

Comments on Sarin and Summers (2016)

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Are banks safer than they were before the crisis?

Sarin and Summers (SS) apply a series of market tests. The Federal Reserve stress tests consider what will happen to bank regulatory capital under highly adverse circumstances, and assuming that the bank neither raises capital nor sells assets to offset risks. Those tests report that the banks are unlikely to lose more than a few percent of assets. SS show, in their measures of bank stock volatility, beta, price/earnings ratio, and out-of-the-money option pricing, that the market's risk-neutral probability that the major banks will lose their equity is about as high if not higher than it was in 2007.

They then look at CDS spreads, which go beyond the stress tests to look at the prospects of default, taking into account the chance that a bank will raise additional money and sell some of its risks on the way down, and the probability that there will be a bailout. Implied default probabilities are up, and are highest for the less-likely-to-be-bailed-out investment banks.

Finally, they look at preferred stock, which should incorporate the probability that a bank will raise new funds and sell risks as it loses capital but which has a lower probability of bailout. If anything, market risks are higher now.

SS's lead explanation is the sharp decline in the value of bank intangible assets since the crisis. For example, Goldman Sachs sold at about three times tangible equity per share before the crisis. Since then tangible equity has doubled but the share price and assets per share have

declined by about a third, leaving the company with a much improved regulatory capital leverage ratio but only a slightly improved market ratio.

So what have the regulators done right and what has to be done to make the banks actually safer?

Think of risk capital in a non-financial firm as being primarily tangible equity and long-term unsecured debt. For banks during the crisis long-term debt turned out not to be risk capital. Since then, regulators have successfully encouraged commercial banks to shift from long-term debt to equity, though the total of the two as a percentage of assets has not risen much; see Table 1. Furthermore, efforts are being made to make long-term debt, particularly at the bank holding company level, “cleaner”, so that a failure of the parent will be less consequential for the operations of a bank subsidiary. While the improvements so far may have been cancelled by the decline in intangibles, they are improvements nonetheless.

But we are failing in many other important respects.

Affecting all commercial banks:

First, total levels of capital required are still probably too low. The large commercial banks are at 20-23 percent equity plus long-term debt, versus 28-30 percent for the investment banks, whose requirements are more influenced by the market demands of their senior creditors, who do not have deposit guarantees. This even though the investment banks hold assets with lower average risk weights and greater liquidity. A way to think of this is that even if long-term debt counts as risk capital, the haircuts applied by the regulatory system to commercial banks are almost surely below market.

Second, there has been no move to mark bank assets to market. As we can see from Table 2, even for assets that they were supposed to mark to market the commercial banks mis-marked relative to the much more conservative investment banks such as Lehman.¹ This mis-marking, as well as the retention of high risk assets, is encouraged by the regulatory capital system, where a risky asset marked at 50 and with a 10 percent capital requirement counts as 45 in cash, even if a sale will reduce risk and only generate 20 in cash. The mis-marking also discourages the raising of new risk capital. For example, if regulatory capital is 10 per share while the stock price is 2 a bank must increase its share count by 5 percent if it wishes to expand its asset base by one percent and retain the same regulatory debt equity ratio. This effect, which banks call dilution, increases the market ratio of equity to debt and so makes debt safer, transferring wealth from equity holders to creditors and insurers – so banks don't want to do it.² Finally, because the sclerotic regulatory capital system realizes losses so slowly, it effectively places short-term unsecured bank debt ahead of the bank insurer, because there will be time to run between when the bank becomes insolvent and when it runs out of regulatory capital.

While some have sneered at the investment banks being under-regulated relative to the commercial banks, it is hard to think of what would be more important for bank safety than to make sure the bank assets were worth what they claimed. The system failed on this and we continue to have stress tests that explicitly ignore market values. Financial institutions when

¹ See Goldman Sachs (2008, 2009) and AIG (2008).

² See Acharya *et al.* (2012) for a comprehensive study of the capital raising of major banks during the crisis.

they trade amongst themselves will often mark to market and adjust capital requirements daily, making their positions safer even with relatively smaller capital margins.

The important thing is not so much using markets to set values of assets as to set capital requirements. Mervyn King (2016) suggests using measures akin to what the Bank of England uses when it lends against collateral. With coauthors³ I have suggested using market measures. If the market will lend you 70 against your Spanish government bond then the capital requirement is $p - 70$ where p is your book value, regardless of whether you mark your bond at 75 or 95.⁴

As applies to big banks only:

Despite all the effort so far, are we really confident that the regulators will allow another failure even at a major investment bank? The vast complexity of Basel 3, which is far beyond that of the humanly incomprehensible Basel 2, gives one doubt. We need to make long-term debt and other forms of unsecured obligations including lines of credit and unsecured claims against derivatives contracts literally incapable of triggering a default. This makes much more sense than selling government insurance for 10 basis points.

Finally, we need a system where as asset values fall balance sheets self-repair and banks are automatically incentivized to add risk capital in bad times. Even if there is no taxpayer loss in resolving a bank's current debts there is risk if on the way down the banking system needs more capital and banks will not raise it voluntarily.

³ See Bulow and Klemperer (2013) and (2015) and Bulow, Goldfield, and Klemperer (2013).

⁴ Care must be taken in using market haircuts for SIFIs to make sure that the lender does not have an implicitly government-guaranteed claim for any shortfall in the value of the collateral.

SS show, in a way that is much more convincing than has been done before, that despite all the efforts of regulators and the decline in reported leverage ratios there remain significant risks of failure in the banking system. Their data call into question whether the current system will really require banks to raise adequate new capital when losses occur. They look for the evidence that moving from an impossibly complicated system to a much more complicated one is helping, and cannot find it. While markets are too pessimistic about half of the time, SS ask whether we can be satisfied with letting taxpayers bear the risk that maybe market prices are right or even optimistic. This is an enormously valuable paper that not only calls into question the safety of the banking system but whether the approach that has been followed over the last seven years is really the right one.

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Table 1

Risk Capital/Assets in 2007 and 2015

Bank	Risk Capital (Tangible Equity) /Assets	Risk Capital (Tangible Equity) /Assets	RWA / Tangible Assets
	2007	2015	2015
4 CBs	19.3(3.7)	21.3(9.5)	71
2 IBs	19.8(3.1)	29.3(9.1)	58
BAC	15.8(3.6)	20.3(8.8)	77
C	22.5(2.3)	23.4(11.6)	71
JPM	16.9(4.8)	21.2(8.6)	65
WFC	23.7(5.9)	20.7(9.4)	72
GS	18.1(3.4)	30.1(9.6)	67
MS	21.6(2.7)	28.3(8.6)	49

Risk Capital is Long Term Debt plus “Tangible Equity”, which is defined as Equity minus Goodwill and intangibles other than mortgage servicing rights.

RWA is risk-weighted assets. All data is in percent.

Table 2

Marks of Commercial Banks
Vs. Investment Banks

Bank	Commercial Real Estate	Subprime CDOs	Alt-A
BAC	96	44	
C	95	46	80
Wachovia	91	58	55
Lehman	85	29	39
MS	75	15	35
Merrill		22	

Source: Goldman Sachs (2008). For examples with identical assets see AIG (2008). Merrill Lynch CDOs had been marked at 36 before a sale.