

MEMORANDUM

To: BCBS

Re: Comment on Leverage Ratio

By: Gordian Knot

Date: September 2013

Purpose:

The BCBS issued a consultation paper in June 2013 proposing a new leverage ratio (i.e. a minimum capital requirement based on total assets) with a request for comments by 20th September 2013 and a proposed public implementation date of 1st January 2015 (following a parallel run since 1st January 2013 until 1st January 2017).

This memo makes some observations about the BCBS's proposed approach and proposes both short and long term alternative approaches to achieve the same goals.

Executive summary:

The idea that leverage can become too high for the risks inherent inside a regulated bank balance sheet or across a regulated banking system is not new. The leverage ratio is an attempt to address the problem of excessive leverage with a simple "backstop" measure and standardised disclosure.

Unfortunately this simplicity creates damaging distortions to the incentives that banks have to minimise risk. This paper provides some examples of the distortions that the proposed leverage ratio can have and concludes with an alternative approach to assigning capital to risk which would be applied consistently across all banks.

Objectives:

What are the goals of a leverage ratio?

1. Minimise total leverage, irrespective of asset credit risk for both on- and off-balance sheet exposures and for both cash and derivative transactions
2. Provide a non-risk based back-up to the regulatory risk-based capital allocation requirement.

Analysis:

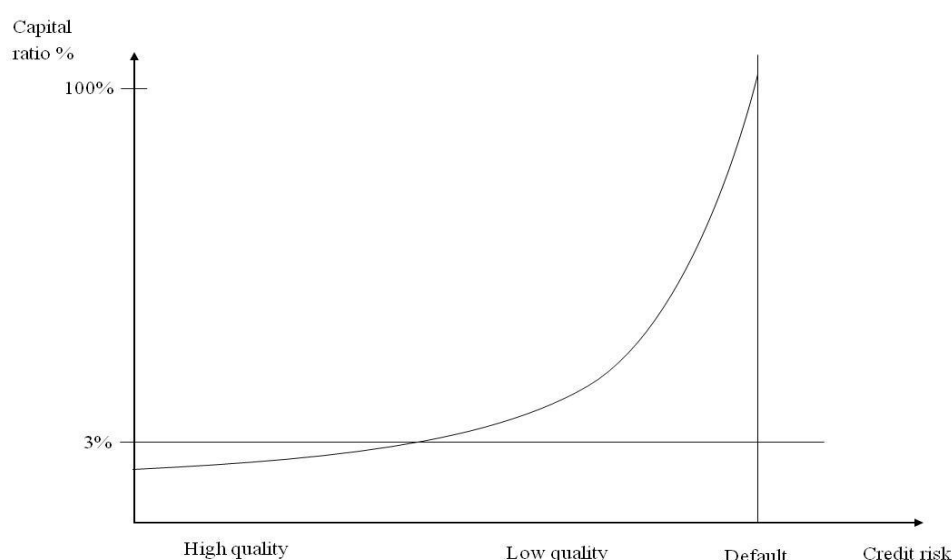
If a bank were to invest 100% of its portfolio in government debt, then it would require no capital and depositors could be confident that they were only exposed to government credit risk, market risk and any operational created by the bank. If the bank were required to limit its leverage ratio to 3% then rational management would increase credit risk to deploy capital to lower quality assets, either as an average increase in risk or by barbellising the portfolio (some assets held in government bonds and some held in very low quality assets). In either case, depositors end up taking more risk than they would without the 3% leverage ratio. It would be rational for investors to respond by investing in the same underlying government bonds via a less regulated entity such as a bond fund. This clearly isn't the intent of the leverage ratio but is the likely result. This is the same for banks with a mixed portfolio of loans and government assets, as at the margin, when capital is fully invested, for each additional government bond purchased additional capital would be required.

If a bank chose only to invest in very high quality corporate debt or in last loss tranches of securitisations, then expected returns and expected losses of both would be very low and the 3% leverage ratio would require an increase in risk to ensure that average capital requirement was always in excess of 3%.

In some ways the leverage ratio is similar to the original BIS 1 capital allocation system, although this also employed risk weights based on the type of obligor relative to its 8% base capital requirement. While there are attractions to the simplicity of a non risk-based capital approach the incentives this creates will be towards holding higher returning lower quality assets. If the capital ratio were set at, say, 20% then the implications on the availability and cost of credit to the economy must be considered. The capital control system is therefore a balance between safety and efficiency in the context of the banking system providing credit and recycling liquidity to the economy.

