

Federal Reserve Bank of Cleveland

The Dark Side of Liquidity

by Joseph G. Haubrich and João Cabral dos Santos

Lord Byron once wrote that “ready money is Aladdin’s lamp.” And who can deny that liquidity—having enough ready cash to pay your debts when they come due—is a good thing? But even at a simple level, people recognize the sacrifices that must be made for liquidity and will often trade, for example, an extremely liquid nest egg for a quite illiquid house, and consider that they have gotten the better of the deal.

In a broader context, the advantages of liquidity—the ability to quickly and easily sell or trade an asset, be it house, car, stock, or bond—are readily apparent; however, a less obvious downside exists as well.¹ This *Economic Commentary* may be thought of as a tour of the dark side of liquidity, an area populated by watered stock, acid tests, ugly princesses, and other denizens of the economic landscape.

■ What Is Liquidity?

The liquidity of an asset means the ease with which it can be traded. An easily traded asset, in turn, is one with other traders willing to participate in the market. Liquidity is thus a property of the market in which an asset is traded. The “Arrow–Debreu” world, a standard benchmark for theoretical economists, assumes a market for each commodity and no trading frictions, so that all assets are fully liquid. That is not the world in which most people live.

U.S. Treasury securities, for instance, are more liquid than an office building in Manhattan, which in turn is more liquid than a bond issued by a newly created firm. In the case of Treasury securities, their value is easily determined, there is an organized market where they can be traded, and many traders stand ready to acquire them. These features are not common to the other two assets. In the case of the bond issued by the fledgling firm, its value may be extremely difficult to determine, and because the company is unknown, a market where the bond can be transacted may not exist. Hence, it is a very illiquid asset.

In one sense, liquidity measures the trade-off between speed and value. You can get full price for a U.S. T-bill within a day. You can also find a buyer for the Manhattan office building in a day, but chances are you would get a better price by waiting. For illiquid assets, the search for a buyer (or seller) takes longer.

Differences in liquidity are often quantifiable.² For example, consider the difference between Treasury bills and Treasury notes. Both are obligations of the U.S. government and so face no risk of default. Both are traded in an active market that has dealers (firms buying and selling for their own account) and brokers (firms helping to match buyers and sellers). Notes, however—those obligations with maturities between two and 10

The liquidity of a firm’s assets—that is, the ease with which they can be traded or sold—is generally thought to enhance the company’s value. Clearly, having enough ready cash to meet the payroll or pay the interest on outstanding loans is a good thing. But liquidity also has a dark side. A company with too much of its worth tied up in liquid assets instead of productive equipment, for example, not only pays the price of lost opportunities, but also has a harder time attracting investors, who must be convinced that the firm’s managers will not “take the money and run.”

years—are less liquid, because many were acquired by longer-term investors who have since locked them away in portfolios, making them unavailable for trade. The brokerage fee for notes runs about \$78 per \$1 million sold, but for bills, that fee drops to between \$12 and \$25. This market segmentation has a particularly striking result. Treasury notes usually pay a semiannual coupon, but when they have less than six months to go, with no more coupon payments, they look just like six-month T-bills. Except for the liquidity difference, that is. Notes nearing maturity pay a noticeably higher return than do bills of the same maturity, in the range of one-quarter to three-quarters of a percent. In late 1987, notes were yielding 6.5 percent, while otherwise identical bills were paying only 6.1 percent. It's hard to imagine a clearer example of the importance of liquidity.

■ Why Is Liquidity Important for Firms?

Liquidity is generally perceived as beneficial to firms. All else equal, the more liquid a firm's assets, the higher the value of that firm tends to be. Liquidity contributes to the value of a firm in many ways. On one level, it helps if the firm has enough liquid assets to meet its payroll, pay its taxes, or pay the interest due on any bank loans. Traditionally, analysts have looked at two financial ratios to assess a firm's liquidity.³ The *current ratio* divides current assets by current liabilities, where "current" means something expected to be converted into cash within a year—assets such as accounts receivable or liabilities such as accounts payable. The *quick ratio*, or *acid test*, subtracts inventories from current assets before dividing. This is because inventories may be liquid, but reducing them too far can hurt production. The box above shows how each of these ratios is calculated.

