Marc Jarsulic
Chief Economist
Better Markets, Inc.

Testimony on "Is Simpler Better? Limiting Federal Support for Financial Institutions."
Senate Committee on Banking Housing and Urban Affairs
Subcommittee on Financial Institutions and Consumer Protection
May 9, 2012

Good afternoon Mr. Chairman Brown, Ranking Member Corker and members of the committee. Thank you for the invitation to Better Markets to testify today.

Better Markets is a nonprofit, nonpartisan organization that promotes the public interest in the domestic and global capital and commodity markets. I won't take the time or space here to list everything it does, but would refer you to our website at www.bettermarkets.com.

My name is Marc Jarsulic and I am the Chief Economist at Better Markets. Prior to that, I was a senior staffer in the Senate. Prior to working in the Senate, I was an attorney concentrating on antitrust and securities law, and an academic economist.

INTRODUCTION

The very largest bank holding companies are now distinctly different from the rest of the banking industry. They are more highly leveraged than other banks, are far more likely to operate large and complex broker dealers, and are more likely to be directly dependent on unstable short term financing.

Each of these characteristics made the large bank holding companies vulnerable during the financial crisis:

> High leverage made them less safe because the ability of a bank to survive a significant decline in the value of its assets depends on the market value of its equity. Other market participants will continue to deal with a bank only if, after the loss, it is perceived to have sufficient remaining equity to remain solvent in the event of another shock. So the bank's leverage – together with the market value and liquidity of its assets – is a key determinant of its ability to function during times of financial stress.
>
> Proprietary trading made them less safe because speculative positions can quickly produce large losses. Trading losses at Citigroup are a case in point.
>
> Dependence on unstable short term financing made them less safe because creditor runs (which materialized in both the repo and asset-backed commercial paper markets) can force the sale of assets and the realization of losses.

Given the scale of the large bank holding companies, these vulnerabilities also threatened the stability of the financial system as a whole. The failure of Lehman produced a huge financial shock and panic. The failure of one of the largest bank holding companies would have been even more serious.

The federal government managed, through massive intervention, to prevent any of the largest bank holding companies from failing. In the case of Citigroup, for example, that

rescue included the Troubled Asset Relief Program ("TARP") capital injections, direct asset guarantees, support for its broker dealer through the Term Asset Securities Lending Facility and the Primary Dealer Credit Facility, and purchase of its commercial paper through the Commercial Paper Funding Facility.

To prevent the need for such rescues in the future, regulators need to use the tools created by the Dodd-Frank Act to eliminate the threats to financial stability created by the large bank holding companies. In particular there should be:

Effective leverage limits for the largest banks

Effective implementation of the Volcker Rule

Effective regulation of shadow banking activity

Taking these steps will go a long way toward containing the risks posed by the size and complexity of the largest bank holding companies.

1. What makes large bank holding companies distinctive?

In addition to their size, large bank holding companies ("LBHCs") – which for convenience we can think of as the 10 largest – are distinguished from the rest of the banking industry in at least three ways.

First, they are very highly leveraged. As can be seen from Figure 1 (below), which uses the ratio of tangible assets to tangible common equity as the measure of leverage, the 10 largest bank holding companies had a collective leverage ratio of 21.2 during the 1990-

2000 period. The remaining BHCs had a collective leverage ratio of 15.6 during that same period. It is also apparent that in the run-up to the financial crisis leverage ratios of the LBHCs increased dramatically. At the beginning of the crisis in 2007 the leverage of the LBHCs was nearly equal to that of the five largest stand-alone investment banks, and at the end of 2008 the LBHC leverage had risen to 47.5.

Second, several of them are heavily engaged in trillions of dollars of complex proprietary trading in equity, debt and derivatives. For example, five LBHCs – Bank of America, Citigroup, Goldman Sachs, J.P. Morgan, and Morgan Stanley – are so-called "G14 institutions": the 14 firms that do most of the trading in OTC derivatives world-wide.[1]

Third, several of them have been and apparently remain dependent on short term, unstable financing. They sponsor and guarantee securitization conduits – which are part of the "shadow banking system." These conduits allow sponsors to finance significant volumes of assets using short term asset-backed commercial paper ("ABCP").[2] In 2007, for example, Citigroup, Bank of America and JPMorgan were among the top 10 bank sponsors of conduits. The ratio of sponsored ABCP to their total Tier 1 capital was 102%, 50.2%, and 52.7 % respectively.[3]

Several of them also rely heavily on very short term repo financing to operate their broker dealers. Outstanding repo finance by primary dealers – which today include Bank of America, Citigroup, Goldman Sachs, JPMorgan Chase, and Morgan Stanley – reached a

---

1 The G-14 includes Bank of America-Merrill Lynch, Barclays Capital, BNP Paribas, Citi, Credit Suisse, Deutsche Bank, Goldman Sachs, HSBC, J.P. Morgan, Morgan Stanley, The Royal Bank of Scotland Group, Société Générale, UBS, and Wells Fargo. *See* http://www.ft.com/intl/cms/s/0/5957e7e2-1e3e-11e0-bab6-00144feab49a.html#axzz1u1CH2PLP

2 Z. Poznar et al. (2010). Shadow Banking. Federal Reserve Bank of New York, Staff Report No. 458, July.

3 *See* V. Acharya et al. (2010). Securitization without risk transfer, Table 1, available at http://ssrn.com/abstract=1364525.

peak of $4.6 trillion in early 2008, and remains significant at approximately $2.7 trillion in February 2012.[4]

Both the ABCP and repo markets experienced massive runs during the financial crisis.

