

König, Philipp; Pothier, David

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The Bank Capital Debate: Should Fragility Be Reduced?

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DIW Roundup
Politik im Fokus

The Bank Capital Debate: Should Fragility Be Reduced?

The Bank Capital Debate: Should Fragility Be Reduced?

Philipp König | pkoenig@diw.de, David Pothier | dpothier@diw.de | Department of Macroeconomics

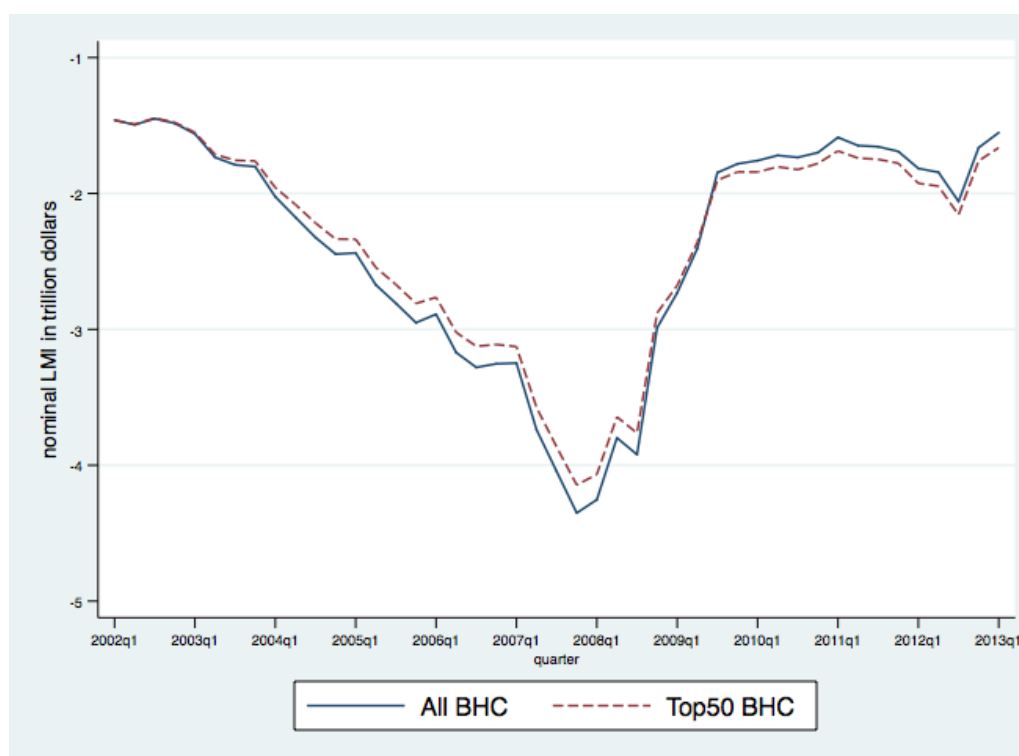
The recent financial crisis has exposed the fragility of the banking sector to sudden withdrawals of wholesale funding, asset price declines and market dry-ups. Governments and central banks had to step in to prevent major banks from defaulting. These events led to renewed interest in the question whether the fragility of banks should be tolerated as a necessary, even desirable feature of an efficient process of financial intermediation, or whether banks should be subject to stricter regulation *ex ante*. This Round-Up summarizes the key arguments on both sides of the debate.

Banks are fragile...

One way to assess bank fragility is to look at the ratio of total assets to equity (leverage ratio). This ratio tells one by how much a bank's asset value can fall before its equity is wiped out and it becomes insolvent. For example, with a leverage ratio of 5, a 20 percent decrease in asset values suffices to erase total equity. [Kalemli-Ozcan et al. \(2012\)](#) show that on the eve of the financial crisis in 2007, almost all major banks exhibited leverage ratios above 10, with the top-three most levered banks being Deutsche Bank (49), Barclays (38), and Bear Stearns (34). Moreover, banks' average leverage ratio between 2000 and 2009 was around 12.4. For comparison, the average ratio for non-financial firms (not listed on the stock exchange) reached its peak in the US in 2008 at around 2.5, while in Europe it peaked at a value of 5 in 2000 and fell to around 4.5 in 2012. These numbers imply that, on average, non-financial firms can survive asset value fluctuations up to ten times as large as banks.