CALCULATING A FIRM'S LIQUIDITY RATIOS

Current assets: \$800,000

Current liabilities: \$300,000

Inventory: \$350,000

$$\text{Current ratio} = \frac{\text{Current assets}}{\text{Current liabilities}} = \frac{\$800,000}{\$300,000} = 2.67$$

$$\text{Quick ratio or acid test} = \frac{\text{Current assets} - \text{inventory}}{\text{Current liabilities}} = \frac{\$450,000}{\$300,000} = 1.5$$

On another level, the more liquid a firm's assets, the easier it is to determine their worth and use them as collateral. It's also simpler for the firm's creditors to transact such assets in case seizure becomes necessary. As a result, it is generally believed that firms with liquid assets are easier to evaluate and can raise funding more readily and under better terms.

■ The Dark Side

But liquidity also has its limits. Except for, say, mutual funds, corporations need to invest in illiquid assets that will produce a profit, be they drill presses, bulldozers, mainframe computers, or factories. A successful firm uses these assets to make money. The result is that nineteenth century bugaboo, *watered stock*. A stock is said to be watered if its market value (the amount it sells for) exceeds its book value (the value of the original investment). According to one economic historian, nineteenth century terminology simply meant that if a stock was watered, "it was expected that the company would be able to earn more by using those assets than would a typical manager elsewhere in the economy."⁴ In this sense, if a stock is not watered, the firm is not justified in issuing it.

Watered stock provides another perspective on liquidity. Separately selling off the assets of a successful firm generally lowers their value. The *going concern value*, or *goodwill*, or *economic value added*, or, yes, *water*, adds some illiquidity to the assets, because they lose value when separated from the company. If much of an asset's value lies in its association with a particular firm, determining this value may be difficult. This is the flip side of the liquidity coin: By gaining value, an asset can become illiquid. Modern terminology refers to this as the "fire sale" effect, in which the Manhattan office building must be underpriced if it is to be sold quickly, whereas negotiable securities without a going concern value will take less of a hit.

This is the stage where we encounter the dark side of liquidity, a phenomenon related to the problem of corporate control. Once a firm has pocketed investors' funds, it may not want to follow through on its original plans. Changing policies in this way may increase management's wealth at the expense of investors. A posh, architecturally significant corporate headquarters hung with old masters might richly satisfy management, yet provide a poor return to investors. Likewise, the two groups may disagree about the size of the CEO's bonus.

A firm can also change its investment policy. When a business funds itself via debt contracts—loans, for example—it has an incentive to increase the risk of its assets. If the firm performs poorly, the owners get nothing because all available money goes to pay off the loan. If the firm does well, the owners receive the profits after paying off the loan. Owners prefer a risky chance at higher profits, while lenders prefer a safer choice that guarantees they will get their money back.

Because they are aware of the firm's incentives, creditors try to take them into account before entering into a contract. One way they do this is by introducing covenants into the contract, that is, restrictions on the actions and policies that firms can adopt during the period the agreement is in force. For example, covenants often restrict dividend payments or mandate maintenance schedules for equipment. However, because it is difficult and expensive to document and verify every possible action the firm can take, managers will always have room to choose actions aimed at expropriating value from creditors.

This is where the liquidity of a firm's assets becomes important. The more liquid these assets are, the easier it will be for managers to change the pool of assets. Exaggerating to make the point, consider which firm's managers would have an easier time expropriating the company's assets and running off to Tahiti—one whose assets consisted of T-bills, or one whose only asset was a marble quarry? Now take the analysis back one step: Who would have an easier time raising money from suspicious lenders—a company whose asset was a quarry, or one that proposed keeping the money as cash? It's easy to see how too much liquidity can make it difficult for a firm to raise funding. Liquidity keeps a company's options open, but some of those options are not very palatable from the standpoint of lenders.