2. Why large bank holding companies were vulnerable during the financial crisis

The distinguishing characteristics of LHBCs – high leverage, heavy involvement in complex trading, and reliance on short term and shadow banking finance – helped make them vulnerable to shocks in the financial crisis. By virtue of their size, these vulnerabilities made the LBHCs potential threats to overall financial stability. This forced the federal government to commit massive resources to rescue them.

Leverage

High leverage ratios make individual banks less safe. The ability of an individual bank to survive a significant decline in the value of its assets will depend on the market value of its equity at the moment of the loss. Other market participants will continue to deal with the bank only if, after the loss, it is perceived to have sufficient remaining equity to remain solvent in the event of another shock. So the bank's leverage – together with the market value and liquidity of its assets – is a key determinant of its ability to function during times of financial stress.

---

[4] Data from the Federal Reserve Bank of New York, *available at* http://www.newyorkfed.org/markets/statrel.html

Higher leverage ratios also make the financial system as a whole less stable. The ability of the banking system as a whole to absorb losses – through acquisition of the weak by the healthy – will be a function of the overall leverage of the banking system.[5] Since the LBHCs hold a majority of banking assets, and a large share of the assets of all financial intermediaries, equity declines at one or more such bank will have a large effect on the overall equity of the banking system.

Moreover, revelation of insufficient equity at even one large bank can produce a Lehman moment when generalized panic sets in. Even if the failed bank is resolved in an efficient manner under the Orderly Liquidation Authority of the Dodd-Frank Wall Street Reform and Consumer Protection Act ("Dodd-Frank Act"), contagion to other large banks is then likely.

Concerns about equity positions of large banks led the entire federal government to provide extraordinary aid to banks during the financial crisis. The Troubled Asset Relief Program, a small part of the overall emergency federal assistance, provided massive injections of equity capital. Banks were able to avoid equity losses because the government helped them borrow and avoid write-downs from asset sales in distressed markets – through the Term Auction Facility, and the Temporary Liquidity Guarantee Program, the Term Securities Lending Facility, the Primary Dealer Credit Facility, and the Commercial Paper Funding Facility.

---

[5] For a discussion of the relationship between leverage, entity stability and overall financial stability see Archaya et. al. (2010). Measuring Systemic Risk, *available at* http://ssrn.com/abstract=1573171; Browlee and Engle (2011). Volatility, Correlation and Tails for Systemic Risk Management, *available at* vlab.stern.nyu.edu.

It is important to recognize that risk-based capital requirements and market discipline did not restrain bank leverage during the run-up to the crisis. In fact, leverage at LBHCs was essentially the same as that of the 5 largest stand-alone investment banks by the end of 2007, and continued to rise for a substantial period thereafter. (See Figure 1, below) There can be no doubt that the high leverage of the large bank holding companies made them vulnerable to the losses they experienced after the house price bubble burst.

Trading

The damage inflicted on Citigroup by its broker dealer subsidiary vividly illustrates the threat that proprietary trading poses to even the largest banks. During the run-up to the crisis, Citigroup traders were among the largest creators and sellers of collateralized debt obligations ("CDOs"). The CDO business required traders to acquire a pool of assets, "structure" a new set of securities based on that pool, and then sell some or all of these newly structured securities to third parties. Creating and pricing the new securities required some expertise, but at its heart the CDO business was a convoluted proprietary trade in which the traders acquired assets, held them as inventory, and planned to resell them later at a higher price.[6]

These CDO securities differed in their credit ratings, the rate of interest paid to investors, and in their payment priority in the event of default. The quantity and

[6] The securities comprising the CDO asset pools were varied -- including RMBS, high grade bonds, and tranches from other CDOs. However, many of the underlying securities were constructed from subprime residential mortgages. The Office of the Controller of the Currency estimates that 70 percent of the assets underlying Citigroup CDO's issued between 2003 and early 2006 were subprime-related. *See* U.S. Office of the Comptroller of the Currency (2008). Memo from John Lyons, Examiner-in-Charge, Citibank, N.A., Subject: Subprime CDO Valuation and Oversight Review – Conclusion Memorandum, July 17, 5. *Available at* http://fcic.law.stanford.edu/resource/index/Search.Videos:0/Search.Documents:1/Search.endmonth:02/Search.endyear:2012/Search.Footnotes:10.42

characteristics of each class of security were chosen by the Citigroup traders to maximize their profits. They found it profitable to create a class of "Super Senior" securities which were nominally highly-rated and which paid relatively low interest rates. Citi traders found that investors were unwilling to buy the Super Seniors. But instead of offering the securities at a lower price and higher interest rate – which would have required lowering the rates paid on the other CDO securities and reduced their price – the Citigroup traders continued to create Super Seniors and to hold them. They would only have created and held unsalable Super Senior securities to maximize their overall returns.[7]

To boost the return from holding the Super Senior positions, Citigroup relied on leverage. During 2003 and early 2006, Citigroup financed $25 billion in Super Senior securities through conduits. These special purpose vehicles ("SPVs") issued asset-backed commercial paper, for which Citi provided "liquidity guarantees." The guarantees meant that Citi would buy the commercial paper issued by the conduit if no one else would.[8] Liquidity guarantees meant that third party purchasers of the commercial paper faced default risk only if Citigroup itself failed to honor its guarantee, regardless of the market value of the Super Senior securities.

