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What Will Basel III Achieve?

Adrian Blundell-Wignall and Paul Atkinson*

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Abstract: *The overhaul of regulation of financial services now under way, as it affects the capital adequacy framework for banks operating internationally, seems unlikely to do more than refine what currently exists. More fundamental reconsideration is needed as it relates to reducing supervisory micro-management based on politically determined formulae in favor of simple, common sense, prudential rules to ensure effective market discipline.*

* The authors are, respectively, special advisor for financial matters to the secretary general and deputy director of the Financial and Enterprise Affairs Directorate at the Organisation for Economic Co-operation and Development (OECD) and senior research fellow at the Groupe d'Economie Mondiale de Science Po in Paris. This paper has been supported by the German Marshall Fund of the United States (GMF) and has not been considered by any OECD committee. We wish to thank Nicola Lightner and Kati Suominen and their colleagues at GMF for helpful comments. The views expressed in this paper are those of the authors and not those of their respective institutions or of member governments of the OECD.

What Will Basel III Achieve?

I. Introduction and Background

Regulatory failure has been a major contributor to the financial crisis that first emerged in the sub-prime real estate market in the United States in 2007 and has now spread to sovereign debt markets in Europe. Unregulated financial institutions, such as hedge funds, have played little role in this crisis, even if many have collapsed and quietly disappeared. But regulated banks in the United States and Europe have operated with too much leverage, poured too much money into bad assets, and required large scale public support. Much of this support has been indirect, provided formally to customers and counterparties. The result has been disruption of inter-bank markets and widespread tightening of credit conditions as financial institutions retreat from risk and struggle to strengthen balance sheets. Taken together, these developments have had severe political and macro-economic consequences.

The need for a more coherent supervisory and regulatory framework for financial services to avoid a repeat of recent developments has been widely recognized. The G20 Heads of Government have attached high priority to reform, affirming a set of broad principles and setting out an extensive Action Plan[1] after the Lehman Brothers collapse in 2008.

The United States recently implemented legislation to implement elements of this Plan. The legislation creates an interagency Oversight Council to improve communication among regulators and watch for systemic threats. It also creates a consumer financial protection agency, requires financial derivatives to be moved onto central clearing houses on electronic exchanges, gives regulators the authority to seize and wind up large institutions that pose a threat to the system, eliminates requirements for federal agency regulations to rely on credit ratings, and restricts the scope for commercial banks to trade speculatively on their own accounts.

In Europe, the de Larosiere Report[2] is similarly serving as the basis for reform. The president of the European Central Bank will lead a systemic risk board similar to the Oversight Council in the United States to provide macroeconomic oversight, although it will only issue warnings and recommendations to be acted upon at the national level. Pan-European bodies will have authority to intervene where national regulators of banks, securities markets, or insurance companies are not acting in accordance with European Union (EU) law, in cases of conflict between national regulators, or in the event of an "emergency" as determined by the European Commission and, if necessary, by the EU

[1] See the November 2008 "Declaration of the Summit on Financial Markets and the World Economy" by the Leaders of the Group of Twenty.

[2] J. de Larosiere et al, "Report of the High-Level Group on Financial Supervision in the EU," Brussels, February 2009.

Council. Hedge funds will be regulated and the three largest countries have announced plans to impose taxes on banks.

At the international level, beyond the EU, International Monetary Fund (IMF) resources are being increased. In addition, the Financial Stability Forum has been reconstituted as the Financial Stability Board to coordinate work and promote effective policies toward the global financial sector.

The most important element of the reform package, however, is not being developed at the national or EU level. This is the strengthening of capital requirements in the financial system. Since 1988, when the original Basel Capital Adequacy Framework (Basel I) was agreed upon, rules to ensure capital adequacy in banks have been designed at the international level by the Basel Committee of Banking Supervisors. This procedure has been retained in the G20 Action Plan. The Committee has now largely completed its work, resulting in a set of proposals referred to here as "Basel III."[3] These proposals are to be submitted to the G20 summit in Seoul in November and implemented at the national level starting from the end of 2012.[4]

There is inevitably a strong political element in these negotiations that can lead to cumbersome processes, slow progress, and, too often, poorly designed rules. This has been true of Basel III, which, notwithstanding positive elements, has missed an opportunity to make meaningful improvements. The central issue is that a financial system is a network of promises that the Basel framework treats in very different ways depending on where they sit in the system. This encourages arbitrage that undermines the objectives of the regulation. The core of the Basel framework requires a more fundamental reconsideration than it has received with Basel III.

The following section summarizes the Basel framework as it is today and the main changes Basel III will bring. The third section of this paper identifies deficiencies that will remain in the framework, even after reform. The fourth section highlights the divergence between regulatory constructs and balance sheet data in the context of the recent bank stress tests in the United States and the European Union. The fifth section considers the banking industry's concerns about Basel III. The sixth section argues for a

[3] In July 2009, the Committee issued new requirements for the trading book, resecuritizations and exposures to off-balance sheet conduits, which are to be implemented by the end of this year. In December 2009, it released two key consultative documents outlining its proposals, one on capital rules ("Strengthening the resilience of the banking sector") and the other related to liquidity ("International framework for liquidity risk measurement, standards, and monitoring"), an area that regulation has treated quite lightly until now. On July 26 and September 10, 2010, the Committee modified elements of its proposals, taking account of extensive comments from the industry, and announced agreement on most of the outstanding issues. All the documents cited in this paragraph, as well as comments on the two consultative documents from outside organizations, can be found on the BIS web site, www.bis.org.

[4] Agreements by the Basel Committee do not have the status of law but constitute frameworks that serve as the basis for designing national laws and regulations, often with wider applicability than the formal domain of the committee members. A downside of this is that modifications at the level of detail are common so that operational differences in practice exist across countries. But it also provides a degree of legitimacy that agreements among unelected civil servants and central bankers would otherwise lack.

simpler combination of rules and incentives that rely far more on market discipline than in the past by 1) ensuring more common equity at risk than Basel III seems likely to produce, and 2) allowing large creditors to lose money when they make mistakes. The final section summarizes and provides concluding remarks.

II. From Basel II to Basel III

The Evolution of the Basel Framework until Today

The Basel framework was designed at the international level in the late 1980s, taking account the international dimensions of two sets of issues then concerning regulators. First, internationally active banks in advanced countries, especially the United States, were struggling with troubled lending to sovereign borrowers – especially in Latin America – that threatened their solvency. Second, persistently rising exchange rates in some countries, especially Japan, steadily strengthened their banks' capital base and facilitated aggressive competition, which banks elsewhere found difficult to match.

In this context, the aim of the Basel framework was to ensure that internationally active banks hold a reasonable amount of capital to serve as a buffer in the event of losses and to do so in a way that encourages a level competitive playing field across countries. The framework contains "three pillars": 1) rules to define minimum capital requirements; 2) supervisory oversight, which includes authority to insist on supplementary capital beyond Pillar 1 requirements; and 3) market discipline.

Pillar 1 is the core of the framework. It classifies bank assets into different "risk categories," which determine a parameter, called a "risk weight." This parameter is used to calculate a capital charge equal to 8 percent of each asset's risk-weighted value. Under Basel I, this parameter was fixed at 0, 20, 50, or 100 percent (Table 1).

The wide variations in the small number of risk weights quickly led to efforts to arbitrage the system to reduce capital costs, not least by resorting to off-balance sheet arrangements to avoid capital charges altogether. A major revision announced in 2004, known as Basel II, for implementation by 2007, was intended to make it more "risk sensitive." This involved extensive refinement of the rules for determining the risk weights by introducing three separate regimes, implying differing regulatory treatment of same asset across regulated banks. Credit ratings were used to introduce an empirical basis for some risk weights. For the largest banks, the most advanced regime allows risk weights to be determined by a system of complicated calculations on the basis of internationally agreed formulae.[5] Basel II sharply reduced minimum requirements. It has not, however, eliminated incentives to reduce capital charges by arbitraging the risk weights.

[5] Provision for capital charges against operating and market risks have also been incorporated.

The capital charges are cumulated across the asset portfolio to arrive at minimum capital requirements. These requirements must be met by funding the asset portfolio with a sufficient amount of instruments that qualify as "capital," generally equity and certain debt instruments (see below for more discussion).