Another way to capture bank fragility is by measuring the liquidity mismatch between the market liquidity of their assets (the ease with which assets can be exchanged for cash) and the funding liquidity of their liabilities (the ease to meet creditors' claims with immediacy). [Bai et al. \(2013\)](#), building on [Brunnermeier et al. \(2012\)](#), compute a liquidity mismatch index (LMI) that measures the net of asset and liability side liquidity. Expressed in units of currency, the LMI shows the amount of funds that a particular bank can obtain at a given point in time in excess of what it needs in order to meet its creditors' claims. Figure 1 below, taken from Bai and others, shows the development of the aggregate LMI for bank holding companies in the US between 2002 and 2012. The value in the trough in the last quarter of 2007 is a striking -4.35 trillion USD. To illustrate this number, suppose that bank creditors had withdrawn (in accordance with the maturity of their claims) their funds and banks had tried to make up the lost funding by borrowing using their assets as collateral. The LMI then shows the amount of funds lacking to fully meet creditors' claims. A negative LMI does not mean that US-banks are insolvent *per se*, but indicates that even though assets may generate a positive net present value at maturity, banks may face tremendous difficulties in raising sufficient funds against them when needed.

Figure 1: Liquidity Mismatch Index



Source: Bai, J., Krishnamurthy, A. and Weymuller, C-H. (2013): [Measuring Liquidity Mismatch in the Banking Sector](#)

Theoretical views on bank fragility...

The question whether the fragility of the banking sector is an inevitable, even desirable feature of an efficient process of financial intermediation has been subject to intense academic debate. There are essentially two viewpoints justifying bank fragility and contending that bank failures are a necessary byproduct of an otherwise efficient process of financial intermediation.

First of all, the “disciplining view” asserts that bank fragility and a short-term liability-structure help to prevent potential misbehavior by bank managers. To prevent misbehavior, creditors of leveraged institutions may credibly threaten to withdraw their funds if they become aware of any malpractices. Since a bank-run leaves the manager empty-handed, the mere threat of a run will give him the necessary incentives to behave properly. Proponents of this view are numerous. The most important examples are the papers by [Calomiris and Kahn \(1991\)](#) or [Diamond and Rajan \(2000, 2001\)](#). The idea of liability-side fragility constituting a disciplining device has also made its way into the policy debate. For instance, the Squam Lake Report contains statements such as “the continuous process of external financing provides valuable discipline on management” (p. 43) or “debt is valuable in a bank’s capital structure because it provides an important disciplining force for management” (p. 55).

Secondly, the “liquidity view” stresses banks as creators of money. Since they create “informationally insensitive” liabilities, these can be easily used as means of payment; i.e. banks produce liquidity (Strahan, 2009). The earliest contributions to

this view are [Diamond and Dybvig \(1983\)](#) or [Gorton and Pennacchi \(1990\)](#). This view is sometimes seen to support high leverage ratios: the shorter the funding base, the more liquidity banks produce and the more efficient the liquidity supply to the financial system will be. Although the liquidity view acknowledges the potentially devastating consequences of bank defaults, its proponents claim that this calls for government action during a banking crisis in order to guarantee a steady supply of liquidity, rather than supporting *ex ante* regulatory measures.

An academic myth...?

[Admati et al. \(2013\)](#) and [Admati & Hellwig \(2013a, 2013b\)](#) disagree and heavily criticize both of these views. In their opinion, the idea that bank fragility is a beneficial and inevitable feature of banking is an academic myth. With respect to the disciplining view, their argument is twofold. First, they doubt the effectiveness of fragile funding as a disciplining device. Second, they point out that the costs of this mechanism are so large that it would be inefficient to rely on it even if it were effective in disciplining bank management. Moreover, when push comes to shove, governments will invariably prefer to bail out troubled banks in order to avoid the large costs that follow bank failures. But if creditors expect a bail-out, the potential disciplining effects of external funding are likely to vanish. What is more, Admati & Hellwig claim that this view does not match the facts: in the run-up to the financial crisis, many banks drastically shortened the maturity structure of their liabilities, but this did not prevent them from accumulating large quantities of opaque and risky assets. [Pfleiderer \(2013\)](#) dubs models of the disciplining view “chamelons”, insofar as they are built on dubious assumptions without much connection to the real world while their implications continue to be emphasized (uncritically) in the policy debate.

