Basel III:
Capital Adequacy and Liquidity
after the Financial Crisis

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I. Introduction: Status Quo – The Basel Accord and The Financial Crisis

Capital adequacy has been the most fundamental pillar of international banking regulation since the 1980s. The adoption of the Basel Accord by the Basel Committee on Banking Supervision (“Basel Committee”) in 1988 (“Basel I”) established the first internationally applicable set of regulatory capital adequacy standards and has been implemented by numerous national bank regulators around the globe. Basel I was followed in June 2004 by a revised version of the Basel Accord (“Basel II”) which, through the external credit ratings-based standardized approach and the internal ratings-based approaches (foundation IRB and advanced IRB) for sophisticated banks, puts greater emphasis on an individualized risk-weighting of the assets held by banks and thereby seeks to “fine-tune” the amount of regulatory capital required of each institution, in contrast with the generic (some say: crude) risk buckets prescribed by Basel I. One of the overarching aims of the Basel Accord was the cross-border harmonization (ideally: unification) of regulatory capital requirements for internationally active banks in order to create a global level-playing field for competition. However, it is doubtful that this goal has been achieved. In particular, Basel II has driven the United States and the European Union apart because, whilst the latter required all banks to implement the Basel

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II framework by January 2007 pursuant to the Capital Requirements Directive,\(^2\) the United States decided to choose a different route and delay the implementation of Basel II. Currently, the advanced internal ratings-based approach to risk-weighting is mandatory for only the 10 largest internationally active US banks and their holding companies with effect from 1 April 2011; 10 more banks are eligible for advanced IRB upon satisfaction of certain qualification requirements. All other depository institutions have the option to either apply the Basel II standardized approach (although this is effectively purged by §§ 939, 939A of the Dodd-Frank Wall Street Reform and Consumer Protection Act’s ban on future reliance on external credit ratings) or continue to use a modified version of the Basel I scheme.\(^3\) Moreover, the federal US banking regulators decided to retain a minimum leverage ratio requirement, which describes the ratio of capital to total average non-risk-weighted assets, of 3% (at least 5% in order to be considered “well-capitalized” under the Federal Deposit

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\(^2\) Constituted by Directives 2006/48/EC and 2006/49/EC, as most recently amended by Directive 2010/76/EU of 24 November 2010 with regards to increased capital requirements for the trading book and re-securitizations.

Insurance Corporation Improvement Act of 1991’s prompt corrective action regime). The leverage ratio features as a capital floor applicable to all banks, a concept that prior to Basel III did not form part of the EU regulatory capital regime.

The financial crisis that took hold of financial markets around the globe in 2008-2009 witnessed, respectively, the emergency acquisition, bankruptcy, receivership, and public bail-out of numerous banks in the United States and Europe. Two major direct reasons, which cover the “true” underlying economic and structural origins of the crisis that have been discussed elsewhere, were responsible for the financial meltdown: first, banks’ balance sheets were unable to absorb the large-scale losses that resulted from writedowns and impairments on business and consumer loans gone bad as well as declining asset prices primarily of mortgage-related securities, which have been suffering from the “hard landing” of the residential housing market in the United States; secondly, the contagious effect of the liquidity freeze caused by the refusal of wholesale lenders and in particular money-market funds—who were themselves facing unprecedented redemption demands from their own investors—to roll-over existing or provide new short-term liquidity to banks that were, rightly or—due to contagion—wrongly, perceived to be exposed to large losses from investments in “toxic” mortgage assets.

One of the primary fallouts of this crisis have been calls for the reform of capital adequacy and liquidity standards for banks. The professed objective is to

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increase the resilience of the banking sector by requiring banks to hold more capital against their risk-weighted assets and to keep higher liquidity reserves in order to provide them with a greater cushion that will enable them to absorb losses and liquidity pressures before they begin to have an impact on short-term and long-term creditors that would endanger the stability and viability of the particular institution. Underlying this is the concern of policymakers to diminish the spillover effect of a future financial crisis from the financial sector, which has over the past three decades developed into a crucially important cornerstone of the modern globalized economy not merely in its traditional role as credit intermediary but also as a provider of transaction infrastructure (see e.g. payment systems), to the real economy resulting in a contraction of GDP with all its concomitant repercussions such as widespread job losses.

This paper will analyze that response of the Group of Twenty ("G-20") to the financial crisis which has attracted the greatest public attention, namely its adoption of a revised version of the Basel Accord comprising a new set of capital adequacy, leverage and liquidity standards prepared by the Basel Committee ("Basel III"). The paper will first outline the key reforms introduced by Basel III and the agenda for their global implementation. It will then aim to present a critique of Basel III through a consideration of the likely consequences and implications of the reforms for banks. The final section will discuss some alternative solutions that could and/or should be adopted, either instead of or in conjunction with Basel III, to increase the stability of the global financial system. It will be argued that whilst Basel III may have been the "obvious" policy
response and contains various worthwhile measures, the reforms do not go far enough, both in their design and implementation, and should be supplemented by instruments that accord a more pronounced role to the disciplining forces of the market.

II. THE REFORM OF CAPITAL AND LIQUIDITY REQUIREMENTS

A. BASEL III PROPOSALS ON CAPITAL AND LIQUIDITY

Basel III was announced by the Basel Committee on 12 September 2010\(^5\) and in large part confirmed the agreement that had been reached on 26 July 2010.\(^6\) It was approved by the G-20 at the Seoul summit on 12 November 2010 and officially published by the Basel Committee on 16 December 2010.\(^7\) As before, it does not have the force of a treaty and is dependent on implementation by national legislators and regulators.

The Basel III revisions to the Basel Accord focus primarily on the enhancement of the quantity and quality of capital, the reduction of leverage and pro-cyclicality, and liquidity management. The reform package can be unbundled into the following elements:


1. **Capital Composition and Quantity**

   - Common equity Tier 1 capital must be at least 4.5% of risk-weighted assets at all times, as opposed to 2.0% hitherto.
   - Tier 1 capital must be at least 6.0% of risk-weighted assets at all times, as opposed to 4.0% hitherto.
   - Total (Tier 1 plus Tier 2) capital must be at least 8.0% of risk-weighted assets at all times, as hitherto.
   - The definitions of common equity and additional Tier 1 capital and Tier 2 capital have been significantly tightened. There is a strong emphasis on common equity as the “purest” form of Tier 1 capital and retained earnings.