Table 1: Overview of Risk Weights in the Basel Framework, in Percent

	BASEL I	BASEL II Simplified Standardised	BASEL II Standardised based on External Ratings		BASEL II Advanced: Internal Ratings Based (IRB) 2004-05 QIS 4 Av % Chg in Portf. MRC	2004-05 QIS 4 Median % Chg in Portf. MRC	
SECURITY							**Basel II Advanced IRB**
Most Government/central bank	0	0			0	0	Comes close to letting banks set their own
AAA to AA-			0				**Pillar 1** capital, with supervisory oversight.
A+ to A-			20				Risk weights depend on internal estimates
BBB+ to BBB-			50				of a loan's probability of default; loss-given-
BB+ to B- (& unrated)			100				default; exposure to loss. These are based
Below B-			150				on the banks' own complex risk models,
Other public (supervisors discretion)	0-50	0			0	0	relying on subjective inputs and often on
Claims on MDBs	20	0			-21.9	-29.7	unobservable (e.g. OTC illiquid securities)
Most OECD Banks & Securities firms (1)	20	20	<90days	Other	-21.9	-29.7	prices.
AAA to AA-			20	20			**Pillar 2** provides for supervisory oversight.
A+ to A-			20	50			With stress testing, and guidance from
BBB+ to BBB- (&unrated)			20	50			supervisors, banks can be made to hold
BB+ to B-			50	100			capital for risks not adequately captured
Below B-			150	150			under Pillar 1.
Residential Mortgages-fully secured	50	35	35		-61.4	-72.7	**Pillar 3** is disclosure and market discipline
Retail Lending (consumer)	100	75	75		(-6.5 to -74.3)	(-35.2 to -78.6)	which relies on some notion of market
Corporate & Commercial RE	100	100			(-21.9 to-41.4)	(-29.7 to -52.5)	efficiency. Rational markets punish poor
AAA to AA-			20				risk managers.
A+ to A-			50				
BBB+ to BB- (&unrated)			100				
Below BB-			150				

(1) Securities firms subject to risk-based capital requirements and consolidated regulation.

What Basel III will Change

The crisis called attention to major excesses of leverage and poor liquidity management. Basel III aims to address these problems to make the system more resilient. It retains the core feature of the Basel framework, i.e., the capital charge system with multiple risk weights. It identifies numerous problems that contributed to or emerged during the crisis and proposes new and often more detailed rules in the hopes that these will avoid a recurrence of such problems. It constructively addresses some problems but it also adds greatly to complexity. In doing so, it overrides management discretion in many areas with internationally agreed rules and formulae designed to be appropriate for all regulated institutions in all countries. The transition period for its main elements is extremely long. Four main areas are affected.

Definition of Capital

In the Basel framework, "capital" does not mean the owners' equity stake in the business. To accommodate different national norms, traditions, and concerns, "capital" has been allowed to include various debt instruments and liabilities with "equity-like" features. Certain deductions are also made for asset items whose value in absorbing losses is questionable, notably goodwill. Basel 1 split capital into two "Tiers" and a third tier was added later.[6] Tier 1 was originally limited to common equity (net of goodwill) and certain disclosed reserves, but other items have also been included over the years as the Basel framework has been translated into regulations at the national level. Tier 1 Capital must be "at least half" of the total.

[6] In 1996 this was added as part of the market risk amendment.

The Basel Committee has attached high priority to raising the *quality*, *consistency*, and *transparency* of the capital base. To this end, Basel III makes numerous definitional changes. Three classes of capital remain, but the narrowest will consist entirely of common equity. Criteria for inclusion of nonequity forms of capital have been simplified and regulatory adjustments have been harmonized internationally. The phase-in period for some of the definitional changes runs as long as until 2023.

The Basel Committee has also issued, for consultation, a proposal to modify the contractual terms of capital market instruments. This would allow regulatory authorities to write them off or to convert them to common equity if a bank would otherwise become nonviable. The purpose would be to reduce systemic risk by facilitating a better management of situations in which a bank was failing by allowing such situations to be isolated and handled smoothly.

Minimum Capital Requirements

Basel III has taken two separate initiatives that could eventually affect minimum capital requirements. Since they involve alternative calculations of the minimum, only one can be binding at any one time.

One is to **strengthen the risk coverage of the existing capital framework**, i.e., by refining existing Basel II rules. This involves:

- New rules or modifications to old ones for determining many of the capital charges: Intended to correct for omissions or underestimates of risks that contributed to the crisis, especially relating to off-balance sheet vehicles and derivatives, these changes will add to the complexity of the system. Targeted items include "counterparty risk," "wrong way" risk,[7] the length of margining period for large and illiquid derivative exposures, favorable treatment for counterparty exposures on centralized exchanges, and bank verification of credit ratings issued by agencies such as Standard & Poors.

- More demanding calibration (Table 2): Eventual minimum capital charges as a share of risk-weighted assets for the new Tier 1 Capital have been raised to 6 percent. For its common equity component, to be known as "Common Equity Capital," the minimum will be 4.5 percent, or three-quarters of the minimum new Tier 1 amount. For the new Total Regulatory Capital, the minimum will remain at 8 percent. These will be phased in beginning in 2013 and will be effective in 2015. They will be supplemented by a "conservation buffer," considered below.

The second is the introduction of a nonrisk weighted backstop, a **leverage ratio**. Both the status and definition of the leverage ratio have been the subject of contentious discussion.

[7] Transactions, especially financial guarantees, whose probability of default is positively correlated with the size of the exposure.

Table 2: Calibration of the Capital Framework in Basel III

Capital requirements and buffers when fully implemented

	Effective date	Percent of risk-weighted assets (RWA)			Percent of total assets (TA)		
	(1 January)	Total Capital	Tier 1 Capital	Common equity	Implied for common equity if:		
					RWA share of TA is:		
					25%	50%	75%
Minimum	2015	8.0	6.0	4.5	1.125	2.25	3.375
Conservation buffer	2019			2.5	0.625	1.25	1.875
Minimum plus conservation buffer	2019	10.5	8.5	7.0	1.75	3.5	5.25
Countercyclical buffer range*	National circum-stances			0 - 2.5	0 - 0.625	0 - 1.25	0 - 1.875

*Common equity or other fully loss absorbing capital

Note: phased adjustments to definitions will be complete for Common Equity Capital in 2018; for Tier 1 and Tier 2 Capital in 2023.

Source: Basel Committee on Banking Supervision, Press release 12 September 2010 (www.bis.org).

The leverage ratio is the term U.S. regulators give to the ratio of a bank's Tier 1 Capital to its total assets, averaged over time.[8] Simple ratios like this can be attractive as regulatory tools and were widely used from the post-war period until the 1980s. They are crude, however, and like the Basel risk weights, they give rise to incentives and behavior that undermine regulators' purpose. European officials have generally been negative about the usefulness of a leverage ratio as a regulatory tool and nothing similar to it is used in the EU regulatory framework.

On the other hand, a lower limit on the leverage ratio as used in the United States is simple and transparent and can impose a meaningful floor for whatever measure of a bank's capital is deemed most appropriate. This limit cannot be arbitraged downward by managing the composition of assets on the balance sheet.[9] These considerations have led regulators to require "strong" U.S. bank holding companies to maintain their leverage ratios above 3 percent and others to stay above 4 percent. In order to be classified as "well-capitalized," a leverage ratio of 5 percent is required. Given that before the crisis common equity usually dominated Tier 1 Capital, U.S. commercial banks generally maintained higher equity positions than those prevailing on the eve of the crisis at the major U.S. investment banks regulated by the SEC (Table 3) and at many European banks (but see Box 1 below). An important feature of the crisis has been that large, diversified commercial banks in the United States, with the notable exception of Citigroup, have not been central to the crisis. The next three largest, Bank of America, JP Morgan Chase, and Wells Fargo, have even acted as rescuers to absorb several major collapsing institutions at short notice.[10]

[8] Other countries that use some variant of a leverage ratio are Canada and Switzerland.

[9] There may, of course, be scope for using off-balance sheet mechanisms to avoid the leverage ratio requirement. But this problem is identical to that which rises with the capital charge system under Basel.