Graph 1 below shows a theoretical optimum capital allocation process, from government assets on the lower left corner (note that no assets require zero capital as no position is entirely risk free) through an ever increasing capital requirement as credit quality falls and up to 100% capital requirement for assets that are about to default.

Graph 1. Theoretical Capital allocation % and credit risk



The area in the bottom left hand corner of the graph (below the 3% line and above the theoretical capital allocation curve) represents assets that are high quality and that require less than 3% of economic capital to support them over an economic cycle. However, under the leverage ratio these assets require a minimum of 3% of capital making them uneconomic to hold on their own. Regulatory liquidity rules require banks to hold many liquidity eligible assets, such as government bonds, that would meet these characteristics. A rational portfolio manager who must hold a part of the portfolio in these liquidity eligible assets would logically barbell the portfolio with lower quality assets, which require much greater economic capital, such that the overall capital requirement is greater than 3%. For most banks with a large retail or SME business of lower quality borrowers the 3% requirement has no adverse effect. But if the bank has a strategy of low risk business only, such that owners and shareholders and management are committed to a truly low risk business, then the 3% leverage ratio results in an increase in risk.

Alternatively, a bank with a very low quality portfolio would not have any issue with the leverage ratio which would not be an effective control system, as the risk based capital control system would dominate all capital requirements.

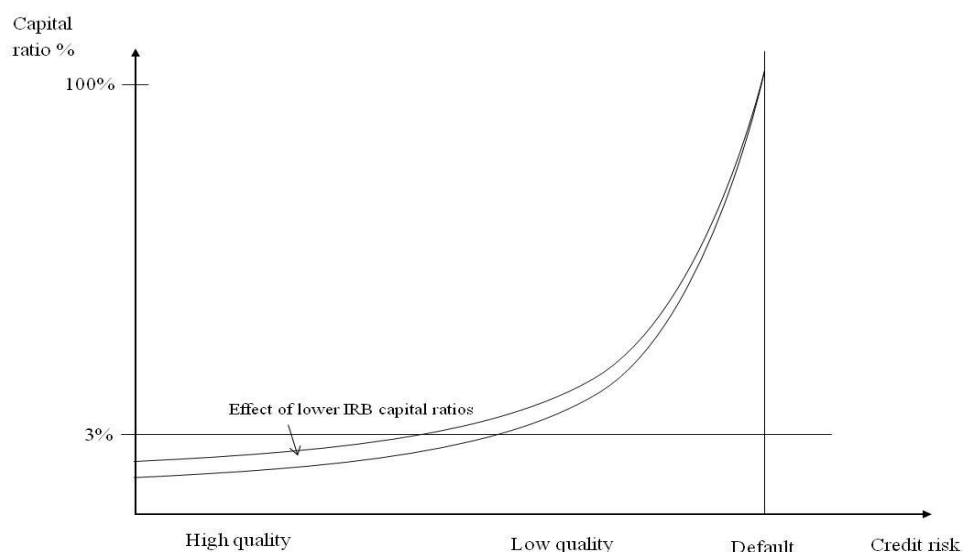
The proposed leverage ratio uses only Tier 1 capital as the numerator in the formula. This is widely seen as another way to improve the quality of banks' capital bases. Our view is that any form of capital that is truly capable of absorbing losses and that is longer in maturity than the asset portfolio should be part of the capital base. While we prefer a simple capital structure we note the regulatory preference for several "thin tranches" of capital under CRD IV.

The risk-based capital control system:

There are two alternative ways that banks are allowed to choose to assign capital to credit risk. These are the standardised approach and the internal ratings based approach (IRB). The standardised approach relies on external ratings while IRB allows a bank to create its own internal ratings based approach and this is back tested to past performance before regulators will allow it to be used. To the extent that the IRB approach requires less capital than the standardised approach it clearly provides banks with a competitive advantage as they can operate with less expensive capital and more lower cost debt. This can be seen as anti-competitive, improving the position of incumbents over new entrants, even if incumbents have demonstrated the quality of their processes over time. Our view is that the same asset held by two banks should always have the same capital charge, since the asset is independent of the lender.

The Modigliani-Miller dictum, that the mix of capital and debt has no bearing on the value of the business, does not hold due to the tax deductibility of interest payments on debt and the franchise value of being able to accept insured deposits. This will always result in banks seeking to optimise their capital debt mix towards the regulatory limit of least capital. As a result, banks have a strong incentive to lean on their IRB models to require less capital. This is one of the failings of the current system and the leverage ratio is an ex-post attempt to bolster an IRB approach that has allowed capital allocation to be reduced too far (the capital ratio required in graph 2 below has been moved down).

