

Basel III in the Global Regulatory Framework

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Overview of presentation

- Basel today
- Basel III: what will it change?
- Persisting deficiencies
- GSIFI's and derivatives
- The way forward

Basel today: the big picture

Background

- Origin 1980s: L.A. debt problems, rising yen.
- Basel I framework 1988, Basel II in 2004.

Today's framework: 3 pillars

- Pillar 1: capital rules
- Pillar 2: supervisory oversight
- Pillar 3: market discipline

Basel today: more concretely

Pillar 1 is core.

- For each asset define a “risk-weight”.
- Calculate a “capital charge” of 8% of the risk-weighted value of each asset.
- Cumulate capital charges across the portfolio.
- Capital charges are “Tiered”, must be met by funding with qualifying instruments, generally equity or certain types of debt.

Risk Weights Under Basel I and Basel II (Pillar I), %

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

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

Basel III: what will it change?

- Retains core features of capital charge system with multiple risk-weights
- Proposes detailed rules intended to avoid a repeat of the recent crisis.
- It constructively addresses some problems but adds to complexity.
- It overrides management discretion with internationally agreed rules in many areas.
- Transition for main elements is very slow.

Basel III: what will it change?

(1) Definition of capital (generally for the better)

- Currently 3 “Tiers”, none containing just common equity.
- Still 3 classes but one will be all common equity.
- Simpler criteria for non-equity forms of capital
- Greater international harmonization.
- Slow transition, continuing until 2023.

Basel III: what will it change?

(2) Minimum capital requirements: 2 separate initiatives, too weak, only 1 of which can be binding.

1.Reinforce existing framework with new rules to correct for omissions and underestimates of risk; and with more demanding calibration.

2.Introduce a leverage ratio as a non-risk-weighted backstop

Calibration of the capital framework in Basel III

Capital requirements and buffers when fully implemented

	Effective date (1 January)	Percent of risk-weighted assets (RWA)			Percent of total assets (TA)	
		Total Capital	Tier 1 Capital	Common equity	Common equity	
					<i>RWA=50% of TA</i>	<i>RWA=75% of TA</i>
<u>Minimum</u>	2015	8.0	6.0	4.5	2.25	3.375
<u>Conservation buffer</u>	2019			2.5	1.25	1.875
<u>Minimum plus conservation buffer</u>	2019	10.5	8.5	7.0	3.5	5.25
<u>Countercyclical buffer range*</u>	National circum- stances			0 - 2.5	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).

Leverage of common equity on the eve of the crisis, end 2006

	<u>Total assets(1)</u> (\$ billion)	<u>Common equity(1)</u> (\$ billion)	<u>Equity ratio(2)</u> (%)	<u>Implied leverage(3)</u>
<u>US commercial banks</u>				
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
<u>US investment banks</u>				
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
<u>European banks</u>				
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.

Basel III: what will it change?

(3) Liquidity management (complex, not needed)

- New framework mimics approach to capital standards: defines asset and liability classes, introduces formulae, assigns weights, imposes portfolio constraints on management.
- New measures of liquidity risk: “Liquidity coverage ratio” and “Net stable funding ratio”
- Rules become effective in 2015, 2018 respectively.

Basel III: what will it change?

(4) Pro-cyclicality: the problem

- There is always a “natural” pro-cyclicality associated with cyclical movement of retained profits. But Basel II has made this more severe.
- Basel II makes many risk-weights based on credit ratings, so parameters also become cyclical. This has encouraged deleveraging and amplified the crisis.

Basel III: what will it change?

(4) Pro-cyclicality: the problem (cont.)

- Consider the case of AIGFP, with \$307 billion exposure in “super senior” CDS portfolio in mid-2008 “written to facilitate regulatory capital relief” [AIG 2008 10Q, cf A.R. Sorkin, “Too Big to Fail”, ch.12, 16.]
- Total capital required for banks under standard regime for \$307 billion of lending, if 100% risk-weighted (without a CDS), is \$24.56 billion ($\$307\text{b.} \times .08$).
- With a CDS bought from AIG with a rating above A+ the risk-weight drops to 20%, so capital charge falls to \$4.92 billion.
- If AIG is downgraded to A+, with cycle, the risk-weight jumps to 50%, requiring \$7.37b. more capital (30% of \$24.56 b.). This is a “Cliff effect”.

