Liquidity Transformation Always Finds the Path of Least Regulation

Bill Nelson | September 23, 2021

Banking is inherently unstable. The business of banking in a nutshell is borrowing deposits and using the funds to make loans. If too many depositors ask for their money back at the same time, the bank will default because it doesn't have the money on hand, it has lent it out. So if you are a depositor and you think other depositors are going to demand their money back, it makes sense to withdraw your money first before the bank fails. Since each depositor knows this, a deposit run can develop simply because there is fear of a deposit run. That's unstable.

The instability has been well understood for as long as there have been banks. In modern times, bank regulation and deposit insurance have reduced the instability. Capital regulations require a bank to have a lot more assets than liabilities so that even if the bank suffers losses, it still has assets to cover its borrowings (including the deposits owed to customers). Liquidity regulations require banks to hold safe and highly liquid assets—basically short-term loans to the federal government—so that each bank has funds on hand to cover deposit withdrawals (or other demands on its funds) for long enough for the bank to sell or borrow against its other assets, if necessary, to generate cash to meet ongoing deposit withdrawals. Lastly, banks are required to purchase federal insurance for their deposits, so that most depositors are assured their money is safe no matter what happens to the bank.

Banking is also profitable. People like to deposit their cash at a bank because they know it is safe and its value is stable: every dollar deposited will still be worth a dollar when it is withdrawn. Plus, they can withdraw their cash at any time (as long as they don't all try to withdraw their cash at once). People also value the transaction services that a bank provides (i.e., the ability to pay and receive payments from others). Deposit rates are lower than interest rates on other short-term investments to reflect the value of these money-like features. On the other side of the balance sheet, loan-making requires expertise and extensive due diligence to make sure the borrower is credit-worthy—loans are "informationally intensive"—and loan rates cover those added cost. Loan rates also include risk premiums and liquidity premiums and often term premiums because loans are risky, illiquid and often longer-term. Due to these characteristics of deposits and loans, banks are engaging in what is called "liquidity" or "maturity transformation" when they fund loans with deposits – funding long-term or illiquid assets with short-term liabilities. For all these reasons, loan rates are generally above deposit rates. Banks earn the spread.

Regulations and deposit insurance reduce bank profitability. Capital is more expensive than deposits as a source of funding. Liquid assets yield less profit than bank loans. And deposit insurance is costly.

It is profitable for *any* institution, not just banks, to fund itself with deposit-like liabilities (liabilities where the creditor is seemingly guaranteed to get at least a dollar back for every dollar invested) and invest in risky and illiquid assets. And it is even more profitable if the intermediation avoids costly regulations and deposit insurance. As a result, there is always an incentive for maturity and liquidity transformation to take place outside of regulated, federally insured banks. But when that happens, the result is always increased instability in the financial system.

It isn't unstable right away. Usually, the institutions claim to have found a new, innovative, and safe way to take in deposit-like investments and turn a profit. People that raise concerns are accused of not understanding how things are different this time and being "anti-innovation."

We saw this dynamic in the years before the Global Financial Crisis. Prime money funds promised investors that every dollar they invested would be worth a dollar, plus they'd earn interest. The money funds invested in, among other things, asset-backed commercial paper that was supposedly perfectly safe because it was backed by large amounts of asset-backed securities. The asset-backed securities were safe because they were backed by large amounts of subprime mortgages. The mortgages, which were made by mortgage brokers, not banks, were safe, or at least safe enough, because they'd only go bad if housing prices fell and a lot of people became unemployed. Between 2002 and 2007, credit intermediation through the shadow banking system grew by about 75 percent.

In the end, it was all just a complicated way to fund loans with deposits without regulation or insurance. And, of course, it proved unstable. Once "investors" in prime money funds realized that they might not all get their money back, they all headed for the exit at once, and the darkest days of the Global Financial Crisis began. Since then, prime money funds have no longer been allowed to treat investments like deposits; instead of the value of a share being pegged to a dollar, the value moves up and down as the funds' investments fluctuate in value.

Liquidity transformation outside the banking system is starting up again. This time, it is FinTech that makes everything different. This time, digital dollars and uninsured deposits at FinTech banks really will be perfectly safe. The new digital crowd has it all figured out. Anyone doubting it either doesn't understand or is afraid of competition or innovation or both.