Economists sometimes refer to this problem as “the fairy tale of the ugly princess.”⁵ A king, wishing to make peace with his neighbor, will send one of his daughters to the other kingdom, where she will be forfeit if her father breaks the peace. If the king cares for both of his daughters equally, he will do best to send the ugly daughter, lest the neighbor create a pretext for keeping the lovely one. The king is the investor; the neighbor the firm; and peace, like profits, is best preserved by avoiding temptation—using the illiquid asset, or ransoming the ugly princess.

In sum, liquidity has both a positive and a negative impact on a firm's fundraising abilities. On the positive side, it allows managers to raise money under better conditions, since creditors can more easily evaluate the company and trade its assets should seizure become the only recourse. On the negative side, liquidity makes it harder to raise investment dollars because the company has more trouble committing to avoid practices aimed at expropriating value from creditors.

Understanding the dark side of liquidity provides a fresh perspective on some important economic questions. For example, it helps explain why banks evolved as a combination of very liquid deposits and very illiquid loans. By making illiquid loans, banks ensure that they won't expropriate depositors' money. Note the balance between the light and the dark sides of the liquidity force: A totally illiquid bank would have trouble cashing customers' checks. This balance also reinforces questions raised by increased financial liquidity. At one time, a bank would hold onto the loans it made. Now, it's not unusual for bankers to sell their mortgages into a collateralized mortgage obligation (CMO) pool, sell their commercial loans to a foreign bank, and securitize their auto loans.⁶ Where once the bank loan stood as the very model of illiquidity, with its complicated covenants and detailed clauses, it now stands as a monument to increased liquidity.

Behind banks' increasing liquidity is a powerful trend: the ever-growing ability to transmit, store, and collate information. The same forces that make it easy for people to transact at a distance via an ATM have simplified the process of tracking the title, payment, and covenant violations of distant borrowers. The increased liquidity caused by this simplification portends large, but uncertain, changes for banks, as old relationships break down. Some of these changes will take the form of new financial instruments, such as banks' providing loan guarantees rather than loans. Others will involve increased competition from non-bank institutions, including money market mutual funds and finance companies.

These liquidity-driven changes in the functions and market position of banks will be counteracted somewhat by the increased value of reputations—a phenomenon spurred by the same information revolution that liquefied loans. Actions—and rumors—are now instantaneously transmitted around the country and even around the globe. A bank's reputation can thus serve as a check on expropriating behavior, since depositors will now stake their investment on evidence of virtuous lending behavior rather than on the constraints provided by an illiquid loan portfolio.

■ Conclusion

In the natural world, the right amount of liquidity is a soothing rain; too much is a flood. In the financial world, the right amount of liquidity enables a firm to pay its workers and retire its debt; too much renders it unable to borrow. The dark side of liquidity arises not merely from lost opportunities—money tied up in T-bills rather than in productive machinery—but from lenders' fear of expropriation. Lenders are less inclined to lend to a liquid borrower who can, figuratively at least, take the money and run.

■ Footnotes

1. A more technical and complete description of many of these ideas can be found in Stewart C. Myers and Raghuram G. Rajan, "The Paradox of Liquidity," National Bureau of Economic Research, Working Paper No. 5143, June 1995.

2. The numbers that follow are taken from Yakov Amihud and Haim Mendelson, "Liquidity, Maturity, and the Yields on U.S. Treasury Securities," *Journal of Finance*, vol. 46, no. 4 (September 1991), pp. 1411–425.

3. For a more detailed look at financial ratios, see J. Fred Weston and Thomas E. Copeland, *Financial Management*, 8th ed., Philadelphia: Dryden Press, 1986.

4. See Gerald Gunderson, *A New Economic History of America*, New York: McGraw-Hill, 1976, p. 330.

5. Though perhaps not politically correct, this is the example given in Oliver E. Williamson, *The Economic Institutions of Capitalism*, New York: The Free Press, 1985, p. 177.

6. For details on these possibilities, see Joseph G. Haubrich, "Derivative Mechanics: The CMO," Federal Reserve Bank of Cleveland, *Economic Commentary*, September 1, 1995; and Joseph G. Haubrich and James B. Thomson, "The Evolving Loan Sales Market," Federal Reserve Bank of Cleveland, *Economic Commentary*, July 15, 1993.

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