2. **Capital Conservation Buffer**

   - Banks will be required to establish a new capital conservation buffer consisting of common equity Tier 1 capital in the amount of 2.5% of risk-weighted assets in order to provide them with an extra cushion of capital on top of the above-mentioned regulatory minimum.
   - Once the capital conservation buffer is tapped into, it will have to be rebuilt through internal capital conservation in the form of progressive restrictions on discretionary earnings distributions like dividends and share buy-backs (illustrated in Table 1 below) and/or the raising of fresh capital from private investors. Capital depletions within the conservation

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9 See *ibid.*, p. 54-57.
range will not have a regulatory impact on the operation/activities of the bank.

- The underlying idea is to strengthen the resilience of banks against cyclicality by forcing them to build up a capital buffer in economically benign times that can be drawn upon in a downturn, whilst at the same time specifying the conditions for its replenishment through the imposition of distribution constraints.

<table>
<thead>
<tr>
<th>Common Equity Tier 1 Ratio</th>
<th>Minimum Capital Conservation Ratios (as % of earnings)</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.5% - 5.125%</td>
<td>100%</td>
</tr>
<tr>
<td>&gt;5.125% - 5.75%</td>
<td>80%</td>
</tr>
<tr>
<td>&gt;5.75% - 6.375%</td>
<td>60%</td>
</tr>
<tr>
<td>&gt;6.375% - 7.0%</td>
<td>40%</td>
</tr>
<tr>
<td>&gt;7.0%</td>
<td>0%</td>
</tr>
</tbody>
</table>

Table 1: Progressivity of earnings distribution constraints in the operation of the capital conservation buffer. Source: Basel Committee, *Basel III: A global regulatory framework for more resilient banks and banking systems*, supra note 7, p. 56.

3. **Countercyclical Buffer**

- Intended to be an additional measure against the procyclicality of risk-based capital requirements and to smoothen the spillover effect of capital losses resulting from credit growth and contraction cycles, the Basel Committee proposes the introduction of a transient countercyclical capital buffer of up to 2.5% common equity Tier 1 capital (or other fully

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10 See *ibid.*, p. 57-60 and Basel Committee, *Guidance for National Authorities operating the Countercyclical Capital Buffer*, December 2010, available at [www.bis.org/publ/bcbs187.htm](http://www.bis.org/publ/bcbs187.htm), for principles and criteria intended to govern the decision of national regulators on the imposition and the operation of countercyclical buffer requirements.
loss absorbing capital) to risk-weighted assets. The countercyclical capital buffer is designed to be prescribed, with regards to size and combination with other macroprudential tools, ad hoc (with a lead-in time of up to 12 months) by national regulators upon a finding, on a jurisdiction by jurisdiction basis, of the existence of “excess credit growth [...] leading to the build-up of system-wide risk”, and in turn to be disapplied upon a determination of the disappearance of excess credit growth.

• Due to the jurisdiction-specific character of the countercyclical buffer, which seeks to reflect differences in the cyclical state of national credit market conditions at any given point in time, the overall buffer requirement for internationally active banks is to be calculated as the weighted average of the national countercyclical buffers (if any) that are applicable in jurisdictions to which the relevant bank has private sector credit exposures.

4. Leverage Ratio

• For the first time the Basel Accord prescribe a non-risk based leverage ratio as a supplement or backstop to the risk-based capital requirements, which, as noted above, has long been an important feature of banking regulation in the United States.

• The initial target is a ratio of 3.0% Tier 1 capital over total exposure (generally based on the accounting measure).

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11 See Basel Committee, Basel III: A global regulatory framework for more resilient banks and banking systems, supra note 7, p. 60-63.
• Whereas the risk-weighted asset-based capital ratios focus primarily on the determination of the riskiness of the assets held by banks (i.e. the “left hand side” of the balance sheet), the leverage ratio seeks to limit the amount of debt that banks use to finance their operations relative to their equity capital. Thus, it is primarily concerned with the capital mix employed by banks (i.e. the “right hand side” of the balance sheet).

5. Liquidity Standards\textsuperscript{12}

• Again for the first time, Basel III seeks to introduce internationally harmonised minimum liquidity requirements. The Basel Committee has developed two minimum standards which serve different objectives:

• First, the Liquidity Coverage Ratio ("LCR") focuses on short term liquidity by requiring the ratio of banks’ high quality (ideally eligible for central bank funding) liquid assets to expected net cash outflow over a 30-day period under an acute stress scenario (assuming e.g. a significant downgrade of the bank’s credit rating, a partial loss of deposits, a loss of unsecured wholesale funding, increases in collateral calls) to be at least 100%.

• Secondly, the purpose of the Net Stable Funding Ratio ("NSFR") is to promote a compatible maturity structure of assets and liabilities and to limit over-reliance by banks on short-term wholesale funding to finance long-term assets. It encourages banks to maintain a ratio of available stable funding (defined as the portion of those types and amounts of

\textsuperscript{12} See generally \textit{ibid.}, p. 8-11 and for details Basel Committee, \textit{Basel III: International framework for liquidity risk measurement, standards and monitoring, supra note 7}. 
equity and liability financing expected to be reliable sources of funds over a one-year time horizon under conditions of extended stress) to the required amount of stable funding of at least 100%.

6. Counterparty Credit Risk

- With effect from 1 January 2013, the Basel II counterparty credit risk framework will be reformed by the application of stricter risk assessment criteria and higher regulatory capital requirements for counterparty credit risk exposures arising from trading, derivatives and securitization activities; conversely, banks will likely receive incentives in the form of lower risk-weightings for the use of central counterparties in the trading of over-the-counter derivatives.13

7. Systemic Risk

- The Basel Committee is investigating whether and to what extent it should prescribe global special requirements for systemically important financial institutions that would apply over and above the above-mentioned minimum regulatory capital and liquidity standards to strengthen their capacity for loss absorption. Likely measures are capital and liquidity surcharges, requirements for contingent capital and bail-in

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13 See ibid., p. 29-54. As to the capitalisation of bank exposures to central counterparties see Basel Committee, Capitalisation of bank exposures to central counterparties, Consultative Document, December 2010, available at www.bis.org/publ/bcbs190.htm. Note that the EU has already tightened the capital requirements applicable to the trading book and re-securitizations: see Directive 2010/76/EU, amending the Capital Requirements Directive.
debt, tighter restrictions on large exposures, and enhanced supervision.

Further progress on this issue can be expected later this year.\textsuperscript{14}

Overall, aside from the introduction of the new leverage ratio and liquidity standards, the net effect of Basel III on the regulatory capital requirements applicable to banks is that the total minimum level of capital will ultimately (by 2019) rise from the current level of 8.0% total capital to risk-weighted assets ("RWA"), of which 4.0% have to consist of Tier 1 capital with 2.0% common equity, to the rate of 10.5% total capital/RWA (including the capital conservation buffer; 8.0% excluding the capital conservation buffer), whereof 6.0% have to be in the form of Tier 1 capital with 4.5% common equity plus the 2.5% common equity capital conservation buffer (thus adding up to a total common equity Tier 1 requirement of 7.0%), to which a jurisdiction-specific countercyclical buffer of 2.5% common equity-equivalent capital might be added from time to time in periods of "excessive" national credit growth.