This time, we are told, stablecoins and uninsured deposits at FinTech banks are safe because they aren't used to fund loans, they are invested 100 percent in "reserves." And that does sound safe. In banking, "reserves" means vault cash and deposits at the Fed, both of which are very short-term loans to the government that don't fluctuate in value and are perfectly liquid. Moreover, many remember from their college money and banking courses that we have a "fractional reserve banking system" where banks "magically" – and some would say recklessly or perhaps even unconstitutionally – create money by loaning out deposits while only holding a fraction as reserves. Being backed 100 percent by "reserves" then, as stablecoin issuers and FinTech banks assert they are, must be the opposite. It's not only safe, it's an act of defiance against the whole evil banking system.

Those of us that have seen this show before, who spent years cleaning up the pieces from the Global Financial Crisis, who have worked to make the financial system safer, are not surprised at all to learn those "reserves" aren't at all perfectly safe and liquid assets. No, they are once again risky and illiquid assets.

Consider the two largest stablecoin issuers in the United States, Tether and USDC. Together they have issued about $100 billion in coins. In both cases, people who buy a stablecoin using real money are told that they can get all their money back whenever they want it. In that sense, these stablecoins are just like a demand deposit at a bank. Recently, however, they've been forced to provide information on the "reserves" that they have invested in using the dollars people have given them in exchange for their stablecoins, and the reserves don't look anything like the "reserves" that banks hold.

Table 1		
Tether's Reserve Disclosure as of June 2021		
Cash & Cash Equivalents & Other Short-Term Deposits & Commercial Paper:		
	$billions	percent
Commercial Paper & Certificates of Deposit[2]	30.8	49
Cash & Bank Deposits[3]	6.3	10
Reverse Repo Notes[4]	1.0	2
Treasury Bills[5]	15.3	24
Subtotal		
Secured Loans (none to affiliated entities)	2.5	4
Corporate Bonds, Funds & Precious Metals	4.8	8
Other Investments (including digital tokens)	2.1	3

[2] Commercial paper & certificates of deposit comprises commercial paper (short-term debt issued by corporations) and certificates of deposit (negotiable short-term deposits issued by financial institutions). The average duration of items in this category is 150 days and the average rating is A-2.

[3] Cash & bank deposits comprises: cash deposits at financial institutions and call deposits, i.e., deposits that may be withdrawn with two days' notice or less; fiduciary deposits, i.e., deposits made by banks on behalf of and for the benefit of members of the consolidated group; and, term deposits, i.e., deposits placed by members of the consolidated group at its banks for a fixed term.

[4] Reverse repo notes comprises reverse-repurchase agreements that have been entered into by means of the purchase of structured notes or fund vehicles whose ultimate issuer or guarantor has a rating of A-2 or better.

[5] Treasury bills comprises U.S. Treasury bills with a maturity of less than 90 days.

As shown in Table 1, More than half of Tether's "reserves" are invested in commercial paper and certificates of deposit.[1] When Tether invests in commercial paper, it gives a company money and at some later time, from the next day to a year later, the company gives Tether back the money plus interest. Sounds like a loan, doesn't it? That's because there is no meaningful difference. Plus, more than half of Tether's commercial paper is so risky that even prime money funds can't hold it. Another 10 percent of Tether's "reserves" is bank deposits, and yet another 10 percent is corporate bonds, precious metals, digital tokens, and "other" assets. Less than a quarter of Tether's reserves consists of Treasury bills, the short-term loans to the federal government of the sort that most people mean when they use the term "reserves."

Until earlier this summer, USDC stablecoin, which is issued through a partnership between Coinbase and Circle, was marketed as being backed by U.S. dollars. Circle, too, recently provided additional information on its reserves (Table 2). As of last month, Circle states that nearly all (92 percent) of its reserves are cash and "cash equivalents" and only 2 percent commercial paper.[2] That sounds pretty good until you read the fine print. "Cash Equivalents" includes *any* security with a maturity less than or equal to 90 days, which includes most commercial paper. The

[1] See Independent Accountant's Report by Moore Cayman, dated 6 August 2021, available at https://tether.to/wp-content/uploads/2021/08/tether_assuranceconsolidated_reserves_report_2021-06-30.pdf

[2] *See* Independent Accountant's Report by Grant Northam, dated September 20, 2021, available at https://www.centre.io/hubfs/pdfs/attestation/2021%20Circle%20Examination%20Report%20August%202021%20Final.pdf?hsLang=en

"commercial paper" line listed separately only includes CP with maturity between 91 days and 13 months. So some unknown fraction of that 92 percent in "cash & cash equivalents" is actually invested in commercial paper.