Citigroup ceased to issue liquidity guarantees in early 2006. However, between early 2006 and August 2007 another $18 billion in Super Senior securities were added

---

7 The Controller of the Currency recognized this motive for the Citigroup trading strategy in its January, 2008 review of Citigroup's CDO-related losses, noting that "The bank built up [Super Senior] positions because they are hard to sell in the primary issuance market at the nominal spreads available for [Super Senior] once deals were completed (10-20bps) and the bank was unwilling to give up some of the inception profits. " *See* Ibid.

8 The amount of leverage on the Citi conduits is not clear from available data. If the SPVs were entirely financed by commercial paper, the leverage was infinite.

directly to Citigroup's trading book positions. Because the securities were held in the trading account, little or no capital was required to back them.[9]

In late 2007 it became clear that the Super Senior securities were worth far less than their face value. To avoid having to make good on its liquidity guarantees, Citigroup bought $25 billion of commercial paper that had been issued by the Super Senior conduits, and placed those Super Senior securities on the books of the Citigroup commercial bank.

Beginning in November 2007, Citigroup was forced to recognize huge losses on the Super Senior securities and other positions.[10] In a remarkably understated 2007 annual inspection report on Citigroup, the Federal Reserve Bank of New York observed that "[m]anagement did not properly identify and assess its subprime risk in the CDO trading books, leading to significant losses. Serious deficiencies in risk management and controls were identified in the management of Super Senior CDO positions and other subprime-related traded credit products." [11] By the end of 2008 Citigroup had written off $38.8 billion related to these positions and to ABS and CDO securities it held in anticipation of constructing additional CDOs.[12]

---

9 Financial Crisis Inquiry Commission (2011). Final Report of the Financial Crisis Inquiry Commission, U.S. Government Printing Office, 196-197.

10 Citigroup, Inc. (2007). Press release, November 4 (announcing losses of approximately $8 billion to $10 billion), available at http://www.sec.gov/Archives/edgar/data/831001/000110465907079495/a07-28417_1ex99d1.htm

11 Federal Reserve Bank of New York (2008). Summary of Supervisory Activity and Findings for Citigroup, January1, 2007 – December 31, 2007, 5, *available at* http://fcic.law.stanford.edu/resource/index/Search.keywords:fcic-085390/Search.Videos:0/Search.Documents:1/Search.Interviews:0/Search.endmonth:02/Search.endyear:2012

12 *See* Citigroup, Inc., Form 10K for the period ending December 31, 2007, 48; Form 10K for the period ending December 31, 2008, 68.

These losses reduced Citigroup's capital, helped to bring the company to the brink of failure, and made a federal rescue necessary. The amount of federal help required to prevent Citigroup from failing was stupendous, including capital injections, debt guarantees, and asset guarantees.[13]

Citigroup was also the heaviest user of the Term Securities Lending Facility ("TSLF"), and a very heavy user of the Primary Dealer Credit Facility ("PDCF"), two emergency lending facilities set up to halt a destabilizing collapse of broker dealers generally. Reliance on these facilities indicated that a broker dealer was having difficulty funding its positions in repo markets. So the fact that Citigroup went to the PDCF 279 times for overnight loans averaging $7.2 billion each, and used the TSLF to execute 43 swaps of "investment grade" collateral averaging $3.7 billion each, are clear signs that its broker dealer was in a very difficult shape. (see Appendix, below).

The debacle at Citigroup is merely illustrative of the harm that bank proprietary trading produced and threatened to produce. The heaviest users of TSLF and PDCF funds includes several other bank-based broker dealers, among them Bank of America, Deutsche Bank, Credit Suisse and Barclays. (see Appendix, below). Although they did not create wreckage on the scale of Citigroup, they were clearly on the brink of doing so.

[13] *See* Special Inspector General for the Troubled Asset Relief Program (2011). Extraordinary Financial Assistance Provided to Citigroup, Inc., January 13.

Unstable short term financing

LBHCs as conduit guarantors and sponsors

Asset conduits are special purpose vehicles, created by commercial and investment banks, and other financial firms securitized lending. In general they issue ABCP and other short-term liabilities that are used to fund the purchase of less liquid assets of longer maturity. Some conduits had liquidity or credit guarantees provided by commercial banks, while others such as the structured investment vehicles ("SIVs") had no formal guarantees from their creators.

Among all conduits rated by Moody's as of January 1, 2007, the mean asset size was $4.1 billion. In this sample, around 73 percent of conduits by assets were sponsored by commercial banks.[14] However, these conduits held over $1.2 trillion in assets, which meant that they were collectively a very significant part of the financial system.[15]

As noted earlier, LBHCs were important guarantors of conduit ABCP. Bank of America, Citigroup and JPMorgan Chase guaranteed ABCP the value of which exceeded 50% of their total Tier 1 capital.

When it became clear in mid-2007 that the house price bubble had burst and that subprime mortgage assets would sustain significant losses, the market for ABCP began to contract rapidly. Outstanding financial ABCP began to plummet from its peak value of $1.2

[14] *Ibid*, Table 2.