Basel III: what will it change?

(4) Pro-cyclicality: 3 main initiatives (right direction but weak)

- Capital conservation buffer, common equity, normally 2.5% of RWA, bringing minimum equity requirement to 7% and Tier 1 capital to 8.5% of RWA.
- Counter-cyclical buffer, when excess credit growth raises risk in the system. “According to national circumstances”, 0-2.5% equity suggested. No time frame.
- Promote more conservative loss provisioning.

Persisting deficiencies

Fundamental problems rooted in original Basel design, neither introduced nor addressed by Basel III:

1. Conceptual underpinnings are poor.
2. Bias against diversification.
3. It demands too little equity and permits too much leverage.

(1) Conceptual underpinnings

- Capital charges “portfolio invariant”. No role for diversification.
- Simple and convenient but requires very strong assumption: only one systematic risk factor.
- “If there are pockets of risk” imposing portfolio invariance “may significantly” bias minimum capital requirements downward for a regional or specialized lender. (Gordy, JFI 2003, p.222)

(2) Bias against diversification

- Variations in risk-weights effectively create regulatory taxes and subsidies.
- Encourage concentration in favored asset classes.
- 3 asset classes favored by Basel I with low risk weights are residential real estate, sovereign debt and inter-bank claims.
- These have been at the heart of the recent crises in US and Europe.

(3) Permits too much leverage

Scope for arbitraging risk weights implies no floor for minimum capital requirements, unless the (low) leverage ratio achieves Pillar 1 status.

On basis of 2009 average RWA/TA, permissible leverage as late as 2015 will be nearly 30 in US and 44 in Europe.

In 2019, when the capital buffer is fully phased in, leverage limits would average around 19 in US and 28 in Europe.

But if banks if banks wish to increase their leverage to raise their return on equity (ROE), there is great scope for doing so by reducing RWA/TA.

The following slide illustrates the implications of the new rules for permissible leverage in major global banks, and, implicitly, the scope for reducing capital requirements by adapting management strategies.

Basel III and scope for leverage

Maximum permissible leverage of common equity assuming no change in RWA/TA(1) from 2010

<u>Bank</u>	<u>RWA/TA(1)</u>	<u>2015</u>	<u>2019</u>
Royal Bank of Scotland	0.320	69.4	44.6
Barclays	0.267	83.2	53.5
Deutsche Bank	0.182	122.1	78.5
BNP	0.301	73.8	47.5
Santander	0.497	44.7	28.7
HSBC	0.449	49.5	31.8
UBS	0.151	147.2	94.6
Citi Group	0.388	57.3	36.8
Morgan Stanley	0.199	117.7	71.8
JP MorganChase	0.329	67.5	43.4
Goldman Sachs	0.271	82.0	52.7
Bank of America	0.390	57.0	36.6
<i>Memo items: required regulatory ratio minima</i>			
Core Tier 1 / RWA (%)		4.5	4.5
Core Tier 1 + Buffer / RWA (%)		4.5	7.0

(1) RWA =risk weighted assets; TA = total assets

Note: US banks accounting adjusted for GAAP/IFRS differences

Source: Bank reports, BCBS, OECD.

Too big to fail: GSIFI's and derivatives

- Derivatives facilitate interconnectedness of large universal banks.
- Problems, if they arise, are hard to isolate.
- Such banks are “Globally systemically important financial institutions (GSIFI's)”.
- Issue: would financial stability be enhanced by imposing a capital surcharge on GSIFI's?