With respect to the liquidity view, Admati & Hellwig stress the tension inherent between bank liabilities being informationally insensitive, thus serving as money-substitutes, and the resulting fragility of banks. In particular, if bank default risks are high due to excessive leverage, then debt liabilities cease to be unambiguous providers of liquidity. Furthermore, they point out that the disciplining view and the liquidity view make contradictory statements about bank creditors’ behavior: the former assumes creditors are active monitors of bank management implying that bank debt cannot be informationally sensitive, clearly contradicting the key assumption espoused by the latter view.

The liquidity view is further [criticized](#) by former Federal Reserve Board member Jeremy Stein. He argues that while banks issuing short-term debt capture its social benefits – namely, the monetary services it generates for other economic agents – they fail to internalize its costs. More specifically, in times of financial turmoil, excessively leveraged institutions will have to sell assets at fire-sale prices which in turn will negatively affect the debt capacity of healthy financial firms holding similar assets. This leads him to conclude that “left to their own devices, unregulated banks may engage in excessive money creation and may leave the financial system overly vulnerable to costly crises.”

Reducing bank leverage...?

If bank fragility is not beneficial, while its consequences - namely banking crises - are so costly, isn’t there anything that can be done in order to mitigate bank fragility? In this respect, Admati *et al.* (2011) strongly favor to limit leverage and enforce higher equity requirements for banks. While pre-crisis regulation already required banks to hold a minimum amount of capital, this was calibrated against risk-weighted assets rather than total assets, and banks enjoyed leeway to employ

their own risk-evaluation models. This, in turn, meant that risks were generally underestimated in order to reduce the amount of equity and to boost returns. Although post-crisis regulation now enforces higher standards on banks, Admati and others point out that even under these new rules, banks can still become highly levered because the posited requirements are still too small. This begs the question why policymakers may not raise equity ratios to a level that more effectively reduces bank fragility. Is it the result of old-fashioned influenced-peddling?

Contrary to this line of reasoning, others, including [Oxford Economics](#) (2013), [Elliot et al.](#) (2012) or [Elliot](#) (2013), argue that equity requirements are costly: they reduce the amount of credit provided to society, hamper liquidity production, raise costs to banks and their customers and, ultimately, slow down economic growth. This reasoning is based on the assumption that the issuance of equity is more costly than the issuance of debt. Proponents of this view usually point out that the apparent simplistic view of Admati and others fails to appreciate that the real world is not as simple as the idealized world of [Modigliani and Miller](#) (1958), where financial structure is irrelevant. [Admati and Hellwig](#) (2013b) counter these criticisms, arguing that: a) more equity would curb the excessive debt overhang problem of banks, thereby allowing them to make more loans, not less; b) even if equity is more expensive, then it must be because banks have so little equity in the first place; and c) it is not the private costs of banks that matter, but the costs to society as a whole. This leads them to conclude that “increasing equity requirements would reduce the cost to society of having a fragile and inefficient financial system where banks and other financial institutions borrow excessively and thus it would be highly beneficial.”

References

Kalemli-Oczan, S., Sorensen, B. and Yesiltas, S. (2012): Leverage across firms, banks and countries, *Journal of International Economics*, November 2012, 88(2), 284-298.
<http://www.sciencedirect.com/science/article/pii/S0022199612000529>

Admati, A., DeMarzo, P., Hellwig, M. and Pfleiderer, P. (2013): “Fallacies, Irrelevant Facts and Myths in the Discussion of Capital Regulation: Why Bank Equity is not Socially Expensive”, Max Planck Institute for Research on Collective Goods, Working Paper No. 2013/23.
http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2349739##

Admati, A. and Hellwig, M. (2013a): *The Bankers’ New Clothes: What’s Wrong with Banking and what to do about it*, Princeton University Press.