[15] It should be noted that the Moody's sample omits collateralized debt obligations and may be otherwise incomplete.

trillion in August 2007. By December it had collapsed by approximately a third to $833 billion.[16]

This run on conduits had significant effects on the financial system. Banks that had provided liquidity and credit guarantees had to make good on them and took losses. Other banks, such as Citibank, absorbed losses on SIVs they had sponsored, even though they were not legally compelled to do so.[17] Given a lack of publicly available data, the extent of conduit-related losses is difficult to calculate. However, the run created the possibility that conduit management or guarantors would be forced into a fire sale of assets. The resulting effect on prices would have spread losses to other financial actors, leading to downward price spiral.

This threat explains the efforts of then-Treasury Secretary Paulson to organize an SIV rescue through a private-sector "Master Liquidity Enhancement Conduit" in late 2007. This effort failed. In the end, the Federal Reserve was compelled to support the ABCP market to prevent a downward asset price spiral. It created the AMLF, CPFF, and Money Market Investor Funding Facility ("MMIF") to do so, which at peak operating levels added more than $340 billion to the Federal Reserve balance sheet.[18]

Although the asset-backed commercial paper market is now much smaller than it was in 2007, it is still important to the financial system. At the end of April 2012

16 V. Acharya et al., op. cit., 3.
17 *See* http://www.marketwatch.com/story/citigroup-to-take-49-bln-of-siv-assets-onto-balance-sheet.
18 *See* http://www.federalreserve.gov/releases/h41/20090102/.

outstanding ABCP amounted to $327 billion, comprising more than a third of all outstanding commercial paper.[19]

LBHC dependence on repo finance

Broker dealer use of repo financing

Repo borrowing is an important source of funding for broker dealers, including those inside the LBHCs. The 19 U.S. primary dealers, which is a subset of all repo market borrowers, reported repo financing of $4.6 trillion in fixed income securities on March 4, 2008. It has been estimated that in mid-2008, the (then) five largest broker dealer/investment banks collectively financed 42 percent of their assets through repo borrowing.[20] While primary dealer repo borrowing is now approximately $2.7 trillion, it is still a huge source of finance for these firms.

Repo allows a borrower to become highly leveraged. In a repo transaction the asset serves as collateral for the loan. So the borrower needs to provide equity funding for the asset only to the extent that the lender insists that the value of the collateral exceed the value of the loan. These repo "haircuts" can be very low. Haircuts for private label MBS and corporate bonds were estimated to be 3-4 percent in 2007 in the tri-party repo market.[21] In the bilateral dealer bank market, haircuts on unpriced and subprime MBS and corporate bonds are estimated to have been zero in the first half of 2007.[22]

---

19 *See* http://www.federalreserve.gov/releases/cp/.
20 M. King (2008). Are the brokers broken? Citibank Global Markets Ltd.
21 A. Krishnamurthy et al. (2011). Sizing Up Repo, 27.
22 G. Gorton and A. Metrick, Securitized Banking and the Run on Repo, 12. Table II, Panel D, *available at* http://ssrn.com/abstract=1440752,

When haircuts are low – as they were for highly-rated subprime MBS and many other types of securities in early 2007 – it is possible to obtain very high leverage (at relatively low short-term interest rates) to support a trading position in assets with long maturities. The high leverage of the large broker dealers is explained in significant part by their use of repo borrowing as a source of debt finance.

Positions that are financed using very short-term borrowing create the potential for a rapid run by the lenders. Repo funding is cheap because any individual lender can change the rate and collateral requirements of a loan very quickly, or simply decide not to roll it over, when a borrower or an asset class becomes less desirable to them. But when things go wrong and lenders as a group decide against a borrower or the collateral he holds, that borrower can see his repo funding vanish in short order. A significant increase in haircuts, for example, means that the borrower must have adequate equity to cover the lost financing, or sell off the position.

If the borrower has used repo to create significant leverage, a run on repo can spell disaster. If the assets he has supported are illiquid or have declined in value, he can be forced to recognize losses and perhaps become insolvent. And of course there may be spillover effects to other firms and to repo financing in general. These dynamics were very important during the financial crisis.

Runs on repo financing during the crisis

Once it became clear that there would be large losses on subprime and other non-Agency MBS in mid-2007, repo runs soon followed. There is evidence that non-Agency ABS and MBS securities – which were used as collateral in the tri-party repo market by several

large broker dealers prior to the crisis – ceased to be acceptable repo collateral as the financial crisis intensified. This hit particular LBHC dealers especially hard.

According to Krishnamurthy et al.[23]:

> While the repo contraction on non-Agency MBS/ABS appears small for the shadow banking system, we find evidence that it played a more significant role for some dealer banks. For Merrill Lynch, Goldman Sachs, Morgan Stanley and Citigroup, nearly 50% of the [tri-party] repo transactions with [money market funds] prior to the crisis were backed by non-Agency MBS/ABS and corporate debt, and almost all of this repo from [money market funds] disappears in the crisis.

In the bilateral repo market – where secured loans are made between large financial institutions with no intermediary – there is evidence of a huge increase in haircuts for a wide range of non-Treasury assets after the middle of 2007. By one estimate the average haircut rose from zero in the beginning of 2007 to 45 percent by the beginning of 2009.[24] Many bilateral repo borrowers are hedge funds and other firms seeking cash from the prime brokerage operations of broker dealers. However, dealers also fund themselves through this market.[25] So the rise in haircuts had an impact on leveraged dealer positions.