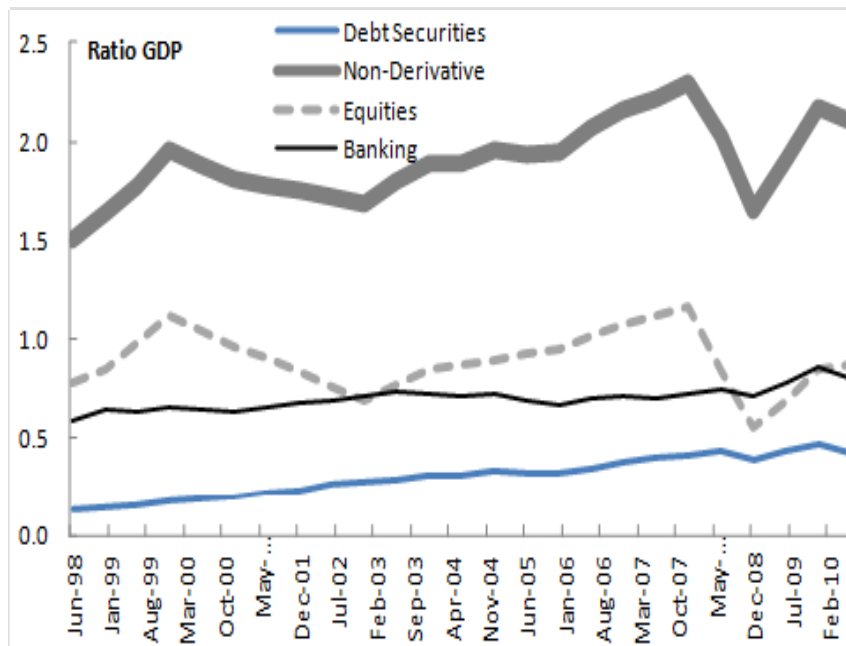
Some orders of magnitude

- Value of global financial assets, ex-derivatives, was around twice world GDP in 2010.
- Notional value of derivatives rose from less than 3 x world GDP in 1998 to 10 x world GDP in 2010.
- Over same period gross market value (current settlement) of derivatives rose from 8.5% to 41% of world GDP.
- Only 3.8% of these were exchange-traded.
- JPM projects revenues in 2012 for 12 GSIFI's (excl. itself) of \$228 billion. Derivatives play a huge role.

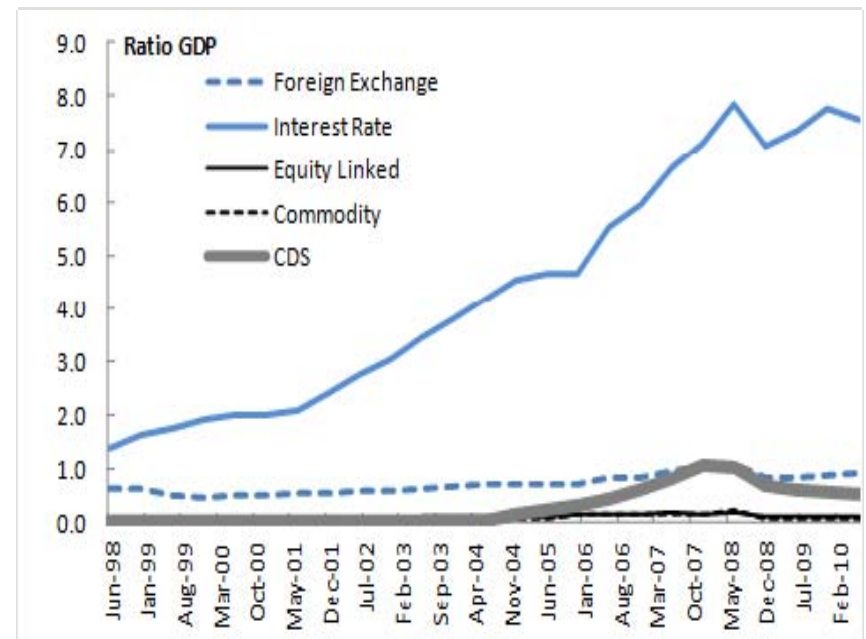
Some orders of magnitude (cont.)