Table 2		
Circle's Reserve Disclosure as of August 2021		
USDC Reserve Breakdown	$billions	percent
Cash & Cash Equivalents[1]	25.3	92
Corporate Bonds[2]	0.4	1
Yankee CDs[3]	1.3	5
Commercial Paper[4]	0.5	2
Total [6]	**27.5**	**100**
[1] Cash and cash equivalents include U.S. dollar deposits at banks and short-term, highly liquid investments that are readily convertible to known amounts of cash and have a maturity less than or equal to 90 days from purchase, as consistent with generally accepted accounting principles (US GAAP).		
[2] Unsecured debt obligations of corporations and financial institutions with a maturity of less than or equal to 3 years. Minimum S&P rating of BBB+; maximum maturity of 3 years.		
[3] USD denominated Certificates of Deposit issued in the US by branch(es) of Foreign Banking Organizations. Minimum S&P rating of S/T A1; maximum maturity of 13 months.		
[4] Unsecured debt obligations of corporations and financial institutions with maturities between 91 days and 13 months. Minimum S&P rating of S/T A1; maximum maturity of 13 months.		

At present, Tether, Coinbase, and Circle are earning the interest being paid on their "reserves" while paying no interest on the funds that they received for their stablecoins. But as soon as any of the risky assets that they have invested in go bad, they will not have the wherewithal to repay all those stablecoin holders because they don't have sufficient capital cushions to absorb investment losses nor enough liquidity to meet massive outflows immediately. Those holding stablecoins – all stablecoins – will all demand their real dollars back at the same time, and the house of cards will collapse again.

Indeed, as discussed in a recent interview of Tether's CTO and General Counsel on CNBC, there are rumors that Tether has invested in the commercial paper of Chinese companies.[3] While Tether has issued a statement that it is not holding any of Evergrande's (a large, financially troubled Chinese financial institution) commercial paper, if it is holding the commercial paper of other Chinese financial institutions, it would be exposed to losses should any of those firms default.[4]

Liquidity transformation outside the traditional banking system may also soon begin at Wyoming's Special Purpose Depository Institutions (SPDIs). SPDIs can accept deposits, offer payment services and provide debit cards, but their deposits are not insured. They are not insured because the state of Wyoming requires that the SPDIs invest

[3] See https://www.youtube.com/watch?v=ZBEqyiO35cQ.
[4] See "Stablecoin Tether says holds no Evergrande commercial paper," Reuters, September 16, 2021. https://www.reuters.com/business/finance/stablecoin-tether-says-holds-no-evergrande-commercial-paper-2021-09-16/.

only in "reserves," thus rendering deposit insurance unnecessary.[5] The deposits are no different than ordinary bank deposits: they are marketed as safe and stable, and they are available on demand. Except "ordinary" bank deposits are insured.

It is not clear what "reserves" means, though. The regulation provides a list of allowable assets that includes reserves balances and Treasury securities (which qualify as level 1 High Quality Liquid Assets (HQLA), a category of assets that can be used to satisfy federal liquidity regulations), as well as other things that do not count as level 1 HQLA (like munis and most agency MBS).[6] However, the regulation then states that only level 1 HQLA is allowed except for any other asset consistent with "safe and sound banking practices" approved by the Wyoming Banking Commissioner. Any asset a bank is legally allowed to hold that hasn't gone bad – boat loans, construction loans, etc. – is consistent with "safe and sound" banking practice. The Wyoming Banking Commissioner has not indicated what assets he would allow.

Nor have any of the SPDIs, which have not yet opened for business, stated unambiguously what they will invest in. Kraken, for example, the first institution to get an SPDI charter, acknowledges in a website FAQ on deposit insurance that a customer's investments will not be FDIC-insured and then goes on to say:

> However, Kraken Bank will be fully reserved (i.e., no fractional reserve banking or associated re-hypothecation and lending activities). All assets will be kept on hand and available as cash or the least risky, most liquid cash equivalents. We will also maintain significant capital reserves and surpluses of our own capital to cover the full balance of all clients, even in the event of a "bank run."[7]

Because Kraken does not publicly disclose the assets into which customer deposits will be invested, or otherwise substantiate its claim that they are "the least risky, most liquid cash equivalents," we contacted Kraken customer service and asked what "Cash Equivalents" means. We were told "stocks, bonds, and mutual funds."[8]

Is this beginning to sound familiar? Offer a deposit-like product that is going to be so ultra-safe that it doesn't need insurance, using a new technology that makes everything so different the institution doesn't need to be subject to insured-commercial-bank-level regulations. Use the funds received to invest in assets that turn out not to be safe and liquid. Earn the spread.