\textbf{B. Key Implementation Steps}\textsuperscript{15}

The Basel III reforms are designed to be implemented by national regulators over a transitional period. One reason for the relatively long phase-in periods was to give banks time to meet the higher capital standards not solely through raising new equity but also through earnings retention and balance sheet management without significant disruption of lending to the general economy.

\textsuperscript{14} Basel Committee, \textit{Basel III: A global regulatory framework for more resilient banks and banking systems}, supra note 7, p. 7-8. The G-20 summit in Seoul in November 2010 deferred the decision on whether capital surcharges for systemically important financial institutions should be set at the global or the national level to 2011.

1. **Capital Composition**

- As of 1 January 2013, banks will be required to have 3.5% common equity Tier 1 capital/RWA, 4.5% Tier 1 capital/RWA and 8.0% total (Tier 1 plus Tier 2) capital/RWA.
- On 1 January 2014, banks will have to meet a 4% common equity Tier 1/RWA requirement and a Tier 1 capital/RWA requirement of 5.5%.
- On 1 January 2015, banks are expected to meet the ultimate 4.5% common equity Tier 1/RWA ratio and the 6.0% Tier 1 capital/RWA requirement.
- The overall total (Tier 1 plus Tier 2) capital requirement of 8.0% thus remains unchanged.
- The regulatory adjustments (deductions and prudential filters) will be phased in from 1 January 2014 and be fully deductible from common equity Tier 1 capital by 1 January 2018.
- Capital instruments that no longer qualify as common equity Tier 1 capital under the revised qualitative criteria will be excluded from recognition as common equity Tier 1 capital with effect from 1 January 2013. Instruments that will no longer be eligible as non-common equity Tier 1 capital or Tier 2 capital will be phased out over a period of ten years, beginning on 1 January 2013 at a recognition level of 90% which decreases by ten percentage points on each subsequent anniversary.
2. Capital Conservation Buffer

- The capital conservation buffer will be phased in beginning on 1 January 2016 (at a level of 0.625% common equity Tier 1/RWA) and becomes fully effective at the level of 2.5% common equity Tier 1/RWA on 1 January 2019. However, banks are urged to apply prudent earnings retention policies to meet the target rate of 7.0% common equity Tier 1/RWA (regulatory minimum plus conservation buffer) as soon as possible.

- National regulators have been given discretion to accelerate the transition period, especially if they find that their country is experiencing “excessive credit growth”.

3. Countercyclical Buffer

- Like the capital conservation buffer, the countercyclical buffer will be phased in beginning on 1 January 2016 (at a level of 0.625% common equity Tier 1/RWA) and becomes fully effective at the level of 2.5% common equity Tier 1/RWA on 1 January 2019. This of course presupposes that the countercyclical capital buffer has been triggered by a finding by the relevant national regulator of “excessive credit growth [...] leading to the build-up of system-wide risk”.

- National regulators may choose to prescribe larger countercyclical buffers. They will also have discretion to accelerate the phase-in if they find that their country is experiencing a period of “excessive credit growth”.

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4. Leverage Ratio

- The transition to the new leverage ratio will occur in three stages: First, an initial period of supervisory monitoring which began on 1 January 2011 will seek to gather intelligence on whether the underlying components of the leverage ratio (Tier 1 capital and total exposure based on accounting measures) can be applied consistently, primarily in light of differences in national accounting standards and practices.

- Secondly, a parallel run period will commence on 1 January 2013 and run until 1 January 2017 in order to track, on the basis of semi-annual leverage data from banks, whether the proposed design and level of the leverage ratio of 3.0% is appropriate over a full credit cycle. From 1 January 2015, banks will be required to disclose their leverage ratio and its components.

- Based on the results of the foregoing, final adjustments to the definition and level of the leverage ratio will be made in the first half of 2017 before it will be accorded binding Pillar 1 treatment with effect from 1 January 2018.

5. Liquidity Standards

- The LCR will be introduced on 1 January 2015, after an observation period beginning in 2011.

- The NSFR is set to move to a minimum standard by 1 January 2018. It will also be subject to an observation period beginning in 2012.
• During the transition period, the Basel Committee will monitor the LCR and the NSFR and their impact on financial markets and economic growth through the establishment of reporting processes.

6. Implementation in the European Union and the United States

In the European Union, Basel III is intended to be implemented by an amended version of the existing EU Capital Requirements Directive (dubbed “CRD IV”) and will thus apply consistently across all member states. In addition to the amendments made by EU Directive 2010/76/EU with regards to capital requirements applicable to the trading book and re-securitizations, the European Commission recently conducted comprehensive public consultations on possible changes to the Capital Requirements Directive in March 2010 and on countercyclical buffers in November 2010. A consultation on the adoption of measures to strengthen bank capital requirements for counterparty credit risk is currently pending. A draft legislative proposal of CRD IV is expected to be

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16 Supra, note 2. Note, however, that the United Kingdom is actively considering the introduction of stricter capital requirements that would be out of step with a uniform adoption of Basel III throughout the European Union: see “How UK proposals compare with international rules”, Financial Times, 15 April 2011, p. 7. Switzerland has already pressed ahead with much stricter capital standards than envisaged by Basel III: see infra, text accompanying note 57.


published by the European Commission in March 2011, together with a micro- and macroeconomic impact assessment.19

In the United States, apart from a request for comments on a proposed rulemaking in relation to revisions to the market risk capital rule for trading positions,20 to the author’s knowledge no Basel III-related proposals for amendments to the regulatory capital regime administered by the federal agencies under Title 12 of the Code of Federal Regulations have been published to date – which may partly be due to the fact that the United States have not yet fully implemented Basel II for all institutions.21 It is to be noted, however, that the “Collins Amendment” enacted in §171 of the Dodd-Frank Wall Street Reform and Consumer Protection Act 2010 (“Dodd-Frank Act”) creates a statutory floor with regards to regulatory capital and liquidity requirements for banks, which the OCC, the Fed and the FDIC are proposing to implement by specifying a permanent floor equal to the Tier 1 and total risk-based capital requirements under the current generally applicable risk-based capital rules.22 Accordingly, the federal agencies will be able to transpose the requirements of Basel III only

21 See supra, text accompanying note 3.
to the extent they are consistent with the statutory floor mandated by §171 of the Dodd-Frank Act.23

Once again, this highlights the fact that the rules and principles adopted by the Basel Committee, lacking the binding force of a treaty, constitute only soft law and leave to national legislators and regulators whether and to what extent they will implement the Basel III reforms. More than ever, it thus remains to be seen whether the supposedly global reforms –having, after all, been approved by the G-20– will succeed in establishing a true global level playing field for competition among internationally active banks. Judging from the hitherto significantly differing levels of implementation of Basel II in the European Union and the United States, it seems highly doubtful that this goal will be achieved any time soon, making it more likely that there will instead continue to be significant scope for regulatory arbitrage in this area.24 This is all the more so given that the Basel Committee itself has explicitly left the adoption and design of some of the most thorny pieces of the reform bundle like, in particular, the countercyclical capital buffer to the choice of national policymakers.

