Amendments to the Uniform Commercial Code: Implications for Real-Time Payments

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Abstract

This article provides an overview of real-time bank-to-bank payments in the United States, examining the recent launch of FedNow and the challenges it faces in gaining traction against established payment platforms like PayPal and Zelle. Although bank-to-bank real-time payment solutions have gotten traction around the world, the U.S. has lagged behind. The core issue lies in the architecture of account-to-account (A2A) payment systems. Such systems necessarily require the coordination of multiple parties and their respective financial institutions, resulting in significant transaction frictions. The adoption of the new Article 12 of the Uniform Commercial Code (UCC) creates an opportunity for the introduction of a new direct and entirely digital real-time payment solution. These changes pave the way for more direct, efficient, and real-time payments and may pave the way to broader adoption of real-time payments in the U.S. The article draws a parallel to book entry transfers in the securities industry and argues that direct real-time payment through controllable payment intangibles (CPIs), the primitive created by the amendments to the UCC, may achieve similar efficiencies. It concludes by emphasizing that CPIs can coexist with A2A systems.

Keywords: real-time payments, account-to-account transfers, UCC, Article 12, controllable payment intangibles

The United States Remains a Laggard In Use of Real Time Payments

Real-time payments have long been the subject of fascination in the fintech community, and the subject of many a fintech venture capital thought piece. This summer brought the much anticipated launch of FedNow. As with the launch of RTP by The Clearing House in 2017, a wave of articles previewed the launch and identified the many ways that real-time payments might change the industry.

Still, whatever changes might eventually flow from broader availability of real-time account-to-account money movement, they are not making much of a dent at the surface. Consumers are still much more interested in PayPal and Zelle than they are FedNow or RTP. And volume growth is likely to be slow if the experience of RTP is any guide: in 2021, RTP transactions accounted for less than one-tenth of a percent of all non-cash transaction volume in the US, at less than $60bn of a total $129tn.

Meanwhile, real-time payments are an industry phenomenon outside of the United States. India's Unified Payments Interface (UPI) network launched in 2016, just a year before The Clearing House introduced RTP, and UPI processed $1.5tn worth of transactions in 2022. Brazil followed with the introduction of Pix in 2020 (mid-pandemic), and the network processed nearly $260bn of volume in April of 2023 alone. The stunning rise apparently prompted Visa to buy Pismo.

The obvious question is what makes the US an outlier in the adoption of real-time payments. At Nyca, we think that the answer can be traced back to limitations in the core architecture of RTP and FedNow

relative to the ways that governments, firms, and households pay one another today. The real-time payments solutions that have rolled out in the United States operate on an account-to-account basis. They offer only a modest increase in speed relative to existing account-to-account systems also offered by the Federal Reserve, The Clearing House, and others, and they do not address the challenges with account-to-account systems that lead Americans to rely on cash and checks in volumes that dwarf the cumulative total of the existing real-time electronic solutions.

As this post explains, however, we believe that a profound change in the payment landscape in the United States is at hand. Changes to the Uniform Commercial Code (UCC) make it possible to replace legacy instruments with fully digital (or nearly fully digital) alternatives. We think that entrepreneurs who understand and build around these challenges will bring the US closer to the real-time payment world that RTP and FedNow have not, and in our view, will not, deliver on their own.

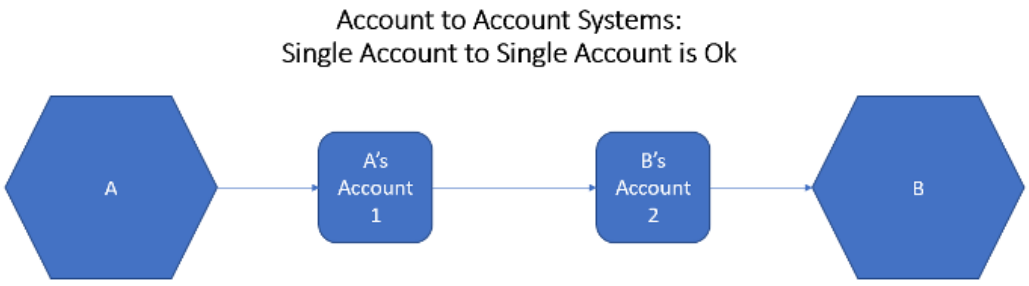
How does money move today?

In the US, parties to a transaction can only definitively pay one another by moving money from an account owned by the payor to an account owned by the payee. Although US law allows parties to create and exchange physical bearer instruments such as cash and checks, at the moment, it does not allow parties (or their financial institutions) to create and exchange digital payment instruments. This means that in order for parties to exchange value electronically, they must (a) have an account with a common counterparty (e.g., PayPal, Square), (b) engage a party that will take on the obligation to move funds from one person to another on an end-to-end basis (e.g., Western Union), or (c) have an account at a financial institution that can execute a transfer to an account held by another financial institution. This has been true for so long that most people don't give this model a second thought, but it is not inherently the only way to facilitate payments.