[10] It should be noted that Citigroup's main problems arose from its investment banking activities and that Bank of America required large-scale support following its acquisition of Merrill Lynch. One could argue that another exception was Wachovia, a large commercial bank that was absorbed by Wells Fargo. But

Table 3: Leverage of Common Equity on the Eve of the Crisis, End 2006

	Total assets(1) ($ billion)	Common equity(1) ($ billion)	Equity ratio(2) (%)	Implied leverage(3)
US commercial banks				
Citigroup	1851	85.4	4.6%	22
Bank of America	1394	66.8	4.8%	21
JP Morgan Chase	1306	70.6	5.4%	18
Wells Fargo	471	34.1	7.2%	14
US Bancorp	212	12.7	6.0%	17
Regions	132	9.5	7.2%	14
US investment banks				
Goldman Sachs	835	29.5	3.5%	28
Morgan Stanley	1118	31.5	2.8%	35
Lehman Brothers	501	14.6	2.9%	34
Bear Stearns	350	11.8	3.4%	30
Merrill Lynch	839	33.4	4.0%	25
European banks				
BNP Paribas	1887	51.9	2.8%	36
Societe Generale	1256	31.9	2.5%	39
Deutsche Bank	2081	33.6	1.6%	62
Unicredito	1073	37.7	3.5%	28
Banco Santander	1081	40.0	3.7%	27
Lloyds	668	17.2	2.6%	39
HSBC	1823	71.0	3.9%	26
Royal Bank of Scotland	1672	43.7	2.6%	38

(1) Net of goodwill; intangibles for HSBC; (2) Common equity as % of Total assets; (3) Reciprocal of the equity ratio, expressed as a whole number.
Source: E*Trade Financial data base; company accounts.

In view of these differing perspectives, the significance of the Basel III commitment to "introduce a leverage ratio" is at best ambiguous. "Broad agreement" has been reached on a number of the elements of the design the leverage ratio but this agreement seems merely to defer key issues:

- The status of the leverage ratio will be fluid for some time. It is to be merely "a supplementary measure…with a view to migrating to a Pillar 1 treatment based on appropriate review and calibration."[11] This would make it simply another metric to be noted and perhaps discussed with supervisors as part of Pillar 2, at least until such migration took place. Should such migration be confirmed, it is scheduled to take place on 1 January 2018. During the seven years until then, there will be two years of "supervisory monitoring" and a four-year "parallel run" during which bank disclosure of its leverage ratio will begin in 2015, leaving final adjustments

Wachovia's takeover of Golden West, a large California savings and loan heavily invested in sub-prime lending, at the peak of the boom would seem to have gone beyond prudent diversification.

[11] This has become standard language. See, for example, the "G20 Toronto Summit Declaration," June 26-27, 2010, Annex II, paragraph 10.

based on experience to be made in 2017. The decision about giving it any force, i.e., as a requirement under Pillar 1, will presumably be made at that point.

- An exposure measure, i.e., the asset base, has been agreed for purposes of testing during the parallel run. A central issue was how to deal with important differences between International Financial Reporting Standards (IFRS), used outside the United States, and Generally Accepted Accounting Principles (GAAP), used in the United States, as regards derivatives and repurchase agreements (see Box 1). The Committee's original proposal of December 2009 recognized the importance of counterparty and other forms of risk, even where market risks are covered, by focusing on gross exposures. This met resistance from the industry, and the Committee finally agreed to abandon this in favor of integrating off-balance sheet items and derivatives essentially by using Basel II formulae and methods. This involves "netting" of derivative and repo exposures. For banks active in derivative markets, this will imply a substantially lower asset base for calculating any capital requirements under the leverage ratio.

- The capital measure to be used has not been decided. In December, the Committee promised to use a "high quality" measure, with Tier 1 Capital and its "predominant form" to be "considered." This strongly suggests that broader alternatives to tangible common equity have been under consideration. In July, the Committee cited a "strong consensus" in favor of the new definition of Tier 1 Capital, and the parallel run to start in 2013 will use this, but "the Committee also will track the impact of using total capital and tangible common equity." This appears to reflect the differing European and U.S. perspectives on the importance of equity, suggested by the focus of their respective bank stress tests (see below): The European analysis focused on *Tier 1 Capital* and provided information about *Total Regulatory Capital*, with no reference to any predominantly equity measure. The U.S. analysis considered both *Tier 1 Capital* and a *Tier 1 "common"* equity-based measure, emphasizing the latter, while not considering any broader measures such as *Total Regulatory Capital*.

- Unless Pillar 1 status is agreed upon, a lower limit is not likely to be meaningful. Furthermore, if the lower limit is too low, it will be ineffective in restraining leverage. For the parallel run to begin in 2013, a 3 percent minimum will be tested. On the basis of the minimum requirements cited above, this could suggest a lower bound for common equity of around 2.25 percent of the asset base, consistent with leverage up to a factor of 44. A "capital conservation" buffer will supplement this, see below, and if fully implemented, could reduce this factor to around 40.

Box 1

The Impact of "Netting" of Derivative and Repo Exposures: The Case of Deutsche Bank

Differences in the treatment of derivatives and repurchase agreements under IFRS, which reports gross exposures, and GAAP, which reports them on a net basis, are material. In the case of Deutsche Bank, total assets more than doubled in the three years to 2008 on an IFRS basis before falling by one third in 2009 (Table 4, upper panel). Virtually all the variation reflected the rise and fall of trading account assets, mainly due to derivative activity.

Deutsche Bank has provided a summary of its 2008 accounts on IFRS and GAAP bases for comparison (lower panel). The very large gross figure for derivatives under IFRS falls by nearly 90 percent when netted and restated on GAAP basis. Some other items are also affected to a smaller degree. The overall balance sheet, the basis for calculating any leverage ratio, would be smaller by more than half under GAAP reporting than as actually reported under IFRS.

It is important to note that comparisons of balance sheet size or leverage between European banks and U.S. banks must be made cautiously in light of these differences since derivative activity can vary significantly across banks and over time.

Table 4: Accounting for Derivatives and Repos: The Case of Deutsche Bank

A. Balance sheet at end-year on IFRS basis (without "netting"), 2005-2009

(billion euros)

	2005	2006	2007	2008	2009
Trading account assets	448.4	1104.7	1378.0	1623.8	965.3
Other assets	543.7	479.8	547.0	578.6	535.4
Total assets	992.1	1584.5	1925.0	2202.4	1500.7

B. Balance sheet at year-end 2008 on IFRS (no "netting") and GAAP (with "netting") bases

(billion euros)

Accounting system *(as reported by:)*	IFRS (E*Trade Financial)	IFRS (Deutsche Bank)	GAAP (Deutsche Bank)	Difference: IFRS and GAAP
Trading account assets	1623.8			
o/w Derivatives		1224.5	128	1096.5
Non-derivative trading assets		247.5	247.5	0
Reverse repos and borrowed sec.	n.a.	168	161	7
Net loans	269.3	269.3	269.3	0
Brokerage, sec-related receivables	n.a.	104.1	35.1	69
Other assets*	309.3	189	189.1	0
Total assets	2202.4	2202.4	1030	1172.4

n.a. not available, I.e. sources' presentations differ.

*Includes cash; near-cash; land, prop. and equip.; intangibles; and other as well as unidentified items.

Source: Company accounts, as reported in the E*Trade Financial data base; Deutsche Bank 20-F filing for 2008 and for IFRS/GAAP comparison.

Pro-Cyclicality

Basel II's use of credit ratings and market data to determine risk weights introduced an important element of pro-cyclicality into the calculation of minimum capital requirements (see Box 2). This has encouraged deleveraging and amplified the crisis. Basel III includes some steps to dampen this pro-cyclicality:

- A "capital conservation buffer," to consist of common equity, will be required over and above the regulatory minimum described above. In normal times, this will be at least 2.5 percent of risk-weighted assets, effectively bringing the minimum equity requirement to 7 percent of risk-weighted assets and the Tier 1 requirement to 8.5 percent. This buffer will be available to absorb losses, i.e. decline, during periods of economic and financial stress. To maintain these buffers, banks could be required to reduce dividends and share buybacks.

- A separate "countercyclical buffer" to be in effect when there is excess credit growth resulting in a system-wide build up of risk while still respecting minimum requirements will also "be implemented according to national circumstances." A range of 0-2.5 percent of risk-weighted assets to be met by common equity of other fully loss absorbing capital is suggested. No time frame for implementation is given.