23 See the notice of proposed rulemaking by the OCC, Fed and FDIC, supra note 3, p. 82320: “[...] as provided under the [Dodd-Frank] Act, any future amendments to the leverage requirements or risk-based capital requirements established by the agencies may not result in capital requirements that are “quantitatively lower” than the generally applicable leverage requirements or risk-based capital requirements in effect as of the date of enactment of the [Dodd-Frank] Act”. In essence, this means that the risk-based capital requirements under Basel III must not be lower than those under Basel I, which was the generally applicable law in force on the date of enactment of the Dodd-Frank Act.

III. CONSEQUENCES AND IMPLICATIONS: A CRITIQUE OF BASEL III

A. REDUCTION OF PRO-CYCLICALITY

One of the main objections to the ratings-based approach of Basel II is its pro-cyclical effect on business and credit cycles as it forces banks to raise additional capital in order to maintain their regulatory capital ratio when it is most expensive to do so, namely in times of an economic downturn marked by deteriorating credit quality, declining asset prices and scarce equity, whereas it requires banks to hold comparatively lower quantities of capital in an economic upturn marked by rising asset prices, increasing credit quality and, thus, lower risk weightings due to improved credit ratings. To put it differently, banks subject to the Basel Accord may be exposed to a vicious cycle set in motion by losses and writedowns on loans and other financial instruments which deplete their capital levels, forcing them to re-adjust their regulatory capital position either by raising fresh capital or shrinking their balance sheet through the disposal of riskier assets (likely in an environment of depressed prices) or contraction of their lending activities. Both of these are, due to the highly correlated nature of banks’ portfolios, likely to result in an oversupply of risky assets and equity instruments in the market, which will in turn further increase the downward pressure on asset prices and equity instruments and tighten the “credit crunch” felt by businesses and consumers, triggering further writedowns and losses for banks etc..

Not only from a prudential perspective but also from a macroeconomic point of view it therefore seems to be a good idea to require banks to build up
material capital buffers over and above the regulatory minimum during “good”, i.e. economically benign, times which they are allowed to eat into and deplete in a downturn in order to smoothen the volatile effects of the credit cycle. The Basel Committee has responded to calls by the United States Treasury Department, the United Kingdom’s Financial Services Authority and the Financial Stability Board by introducing the capital conservation buffer. This is a welcome measure as it emphasizes greater long-term prudence by requiring the establishment of an extra capital cushion when it is relatively easy and cheap to obtain through earnings retention and/or equity offerings. The buffer will be available as an extra cushion in periods of stress and can hence act as a shock absorber rather than as a transmitter of risk.

An alternative to the maintenance of an on-balance sheet capital buffer would be to allow or urge banks to obtain contingent “capital insurance”, i.e. the right, in consideration for the payment of an insurance premium, to issue capital to a counterparty in an economic downturn. A variant of this “put option” would be the issuance of contingent capital, which is discussed further below.

Furthermore, a more pronounced role should be accorded to dynamic loss provisioning. This would require banks to build up balance sheet reserves, over and above capital, for general expected credit losses over an economic cycle.

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26 Scott (2010), supra note 1, p. 445. As this arrangement is akin to the bank entering into a credit default swap written on itself, it would be essential for regulators to ensure that the counterparty risk is sufficiently controlled, e.g. through robust collateral requirements.

even before there is evidence of an impairment or actual losses on the loans (the latter are the usual triggers for the accounting recognition of losses). The provisions would be required to be made in “good” years with low credit losses and be “converted” into actual impairment/loss provisions in periods with higher than expected losses without triggering additional writedowns (up to the amount of the expected loss reserve) at that point in time. The countercyclical nature of dynamic provisioning would thus help smoothen the recognition of losses since they would be anticipated earlier in the cycle than under the current approach. To allay concerns that this might contribute to earnings manipulation and skewed, “imaginary” reporting of earnings and losses in conflict with the requirements of US GAAP and IFRS, one could mandate that the provisions not be run through the profit and loss statement but appear as an extra “pool” of capital on the balance sheet; in fact, dynamic loss provisioning would strongly support the case for a formal separation of regulatory capital accounting from financial reporting accounting, which is discussed further below.

While the establishment of a permanent structural capital conservation buffer coupled with earnings-distribution constraints is mandated under Basel III, the Basel Committee has left the design and operation of the ad-hoc, countercyclical capital buffer, which is meant to be tied to the prevailing macroeconomic circumstances, largely to the discretion and judgement of national regulators.28 It is likely that the definition and application of an affirmative finding of “excessive credit growth” as the trigger for the imposition

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of a countercyclical capital buffer requirement will result in significant differences between individual jurisdictions, both in theory and in practice, which would no doubt further undermine the overarching Basel objective to create a global level playing field for internationally active banks and distort competition among banks depending on the jurisdiction(s) in which they primarily operate.

B. LEVERAGE RATIO

The introduction of the leverage ratio which requires banks to maintain capital in the amount of a fixed percentage of the value of all assets regardless of their riskiness is a welcome addition to the regulatory armory. It has long been a cornerstone of banking regulation in the United States.

First, it will help avoid a repetition of the excessive leverage which banks (and especially investment banks and broker-dealers that have since converted to bank-holding companies, such as Goldman Sachs and Morgan Stanley) had built up in the run-up to the 2008-2009 financial crisis. A corollary of the highly levered balance sheet structure of many banks before and during the crisis was that they were unable to cope with the high demand for re-intermediation of large off-balance sheet exposures as their balance sheet growth was constrained by the amount of their regulatory capital.29

29 T. Schuermann, “Financial Re-Intermediation”, Remarks at the International Finance Seminar, Harvard Law School, 4 October 2010. According to the Basel Committee, based on year-end 2009 figures, the average leverage ratio was 2.8% for the largest internationally active banks and 3.8% for the rest; 42% of the largest internationally active banks and 20% of the rest would have been constrained by a 3.0% leverage ratio requirement: Basel Committee, Results of the comprehensive quantitative impact study, December 2010, available at www.bis.org/publ/bcbs186.htm, p. 14-15.
Secondly, the forced de-leveraging that occurred during the financial crisis amplified the downward pressure on asset prices, which in turn led to further declines in banks’ capital levels and the availability of credit to other financial institutions and businesses in the real economy when it was most needed. An *ex ante* ceiling on the permissible level of leverage could mitigate the magnitude of the *ex post* destabilizing effects of de-leveraging efforts in a credit downturn.