By definition, account-to-account (A2A) systems involve more parties and more transaction frictions than direct (i.e., tokenized) payments between counterparties. Transactions on an A2A basis involve at least three steps: (1) collecting payment instructions from the party being paid, (2) relaying those instructions to the payor's custodian, and (3) confirming that the funds were received. This requires several layers of infrastructure, including but not limited to the following:

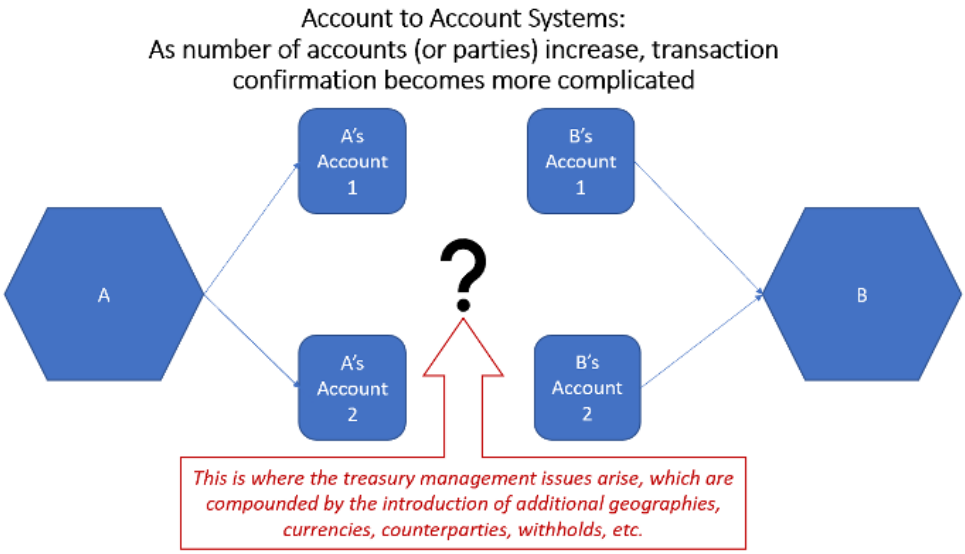
- Sender to custodian instruction
- Rails connecting one custodian to another
- Tools for reconciliation associated with all the transactions in a party's account
- Tools to facilitate the sync between parties' accounts and custodians' ledgers
- Risk mitigation tools for all steps in the transaction process

Transacting in this way is difficult for one party that has multiple banks, and that difficulty is compounded when multiple parties are involved. An A2A payments system with many parties presents countless opportunities for added complexity. For example, parties may operate in different countries and therefore transact in different currencies. Their respective custodians may not share a common intermediary, requiring those counterparties to find another mutual counterparty (e.g., a correspondent bank). These challenges are frequently compounded by limitations in the technological infrastructure on which those custodians (generally banks) rely—i.e., batch processing rather than real-time processing—but the fact that parties often have multiple accounts across multiple custodians pertains regardless.



Step 1: A asks its bank to send funds from its account to B's account

Step 2: B confirms to A that funds have been received



What progress has been made towards achieving real-time payments on A2A rails?

The companies that exist in B2B payments today have all identified ways to make the A2A system work better. Various risk systems, real-time ERP access, ledger-as-a-service companies and settlement layers have all been built to bring A2A payments closer to the real-time ideal. While these innovations have made A2A payments work better, these systems can never work as efficiently as direct transfers between counterparties.

The central bank's proposed solution to real-time payments is the FedNow initiative, which officially launched on July 20th with over 50 banks and service providers on board. FedNow was initially announced by the Fed in 2019 as a new payment rail to facilitate real-time payments for all financial institutions, regardless of balance sheet size. The below diagram illustrates the proposed payment flow over the FedNow rails, *in simplest form*:

The numbers in the diagram above correspond to the steps required to complete a payment over FedNow rails. These steps are summarized below (and fully detailed by FRB services here):

1. A sender initiates a payment by sending a payment message to its financial institution through an end-user interface outside the FedNow Service. The sender's financial institution is responsible for screening the payment according to its internal processes and requirements.
2. The sender's financial institution submits a payment message to the FedNow Service.
3. The FedNow Service validates the payment message, for example, by verifying that the message meets the appropriate format specifications.
4. The FedNow Service sends the contents of the payment message to the receiver's financial institution to seek confirmation that it intends to accept the payment message.
5. The receiver's financial institution then sends a positive response to the FedNow Service, confirming that it intends to accept the payment message.
6. The FedNow Service debits and credits the designated master accounts of the sender's and receiver's financial institutions (or their correspondent banks), respectively.
7. The FedNow Service sends a payment message forward to the receiver's financial institution with an advice of credit and in parallel notifies the sender's financial institution that settlement is complete.
8. The receiver's financial institution credits the receiver's account (which happens outside the FedNow Service).

This payment flow illustrates the inherent friction in A2A rails. The need to communicate via financial institutions in order to complete a payment creates more than double the number of steps than otherwise would be necessary for a more direct method of transacting between two parties. In the following section, we detail how recent changes to the legal code around payments in the US—the amendments to the Uniform Commercial Code—could reveal an alternative payment rail that eliminates much of the complexity in the above steps 2 through 8.

