discussion on critical areas of legal uncertainty in this space, see Letter of Joseph H. Sommer to the Uniform Law Commission, re Proposed Study Committee on Special Deposits, 15 December 2017. See also Presentation of Joe Sommer, Special Deposits, before the Business Law Section of the American Bar Association’s UCC Joint Committee (Apr. 12, 2018) [hereinafter “Sommer Presentation”].

\textsuperscript{76} For an example of the legal uncertainty in such instance, see the discussion of NML v. Argentina, 727 F.3d 230, 245 (2d Cir. 2013) in the Sommer Presentation, supra note 75.

\textsuperscript{77} Id.
security — or a financial asset. And, arguably investment securities could be viewed as a payment instrument — i.e., instructions directing the transfer of funds (in the amount of interest or principal) through the banking system upon presentment, just like checks. The economic objectives around stablecoins and the market practice around them — i.e., where the stablecoin is backed by a basket of various \textit{financial assets} but the stablecoin is intended to be used as a \textit{medium of exchange} — can further blur the lines traditionally drawn between the commercial law of investment securities and around payments.

It is around this facet of stablecoins — economic objectives and market behavior that tend to blur the lines between traditional legal categories — that lawyers advising banks and financial sector stakeholders would serve clients well to raise legal questions. The critical threshold issue is one of legal recognition. Is a given stablecoin intangible property (e.g., uncertificated securities) or a claim (e.g., bank deposits)? It must be \textit{something} that is recognized by the law. And precisely what that may be — property, a claim, or something else — has important practical consequences for market participants (e.g., choice of law\textsuperscript{78}).

As this Article has shown, both property aspects and monetary aspects of commercial law can be leveraged to create a sound legal basis to support a stablecoin arrangement. Yet, the question remains as to what a given coin actually is as a legal matter: is it a payment instrument (designed to be used as medium of exchange) or a security (designed as an investment or risk-shifting medium)? As the market has learned from Libra’s radical proposition, stablecoin arrangements can pose conceptual problems and create new incompatibilities that did not previously exist in what had been the simple, clear-cut world of payments and the separate world of investment securities.

Nevertheless, the UCC was designed to anticipate innovations in market practices and business models. It is this legal insight, as well as awareness of the commercial law tools available within the UCC, that will help clever stablecoin innovators to quickly but safely build a sound legal basis for market practices around their coin and enable innovative business models to thrive within our financial system.

\textsuperscript{78} Though outside the scope of this article, choice of law is a perennial issue with important practical consequences. Article § 8-110 has choice of law rules for investment securities, supplemented by The Hague Securities Convention (which explicitly excludes “cash” from the definition of “securities” in Article 1(a)); Article § 4A-507 has its own separate choice of law rules for funds transfers. What happens if a stablecoin seeks to straddle both Articles 4A and 8?