The liquidity crises and dramatic failures of Bears Stearns and Lehman Brothers were in significant measure caused by the disappearance of repo financing on which they

---

23 A. Krishnamurthy et al., op. cit., 4.
24 G. Gorton and A. Metrick, op. cit., 20-21.
25 T. Adrian et al. (2012), Repo and Securities Lending, Federal Reserve Bank of New York, Staff Report No. 529, December, 4-5.

were heavily dependent. In the run-up to their respective failures, various tri-party repo counterparties cut their exposures, required larger haircuts and higher interest rates, and ultimately ceased dealing with them.[26] The bilateral repo market also turned against Bear Stearns and contributed to its demise. According to the Financial Crisis Inquiry Commission report, repo lenders to two Bear Stearns internal hedge funds increased collateral haircuts or refused to roll over their loans before the funds filed for bankruptcy on July 31, 2007.[27]

The Federal Reserve was forced to support broker dealers to stem the run on repo financing

The Federal Reserve was so alarmed by the crisis in the repo market that it established two separate rescue facilities. The Primary Dealer Credit Facility (PDCF) provided overnight repo financing to primary dealers for tri-party eligible collateral. The Term Securities Lending Facility (TSLF) provided 28-day swaps of tri-party-eligible collateral for Treasury securities. The Treasury securities then could be used as collateral for repo borrowing.

Both these facilities were widely used by very large broker dealers, including those housed in major banks. Summary data on broker dealer borrowing from the PDCF and TSLF– which show large scale borrowing by several important broker dealers – are presented in Tables 1 and 2 in the Appendix. Borrowing from the TSLF was highly

---

[26] Financial Crisis Inquiry Commission (2011).Final Report of the National Commission on the Causes of the Financial and Economic Crisis in the United States, Government Printing Office, 280-91, 324-31; D. Duffie (2010), The failure mechanics of dealer banks, Bank for International Settlements, Working Paper No. 301, March, 16; A. Copeland et al (2010), The tri-party repo market before the 2010 reforms, Federal Reserve Bank of New York, Staff Report No. 477, November, 55-63.

[27] Financial Crisis Inquiry Commission (2011). Final Report of the National Commission on the Causes of the Financial and Economic Crisis in the United States, Government Printing Office, 280-91.

correlated with broker dealer financial weakness – as measured by leverage and cumulative stock price declines.[28]

3. Policy implications

The financial crisis was arrested through massive intervention by the federal government. The demonstrated willingness of the government to take such actions continues to reassure financial markets. However, many of the underlying structural problems that led to the crisis remain unresolved. The leverage of LBHCs is not yet constrained. Effective limitations on bank trading, much of which takes place in LBHCs, have yet to be put into place. Steps have not been taken to prevent runs on short term finance from putting the LBHCs in jeopardy once again.

The Dodd-Frank Act gave regulators the tools to achieve many of these necessary changes. Properly utilized, many of the existing threats to financial stability can be significantly limited.

Effective leverage limits for the largest banks

The Federal Reserve should use its authority under Section 165(b)(1)(A)(i) of the Dodd-Frank Act to impose significant new leverage requirements on the largest banks. These leverage ratios should rise with bank asset size, since the combination of size and high leverage increases the risk to financial stability.

[28] V. Archaya et al. (2011). Dealer Financial Conditions and the Term Securities Lending Facility: Was Bagehot Right After All, December 29, 5.

Required leverage ratio should be calculated using tangible common equity and tangible assets. During the financial crisis, market participants focused the market value of the equity of financial firms under stress. Of the available accounting measures of firm equity, tangible common equity comes closest to the values that market participants take seriously.

As can be seen in Figure 1, the leverage ratios for smaller banks are consistently and significantly lower than those of the large bank holding companies. A natural hypothesis is that this reflects the differential treatment that lenders give to big banks that have an implicit guarantee from the federal government because they are "too big to fail." Some have suggested that leverage limits for the big banks should be set at the level that market forces have determined is appropriate for banks without implicit government guarantees. That would imply a leverage limit of about 16.

However, there is good reason to believe that the leverage ratio of smaller banks would be inadequate for large banks. While smaller banks may not have the same "too big to fail" guarantee, they are still inside the federal safety net. They have access to discount window, and they have sticky sources of funds because their depositors are federally insured. This exempts them from substantial market discipline.

Moreover, to the extent that leverage ratios at smaller banks do reflect the effects of market discipline, that discipline will never take externalities into account. That is, large equity losses at several smaller banks can have an important impact on overall financial stability. The failures of WaMu, Wachovia, and IndyMac certainly contributed to overall financial distress during the financial crisis. But market forces do not take account of such

externalities when funding the borrowing of individual banks, precisely because they are externalities.