What could the world look like given the changes to the Uniform Commercial Code?

A recent development in payments law may present an alternative to the world of A2A payments we live in today. The UCC, or the Uniform Commercial Code, is an area of payments law that while relatively obscure, is a core part of the institutional plumbing that makes commerce possible in the United States. The UCC governs everything from how title to money passes hands to how to resolve competing

interests in everything from securities to restaurant equipment. As of October, the Uniform Law Commission published amendments to the UCC that may obviate the need for the highly complex A2A system we have today. These amendments have already been enacted in 11 states and introduced in 17 more as of October. Four states even adopted the new rules when they were in draft form.

The amendments to the UCC create a new taxonomy for digital assets and devise a set of rules on how to ascertain ownership of such assets. They achieve this by doing three things:

1. Recognizing the existence of fully digital assets (including electronic money, controllable accounts, controllable payment intangibles, and controllable electronic records);
2. Creating a "take free" rule for certain digital assets that mirrors the "take free" rule that applies to money and other bearer instruments;[1] and
3. Devising a set of rules that revolve around the newly defined concept of "control" to resolve disputes about which party has the strongest claim to certain digital assets.

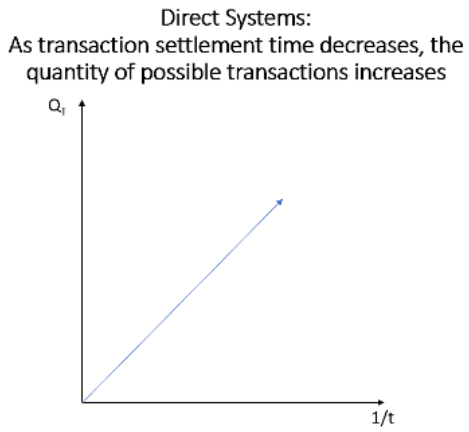
The ripples from the amendments to the UCC may be felt for years to come. The most immediate, in our view, is to further open the door to the routing of transactions outside of the A2A payment networks maintained by central banks around the world.

As detailed above, prior to the adoption of these amendments, there have only been two ways to ensure that a transaction between two parties is free and clear from claims by a third party: (1) rely on banks to intermediate the transaction, or (2) move large piles of money (or fungible commodities). After the adoption of the UCC amendments, firms and people can take direct possession of certain controllable payment intangibles (CPI). A CPI is a digital representation of a promise to pay a specified party. Parties may choose to direct the proceeds to a particular bank or financial intermediary, but they do not need to rely on an intermediary to transfer money. The CPI itself ensures that the underlying money cannot be double spent.

These changes create the potential for a new type of architecture for B2B payments that could bring the payments system much closer to real-time than A2A payments ever could. In short, under this construct, balances could be maintained on a single ledger, while the CPIs travel between counterparties. In this model, the CPI is a ledger entry, or a token, that allows the underlying money to sit on a single ledger. This type of system would eliminate a lot of the frictions inherent in the A2A model as described above (i.e., steps 2 through 8 in the FedNow diagram, and exponentially more steps required by the settlement process to Fed master accounts today), and therefore help us get closer to achieving real-time payments.

The graph below demonstrates the impact of the efficiencies achieved by a direct payment system. As the time (t) it takes to settle a transaction decreases, the quantity of transactions that can be executed in that increment of time increases. Ultimately, as we move closer to real-time payments—as frictions are eliminated and the time it takes to execute a transaction approaches zero—the quantity of transactions that can be executed in a given time period grows dramatically.

[1] The UCC amendment creating a "take free" rule for digital assets means that the controller of a digital asset takes that digital asset free of any security interest, except to the extent that the controller colluded with the prior holder to deprive the secured party of its interest in the property.



As a proof point for a similar model that already exists, this is how the securities industry works today with the DTC serving as the 'single ledger'. The Depository Trust Company (DTC) provides settlement services for virtually all equity, corporate and municipal debt trades and Money Market Instruments in the US.[2] The payment or transfer of securities ownership also occurs at the DTC. Thus, when securities are traded, the underlying securities do not actually change hands. Instead, their tokenized instruments move from party to party. In fact, the DTC was established in 1973 with the purpose of reducing costs and providing clearing and settlement efficiencies by immobilizing securities and making ledger changes to securities ownership.[3] What we are suggesting with direct payments stems from a similar desire to minimize inefficiencies in B2B payments by creating a single ledger for global payments with tokenized instruments trading hands on top of that ledger.

All of this being said, there will surely be use cases for both A2A payments and direct payments in the foreseeable future. As venture capitalists, it is our job to think about what these use cases might be, develop a view of what the payments system might look like 10+ years in the future (with the associated probabilities), and invest in companies that are helping to build that future. For this reason, we will continue investing in companies supporting both the A2A and direct states of the payments system.

[2] https://www.dtcc.com/settlement-and-asset-services
[3] https://www.dtcc.com/about/businesses-and-subsidiaries