Third, and this is perhaps its most important advantage, the leverage ratio is comparatively easy to calculate and administer, especially in comparison with the highly technical and difficult (external, under the credit-ratings-based standardized approach, and internal, under the internal-ratings-based advanced approach) processes for the risk-weighting of assets under Basel II.\(^{30}\) In fact, it is arguable that the very introduction of a leverage ratio by the Basel Committee reflects a degree of mistrust towards the Basel II risk-weighting procedures, especially in view of the fact that Basel I was originally developed at least in part as a reaction to the (exclusive) use of a leverage ratio to regulate bank capital.\(^ {31}\) Thus, one might ask: if the leverage ratio is now really going to be the binding constraint that sets the capital floor, why should so much effort have been (and be) spent on devising and implementing the complex Basel II risk weighting procedures?

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\(^{31}\) Scott (2008), *supra* note 1, p. 282.
C. **Liquidity Standards**

If anything, the 2008-2009 financial crisis has illustrated that regulatory capital requirements cannot prevent a *liquidity* crisis. In fact, it has been noted that during the crisis a significant number of banks were experiencing liquidity problems and could not refinance themselves in the short-term wholesale lending markets despite having nominally adequate regulatory capital levels.\(^{32}\)

The rapid market shutdown demonstrated forcefully just how quickly liquidity can dry up, especially as a result of (warranted or unwarranted) contagion, forcing central banks around the globe to step in as lenders of last resort in order to avert a total collapse of the financial system.

The introduction for the first time of explicit international liquidity standards is a major cornerstone of Basel III to forestem the recurrence of a liquidity crunch of the magnitude witnessed in the recent crisis.

The LCR’s focus on 30-day liquidity will help promote short-term resilience whilst the NSFR is concerned with assuring a long(er)-term structural liquidity match between assets and liabilities and the use of reliable, high quality funding sources. It is likely that the impact of the LCR and in particular of the NSFR will be significant and affect the maturity transformation intermediation function of banks because they will now have a regulatory incentive to align, to a greater

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\(^{32}\) Basel Committee, *Basel III: International framework for liquidity risk measurement, standards, and monitoring*, supra note 7, p. 1. A. Greenspan, “How Dodd-Frank fails to meet the test of our times”, *Financial Times*, 30 March 2011, p. 9: “[In the summer of 2006] more than 99 per cent of all insured institutions met or exceeded the requirements of the highest regulatory capital standards”.
extent than before, the maturity of assets and liabilities. A “hoarding” of liquidity by banks would reduce the amount of lending to the real economy and constrain balance sheet growth. However, apart from the fact that it is debatable whether credit growth – which sometimes seems to be regarded as an end in itself, under the cloak of a need to stimulate economic growth – is genuinely preferable to an increase in the systemic stability of the banking sector even if that might indeed have the incidental effect of tightening the availability of credit to businesses and consumers, one conceivable way to address this concern might be to enable banks to at least partly satisfy the NSFR through the purchase of “liquidity insurance” from central banks in the form of a right, in return for the payment of a commitment fee, to draw down funds as and when needed.

D. **Overall Impact: De-leveraging**

Overall, Basel III will likely result in a significant de-leveraging of banks. The shift by Basel II from pre-determined risk buckets to external (standardized approach) or internal ratings-based (advanced approaches) asset risk assessments was effectively a capital-decreasing exercise. Basel III has decisively reversed this – essentially, one might regard it (i) as an extension of Basel I insofar as, whilst leaving the basic precepts of the Basel II risk-weighting

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33 Basel Committee, *Results of the comprehensive quantitative impact study*, supra note 29, p. 17-21, found that as per year-end 2009 banks had a cumulative shortfall of liquid assets in the amount of €1.73 trillion with regards to the LCR and of stable funding in the amount of €2.89 trillion with regards to the NSFR. For Group 1 banks (internationally active, well-diversified with Tier 1 capital in excess of €3bn), the LCR stood at 83% and the NSFR at 93%: *ibid*.


35 See, e.g., Scott (2010), pp. 437-439, 441 with further references.
methodology untouched, it changes the composition of regulatory capital by putting a much stronger emphasis on core equity, and (ii) as a reversal of Basel I and Basel II insofar as it stipulates the leverage ratio as a – compared to the US “well-capitalized” requirement of 5%, rather mild – capital floor. In short, banks will be required to hold more and better (i.e. fully loss-absorbing) capital against their risk-weighted assets. In order to attain the higher capital levels banks can manage the assets side and the liabilities side of their balance sheet: on the asset side, they could reduce their risk exposure through a securitization or sale of existing loans and other assets, scaling back new lending, and swapping existing assets against less risky assets in order to improve their overall risk-weighting profile; on the liability side, they could increase the amount of capital either externally through issuing new common equity and other qualifying loss-absorbing capital or internally through earnings retention and limiting distributions to shareholders. Seven observations about the likely consequences appear warranted:

First, the Basel Committee estimates that banks will need to raise (or retain earnings in the amount of) at least €173 billion in common equity in order to achieve the core 4.5% common equity Tier 1/RWA ratio applicable from 1 January 2015 and €602 billion in order to attain the 7.0% common equity Tier 1/RWA ratio (including the capital conservation buffer) applicable from 1 January 2019. Notably, these figures do not include any potential capital

surcharges that may be imposed on systemically important banks either globally under the auspices of the Basel Committee or by national regulators as an additional safety margin akin to a progressive tax.\footnote{Basel Committee, \textit{Basel III: A global regulatory framework for more resilient banks and banking systems}, supra note 7, p. 7; Dodd-Frank Act, §115(b); Scott (2010), \textit{supra} note 1, p. 442.}

Secondly, the new liquidity rules will, on average, cause banks to reduce the duration –\textit{viz:} increase the liquidity– of their assets and/or to increase the maturity of their own debt funding, both of which will have an impact on their maturity transformation function.

Thirdly, we are likely to see a significant impact on refinancings: Corporate borrowers, especially those in the leveraged loan market, are usually able to repay maturing term loans only if they can refinance themselves through taking out (re)new(ed) loans from the same or a new syndicate of banks, or by issuing debt or equity in the capital markets. The former will become more difficult if the banking sector is deleveraging itself; the latter is likely to prove equally difficult as corporate issuers may find themselves competing in the capital markets with banks seeking to raise equity or other loss-absorbing (debt) capital in order to comply with the new capital ratios. This will ultimately increase the cost of capital for all participants at least in the short- to mid-term.