In fact, recent research by the Centre for Economic Policy Research indicates that an upper bound for the leverage ratio should be much lower – approximately 5.[29] This research indicates that this significantly reduced leverage ratio will deliver significant net economic benefits:

> We conclude that even proportionally large increases in bank capital are like to result in a small long-run impact of the borrowing costs faced by bank customers….In light of the estimates of costs and benefits we conclude that the amount of equity funding that is likely to be desirable for banks to use is very much larger than banks have had in recent years and higher than the minimum agreed Basel III framework." [30]

The Federal Reserve has proposed adopting the Basel III capital requirements as part of its implementation of Section 165 of the Dodd-Frank Act. This will allow the large bank holding companies to maintain very high leverage ratios. [31] To reduce threats to financial stability, permissible leverage should be significantly lower.

---

[29] D. Miles et al. (2011). Optimal Bank Capital, Centre for Economic Policy Research Discussion Paper 8333, 38, available at www.cepr.org/pubs/dps/DP8333.asp.

[30] D. Miles et al., op. cit., 3.

[31] Basel III calls for a phased- in capital to risk-weighted-assets ratio of 10.5 percent, of which 7 percent is common equity. Large so-called G-SIB's are to have a maximum 3.5 percent additional capital surcharge. So if a G-SIB were assessed the full additional 3.5 percent surcharge, the common equity/risk-weighted asset ratio would be 10.5 percent. Since risk-weighted assets are on average significantly less actual assets – by one estimate approximately 40 percent less – the ratio could be less than 6.3 percent, giving a leverage ratio of nearly 16 relative to common equity.

Effective implementation of the Volcker Rule

LBHC trading created significant losses and threats to financial stability during the financial crisis. Section 619 of the Dodd-Frank Act (the "Volcker Rule") requires that those risks be eliminated, through the elimination of proprietary trading, and necessary restrictions on permitted trading.

Rules on market making, which remains permissible under the statute, must eliminate incentives to disguise proprietary trading as market making. The risks posed by trading in Treasury securities and certain other assets, which also remains permissible under the statute, need to be reduced by effective leverage requirements.[32]

Limit firm revenue and trader compensation to observable bid-ask spread

To eliminate trader incentives to take large, high-risk positions in hopes of large bonuses, revenue for permitted market making activity must be strictly limited to an observable and meaningful bid-ask spread or fees and commissions.

An observable and meaningful bid-ask spread will exist only where traders continuously offer to buy or sell a well-defined asset and actively do so, allowing the

---

[32] Better Markets has filed three comment letters in connection with the proposed Volcker Rule: *See* Better Markets Comment Letter, November 5, 2010 on Study Regarding Implementation of the Prohibitions on Proprietary Trading and Certain Relationships with Hedge Funds and Private Equity Funds ("Better Markets 11/5/10 Comment Letter") *available at* http://www.bettermarkets.com/sites/default/files/FSOC-%20Comment%20Letter-%20Volcker%2011-5-10.pdf; Better Markets Comment Letter, February 13, 2012 on Prohibition on Proprietary Trading and Certain Relationships with Hedge Funds and Private Equity Funds ("Better Markets 2/13/12 Comment Letter") *available at* http://www.bettermarkets.com/sites/default/files/SEC-%20CL-%20Volcker%20Rule-%202-13-12.pdf; and Better Markets Comment Letter, April 16, 2012 on Prohibitions and Restrictions on Proprietary Trading and Certain Interests in, and Relationships with, Hedge Funds and Covered Funds ("Better Markets 4/16/12 Comment Letter") *available at* http://www.bettermarkets.com/sites/default/files/CL%20CFTC%20FINAL%20Volcker%20Rule%204-16-12.pdf.

calculation of the spread from contemporaneous, executed purchases and sales with non-dealer customers. The existence of such a bid-ask spread shows that market making services – the provision of immediacy to customers who desire to buy or sell – are actually being provided.

This limitation will have the effect of eliminating trader incentives to hold unhedged asset inventories. Because by definition significant income from the price appreciation of positions will be a signal that the traders are not engaged in market making, they will have a strong incentive to carefully hedge the inventories that they do hold to meet client demand.

In addition, requiring observable and meaningful bid-ask spreads will prevent banks from using the market making exemption to take positions in assets that are:

- traded so infrequently that bid-ask spreads cannot be calculated from contemporaneous purchases and sales; or

- so-called Level 3 assets that are "marked to model", such as "structured" securities or complex bespoke derivatives.

During the crisis, trader inventories of these assets proved to be worth far less that their reported values indicated. Firms such as Citigroup and Merrill Lynch were forced to write down their positions and recognize losses that severely weakened them.[33] Eliminating the accumulation of positions in these highly risky assets in the banks will in

[33] The effects of impossible to value CDO securities on Citigroup are discussed in the Better Markets 2/13/12 Comment Letter, op. cit.

itself make them more stable. Moreover, it will meet the requirement of Section 619(d)(2) of the Dodd-Frank Act, which prohibits trading activity that exposes a banking entity to high risk assets and high risk trading strategies, or threatens financial stability.

In addition, by eliminating impossible-to-value assets from trader balance sheets, market participants will be better able to assess the risk of transacting with bank dealers. This should increase market discipline of the market makers. Moreover, regulators will have a more accurate idea of the solvency of the traders they oversee.

Finally, an obvious but nonetheless important benefit of limiting permissible market making income is that it provides an easily monitored, market generated metric that will give bank traders clear guidance on what they may do. This will clearly satisfy any demand for bright lines or safe harbors for trading activity.