The Committee is also looking for ways to introduce a longer-term horizon into the calibration of the formulae for risk weights, where appropriate, and it is encouraging supervisors to override the formal rules using Pillar 2 authority if necessary. It will promote more conservative, forward-looking loss provisioning,[12] and proposes to adjust regulatory capital definitions to reflect any failure to comply in this regard.

Liquidity Management

An extensive framework for measuring liquidity risk, setting standards, and monitoring largely mimics the approach to capital standards: it defines asset and liability classes, introduces formulae, assigns weights, and imposes ratio constraints on portfolio management. Two new measures of liquidity risk and requirements relating to them are introduced. One is the *Liquidity Coverage Ratio*, a vehicle designed to promote short-term resiliency by ensuring that institutions have enough high quality liquid resources to survive an acute stress scenario for one month. After a period of observation, minimum standards will be effective from 2015. The other is the *Net Stable Funding Ratio*, designed to promote stable sources of funding on an ongoing structural basis. Minimum standards will come into effect in 2018. See below for more comments about this framework.

[12] In particular, it endorses the IASB principle to base provisions on "expected" losses rather than "incurred" losses.

Box 2

Arbitrage and Pro-Cyclicality under Basel II

Under Basel I, the major source of arbitrage was the differing regulatory treatment, i.e., the risk weight variations, of **different assets**. Basel II, especially in conjunction with the development of the market for credit default swaps (CDS), facilitated another source of arbitrage: the risk of the **same asset** can be transferred easily between financial institutions subject to **different regulatory regimes**. For example, a bank under the "standardized" regime acquiring risky assets carrying a 100 percent risk weight, such as nonprime corporate real estate, can insure these by buying a CDS from an institution with a AAA credit rating. This allows the risk weight to be reduced to 20 percent (see Table 1), reducing the capital charge by 80 percent. If the seller of the CDS is not subject to a corresponding and offsetting increase in capital requirements, say because it is outside the system, the capital backing for the asset in the banking system as a whole falls.

This arrangement helped create a strong market for CDS especially in Europe, where Basel II is applied widely and implementation was rapid. Banks there were often buyers, and at least one large U.S.-based AAA rated insurer was a major seller. Andrew Ross Sorkin[13] relates that in its August 2008 10Q filing, AIG reported that $307 billion of a notional $441 billion exposure of its Financial Products unit's "super senior" CDS portfolio was "written to facilitate regulatory capital relief for financial institutions primarily in Europe." This could have reduced capital charges for European banks under the standard regime by as much as $19.6 billion (80 percent of $307 x .08). If some buyers used the internal ratings-based regime, this figure could conceivably be higher. Sorkin also reported, based on a confidential source, that in early September 2008, AIG's 12,000 individual derivative contracts included $1 trillion concentrated with just 12 major financial institutions.

The pro-cyclicality of Basel II becomes evident when one considers the implications of a credit downgrade by rating agencies for AIG as the economic and financial situation deteriorated in 2008. Under the standard regime, summarized in Table 1, the risk weight of an exposure to AIG would rise from 20 percent to 50 percent in the event of a drop below AA-, a process that began just before the Lehman Brothers bankruptcy, and to 100 percent if the downgrade went to BBB+, still investment grade. A drop to A+ would have implied an increase in minimum capital requirements of more than $7 billion on the $307 super senior CDS mentioned above alone. One can only guess what it might have implied for the 12 institutions with $1 trillion of exposure. Many banks could have been facing large increases in capital charges, known as a "cliff effect." The demand for collateral by the holders of the CDS, which shortly afterward triggered the Federal Reserve takeover, needs to be understood in that light.

[13] Andrew Ross Sorkin, *Too Big to Fail,* Allan Lane, London 2009. See chapters 12 and 16.

III. Persisting Deficiencies in the Basel Framework

Some of the changes introduced with Basel III will be for the better. The changes to definitions of capital go in the right direction, some damping of the pro-cyclicality introduced with Basel II is likely, and the various changes to calibration will work to raise minimum equity requirements. While the transition seems too long – the transition from the Maastricht Treaty in 1992 to the introduction of the euro in 1999 was shorter – bank management can be expected to take some account of future rules at some stage before they come into effect.

Other changes introduced with Basel III are less helpful. Most important, the need for the liquidity management framework and set of rules is unclear. It may be true that most crises at financial institutions manifest themselves in their final stages as liquidity problems, i.e., the banks run out of cash. But it does not follow that liquidity is the source of the problem or that an international regulatory framework for managing it is helpful. Indeed, since ensuring access to liquidity is a core function of central banks – many of whom have supervisory responsibilities – it is unclear what a new regulatory regime is intended to add. Overall this distracts from more important issues: the capital adequacy framework and resolution regimes to ensure that problems are addressed while banks are still solvent.

So long as a bank is solvent, with an adequate level of equity, its management should be capable of managing its own liquidity. If it does this so poorly that continued operations become impossible, a good resolution regime should take over and deal with the situation without needing recourse to taxpayers. Prompt intervention to avoid systemic damage should involve a change of management and possible restructuring, with any necessary costs paid at the expense of the bank's equity.

Where a bank is insolvent, or nearly so, good liquidity management will only defer addressing the core issue. Liquidity problems are little more than a messenger that delivers bad news and forces necessary restructuring or an end to operations.

The design of the proposed liquidity framework highlights the other major unhelpful change from Basel III: more complexity and further override of management discretion by internationally agreed rules that make little allowance for banks' different businesses or national contexts.

At the level of detail, the bias towards government bonds contained in the framework may seem helpful in an era of large deficits, but a regulatory subsidy for governments can only come at the expense of private borrowers, and especially small and medium-sized enterprises. Furthermore, as the evolving European crisis suggests, government bonds are not necessarily risk-free in jurisdictions where there is no local fiat currency that the government controls. In extreme circumstances, the liquidity rules proposed could even contribute toward solvency problems, especially where government paper must be marked to market to recognize valuation changes.

The more fundamental problems, however, are rooted in the original design of the Basel framework, not introduced by Basel III and not addressed by it:

- *Its conceptual underpinnings are poor*. The capital charges are "portfolio invariant," i.e., they do not depend on what else is in the portfolio. Diversification has no role to play. This feature keeps the calculation of capital charges simple and facilitates comparability of treatment across countries, which is convenient from a practical regulatory standpoint. But the conditions under which this makes sense turn out to be a very strong and improbable: only one "systematic" risk factor exists, proxied by the global economic cycle. This denies the possibility of regional, national, or sectoral developments against which a prudent bank would wish to diversify, such as a sub-prime crisis confined to the United States and out of sync with the industrial cycle in Asia. Analysis undertaken at the Federal Reserve concluded that "if there are indeed pockets of risk," imposing portfolio invariance "may significantly" bias minimum capital requirements downward for a regional or specialized lender.[14]

- *It is biased against diversification.* Variations in risk weights constitute differential regulatory treatment across asset classes, effectively creating regulatory taxes and subsidies. This encourages portfolio concentration in favored asset classes. The three major asset classes favored by Basel I with low risk weights have been sovereign debt, claims on OECD banks, and appropriately regulated security firms and secured residential real estate. These have been the asset classes at the center of the U.S. sub-prime and European sovereign debt crises.

- *It demands too little equity and permits too much leverage*. Variations in risk weights also encourage arbitrage to reduce overall capital requirements and their associated costs. No floor to capital requirements exists except what the very low leverage ratio may imply once it achieves Pillar 1 status. As late as 2015, before the 2.5 percent capital conservation buffer begins its phase-in, and provided reductions for risk weighting remain at their 2009 averages (around 75 percent in the United States and 50 percent in Europe, see Table 4 below), permissible leverage of equity, on average, will be very high:[15] nearly 30 in the United States and 44 for Europe, above pre-crisis levels for many banks. Even from 2019, when the new rules are fully phased in, leverage limits would average around 19 in the United States and 28 in Europe. A limit dictated by the leverage ratio around 40 would have no effect except for banks that reduced their average risk-weights to around 35 percent or less. Given the bias toward system interconnectedness, widespread low capital levels seem likely to remain as invitations to systemic threats.

[14] Gordy, M D. (2003), "A Risk-Factor Model Foundation For Ratings-Based Bank Capital Rules," *Journal of Financial Intermediation*, vol.12, p.222.

[15] Permissible leverage figures are derived as reciprocals of the implied common equity requirements reported in the final two columns of Table 2.