Fourthly, banks may at least in part seek to adjust their capital ratio through the run-off or disposal of financial assets.\footnote{See, e.g., F. Guerrera and P. Jenkins, “Citi in bad assets sale as Basel III rules loom”, \textit{Financial Times}, 19 April 2011, p. 13.} If, due to the circumstances described in the preceding paragraph, debt funding for large-scale refinancings...
or acquisitions remains scarce, the prices of financial assets are likely to remain deflated, so that banks may have to sell at prices that are significantly lower than what they would have been able to obtain pre-crisis and, in particular, may cause them to realise losses that will eat further into their capital.

Fifth, the new liquidity requirements are likely to increase banks’ reliance on wholesale funding as additional customer deposits may be difficult to attract in the current low-interest environment. Although the cost of short-term funding in the wholesale market has significantly decreased from the levels seen in 2008-2009 when the wholesale money market literally shut down in the wake of the Lehman Brothers bankruptcy, they are still fragile and volatile relative to pre-crisis levels.

Sixth, Basel III’s pronounced emphasis on “core” risk capital in the form of common equity and retained earnings is a welcome adjustment of the debate about the Basel framework away from the hitherto dominant focus on risk-weighting methods and categories (reflected in the denominator of the capital ratios) to the quality of capital (reflected in the numerator),\textsuperscript{39} notwithstanding that this will likely make regulatory capital more expensive through the shift in demand from the markets for non-common equity Tier 1 capital and Tier 2 hybrid capital, which had been thriving prior to the crisis, to common equity and, potentially, contingent capital instruments (discussed below).

Lastly, and perhaps most importantly, the phase-in of the Basel III reforms will take place over a longer period than initially expected, largely due to

\textsuperscript{39} Scott (2010), supra note 1, p. 446-447. Although this is not meant to suggest that we should not seriously re-consider whether it is worthwhile to retain the Basel II risk-weighting methodology. See the discussion further below on this point.
concerns about their impact on bank lending activity and the pace of economic recovery (keyword: “credit crunch”). However, even if this is a valid concern – which is debatable as the real fallout of a tightening of credit conditions may be that banks will in future differentiate more stringently between creditworthy and not so creditworthy borrowers (keyword: “subprime” lending), a notion that goes to the very heart of what prudent and “safe and sound” banking means – a possible solution might be to force banks to comply with the increased capital requirements by raising fresh equity instead of adjusting their balance sheet through asset shrinkage. Furthermore, the rather long time horizon until Basel III will take full effect is exacerbated by the fact that it contains lots of placeholders and scope for deference to national legislators and regulators especially on the new and thorny issues, which calls into question the extent to which it is realistic to expect that the new rules will have been implemented consistently on a global scale before the next crisis hits.

IV. A SKETCH OF ALTERNATIVE AND COMPLEMENTARY SOLUTIONS

Perhaps the single most difficult problem besetting capital adequacy requirements is the conundrum of calibration: What is the “right” amount of capital that should be imposed on banks in order to make them fail-safe? In other words, how likely is it that the (risk-weighted) value of assets is going to

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decline by 8, 9, 10, 11, 15...%? This is incredibly hard, if not impossible, to assess, all the more so from an outsider's (viz. regulator's) point of view, as the Basel Committee itself admits.42

In addition, the individualized risk-weighting of assets under the standardized and perhaps even more so under the internal ratings-based approach mandated by Basel II, which replaced the generic risk buckets prescribed by Basel I, is extremely complex, technical and costly. As the massive “re-valuation” of asset prices during the financial crisis has shown, the valuation and determination of the riskiness of financial assets is rather an art than a science.

In view of the fundamental difficulties besetting the risk-weighting of assets and the calibration of regulatory capital levels, which have long been a primary focus of the debate among regulators, industry representatives and legal and economic scholars on the virtue of the Basel Accord,43 it seems worth thinking about alternative approaches to capital and liquidity-based bank regulation (which, it should not be forgotten, supplement the existing activities-based safety and soundness regulation and the behaviour-oriented conduct of business regulation of banks, both of which are outside the scope of this paper)44.


43 See, e.g., the discussion in Scott (2010), supra note 1, p. 430, 433-436, 440-450 with further references.

44 See, e.g., Carnell/Macey/Miller, supra note 1, chs. 5, 6, 7, 8; Dodd-Frank Act, Titles VI and X.
A. Leverage Ratio

Perhaps the most radical alternative would be to entirely scrap the Basel risk-weighted approach to capital and replace it simply with a “crude” overall leverage ratio supplemented by liquidity reserve requirements and market discipline. The appeal of this return to simplicity, which is to some extent inherent in the existing regulatory capital regime of the United States, lies in its transparency and easy “policeability”.\textsuperscript{45} As a beneficial side effect, there would be less scope for banks to become “too big to fail” because the leverage ratio, by virtue of putting a more direct (i.e. less “filtered”) emphasis on market-based constraints on a bank’s ability to raise equity capital from private investors, would effectively limit their size. On the other hand, the very fact that the financial crisis originated and had its greatest impact in the United States despite the existence of a leverage ratio for banks – which, as has been seen, however did not apply to non-bank financial institutions such as the late investment “banks” – shows that a leverage ratio is unlikely to be a panacea \textit{per se}.

B. Market Discipline: Stress Tests and Accounting

Another solution would be to strengthen Pillars 2 and 3 of Basel II, i.e. the roles of supervisory review and market discipline. The argument for greater reliance on market judgements is supported by studies which have shown that

more competition among banks increases their level of capital because they are subject to closer scrutiny from their lenders in a competitive environment.\footnote{46 See K. Schaeck and M. Cihák, "Banking Competition and Capital Ratios", IMF Working Paper 07/216, September 2007, cited by Scott (2010), supra note 1, p. 428.}

One tool to achieve this would be the introduction of regular, rigorous stress testing of banks' balance sheets and publication of the results on a names basis.\footnote{47 See the discussion in Scott (2010), supra note 1, p. 458-460 with further references.} The development of an internationally standardized stress test would, due to its primarily informational content, be relatively cost-efficient and provide an early warning system to creditors, shareholders, borrowers and other market participants to help reduce uncertainty, which, together with resulting speculation, is the main cause of contagion – this is arguably the most significant driver in the development of a widespread financial crisis. It could also help “soften the landing”, especially if stress tests were performed on a quarterly or even more frequent basis in order to keep stakeholders informed on a timely basis as it would taper the potential for negative surprises. With this in mind, it is regrettable that the European Banking Authority has decided again to ignore the very real scenario of a sovereign debt default by one or more of the Eurozone members in its design of the EU-wide 2011 stress test; to its credit, however, it will require banks to have a core Tier 1 ratio of 5% and accept a certain form of hybrid capital instrument widely used in particular by German Landesbanken (so-called “silent participations”) for recognition only on condition of an undertaking by their holders that they be converted into

\footnote{48 H. Scott, "How to Improve Five Important Areas of Financial Regulation: The Three C’s of Systemic Risk", Draft for the Kauffman Foundation, 30 August 2010, p. 1-4.}
common equity in the near future: both of these measures will have the effect of partially accelerating the official Basel III timetable for implementation.  