WHY NOT BE TRANSPARENT?

All the parties involved – the stablecoin issuers, the SPDIs, the Wyoming Banking Commissioner – have every incentive to be completely transparent. The stablecoin issuers want customers to be confident that their coins are safe. The SPDIs want customers to know that their deposits are safe. The Wyoming Division of Banking wants SPDIs to be seen as so safe that they don't need FDIC insurance.

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[5] For example, Kraken states that it "is required by Wyoming law to maintain 100% reserves of its deposits of fiat currency at all times." https://blog.kraken.com/post/6241/kraken-wyoming-first-digital-asset-bank/. Avanti states that it offers "full-reserve requirement for dollar deposits". https://avantibank.com/.

Also see Wyo. Stat. 13-12-105: "At all times, a special purpose depository institution shall maintain unencumbered liquid assets valued at not less than one hundred percent (100%) of its depository liabilities."

[6] Wyoming SPDI Rules (05-21), section 9, available at https://drive.google.com/file/d/1EVLJjkvgV3--gWnie72fJwn_9VwVaJLC/view.
[7] https://www.kraken.com/en-us/bank.
[8] Our exchange with Kraken customer service is available on request. It is, of course, possible that the customer service representative was incorrect.

The only reason to be anything but fully transparent is to be able to invest in higher-yielding assets that are inconsistent with the message that the stablecoins or uninsured deposits are backed by vanilla, ultra-safe, highly liquid assets. There are no trade secrets involved in investing in Treasury bills.

Nevertheless, not only does the lack of transparency persist, Tether is taking legal action to avoid being transparent. Tether recently petitioned the New York Supreme Court to block a Freedom of Information Law request from the publication CoinDesk for documents detailing the composition of Tether's reserves over the past few years.[9] Tether states that releasing the documents would put it at a disadvantage relative to its competitors.

Similarly, there is no reason for the Wyoming regulations to define liquid assets as anything the Banking Commissioner says they are. Such ambiguity and unfettered secret discretion is generally not present in federal banking regulations. When the Fed requires a bank to hold a certain quantity of reserves against deposits, it is completely clear that reserves are defined as vault cash and deposits at a Federal Reserve Bank. There is no "other things the Fed defines" category, secret or not. The banking agencies have been unambiguous about what assets count as level 1 HQLA for the purposes of satisfying liquidity requirements or equity for the purposes of satisfying capital requirements. Will the Commissioner decide that Wyoming state or local municipal debt is liquid, or investments in equity mutual funds, or deposits at a Wyoming bank? Has the Commissioner already approved some assets – will those decisions be made public? Why not provide a definitive list now?

OUTLOOK

There is reason to be optimistic that a financial crisis will be avoided this time. All the U.S. financial regulators appear deeply concerned about the financial stability and other risks that are building. In July, the President's Working Group on Financial Markets met to discuss the rapid growth of stablecoins and the possible risks they present to end users, the financial system and national security. The Secretary of the Treasury underscored the need for government to act quickly to ensure that there is an appropriate U.S. regulatory framework in place, and the PWG indicated that it expects to issue recommendations for such a framework in the coming months. In addition, Fed Chair Powell has stated that the Fed will be issuing a research paper this month discussing crypto currency, including stablecoins. Finally, stablecoins and their issuers have been the recent target of the attention of the SEC. Chairman Gensler has said that he believes many are operating illegally as unregistered investment securities, and just recently, Coinbase revealed that the SEC is investigating the crypto exchange's planned offering for crypto holders to lend out stablecoins and earn interest as constituting an unregistered investment.

[9] In the Matter of the application of iFinex Inc. et al against State of New York, Office of the Attorney General, regarding Freedom of Information Law Requests G000260 and G000261, filed August 30, 2021. See also "Tether Asks Court to Block NYAG From Releasing Documents to CoinDesk," CoinDesk, August 31, 2021. https://www.coindesk.com/policy/2021/08/31/tether-asks-court-to-block-nyag-from-releasing-documents-to-coindesk/