IV. Transparency and Basel Arithmetic: The Example of the Stress Tests[16]

An unfortunate feature of the Basel framework is that it employs terminology for its main calculations and constructs that nonspecialists can easily understand as referring to more conventional concepts. Consequently, financial analysis and public policy debate relating to individual banks or to the banking system as a whole should be interpreted cautiously.

The ambiguity of the term "capital," which may contain varying amounts of common equity, has already been noted. The other source of obfuscation is the risk-weighting system for deriving capital charges. This system is used to generate an aggregate called "risk-weighted assets," which can easily be confused with the size of the balance sheet. The various ratios deriving from these measures, which are used as metrics for capital adequacy and widely cited in financial analysis, are essentially arbitrary numbers. They have little economic or financial interpretation and will almost invariably overstate a bank's equity strength or solvency if interpreted as germane in that context.

Table 5 illustrates the kind of divergence that is common between the Basel concepts and more commonly used measures.

- The top panel shows that risk-weighted assets, which are the basis for calculating capital requirements, are significantly lower than actual assets on the balance sheet. The difference at the aggregate level has consistently run around 25 percent in the United States and close to 50 percent in the euro area.[17] This difference between regions is probably exaggerated to some degree by the differences between IFRS and GAAP accounting as regards derivatives (see Box 2, above).

- The lower panel reports Tier 1 Capital and its common equity component ("Tier 1 common capital") for selected U.S. banks at the end of 2008, as reported by the Federal Reserve in its 2009 stress test, as well as balance sheet measures as reported in published accounts. The nonequity component of Tier 1 Capital is highly variable across banks. This, to an important degree, reflects responses to the crisis during 2008, but it is an indication of how variable the meaning of the Basel concepts can be if there is an incentive to manipulate them.

The impact on ratios can be severe. A Tier 1 Ratio of 6 percent, taken as a benchmark in both the European and U.S. stress tests and the new minimum from 2015, translates to

[16]See Federal Reserve Board, *The Supervisory Capital Assessment Program: Overview of Results*, May 7, 2009; and Committee of European Bank Supervisors, *Aggregate outcome of the 2010 EU wide stress test*, coordinated by CEBS in cooperation with the ECB, July 23, 2010.

[17] The notable drop from 2007 in the euro area mainly reflects the reductions in risk weights under Basel II. In the United States, implementation of Basel II was on a slower track, which has been taken over by crisis-related events. The decline in average risk weights from 2008 may reflect the incorporation of Goldman Sachs, Morgan Stanley, Merrill Lynch, and Bear Stearns into the statistics following mergers and changes in status.

common equity backing for the balance sheet of only 2.25 percent (implied leverage 44, cited earlier), if:

- Risk weighting is in line with the euro area average of around 50 percent; and
- Common equity is assumed to be three-quarters of the Tier 1 total, consistent with new 2015 minima.

Even if Tier 1 Capital consisted entirely of common equity, the equity backing would be 3 percent and the implied leverage would be 33. These figures would be similar to those for some of the U.S. investment banks that disappeared in the crisis or have now become commercial banks (Table 3).

Table 5: Regulatory Constructs Compared with Balance Sheet Data

A. Banking system size:actual data and risk-weighted totals, end year

		2005	2006	2007	2008	2009
US banks						
	Total assets ($ billions)	10879	11862	13034	13841	13108
	Risk weighted assets ($ billions)	8141	8881	9809	10011	509
	(as share of total assets)	75%	75%	75%	72%	73%
Euro area banks						
	Total assets (euro billions)	23,634	25,945	29,440	31,837	31,147
	Risk weighted assets (euro billions)	12,699	14,134	14,385	15,795	15,302
	(as share of total assets)	54%	54%	49%	50%	49%

Source: FDIC, all depository instituions for US; ECB, risk-weighted assets as reported by the Institute of International Finance for Euro area.

B. Measures of Bank Capital for selected US banks, end 2008, $ billions

(as a pecentage of Tier 1 capital in bold)

	Bof A	BNYM	Citi	Goldman	JPMC	M. Stanley	PNC	Regions	State St.	USB	Wells
Regulatory constructs											
Tier 1 capital	173.2	15.4	118.8	55.9	136.2	47.2	24.1	12.1	14.1	24.4	86.4
Tier 1 common capital	74.5	11.0	22.9	34.4	87.0	17.8	11.7	7.6	10.8	11.8	33.9
	43%	**71%**	**19%**	**62%**	**64%**	**38%**	**49%**	**63%**	**77%**	**48%**	**39%**
Balance sheet data											
Equity, net of goodwill	95.2	6.5	114.5	59.6	118.9	46.5	16.5	11.3	8.2	17.7	76.5
	55%	**42%**	**96%**	**107%**	**87%**	**99%**	**68%**	**93%**	**58%**	**73%**	**89%**
Common equity, net of goodwill	57.5	3.7	43.8	43.1	87.0	27.4	16.5	8.0	6.4	9.8	45.2
	33%	**24%**	**37%**	**77%**	**64%**	**58%**	**68%**	**66%**	**45%**	**40%**	**52%**

Source: Federal Reserve Board, *The Supervisory Capital Assessment Program: Overview of Results,* May 7, 2009 for the Tier 1 measures; company reports, as reported in the E*Trade Financial data base, for balance sheet data.

The recent European stress tests need to be interpreted cautiously in this light. These tests were applied to 91 of Europe's largest banks, comprising around 65 percent of the banking assets in the EU. They were designed to assess the ability of banks to absorb shocks and survive moderate recession in the EU, involving no growth this year and -0.4 percent next year. For the euro area, the cumulative fall in output is 0.8 percent.[18] The evolution of Total Regulatory Capital and Tier 1 Capital were both analyzed but the benchmark for the test was whether Tier 1 Capital remained above 6 percent of risk-weighted assets. The results were reassuring: only seven banks failed, with a collective shortfall of only EUR 3.5 billion below the 6 percent threshold.

[18] The test also envisaged a rise in EU unemployment from below 10 percent in Q1 2010 to 11 percent next year (from 10 percent to 11.5 percent in the euro area) and widespread falls in home prices.

Some observations:

- Press reporting about the tests, when it provided any explanation of the test benchmark at all, often misrepresented the test as requiring Tier 1 Capital of at least 6 percent of assets, rather than *risk-weighted* assets.[19] Since risk-weighted assets for the 91 banks are only 40 percent of total assets (Table 6, column 6), this overstates the stringency of capital requirement by a factor of 2.5.

Table 6: Selected European Banks Covered by the EU Stress Test

(billions of euros or percentage, end of 2009)

	Balance sheet data						*Regulatory constructs*		
	Assets*	Common equity*	Equity Ratio {[2]/[1]}	Implied leverage	RWA	Ave. RW {[5]/[1]}	Tier 1 Capital	Tier 1ratio {[7]/[5]}	Common Eq.as % of Tier 1 {[2]/[7]}
	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]
91 European banks	28,032	n.a.	n.a.	n.a.	11,291	40%	1,162	10.3%	n.a.
of which									
BNP Paribas	2046.7	58.5	2.9%	35	620.7	30%	62.9	10.1%	93%
Credit Agricole	1537.9	26.0	1.7%	59	538.9	35%	52.4	9.7%	50%
Societe General	1017.1	35.6	3.5%	29	324.1	32%	34.7	10.7%	103%
Deutsche Bank	1493.3	29.2	2.0%	51	273.5	18%	34.4	12.6%	85%
National Bank of Greece	110.9	6.0	5.4%	18	67.4	61%	7.6	11.3%	79%
Unicredito	908.3	39.2	4.3%	23	452.4	50%	39.0	8.6%	101%
Rabobank	604.0	34.4	5.7%	18	236.3	39%	33.2	14.1%	104%
Grupo Santander	1087.6	45.8	4.2%	24	562.6	52%	56.0	10.0%	82%
Svenska Handelsbanken	206.4	7.4	3.6%	28	94.6	46%	8.6	9.1%	86%
Lloyds	1156.5	46.5	4.0%	25	556.4	48%	53.6	9.6%	87%

* Net of goodwill; intangibles for National Bank of Greece and Rabobank.
Note: RWA = risk-weighted assets; RW = risk-weight.

Source: Committee of European Bank Supervisors, *Aggregate outcome of the 2010 EU wide stress test coordinated by CEBS in cooperation with the ECB*, 23 July 2010; company accounts as reported in the E*Trade Financial data base.