(Source: BIS, Datastream, World Federation of Stock Exchanges and OECD; note difference in scales)

Composition of global securities, ex. derivatives



Composition of global derivatives securities



Counterparty netting

- Bilateral netting of derivatives and repo positions is permitted for capital purposes.
- Also some legally enforceable bilateral cross-product netting.
- Allows increased exposures, especially via derivatives, while avoiding capital charges.
- Numbers can be very large.
- But positions may not cancel in all possible states of the world.
- Can leave large exposures in a crisis

The scope of the issue: Deutsche Bank, end-2008 (billion euros)

	IFRS basis	GAAP basis	Difference
Total assets	2202.4	1030	1172.4
Derivatives	1224.5	128	1096.5
Non-deriv. trading assets	247.5	247.5	0
Reverse repos & borrowed sec.	168	161	7
Net loans	269.3	269.3	0
Brokerage, etc.	104.1	35.1	69
Other	189	189.1	0.1

The scope of the issue: US banks, end 2010 (\$ billion)

	Gross Derivative Assets	
	No netting	After counterparty netting, cash collateral
Bank of America	1519	73
JP MorganChase	1529	80
Citigroup	654	50
Source: company reports		

Why does this matter?

- Among Basel III innovations is a “Credit valuation adjustment (CVA)” charge to deal with unexpected counterparty risk losses, marked to market.
- The Committee estimates that these have been more important than actual defaults.
- This charge is applied after netting and is additive across counterparties.
- This rewards concentration in the derivatives markets and facilitates minimizing the CVA charge.

Example: bank with exposures from 2 interest rate swaps and 2 CDS

Diverse counterparties			Concentration case	
<u>Counterparty A</u>			<u>Single counterparty</u>	
IRS 1 (up)	100		IRS 1 (up).	100
CDS 1 (down)	-90		CDS 1 (down)	-90
Net vs. A	10			
<u>Counterparty B</u>				
IRS 2 (up)	90		IRS 2 (up)	90
CDS 2(down)	-100		CDS 2 (down)	-100
Net vs. B	-10		Net position	0

Forces operating on GSIFI's

All other things equal:

- Basel III reforms will add to capital costs
- Dodd-Frank and similar EU moves to strengthen transparency and push trading to exchanges with central clearing will press margins
- Volcker rule in US may lead profitable business to migrate elsewhere.
- GSIFI's will experience pressures on ROE's

The impact of regulatory reform on return on equity (ROE) at GSIFI's (market estimates, in percent)

	<u>CS</u>	<u>UBS</u>	<u>DB</u>	<u>GS</u>	<u>MS</u>	<u>BNP</u>	<u>SG</u>	<u>BAR</u>	<u>BAC</u>	<u>C</u>	<u>Average</u>
ROE before regulatory reforms	23.5	22.7	19.9	23.4	19	19.2	17.2	17.8	na	na	20.3
ROE after regulatory reforms	13	11.5	10.5	13.8	12.4	13.8	10.2	12	na	na	12.1
o/w Equity derivatives	22	26	21	20	22	24	29	27	17	15	22
Source: JP Morgan, OECD											

How will GSIFI's respond?

All other things not equal

- GSIFI's can try to maintain their ROE by reducing capital charges by arbitraging the risk-weight system, not least by using derivatives.
- Likely result will be lower RWA/TA and higher leverage
- Lightly leveraged banks in Slide 19 will have an incentive to behave more like the highly leveraged banks.

Will a GSIFI surcharge be helpful?

For:

- Since more capital would be welcome, this would go in right direction.
- GSIFI's enjoy competitive advantage from being too-big-to-fail. A surcharge would provide some offset.

But:

- It is likely to be ineffective so long as capital requirements can be arbitrated down.
- More differential regulatory treatment invites new distortions, even if difficult to anticipate.

The way forward (1)

Pillar 1: scrap risk-weight system; introduce meaningful leverage ratio; reward diversification.

Pillar 2: be realistic about what supervisors can achieve; attack fraud, enforce sensible rules, insist on honest accounting and transparency.

The way forward (2)

Pillar 3: make market discipline more effective.

- Minimize implicit guarantees. Where unavoidable, make explicit and fund them.
- Begin prompt corrective action when banks violate capital rules but are still solvent.
- Effective resolution regimes.
- Allow some large creditors to lose money when they make mistakes.

Thank you for your attention.