Establish leverage limits for permitted trading

Although the Volcker Rule specifically permits a few enumerated non-proprietary trading activities, such as market making, from the prohibition on proprietary trading, even those few permitted activities are qualified. In particular, subsection 619(d)(2)(A) removes the permitted status of any activity that

> "……
>
> (ii) would result, directly or indirectly, in a material exposure by the banking entity to high-risk assets or high-risk trading strategies (as such terms shall be defined by rule as provided in subsection (b)(2);
>
> (iii) would pose a threat to the safety and soundness of the banking entity; or

(iv) would pose a threat to the financial stability of the United States."

Events of the financial crisis have demonstrated that the financial model still used by bank broker dealers is highly unstable and poses significant threats to bank safety and soundness, and to overall financial stability. Broker dealers historically have been highly leveraged, willing to depend on repo and other short term borrowing to fund longer maturity and less liquid assets, and subject to fatal lender runs in times of stress. These weaknesses required the Federal Reserve to create the TSLF and PDCF in order to bail out the broker dealers during the crisis.

Because of the demonstrated threat posed by the broker dealer funding model, any rule implementing the Volcker Rule needs to address its weakness directly. By doing so the rule would decrease the likelihood that otherwise undeterred proprietary trading would create significant threats to a bank or to overall financial stability. Unfortunately the proposed rule does not do so. Instead, in merely restates Section 619(2)(A) in slightly altered form.

What the rule ought to do is place meaningful leverage and liquidity requirements on bank broker dealers. The lower the permitted leverage, the smaller the impact of an asset price decline on the equity of any one trader. The higher the liquidity requirements, the less likely that an asset price decline would result in a forced asset sale.

It must be recognized that unless leverage and liquidity requirements are very tough, the threats created by bank trading operations will persist. Runs by bank depositors are not deterred by fractional capital requirements alone, because depositors know that they can take losses if the bank's assets lose sufficient value. Depositor runs are prevented

by deposit insurance, which assures depositors that they will not lose by continuing to fund the bank. But there is at the moment nothing analogous to deposit insurance for repo lenders. So it is entirely predictable that in a period of market turmoil repo lenders will reduce the acceptable leverage ratio for assets they fund from fifty to two, or exit the repo market altogether, at a moment's notice, just as they did during the financial crisis. Therefore, to meet the requirements of 619(d)(2)(A) the proposed rule must mandate low leverage and high liquidity for bank broker dealers.

Effective regulation of shadow banking system.

The Financial Stability Oversight Council has adopted rules to implement Section 113 of the Dodd-Frank Act, which provides authority for designating systemically significant nonbank financial firms for supervision by the Federal Reserve.[34] That is, Section 113 gives the federal government the power to bring the shadow banking system into the light of regulation. The runs on repo and on asset-backed commercial paper during the crisis demonstrate that asset conduits and the repo market need to be designated and supervised to prevent a repetition of these events in the future. [35]

---

[34] *See* Comment Letter filed by Better Markets December 19, 2011 on Authority to Require Supervision and Regulations of Certain Nonbank Financial Companies *available at* http://www.bettermarkets.com/sites/default/files/CL%20FSOC%20SIFIs%2012-19-11.pdf

[35] Federal Reserve Governor Daniel Tarullo has publicly acknowledged that the tri-party repo market – where some but certainly not all repo lending takes place – needs oversight. *See* http://www.federalreserve.gov/newsevents/speech/tarullo20120502a.htm.