However, in view of the undeniable failure of “light touch” regulation that characterised the main financial markets in the last decade or so and the scepticism of free markets that has gained new ground as a result of the 2008-2009 financial crisis, it would appear almost certainly unfeasible politically to leave the determination of the “right” amount of capital entirely to the market. A more realistic solution might therefore be to use the capital requirements prescribed by Basel III as a “floor” which is then supplemented, on an institution-specific basis, by market-determined calls (or otherwise) for additional capital in view of the results of regular, publicized stress tests. Another possible market-based parameter which participants could (and probably to an extent already do) use to calibrate the capital cushion they require in order to transact, either as a counterparty or as a debt and/or equity investor, with a specific bank would be the extent of the spread of the bank’s subordinated debt yield over the Treasury benchmark.

Furthermore, the impact of capital adequacy requirements is highly dependent on accounting rules. It has been suggested that a separation of

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regulatory accounting from financial reporting accounting could increase market transparency from a prudential perspective.\textsuperscript{51} The primary objectives of the current US-GAAP-based accounting system are investor information, investor protection and efficient capital allocation. This is exemplified by the mark-to-market requirement, which is a prominent feature of the calculation of tangible common equity, i.e. the key accounting measure of shareholders’ exposure to losses. Investors are, however, not the sole potential addressees of accounting statements. For example, the mainstay of the accounting principles of various continental European countries is the protection of creditors.\textsuperscript{52} It seems desirable to supplement the existing accounting regimes for banks with an additional set of regulatory accounting statements which would focus on the loss absorbency potential of banks’ capital from a prudential, conservative long term point of view. Public disclosure of these should in turn be mandated in parallel with existing US-GAAP- or IFRS-based accounting statements. In fact, Basel III seeks to introduce enhanced disclosure requirements aimed at improving the transparency of regulatory capital and market discipline. In particular, banks will need to reconcile regulatory capital instruments and adjustments with the audited balance sheet and offer a comprehensive explanation of the calculation of their regulatory capital ratios; further

\textsuperscript{51} Scott (2010), \textit{supra} note 1, pp. 444, 449.
\textsuperscript{52} E.g., the German \textit{HGB}. Note that these accounting standards were replaced by the mandatory use of IFRS for publicly listed companies in 2005.
disclosure requirements that will form part of Pillar 3 are expected to be published by the Basel Committee later this year.\(^{53}\)

C. CONTINGENT CAPITAL

Apart from the disclosure-based measures set out above, a market-oriented reform suggestion which focuses more directly on banks’ capital structure would be to accord contingent capital instruments a greater role.\(^{54}\) Contingent capital in the form of debt instruments which would convert into common equity, either (and preferably so) automatically upon triggering certain contractually stipulated conditions or (somewhat less desirably) upon a mandatory “bail-in” of debtholders by bank regulators upon the occurrence of certain critical trigger events.\(^{55}\) could be a useful tool to enable banks to effectively raise hard equity \textit{ex ante}, i.e. in benign times, as opposed to forcing them –as has been vividly illustrated by the financial crisis– to tap the equity markets \textit{ex post}, i.e. when they are effectively unable to do so (or only at a very substantial discount) in a state of crisis.\(^{56}\) The debt-to-equity conversion would

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\(^{53}\) Basel Committee, \textit{Basel III: A global regulatory framework for more resilient banks and banking systems}, supra note 7, p. 27.

\(^{54}\) The Dodd-Frank Act requires the Financial Stability Oversight Council to conduct a feasibility study and to issue a report on whether the Fed should prescribe a contingent capital requirement for bank holding companies and systemically important nonbank financial companies within two years from the date of its enactment (21 July 2010): Dodd-Frank Act, §115(c). See also the consultation undertaken by the Basel Committee, \textit{infra} note 56.


immediately recapitalize the bank by reducing its liabilities, increasing its common equity, and improve its leverage and risk-weighted capital ratios. It would essentially constitute pre-subscribed equity which, from a market discipline point of view, would, through its pricing in the primary and secondary markets, send a signal to the market about the perception among sophisticated investors of the issuing bank’s financial condition and default risk.

However, various questions need to be addressed in order to create a workable role for contingent capital: First, should it be permitted to qualify as Tier 1 capital and thus count towards the calculation of the leverage ratio and risk-weighted capital ratios when it is raised or only upon the conversion taking effect? Secondly, should contingent capital be required, e.g. instead of or in satisfaction of the capital conservation buffer or (when it applies) the countercyclical capital buffer, or should it be permissible only and thus left entirely to the market whether it will come to be accepted as a supplement to the prescribed pockets of regulatory capital over time? Third, should there be scope for bank regulators to be able to mandatorily convert long-term debt into equity and thus effect a legislatively authorised bail-in of creditors, or should the conversion feature be left entirely to the sphere of contractual agreement between the bank and its investors under the terms of the indentures governing

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these debt instruments? Fourth, and perhaps most importantly, how should the trigger event(s) be crafted?57

Switzerland’s “opt-in” approach to contingent capital provides a good example: Credit Suisse and UBS, two institutions deemed systemically important by the Swiss banking regulator, are required to have a risk-weighted capital ratio of 19% by 2019. 10 percentage points must be in the form of common equity. The remaining 9 percentage points may be satisfied by contingent convertible instruments which convert into equity upon the occurrence of certain pre-determined trigger events.58 On 14 February 2011, Credit Suisse successfully placed with institutional investors contingent capital securities in an amount of SFr6 billion under the new regulations; the instruments will convert into common equity if Credit Suisse’s common equity capital ratio falls below 7% or if the Swiss banking regulator determines that the bank is in danger of insolvency.59 The success of the heavily oversubscribed pioneering Swiss launch instills hope that there may in fact be sufficient investor demand for contingent capital to lead to the development of a suitable market infrastructure for deeply subordinated/convertible bank debt such that it may

58 See Goldman Sachs, “Contingent capital: possibilities, problems and opportunities”, supra note 55, Appendix C Exhibit 9, for a comparison of the new Swiss regulations with the Basel III capital requirements.
come to play the market disciplinary role that leading scholars wish to ascribe to it.60