Graph 2. Capital allocation % and credit risk. Effect of IRB to reduce capital.



In several ways the risk based capital allocation systems are also very simplistic.

- These approaches do not recognise the difference between a single asset or a portfolio of assets of the same quality.
- Nor do they distinguish between a portfolio of similar assets or a portfolio of dissimilar assets (we are not going to go off topic with a discussion about the maths used to estimate correlation based on short term price movements – this may hold for short periods only, but in a liquidity crisis all price based correlations tend to 1).
- Nor do they look at the amount of income being earned from an asset or a portfolio of assets and relate this to either the diversification of the portfolio or to the amount of income as a sustainable ability to absorb first losses.
- They also do not treat credit enhancement, collateral and security taken to protect the lender or counterparty consistently.
- They are highly asymmetric in that loans (and deposits) are held at book value until written down while bonds, derivatives and traded liabilities are marked to market. For example, a fixed rate loan is not marked to market, while a swap to convert this into a floating rate asset that can be match funded is marked to market. The swap will require both initial margin, variation margin and capital add-ons. As a consequence of attempting to hedge risk a bank will have higher capital costs.
- Bilateral netting is allowed for most types of derivative but arbitrary add-ons for potential future exposure make all forms of derivatives heavy users of capital, resulting in banks taking more market risk than they would otherwise choose to accept.

Banks own economic capital models and models used by rating agencies (which are de facto industry standards) do include many of these factors and may include income (or excess spread) in the calculation of capital requirement. There is an argument for developing more sophisticated standardised capital models that cover risks in all dimensions. These would include the maturity of each asset, portfolio diversity and, a crucial component of risk that is rarely considered in capital adequacy calculations, the size and shape of the asset-liability maturity gap. So more sophisticated models do exist, but the challenge of applying them consistently across many banks in multiple jurisdictions is formidable. Therefore, we do not propose widespread application of these more sophisticated models, even if this is the most likely direction of regulatory travel in the near term.

Alternatives:

If the leverage ratio is intended to prevent high leverage then it is only required if the existing risk based control system is either not demanding enough or isn't applied rigorously.

Our belief is that banks have substantial flexibility with their local regulators in applying low capital requirements using the IRB approach and that capital requirements can be negotiated below the capital required for assets over the economic cycle. Certainly, capital is frequently not scaled to the maturity of the assets but to an expected holding period for trading activities.

The rigorous and consistent application of capital is made significantly more difficult by unique IRB models negotiated with local regulators. Shareholders, depositors, bond investors and analysts find it impossible to compare capitalisation across banks. Competitive advantage accrues to the bank able to persuade its regulator to agree to the lowest capital requirements. This increases the risk of regulatory capture and favours incumbents over entrants.

1. Rescaling the risk-based IRB capital approach to make it both more consistent across banks and set at a higher level, closer to the standardised approach would remove the need for the

leverage ratio and this should be considered a first step. This is reversing the effects shown in graph 2 above.

2. Developing more sophisticated models to adequately capture risk, even if it is entirely logical and well specified, is unlikely to be capable of being implemented globally and runs against the prevailing mood for simplicity.
3. Applying a common capital requirement based upon the return earned on each asset relative to a risk free benchmark resolves this process. This approach links capital requirements back to the overall market perception of risk avoiding the problems of ratings based capital models (standardised), obligor type capital models (per BIS 1) and negotiated/ratings based capital models (IRB).

Conclusion:

The leverage ratio is not likely to affect the behaviour of the most risk seeking banks, but will have a negative impact on banks seeking a low risk profile by increasing the cost of holding both high quality and the most liquid assets.

It is preferable to rescale the risk-based capital models approved by regulators in the form of the IRB capital models (used by many larger banks) back towards the standardised approach rather than distort the incentives of every bank to reduce risk or to increase liquidity as a first step. This has the benefit of reducing anti-competitive bias from the regulatory control system.

A more sophisticated risk-based capital model could be developed based on existing economic capital models that address all risks, but applying this consistently to all banks globally would be a formidable challenge.

An alternative long term solution would be to move towards calculation of risk-based capital based on the return observed above a risk free rate for all transactions. This approach to allocation of capital removes the requirement for ratings, IRB methodologies and requires significantly less regulatory involvement.