

**Comments on
Franklin Allen & Elena Carletti “The Role of Liquidity in Financial Crises”**

Peter R. Fisher, BlackRock

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Allen and Carletti provide an insightful review of the literature on liquidity and financial crises and a useful framework for considering the role of liquidity in the events of the past year. I find myself in fundamental agreement with what I take to be their two key points: first, on liquidity hoarding as the more significant explanation of the breakdown in inter-bank markets and, second, on the impact of cash-in-the-market pricing on asset values. As a consequence of this agreement, my comments will necessarily digress into quibbling about how one reaches these conclusions, how they should be characterized and into my own thoughts on the key puzzle of the past year, the Federal Reserve’s new facilities and suggested areas for further work.

Liquidity hoarding as “balance sheet defensiveness”

In their analysis of the drying up of inter-bank lending markets, the authors conclude that “liquidity hoarding” by banks has probably been the more-important factor than has uncertainty about the condition of borrowers. (Allen & Carletti, 20-21.) I certainly agree. (See Fisher 2008) In public, bankers would always prefer to blame uncertainty about their borrowers’ balance sheets than anxiety about their own balance sheets. However, in my own conversations with bank CFOs, Treasurers, and trading desks from August of 2007 through March of 2008, there was a frank acknowledgement of a defensive concern with their ability to finance their own positions and those of their key customers. The simultaneous and generalized widening of unsecured, inter-bank lending rates across U.S. Dollar, Sterling and Euro markets last August and the persistence of these wider spreads for the past year, also supports the idea of a lenders’ strike as the more useful explanation.

I see “liquidity hoarding” as a form of “balance sheet defensiveness” by bankers unwilling to rent space on their balance sheets to their competitors at traditional spreads.

A broad definition of liquidity as the growth of balance sheets, as expressed in the other recent work of Adrian and Shin (2008), should not be seen as a different subject but rather as the flip side of the same coin. This broad definition of liquidity as the growth rate of financial intermediaries’ aggregate balance sheets helps explain both the abundance of liquidity earlier in this decade and the subsequent scarcity of liquidity that began last summer. More importantly, it locates the concept of liquidity in a *behavior* (the willingness and ability to expand one’s balance sheet) that creates a *flow* rather than simply viewing liquidity as a *stock* to be allocated.

Allen and Carletti's discussion of aggregate as contrasted with idiosyncratic liquidity shocks (21) would benefit from further thinking about behaviors and flows rather than stocks. Having concluded that liquidity *hoarding* was the better explanation of inter-bank behavior, the authors surprisingly focus on "uncertainty in aggregate demand for liquidity" without corresponding attention to "aggregate supply".

Let me make a plea to the regulators and central bankers, however, to consider carefully the distinction between aggregate and idiosyncratic liquidity shocks before designing new liquidity rules or ratios or further altering central bank operations. It is critical that any new rules recognize the behavioral dimension of liquidity as something that a banking system creates (or destroys) and not as a stock to be rationed among banks. Thus, I would be skeptical as to whether different liquidity rules or ratios had they been adhered to, by themselves, would have made things any better over the past year and I can easily see how they could have made things pro-cyclically worse.

I would also suggest further work on the appropriate central bank response to aggregate as opposed to idiosyncratic liquidity shocks as the issue seems much less clear cut to me. I can see the case for central bank intervention in both cases, depending on circumstances. For example, an aggregate liquidity shock caused by a central bank firming of monetary policy would not be a likely candidate for an aggressive central bank reaction. An idiosyncratic shock to a single firm of an extraordinary scale (such as a computer malfunction of a major clearing bank) or one that raised solvency concerns in the inter-bank market which the central bank knew to be unfounded would both be candidates for central bank lending.

Cash-in-the-market pricing is an accurate description

Allen and Carletti's description of the impact of scarce liquidity on asset prices, in conditions of incomplete markets and as constrained by the limits to arbitrage (Allen & Carletti, 12-13, 18-19, citing Shleifer & Vishny 1997), is hauntingly familiar to the investment management practitioner, particularly one that thought *high-quality*, mortgage-related securities looked cheap in December, and in March, and again in June.