Appendix

Figure 1

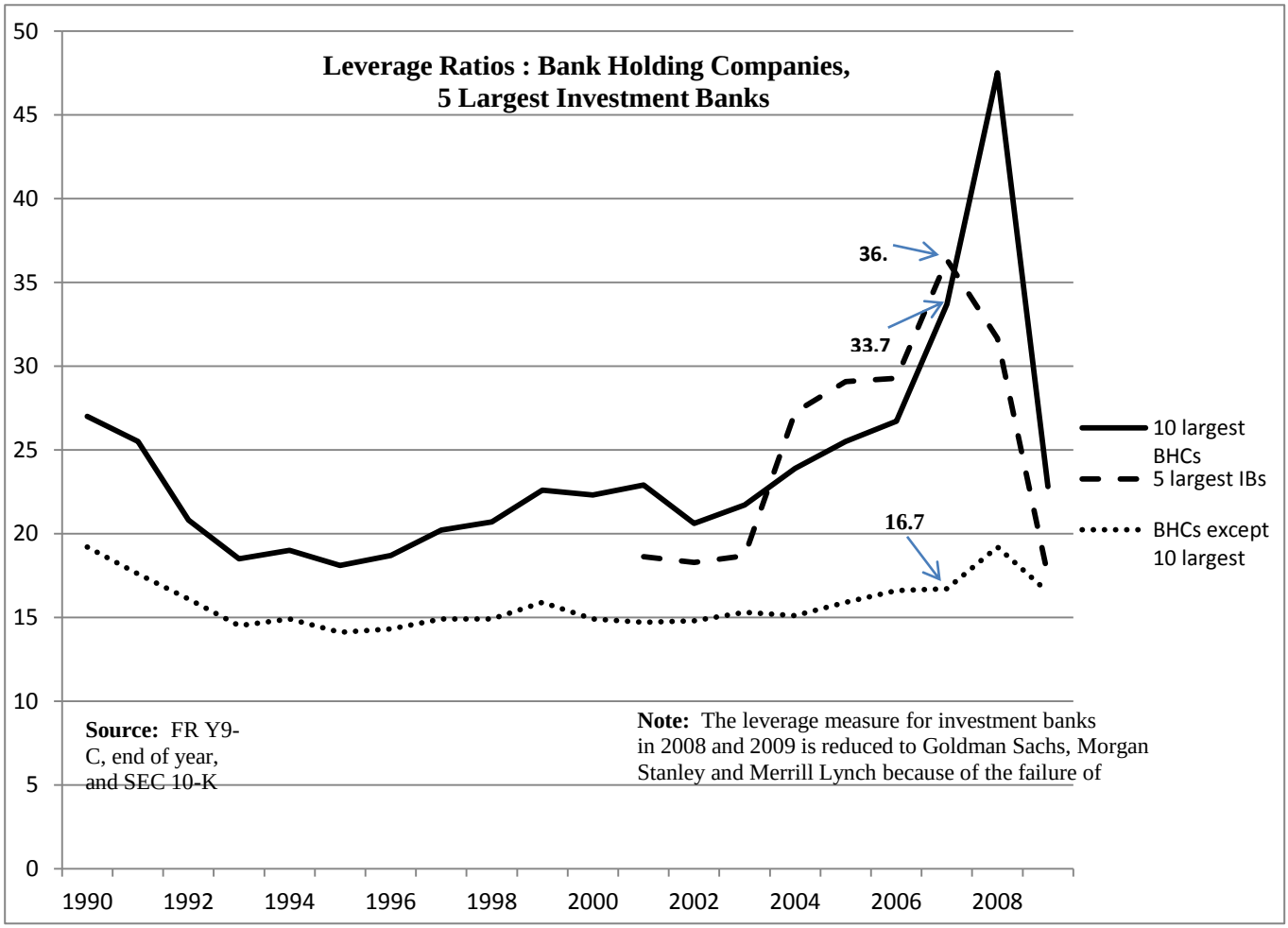

Table 1

Borrowing from PDCF

Dealer	Number of Borrowings	Average Amount Borrowed ($M)	Total Amount Borrowed ($M)
Merrill Lynch Government Securities Inc.	226	9210	2081388
Citigroup Global Markets Inc.	279	7241	2020219
Morgan Stanley & Co. Incorporated	212	9022	1912625
Bear, Stearns & Co., Inc.	69	13915	960102
Banc of America Securities LLC	118	5414	638856
Goldman, Sachs & Co.	85	6933	589308
Barclays Capital Inc.	74	5546	410437
Lehman Brothers Inc.	10	8332	83322
Countrywide Securities Corporation	75	1027	77035
BNP Paribas Securities Corp.	43	1544	66375
Mizuho Securities USA Inc.	108	392	42312
UBS Securities LLC.	8	4425	35400
Cantor Fitzgerald & Co.	61	460	28060
J. P. Morgan Securities Inc.	3	1007	3020
Credit Suisse Securities (USA) LLC	2	750	1500
Deutsche Bank Securities Inc.	1	500	500
Daiwa Securities America Inc.	1	440	440
Dresdner Kleinwort Securities LLC	1	93	93

Source: http://www.federalreserve.gov/newsevents/reform_pdcf.htm. Dealers ranked by total amount borrowed.

Table 2

Borrowing from TSLF

	Schedule 1		Schedule 2		
Dealer	**Average Amount Borrowed ($M)**	**Number of Borrowings**	**Average Amount Borrowed ($M)**	**Number of Borrowings**	**Total Borrowings ($M)**
Citigroup Global Markets Inc.	2,086	20	3,781	43	204,282
RBS Securities Inc.	1,610	14	3,298	43	164,370
Credit Suisse Securities (USA) LLC	1,592	11	2,966	41	139,094
Deutsche Bank Securities Inc.	2,746	20	2,546	31	133,866
Barclays Capital Inc.	1,733	21	1,700	43	109,508
Goldman, Sachs & Co.	1,221	15	2,445	36	106,328
Merrill Lynch Government Securities Inc.	610	5	2,298	33	78,891
Morgan Stanley & Co. Incorporated	517	6	1,224	25	33,706
UBS Securities LLC.	438	4	1,631	17	29,477
Lehman Brothers Inc.	395	5	1,276	13	18,560
Banc of America Securities LLC	838	8	820	14	18,177
J.P. Morgan Securities LLC	575	7	580	14	12,144
BNP Paribas Securities Corp.	718	9	99	10	7,458
Countrywide Securities Corporation	97	5	60	5	782
HSBC Securities (USA) Inc.	0	0	52	11	569
Cantor Fitzgerald & Co.	61	4	10	5	294
Bear, Stearns & Co., Inc.	0	0	35	2	69
Dresdner Kleinwort Securities LLC	33	2	0	0	65

Notes: The tables reports the average amount borrowed and the number of borrowings by dealer for the 33 Schedule 1 and 58 Schedule 2 operations. Borrowings through the TSLF Options Program are excluded. Dealers that never borrowed from the program are excluded. Dealers are ordered in the table based on the weighted average quantity borrowed across the Schedule 1 and Schedule 2 operations, with weights based on the number of Schedule 1 and Schedule 2 operations (i.e., 33 and 58)

Source: Archaya et al. (2011), dealers ranked by total borrowing.