- The stress test had two variants: one based on the adverse global macroeconomic scenario described above and a second that in addition assumes an EU-specific shock arising from an aggravation of the sovereign debt crisis. The design of the sovereign debt shock understates the stresses that would emerge by considering the impact on banks' trading books but assuming that there would be no implications for the 80 percent of sovereign debt held in banking books.[20] The authors also report less information about this scenario than they do for the adverse scenario without the sovereign shock. Accordingly, in what follows, we disregard the sovereign shock scenario where possible.

- For most of the largest banks, and for the 91 banks in aggregate, the adverse scenario without the sovereign shock did not generate enough write-offs or other adverse pressures to lead to net losses (Table 7). Losses (i.e., impairments to the banking book and losses on the trading book) were covered by income. In many

[19] In particular, see the *Wall Street Journal* (David Enrich, "EU Banks Survive Stress Tests," July 24, 2010, and the *International Herald Tribune* (Jack Ewing, "7 European Banks Fail Test of Strength," July 24-5, 2010). BBC news wrongly described Tier 1capital as "the strictest measure of capital" in its report "Seven EU banks fail stress test" on July 23, 2010.

[20] See A. Blundell-Wignall and P. Slovik, "The EU stress test and sovereign debt exposures," *OECD Working Paper*, Paris, August 2010.

other cases – the Spanish *cajas* being exceptions[21] – net losses were small.[22] While the test may reflect well on banks' **asset quality**, it sheds little light on the adequacy of their **capital** to serve as a buffer to absorb losses since this was so rarely tested.

Table 7: European Adverse Scenario Stress Tests, Excluding Sovereign Shocks, 2010-11

	Net income* (billion euros)	Increase in RWA (billion euros)	Increase in Tier 1 capital (billion euros)	Increase in Tier 1 ratio (percentage points)
91 European banks	10	824	1	-0.7%
of which				
BNP Paribas	9.4	69.3	4.0	-0.4%
Credit Agricole	6.2	61.3	2.7	-0.5%
Societe General	4.3	35.7	1.8	-0.5%
Deutsche Bank	8.3	105.4	4.6	-2.3%
National Bank of Greece	-0.7	3.8	-0.8	-1.7%
Unicredito	-1.9	18.8	-0.7	-0.5%
Rabobank	4.4	46.0	2.5	-1.4%
Grupo Santander	17.6	22.7	3.5	0.2%
Svenska Handelsbanken	2.7	13.3	1.2	0.0%
Lloyds	1.5	57.6	4.0	-0.2%

* Income *less* impairments in banking book and losses on trading book.
Note: RWA = risk-weighted assets
Source: Committee of Europen Bank Supervisors, *Aggregate outcome of the 2010 EU wide stress test coordinated by CEBS in cooperation with the ECB* , 23 July 2010.

- As a result, for the system as a whole, and individually for most of the banks reported in Table 7, Tier 1 Capital in fact **rises** slightly in the adverse scenario. Since the scenario is designed with a "constant balance sheet" assumption, it is unclear what is being tested besides the sensitivity of regulatory constructs. If capital rises as income exceeds losses while the balance sheet is otherwise unchanged, a sensible capital ratio should rise. But the Tier 1 Ratio at the level of the system declines by 0.7 percent, entirely due to the rise in risk weights. This largely reflects the pro-cyclical features introduced in Basel II, which raise risk-weighted assets by EUR 824 billion.

- The U.S. stress test can be subjected to many of the same criticisms, although too little information was reported by the Federal Reserve to reproduce Table 7 for the U.S. test. Two differences with the European tests should be noted, however. First, the adverse scenario generated significant losses in excess of income and dedicated reserves to absorb them ($236 billion), which implied a meaningful test

[21] Twenty-five of the 52 banks registering net losses in the adverse scenario are *cajas* or other small Spanish banks. The most important remaining exceptions were known problem cases often benefiting from large public support, including Royal Bank of Scotland, ABN/Fortis, Hypo Real Estate, Dexia and two large Irish banks.

[22] For most of the largest banks, this remains true in the sovereign shock scenario, but for the 91 banks in aggregate net losses of EUR 57 billion, or around 6 percent of Tier 1 Capital, emerge.

of the ability of banks' capital to serve as a buffer against unexpected losses. And second, as noted above, the test applied a double benchmark: the 6 percent Tier 1 Ratio used by the Europeans but also a 4 percent ratio of the common equity component of Tier 1 Capital to risk-weighted assets. Banks had little trouble meeting the Tier 1 benchmark but the equity-based benchmark proved more demanding. The widely reported conclusion that 10 of the 19 financial firms tested were required to raise $185 billion from their end-of-2008 position was based on shortfalls in the equity-based component not considered in the European test.

V. Banks' Response to Basel III

The reaction of the industry to Basel III, as proposed in December 2009, has been fiercely negative. Its concerns are well-summarized in the comments posted on the BIS website by key industry federations and lobby groups. Objections boil down to two main arguments: 1) excessive complexity; and 2) severe macroeconomic consequences.[23] A general theme is resistance to any effective new constraints on banks' management, in particular any effective Pillar 1 requirement for more equity, notably by pressing for extensive reliance on the ineffective Pillar 2. The European Banking Federation is explicit:

> "In a broad sense, we think that too much strain has been put in stressing the Pillar I of the Basel II framework….All new extraordinarily cautious measures should be placed under the scope of Pillar 2." [24]

The industry's success in obtaining modifications has so far been mixed. The cool response of the Market Monitoring Group of the Institute of International Finance (IIF), which has emerged as one of the key industry spokesmen on regulatory issues, is suggestive. It merely "takes note of the progress made to date on regulatory reform, including the announcement of the final calibrations of the Basel capital requirements…"[25]

Complexity

Concern about complexity echoes many of the observations in section III above. The detailed changes in Basel III will interact with each other, as well as other changes being

[23] At the level of specifics, the federations have also raised concerns about many issues, including the treatment of netting, margin arrangements, and off-balance sheet exposures for purposes of calculating the leverage ratio; proposed new definitions of capital; capital buffers; use of bonuses for capital conservation; and securitization exposures. The agreement to be presented to the G20 summit reflects concessions in some of these areas, notably those relating to the calculation of the leverage ratio.

[24] EBF submission, p.4. The IIF argues in its submission for placing the leverage ratio, any capital buffer framework to address pro-cyclicality and the net stable funding ratio proposed in the liquidity framework all on a Pillar 2 basis (Executive Summary, p.2).

[25] IIF press release, September 21, 2010 (www.iif.com).

proposed elsewhere. Many of these changes, especially those relating to liquidity, represent a replacement of management judgment by internationally agreed rules. One reason for banks' preference for Pillar 2 over Pillar 1 is a legitimate concern that the level of detail incorporated in the rules is not sensibly adapted to the differing businesses, risks, and contexts of each bank. The one-size-fits-all character of Basel III is a serious problem.

While the discussion and lobbying efforts that followed the December 2009 proposals have led to modifications at the level of detail, and a few issues remain outstanding, the final agreement remains a source of increased complexity.

Macroeconomic Effects

To elucidate the industry's case, the IIF put together a working group involving the chief economists and regulatory economists of more than 30 major banks and other financial institutions, as well as the European Banking Federation, to assess the cumulative effect of the various reform proposals that would affect banks. In a thoughtful and widely cited effort to treat a complex subject,[26] it has warned of cumulative losses of GDP in the United States, the euro area, and Japan of more than 3 percent by 2015, generating losses of nearly 10 million jobs. In an analysis that extends to 2020, very little recovery is projected, thus making the effects more or less permanent.

The central deflationary force arising from Basel III will be the higher lending spreads necessary to recoup the cost of funding a larger share of operations with common equity, over and above that of debt or deposits. The IIF was unable to incorporate all the changes being considered as Basel III and included some proposals not relating to requirements for more equity, but it acknowledges that the impact of higher capital costs on spreads are the main driver of their results.[27] This will mainly be a function of the size of the excess cost of equity and the increase in the amount of equity banks hold. If all of this results in higher lending rates, which in the IIF model they do, they will work to deflate the economy.

Overall, the estimated impact of these forces seems highly exaggerated.