Unfortunately, "cash-in-the-market pricing" by itself describes but does not explain the divorce of asset pricing from fundamentals – meaning the credit fundamentals of the underlying cash flows, not macro-economic fundamentals. Allen and Carletti observe: "When liquidity is scarce asset prices are determined by available liquidity or in other words by cash in the market." But when liquidity is abundant asset prices are also determined by cash in the market, as was the case from 2004 through early 2007.

But it is also the case that balance sheet expansion and contraction, and the broader definition of liquidity, do not explain the divorce between asset pricing and credit fundamentals.

The puzzle that should haunt us

With the benefit of hindsight, we cannot claim to be puzzled by the fact of falling house prices nor by the fact of a financial crisis. If we are candid, however, we should admit that we are still perplexed by the severity and longevity of the crisis, by the loss of financial firms' ability to absorb losses and to provide liquidity and, thus, by the jeopardy this crisis poses to the real economy.

The key questions that should haunt us are: (1) How can a system that was thought to be so well capitalized just 18 months ago have proved itself to be much more highly-leveraged (so much more poorly capitalized) than we thought? And (2) How did this leverage so abruptly and persistently translate itself into both a lack of liquidity and falling credit asset values?

My own attempts to answer these disturbing questions focus on the prevalence of asset-based or "repo financing" and on the transformation – or degradation – this has wrought to our credit system.

Let me acknowledge that in our highly-evolved financial system there is a daisy chain of agency problems – of misaligned incentives – both in the creation of credit (from asset originators to asset distributors to asset managers) and in the investment process (from beneficial owners of assets, to boards of directors, to staffs, to consultants and again to asset managers). But these agency problems in finance have been with us for some time and could just have easily been described in 1978, 1988 and 1998 as today.

I see the daisy-chain of secured financing arrangements that have run through our financial system, and the asset-based rather than income or cash-flow-based credit process which they reflect, as providing the more compelling insight into both the surge in liquidity and credit prices early in this decade and their subsequent collapse over the past year.

The theory of a lower capital charge for secured financing rests on the assumption that the addition of pledged collateral lowers the risk to the lender. In the presence of both belts and suspenders it is assumed that the lender need hold less of a cushion (in the form of loss bearing capital) against the risk of loss, where the belt is presumably the borrower's ability to repay the debt out of cash flow and the suspenders are the borrower's pledge of collateral.

The degradation of our credit process comes about not by the fact of secured financing but *when lenders cease to pay attention to the borrowers' ability to repay out of cash flow* and make their lending decisions solely on the basis of the expected value of the collateral and whatever haircut (or down payment) the lender can secure *whether the borrowers be households or hedge funds*.

In our current system of transaction-based leverage the haircut becomes the loss absorber of first recourse. But the haircut is only a slice of the asset itself and, thus, the

“capital” available to absorb losses on the asset is perfectly correlated with the asset. As the asset goes up in value this correlation appears to create an additional cushion and to justify the wisdom of the loan; but when the asset falls in value, the cushion decays at the same rate as the asset.

As lenders seek to protect themselves by increasing their implicit capital cushion through increasing haircuts (as many intermediaries attempted to do earlier this year) their actions both confess their failure to look to the borrowers’ cash flow as the first recourse and demonstrate the pro-cyclical nature of asset-based financing as the impact of rising haircuts on asset values becomes self defeating. This is exactly parallel to the pro-cyclical nature of secured financing described in a more general context by Kiyotaki and Moore (1997) as referenced by Allen and Carletti (6).*

With all the discussion about underwriting standards for home mortgages, it strikes me as more than a little odd that we have been observing and discussing a crisis in the financial system for more than a year and yet nobody has spoken about underwriting standards for lending to hedge funds, or SIVs, or REITS, or CDOs or broker dealers or banks. I believe this is a reflection of how deeply we are immersed in a culture of asset-based finance. But perhaps after a quarter century of a bull market in credit asset values – brought on by the persistent decline in nominal interest rates caused, in sequence, by disinflation, productivity gains, and an extended period of abnormally-low real rates – we should not be surprised that our financial system has been re-engineered into an asset-based process that presumes rather than inquires into the cash flows of borrowers.