Admati, A. and Hellwig, M. (2013b): *The Parade of the Bankers’ New Clothes Continues: 23 Flawed Claims Debunked*, mimeo,
http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2292229

Bai, J., Krishnamurthy, A. and Weymuller, C-H. (2013): *Measuring Liquidity Mismatch in the Banking Sector*, mimeo,
http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2343043

Brunnermeier, M., Gorton, G. and Krishnamurthy, A. (2012): *Liquidity Mismatch Measurement, NBER Systemic Risk and Macro Modelling 2012*.
<http://www.nber.org/chapters/c12514.pdf>

- Calomiris, C. and Kahn, C. (1991): The Role of Demandable Debt in Structuring Optimal Banking Arrangements, *American Economic Review*, 1991, 497-513
<http://www.jstor.org/sici?sici=0002-8282%28199106%2981%3A3%3C497%3ATRODDI%3E2.0.CO%3B2-E&origin=repec>
- Diamond, D. and Dybvig, P. (1983): Bank Runs, Deposit Insurance and Liquidity, *Journal of Political Economy*, 91, 401-419.
<http://www.jstor.org/sici?sici=0022-3808%28198306%2991%3A3%3C401%3ABRDIAL%3E2.0.CO%3B2-Z&origin=repec>
- Diamond, D. and Rajan, R. (2000): A Theory of Bank Capital, *Journal of Finance*, 55, 2431-2465.
<http://onlinelibrary.wiley.com/doi/10.1111/0022-1082.00296/abstract>
- Diamond, D. and Rajan, R. (2001): Liquidity Risk, Liquidity Creation and Financial Fragility, *Journal of Political Economy*, 109, 287-327
<http://www.jstor.org/stable/10.1086/319552>
- Elliot, D., Salloy, S. and Santos, A. (2012): Assessing the Cost of Financial Regulation, IMF Working Paper, WP12/2013.
<http://www.imf.org/external/pubs/ft/wp/2012/wp12233.pdf>
- Elliot, D. (2013): Excessive Bank Equity Rules would slow the Economy, op-ed, The Brookings Institution,
<http://www.brookings.edu/research/opinions/2013/04/09-bank-equity-elliott>
- Gorton, G. and Pennacchi, G. (1990): Financial Intermediaries and Liquidity Creation, *Journal of Finance*, 45, 49-71.
<http://www.jstor.org/sici?sici=0022-1082%28199003%2945%3A1%3C49%3AFIALC%3E2.0.CO%3B2-4&origin=repec>
- Modigliani, F. and Miller, M. (1958): The Cost of Capital, Corporation Finance and the Theory of Investment, *The American Economic Review*, 48 (3), June 1958, 261–297
<http://www.jstor.org/stable/1809766>
- Oxford Economics (2013): Analyzing the Impact of Bank Capital and Liquidity Regulations on US Economic Growth, Report prepared for the Clearing House Association, April 2013
http://www.astrid-online.it/La-produtt/Studi--ric/Oxford-Economics_US-Growth_liquidity_04_2013.pdf
- Pfleiderer, P. (2013): Chameleon Models: The Misuse of Theoretical Models in Financial Economics, mimeo,
<http://www.gsb.stanford.edu/sites/default/files/research/documents/farfe%20panel%20pfleiderer.pdf>
- Squam Lake Report (2010): Fixing the Financial System, Princeton University Press
- Stein, J. (2012): "Monetary policy as financial stability regulation." *The Quarterly Journal of Economics*, 127 (1), 57-95.
<http://qje.oxfordjournals.org/content/127/1/57.full.pdf+html>
- Strahan, P. (2009): Liquidity Production in 21st Century Banking, Ch. 5 in *Oxford Handbook of Banking*, Oxford University Press, December 2009.

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DIW Berlin – Deutsches Institut
für Wirtschaftsforschung
Mohrenstraße 58, 10117 Berlin

Tel. +49 (30) 897 89-0
Fax +49 (30) 897 89-200
<http://www.diw.de>

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Alfred Gutzler
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