- *Raising the necessary equity would be less disruptive than suggested*. The IIF estimated that Basel III will require U.S. banks to raise $247 billion and euro area banks $273 billion between now and 2015. This sounds like a large amount but perspective is needed. For U.S. banks, this is less than $50 billion per year and for euro area banks, just under $55 billion per year. For the banking industry as a whole, these are not large amounts: during 2005-07, in the run-up to the crisis, the four largest U.S. commercial banks alone were able to return more than $50 billion per year to shareholders as dividends or share buybacks (Table 8). Most of the U.S. banks covered in the table were on a pace to return an amount equal to their entire equity base in 2005 within three to five years.

[26] Institute of International Finance, *Interim Report on the Cumulative Impact on the Global Economy of Proposed Changes in the Banking Regulatory Framework*, June 2010.
[27] Ibid. See the Executive Summary.

Dividend restraint and ending buybacks can contribute a great deal to meaningful recapitalization even before new issues are considered. Euro area banks returned cash at a significantly slower rate, but at least one of the largest U.K. banks behaved similarly to U.S. counterparts. Buybacks have not been a major feature in Europe, but there should still be some scope for dividend restraint. It should also be noted that the needed equity capital, as estimated by the IIF, is far smaller in relation to the size of the banking system's balance sheet in the euro area than it is in the United States (c.f. Table 4).

Table 8: Cash Returned to Shareholders by Selected Banks, Annual Average 2005-2007

	($ billion) Dividends	Share buybacks	Total cash returned	As % of 2005 Com. Equity*
US banks				
Citigroup	9.9	6.8	16.7	21.3%
Bank of America	9.4	8.1	17.5	31.3%
JP Morgan Chase	4.9	5.2	10.1	15.9%
Wells Fargo	3.7	4.2	7.8	26.5%
Regions	0.9	0.8	1.7	30.4%
US Bancorp	2.5	2.2	4.7	35.8%
PNC	0.7	0.6	1.2	24.8%
Total (seven banks)	32.0	27.9	59.7	
Euro area banks				
Banco Santander	3.6	..	3.6	10.9%
Deutsche Bank	1.8	1.9	3.7	12.5%
Unicredito	2.6	..	2.6	8.0%
Dexia	1.1	0.4	1.4	8.4%
Allied Irish	0.8	..	0.8	8.9%
Nat. Bank of Greece	0.5	0.1	0.6	16.4%
Total (six banks)	10.4	2.4	12.7	
UK banks				
Lloyds	3.6	..	3.6	27.2%
HSBC	6.0	0.7	6.7	11.3%
Royal Bank of Scotland	5.1	0.6	5.7	16.4%
Total (three banks)	14.7	1.3	16.0	

* Net of goodwill, intangibles for Dexia, Nat. Bank of Greece and HSBC.
Note: totals may not add due to rounding.
Source: E*Trade financial data base.

- *The impact of higher bank equity on spreads should be small.* Table 9 reports the sensitivity of spreads to plausible values of equity funding levels and costs of equity. Even a large increase from the 3 percent prevailing in some U.S. investment banks on the eve of the crisis to 8 percent, which is above the generally higher levels prevailing in most of the larger U.S. banks today, would add only 25 to 50 basis points to spreads, depending on the assumed target return on equity. This is little more than a rounding error in the overall macroeconomic picture.

- *Monetary policy adjustments can compensate for higher spreads.* While spreads might have to rise, there is no presumption that the additional costs must be borne by borrowers – leading to deflationary effects on the economy – rather than depositors and other sources of funding. An obvious possibility is that monetary authorities take offsetting action, cutting policy rates to hold lending rates down. They would have every incentive to do this in a scenario anything like what the IIF calculations depict. The IIF gives various reasons for not considering this possibility, noting in particular the low level of rates prevailing now. But even its own base scenario, with the fed funds and key ECB policy rates rising to around 1.5 percent or above for most of the coming decade, contains substantial room to offset the rises in spreads suggested above.

- *External demand could play a role.* Another possibility is that exchange rate adjustments, notably vis-à-vis Asia, could lead to offsetting trade stimulus. But the IIF analysis does not allow for these effects.

- *Relying more on nonbank credit is an option.* If the cost of equity is so high that intermediation is too expensive at the margin to be economic, then alternative funding mechanisms can be sought from nonbank institutions. The IIF assumes that this cannot happen by treating nonbank credit as responding to the same forces that drive bank credit so that no substitution occurs. Historically, however, at least in the United States, nonbank sources of credit have on occasion compensated for weakness in the banking system (e.g., during the Russia/LTCM episode in 1998-9 and post-tech bubble in 2001-2). While this has not been the case since the Lehman Brothers collapse, insurance companies, pension funds, mutual funds, and, once restructured and recapitalized, issuers of asset backed securities should have at least some capacity to respond to market openings that the banks are unwilling to fill.

Table 9: Lending Spreads Required to Cover Excess of Equity Cost Relative to Debt

		Excess cost of equity relative to debt**		
Equity ratio*	Implied leverage	5%	7%	10%
		(required spread, in basis points)		
		5%	7%	10%
2%	50	10	14	20
3%	33	15	21	30
5%	20	25	35	50
8%	13	40	56	80
10%	10	50	70	100

* Ratio of equity to total assets, both net of goodwill.
** Margin of target return on equity over average cost of debt and deposits
Source: authors' calculations.

Evidently, disturbing estimates as large as those made by industry leaders should be taken with a very large grain of salt. A more plausible analysis has been provided by two reports commissioned by the Basel Committee and the Financial Stability Board as part

of the process of implementing Basel III. These assessments of its macroeconomic impact during the transition and over the longer term, which are based on assumptions that differ in some respects from those of the IIF, are more in line with the commentary above than with the industry analysis. In particular:

- The analysis of the transition period reports a median estimate for the impact on GDP "roughly one-eighth" the size of the IIF estimate.[28]

- Two percentage point increases in Pillar 1 capital requirements in line with those assumed by the IIF would have a permanent negative impact on output of 0.18 percent (median estimate). The median impact of meeting the liquidity requirement would be negative 0.08 percent. These add up to less than one-tenth of the IIF estimate, which (as noted above) persists once the transition has passed.[29]

VI. The Way Forward

Despite its positive elements, Basel III is a second-best approach to making the banking system more resilient. The best approach would be to replace the core constructs of Basel I with something much simpler, incorporating and building on the improvements the new proposals offer where possible.

The three pillars set out in Basel II provide a good organizing framework but the approach to each of the pillars and the balance among them needs to be revised.

Pillar 1: Ensure Capital Adequacy

Are Pillar 1 Rules Really Needed?

Externally imposed rules override management discretion and can distort incentives. Are Pillar 1 rules to ensure capital adequacy needed?

Where a financial institution and its creditors are credibly exposed to the disciplines of the market, with no prospect of taxpayer support if things go wrong, rules may not be necessary. Creditors have a strong incentive to insist that significant equity levels are maintained to protect their interests. Such equity levels benefit creditors much as "deductible" allowances benefit insurance companies: they not only provide a first buffer to absorb losses but also discourage irresponsible behavior by people taking risky decisions.

[28] See the Executive Summary of Financial Stability Board and Basel Committee for Banking Supervision, "Assessing the macroeconomic impact of the transition to stronger capital and liquidity requirements," *Interim Report of the Macroeconomic Assessment Group*, August 2010 (www.bis.org).

[29] See the Executive Summary of the Financial Stability Board and Basel Committee for Banking Supervision, "An assessment of the long-term economic impact of stronger capital and liquidity requirements," August 2010 (www.bis.org).

Unfortunately, commitments to expose creditors of unregulated banks to the disciplines of the market are not credible. Failure of large institutions such as Lehman Brothers, implying large but not immediately identifiable losses to creditors, can be extremely disruptive with severe macroeconomic consequences. The case for taxpayer support to override market discipline can be very strong. Promises in good times to allow such discipline to operate, regardless of the consequences, involve trying to commit future governments to behave in ways that may be foolish and therefore do not have any credibility. This provides bank creditors and depositors, at least, with an implicit guarantee that removes their incentive to insist on realistic levels of equity. As long as creditors to financial institutions are even *perceived* to benefit from implicit guarantees, rules are likely to be needed to compensate for a bias toward too little equity.