While there are significant differences between the events of 2008 and of 1998, I am struck by the parallel in the pro-cyclical mechanics that repo-based financing played both in story of Long-Term Capital Management and in the system-wide dynamics that began to unfold last summer.

I would also suggest that the prevalence of repo-based financing helps explain the abruptness and persistence with which the de-levering has been translated into illiquidity and sharp asset price declines.

* In his opening remarks, Chairman Bernanke observed that the run on Bear Stearns was surprising “in that Bear Stearns’s borrowings were largely secured – that is, its lenders held collateral to ensure repayment even if the company itself failed.” I would suggest that, in a financial system built around asset-based lending, Bear Stearns’s lenders were not looking to the firm’s cash flows as security for their loan but, rather, were looking at the assets themselves and the risk that those assets would go down in value. It was precisely the pro-cyclical nature of secured financing that brought the firm down. How much time do we think Bear Stearns’s *secured* lenders had spent in due diligence on the Bears Stearns *income statement*? Rather, I think they viewed themselves as lending against a portfolio of assets among which was the collateral posted by Bear Stearns and that the best means of protecting themselves against a decline in these assets’ value was to “sell” them back to Bear Stearns.

For some time, the marginal buyer (or seller) of assets has been a levered buyer (or seller). Not in the sense of balance sheet leverage but, rather, levered in the transactional sense of only being in a position to buy those assets which can be funded in the repo market. This is true not only of the firms that are thought of as highly levered, like hedge funds, but is also true of a great deal of “long only” activity where the high volume and velocity of transactions creates reliance on repo financing to support the timely purchase of assets and a subsequent sorting out of positions and cash flows.

As a consequence, “funding liquidity” has come to mean the ability to fund the purchase of an asset on leverage and illiquidity means the inability to fund (or extend the funding) of an asset on leverage. The pro-cyclical nature of raising haircuts as a form of lender self-defense triggered both a shift in demand from secured to unsecured markets, overwhelming the traditional inter-bank markets, and a fall in asset prices that could not be sustained at higher haircuts.

While economists and commentators can distinguish between funding liquidity and asset market liquidity (or depth), in market practice the two terms are commonly conflated because they are so closely linked. While different types of assets are recognized as having different liquidity characteristics, outside of money market eligible instruments, this liquidity itself is thought of as an asset’s ability to be financed. Thus, liquidity is not so much an alternative to investment (as in “being liquid” or “being invested”) but, in a world of transactional leverage, “liquidity” is the means of becoming invested and illiquidity is the corresponding explanation for downward pressure on asset prices.

In sum, the “cash in the market” that has driven asset prices both up and down is the cash that comes from lenders, not investors.

The Federal Reserve’s New Facilities

In discussing the Federal Reserve’s new facilities, Allen and Carletti focus principally on the swapping of Treasury securities for lower quality collateral and suggest contrasting perspectives on how this might be evaluated. (22) On one hand, they point out that the collateral swap “helps the functioning of the repo markets in times of crisis” by expanding the supply of the preferred collateral. But on the other hand, to the extent that the swapping of Treasuries for lower quality collateral helps financial institutions window dress, they suggest that this may have contributed to the strains and “actually hurt more than help” by making it easier for the Fed’s counterparties to engage in the deception of hiding the quality of their balance sheets on reporting dates.

I have several reactions. First, these are essentially the same thing: you cannot help the repo market without affecting the balance sheets of repo market participants. Second, of course it is about window dressing – trying to make balance sheets look less leveraged – but it is always about window dressing. Ten years ago a broker-dealer CFO described to me the process of managing his balance sheet through quarter-end statement dates as like flying a jumbo jet under the Gateway Arch in St. Louis. Banks and broker-

dealers are always trying to manage down their leverage on quarter-end dates and over the past year this has been particularly intense.

Twenty years ago, central bank orthodoxy, which came from the Bundesbank, held that no self-respecting central bank would want to use its balance sheet to monetize the profligacy of its own finance ministry. The irony was that accumulating foreign exchange reserves forced the Bundesbank to finance the profligacy of the U.S. Treasury – foreshadowing our current imbalanced relationship across the Pacific. Today, a new orthodoxy suggests that a central bank should *only* hold sovereign credit on its balance sheet as a way of avoiding the messy business of credit judgments.