D. MISCELLANEOUS

It is important that the reforms of capital and liquidity requirements not be seen in isolation from other measures which are aimed at improving the overall systemic stability of the financial system and the prudential supervision of banks. In particular, decisive emphasis should be placed on corporate governance reforms that increase risk management standards for boards and top-level executives of banks and re-align their compensation, incentives and liability structures with the level of risk being undertaken. Moreover, it is essential that bank resolution regimes in the major financial jurisdictions be developed further in order to provide a robust and workable procedure for the orderly closure, restructuring and liquidation of troubled banks and other significant financial institutions to reduce the risk of sudden catastrophic failures necessitating a public bail-out in the future; indeed, it would be even better if we could find a way to harmonize or even unify, procedurally and/or substantively, the various national reform proposals that are currently underway, although that appears still a long way off juridically and politically in the short- to mid-term.61

60 See Scott, supra note 1, p. 456-457 for a discussion of the necessary conditions for a meaningful subordinated debt market.

V. CONCLUSION

The verdict on Basel III is equivocal. It can be regarded as a zero-sum game: the reforms make four steps forward and four steps backward.

On the plus side, Basel III’s focus on the definition of capital and the marked shift to common equity as the strongest loss absorber constitutes a much-needed improvement of the *quality* of capital. The leverage ratio, which has long been a central tenet of the regulation of depository institutions in the United States, is clear, transparent and comparatively easy to monitor. The new liquidity requirements in the form of the LCR and NSFR address one of the key drivers of the financial crisis – arguably, it was a liquidity rather than a capital crisis, notwithstanding that it was ultimately caused by fundamentally bad lending decisions. The capital conservation buffer provides an antidote to the pro-cyclical effects of Basel II to smoothen the exposure of banks to the volatility of the credit cycle. More generally, the main positive effect of Basel III, which has widely been portrayed as the most radical overhaul of international banking regulation since the first Basel Accord, is probably its strong public “signalling” effect – signalling a return to heightened prudential standards in order to rebuild the trust of the economy and the general public in the safety and soundness of the banking system.

On the minus side, Basel III continues to leave too much discretion to national legislators and regulators which undermines its leitmotif of creating a global level playing field for internationally active banks. This is exemplified by the design of the countercyclical capital buffer, which contains lots of scope for
divergence between jurisdictions on its implementation and operation in practice, not to mention the potential for confusion about how to determine the “weighted average” of capital requirements that banks operating in multiple jurisdictions, each of which may be at a different point of the credit cycle at any given point in time, are likely to face. Its professed countercyclical role should rather be taken up by the accounting and disclosure effects of general expected loss reserve requirements and the capital structure effect of contingent capital instruments.

Secondly, considering the frequency with which major financial market crises have occurred over the course of the past two decades (roughly about every three years), the very long and slow phase-in of the Basel III requirements makes it unlikely that the desired objectives will have been accomplished before the onset of the next crisis. This squarely raises the specter of further public bail-outs.

Thirdly, it remains unclear –arguably inevitably so– whether the new minimum levels of regulatory capital have been calibrated at the “right” level, i.e. at a level that is commensurate with the risk inherent in the activities being undertaken. This in turn raises a broader question: Is the regulatory capital regime designed by the Basel Accord sufficient?

In my view, the abstract concept of prescribed risk-weighted capital standards should be discarded and replaced by a leverage ratio that is complemented by a greater emphasis on market discipline, along the lines of the proposals put forward by the U.S. Shadow Financial Regulatory Committee in
The financial crisis has shown that regulatory capital by itself is incapable of preventing large banks from failing. As shown, the promotion of market discipline could come in various flavours. It is submitted that stringent, regular, standardized and widely publicised stress tests should become the norm. Further, contingent capital should be allowed and perhaps even be regulatorily required as a component of the capital mix as it is potentially a very attractive form of loss-absorbing capital to issuers and investors alike. Moreover, it could play an important role in the establishment of a robust market infrastructure for subordinated bank debt, which could in due course endorse the role of market discipline in the policing of the safety and soundness of banks.

From a policy perspective, it is suggested that when thinking about reforms of regulatory capital and liquidity, one issue that frequently appears to be overlooked – or subdued by an explicit or implicit assumption that economic growth is necessarily and unfailingly good *per se* – is that the extent to which the availability of credit to the real economy will be affected by tighter capital and liquidity requirements should be weighed against the benefits of an increase in the systemic stability and resilience of the banking sector. The objective here should be to reduce the frequency and intensity of banking crises in view of their great potency to undo years of economic growth in a very short period of time.\(^63\)

The long post-World War II period of stability markedly contrasts with the much more erratic peak-and-trough run of financial markets beginning in the late


1980s/early 1990s; stock market patterns show that slow but steady growth is likely to be more gainful in the long run than frequent boom-and-bust cycles.\textsuperscript{64} Indeed, various studies conducted by the Basel Committee, the Federal Reserve Board of New York and the OECD are inconclusive about Basel III’s likely economic impact and vary in particular depending on whether or not cost savings from averting future crises of the financial sector are taken into account.\textsuperscript{65}

Finally, Basel III leaves open how the so-called “shadow banking” sector should be dealt with, i.e. non-depository financial institutions such as mortgage originators, securitization vehicles, CDOs, CLOs, SIVs, money-market mutual funds, hedge funds, private equity funds, mutual funds or insurance companies that perform one or more of the intermediation functions of banks like maturity transformation, capital pooling and risk transformation. The Basel capital requirements only apply to banks in the sense of deposit-taking institutions. In particular, one consequence of higher capital and liquidity requirements for banks may be that a larger share of intermediation is going to be driven into the hitherto largely unregulated shadow banking sphere, which, as the 2008-2009 financial crisis has shown, may today be just as important to the safety of the overall financial system as banks with regards to interconnectedness and

\textsuperscript{64} Carnell/Macey/Miller, supra note 1, p. 20-23.

contagion. To the extent that such entities may have to be bailed out with public money, a good case can be made for subjecting them to some form of capital regulation, essentially as a toll for being “too big to fail”. The Dodd-Frank Act envisages that systemically important nonbank financial institutions, once they have been designated as such by the Financial Stability Oversight Council, may have to comply with the capital requirements and leverage limits applicable to banks.66 This issue merits a much more detailed analysis and will likely continue to be a topic of intense debate among scholars and practitioners which the G20, the FSB and the Basel Committee should address at the international level in conjunction with the reform of capital and liquidity requirements for depository institutions.

66 Dodd-Frank Act, §115(c). Whether this is the right approach in view of the fact that the business model of these entities is often significantly different from the core function of banks is debatable.
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