The Leverage Ratio

Replacing the risk-weighting framework with an effective leverage ratio, appropriately designed and calibrated, would be the simplest way to proceed. This would eliminate the scope for arbitraging minimum capital requirements toward zero by shifting the composition of what is **on**-balance sheet. It would need to be designed to eliminate incentives to arbitrage rules by shifting assets **off**-balance sheet, but this is a challenge that exists with the existing rules and can be addressed, at a minimum, in the same way. It requires Pillar 1 treatment, a reasonably narrow capital definition comprising mostly common equity, and calibration involving a minimum substantially higher than currently planned. A relatively short transition period should suffice for implementation.

The bulk of the pro-cyclicality problem would disappear with the risk-weighting system, although some degree of natural pro-cyclicality would remain. Consequently the various Basel III initiatives to limiting pro-cyclicality could usefully be retained.

Rewarding Diversification

An effective leverage ratio would end the existing bias toward concentrated exposures to favored assets by eliminating the incentive to arbitrage risk weights. But it would do nothing positively to favor diversification.

Ways should be sought to reinforce an effective leverage ratio by adding properties that would recognize and penalize excessive concentration so as to reward diversification. A benchmark portfolio could be agreed upon with supervisors that was deemed by both bank management and supervisors as "appropriately diversified." It would be defined in terms of reasonable ranges along key dimensions (e.g., sectoral, geographical, etc.) to allow ample scope for management business judgment while still respecting the benchmark. Deviations from the benchmark would call for supplementary capital, perhaps according to a quadratic rule so that large deviations are penalized proportionately more than small ones. Any supplementary capital requirements due to lack of diversification would be in addition to counter-cyclical and conservation buffer requirements.

Pillar 2: Be Realistic about what Supervisors can Achieve

In principle, Pillar 2 provides supervisors with the authority to override or supplement Pillar 1 rules as they see necessary or appropriate. So, in a sense, the Basel Framework is immune from criticism.

This begs the important question of what supervisors can actually achieve. Constraints include:

- Resources available to supervisors are limited and political oversight may discourage calling attention to and addressing problems.

- Supervisors are usually paid a fraction of what the bankers they are supervising earn. This may discourage the best people from being supervisors except as a stepping-stone to a better job. Capture can be a problem.

- Supervisors are too often detached observers rather than participants in the markets where banks operate, making it difficult to assess developments.

- Bankers provide supervisors with whatever information they ask for. But often they do not know what to ask for.

Supervisors' track record in the run-up to the crisis is not encouraging. Supervised institutions contributed to virtually all elements of the crisis. For example, in some of the most egregious cases include:

- Northern Rock's supervision by the Financial Services Authority (FSA) in the United Kingdom was close enough in mid-2007 to lead to a small supplementary, i.e., Pillar 2, capital requirement but, at the same time, to permit a 30 percent increase in the interim dividend. Leverage of the bank's equity was of the order of 50. In September of that year Northern Rock suffered the first run on a British bank since 1866 and collapsed.[30]

- The EU Financial Conglomerates Directive of 2002 required that EU-equivalent consolidated supervision, approved by the appropriate EU supervisor, be in place for AIG's Financial Products unit and the five largest U.S. investment banks if they were to operate in London and elsewhere in the EU. Arrangements that satisfied these requirements were put in place for oversight of AIG by the Office of Thrift Supervision (OTS) and of the five investment banks by the Securities and Exchange Commission (SEC). These institutions were eventually at the core of the crisis.

These considerations suggest that reliance on supervision is too often wishful thinking, which may be why banks regard Pillar 2 so positively. Supervisors are poorly placed to

[30] See Northern Rock, *Interim Results for Six Months Ending 30 June 2007*; and Treasury Committee, *The Run on the Rock, Vol. II*, House of Commons, London, 2007, exchange between Mr. Fallon and Mr. Appelgarth.

manage banks and should not try to do so to allow management the freedom to manage its own business and partly to avoid the appearance of a government stamp of approval to businesses, which should face the disciplines of the market on their own.

Important tasks remain to ensure the transparency and integrity of market processes, which allow participants to operate with confidence. While these are more regulatory and enforcement-oriented than supervisory, public authorities can realistically carry them out effectively. To do this, however, they must be appropriately resourced and their corporate culture must be built around these objectives. These tasks include:

- Ensuring that financial reports are as honest a representation of a financial institution's situation as possible;

- Strengthening transparency by insisting on adequate and timely disclosure of material information;

- Preventing fraud and prosecuting it when it occurs; and

- Taking prompt corrective action to enforce compliance with such prudential rules as exist.

Pillar 3: Make Market Discipline More Effective

As noted, the likely costs of a financial collapse and the implicit guarantee that these provide to creditors of large financial institutions make it impossible to rely solely on markets to regulate financial markets. Nevertheless, significant steps can be taken to make market discipline more effective:

- Simpler but stronger rules under Pillar 1, as suggested above, would ensure that more meaningful levels of shareholders' equity constitute a larger first buffer to absorb losses in financial markets. It would also increase the contribution of owners to overall funding of bank activities compared to that of creditors benefiting from the implicit guarantee. More funding by equity-at-risk rather than borrowed resources would strengthen investor incentives to insist on prudent management. At the same time, simpler rules would free management from the one-size-fits-all constraints of Basel III.

- Effective resolution regimes must be in place. Failure to respect prudential rules or inability to operate due to liquidity problems should lead to prompt corrective action. This should normally involve, at minimum, a change of management while the equity buffer is still largely in place. So long as the bank is still solvent, restructuring or liquidation, if necessary, should be possible without cost to taxpayers.

- With governance reforms that ensured that directors act in the interests of shareholders, and not hired management, capital preservation would be a more

important consideration in making investment decisions. Bonuses to staff would be made in the interests of people paying them and not those receiving them.

- Where nothing can be done about the implicit guarantee, this should be recognized by making it explicit and pricing it realistically. This would essentially mean extension of deposit insurance beyond current beneficiaries, mainly retail depositors, and charging for it. This should lead to interest rate differentials between insured and uninsured deposits and other forms of lending. It would be sensible to use the premia to maintain a fund that can be drawn on to make good on guarantees when needed.

- Most important, where explicit guarantees are not in place, ways must be found to eliminate the implicit guarantee. Rhetoric does not work since today's promises cannot commit future governments. Where losses to be absorbed exceed the equity buffer and any fund to cover insured deposits, the resolution regime must demonstrate that the implicit guarantee does not exist. This requires allowing at least some large unsecured creditors to lose money, even if taxpayer support is provided.

- In this regard, the main damage to incentives may arise less from direct support to shareholders of financially weak banks than from large-scale support that has routinely been provided to customers and counterparties. From the peso crisis of 1994 to AIG in 2008 and Europe's sovereign debt crisis earlier this year, the main beneficiaries of massive "bailouts" have not been the direct recipients of financial support but their creditors. Where bankers take large risks for high returns that reward those risks, ways must be found to allow them to suffer the consequences when mistakes are made.

VII. Summary and Concluding Remarks

The answer to the question posed in the title to this paper seems to be "not much." As noted, Basel III has positive features: it simplifies the definition of capital and gives greater weight to equity; and its initiatives to dealing with pro-cyclicality may be helpful. But:

- The core framework for determining capital requirements that permitted pre-crisis excesses remains in place.

- The banking industry appears to have succeeded in limiting any meaningful increases in equity requirements beyond what banks typically held before the recent crisis.

- Implementation is extremely slow, with little beginning before 2013 and phasing-in running as late as 2023 for grandfathered changes to the definition of capital.

- If risk-weight reductions of the base for determining minimum capital remain in line with 2009 levels, permissible leverage of bank equity in 2015, on average for the system, will be around 30 in the United States and around 44 in Europe. These exceed pre-crisis leverage for many banks. In 2019, when the new system is fully phased in, these figures will decline to 19 and 28, respectively. For individual banks with below-average risk-weights, permissible leverage will be above these averages.

- Increased complexity, notably associated with the new, but unnecessary, liquidity framework will impinge on management discretion.

It seems unlikely that the G20 summit in Seoul in November will question what the Basel Committee has agreed on. Press reports have suggested that the G20 is considering supplementary capital requirements that would affect the 20-25 largest banks in the world, superficially a positive step. But so long as the risk-weighting framework remains the base for calculations, raising ratios seems likely to be ineffective. Furthermore, introducing separate regimes for large and small banks will introduce a new scope for regulatory arbitrage.

It is to be hoped that independent political forces will raise harder questions and seek more meaningful reform. These could emerge in the U.S. Congress or the European Parliament.