But in today's monetary world, a central bank that lends only against sovereign credit is like a gold-regime central bank that lends only against gold: in a crisis it will end up sucking all of the preferred assets out of the market – by hogging the base asset for the central bank's own balance sheet. To be relevant in a financial crisis, central banks have to lend against the assets the banks *have* not the assets they wish the banks had. The time to be fussy about the asset quality of the financial system's balance sheet is when the assets are being created, not when they need lender-of-last-resort financing.

The swapping out the Fed's balance sheet holdings of Treasuries, and the expansion of the discount window both to an auction format and to primary dealers, are useful and necessary steps that indirectly help give the banking system time to de-lever – to shrink balance sheets down to their sustainable capital and income base. But none of the Fed's facilities directly help the banks and broker-dealers to de-lever, because *you cannot de-lever by borrowing money.**

In creating the auction mechanism for the Discount Window the Federal Reserve has sought to re-activate the banking system's use of the lending facility that accepts a broader pool of collateral. As a former Manager of the System Open Market Account, a guilty conscience obliges me to confess that the non-use of the Discount Window by banks has been, to some extent, a self-inflicted wound.

By providing an entirely elastic supply of reserves at a constant, targeted price and aiming to minimize the volatility in the Fed Funds rate, the Open Market Desk habituated the banking system to the non-use of the Discount Window. While the stigma of weakness associated with use of the Discount Window in the late 1980s and early 1990s certainly played a role in banks' reluctance to seek borrowed reserves, by never forcing the banking system to take out borrowed reserves, the Federal Reserve habituated the banking system to a regime in which all needed reserves were provided through open market operations. Neither the Desk nor the Committee was willing to tolerate the volatility in the Funds rates that would, over time, have trained bank treasurers to use the Discount Window.

* Nor can you de-lever by lending money. Thus, in a general de-levering of the financial system we find the conditions under which the dictum of Polonius is appropo: "Neither borrower nor lender be."

Thus, I fear we have had too little rather than too much volatility in the Fed Funds rate. If the Federal Reserve's actions have contributed to the practice of window dressing it is not through the advent of the recent swapping of Treasury securities for lower quality collateral but, rather, by the Fed's routine willingness to provide a super abundance of reserves on quarter-end dates. Finally, Allen and Carletti may want to reflect upon the seemingly perverse consequences of the Fed's efforts to limit the volatility of the Fed Funds rate as a contributor to higher intra-period leverage with reference to their conclusion that central bank interventions "can remove the inefficiency deriving from asset price volatility and achieve the same allocation as with complete markets." (12) We must be careful to distinguish removing volatility from merely shifting it.

Contagion

Allen and Carletti also discuss the fear of contagion as a rationale for central bank intervention, concluding that the main finding from the literature is that contagion is unlikely but that there are reasons for being cautious in accepting this result and that further work in this area should be undertaken. (24-25) I certainly concur on the need for further work, particularly to get beyond consideration of direct exposures between financial firms and to delve further into indirect exposures. Counterparties should have a quite accurate picture of their direct exposures to a firm at risk of being closed. However, indirect exposures caused by parallel and correlated asset positions, as well as proxy hedging strategies, are harder to ascertain, harder assuage and, thus, more likely to stimulate herding behavior that could give rise to contagion.

A final thought

We need to be careful with the words we use. We have a problem of both too little capital and of too much capital. There is too little loss bearing capacity inside many financial intermediaries in the form of equity; but there is too much capital in the business of financial intermediation. The easy part of de-levering is the selling of financial assets to shrink balance sheets and the raising of new equity for those firms presumed to be survivors. The harder part will be contraction of the financial services industry.

In the 1990s Japan made two mistakes of consequence. First, in the early 1990s the Bank of Japan ran too restrictive a monetary policy. In the latter part of the decade, the Japanese authorities were too slow in managing the process of consolidating their weakened banks.

I hope we have learned both lessons from the Japanese experience.

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