The BIS' Proposed Market Risk Framework

- The Basel Committee on Banking Supervision's recently published their consultative document on the treatment of trading books and a proposed market risk RWA framework.
- The proposals will greatly reduce arbitrage opportunities between the banking and trading book and will require banks to have improved their Management Information Systems (MIS).
- There may be some unintended consequences - in particular on the credit and equity markets.

This note provides our early guide to some of the key features in the Basel Committee on Banking Supervision's consultative document titled 'Fundamental review of the trading book: A revised market risk framework', which was issued on 31-Oct-13. The Committee has invited comments by 31-Jan-14, after which it will publish a revised accord and the implementation timetable. We estimate that the revised accord will not be published before late 2014, suggesting implementation at least 2 years off. In this note, we look in turn at:

(1) The revised banking book / trading book boundary;
(2) The definition of trading desks and added disclosure requirements;
(3) The move from VaR to Expected Shortfall and capturing liquidity; and
(4) The calculation of market risk RWA.

The Revised Banking Book / Trading Book Boundary

The first area that the BIS paper covers is a revised definition of the banking and trading book boundary. The Committee believes that the current 'intent based' definition allows for significant regulatory arbitrage and proposes that the boundary be based on the type of instrument (table below); any deviation from this approach would require a regulatory approval.

The Committee also envisages that once a bank assigns an instrument to either the banking or the trading book, it may only re-designate the instrument to the other regulatory book in extraordinary circumstances. Even then, an additional capital charge would be levied for any reduction in RWA resulting from the re-designation; this is clearly designed negate any arbitrage benefit.

FX or commodity positions may be held in the banking book, but will be included in the market risk capital charges, treated as if they were effectively part of the trading book.

Trading Book / Banking Book Instruments

Trading Book	Banking Book
Accounting trading asset or liability	Any unlisted equity
Instruments resulting from market-making activities	Instrument designated for securitisation warehousing
Instruments resulting from underwriting activities	Real estate holdings
Any listed equity or equity investment in a fund	Equity investment in a fund (including a hedge fund) where the bank cannot look through the fund daily or where the bank cannot obtain daily real prices
Naked short positions, including all short positions in cash instruments	
Options	

Source: BIS

Likely Impact:

We expect that these changes will have greatest impact on Tier 2 and Tier 3 banks who typically have more 'quasi trading' activity in their banking book. Indeed, some banks may prefer to close such operations, given the additional monitoring and disclosure requirements of the trading book.

The Definition of a Trading Desk and Added Disclosure

The proposals require that banks have clearly defined trading desks whereby each desk must:

(1) Comprise a group of traders or trading accounts, with traders only assigned to one desk;
(2) Have clear reporting lines and compensation policy;
(3) Have a documented strategy and MIS covering revenue, costs and RWA;
(4) Produce the daily P&L and, weekly at least, risk management and regulatory risk reports;
(5) Treat trades between desks (e.g. internal hedges) in the same way as external trades;
(6) Backtest the performance of a trading desk's risk management models to compare theoretical P&L with actual P&L (RWA penalties apply if these models prove to be excessively inaccurate).

In addition, much greater disclosure will be required. Banks will have to provide full detail of their trading desk structure, including whether a desk is nominated to use a models based approach to market-risk RWA (mRWA). Regular disclosure reports are also envisaged; the Committee's sample is shown below.

Sample disclosure as envisaged by the BIS Committee on Banking Supervision

Trading desk risk disclosure report (1) — Table 1

	Desk	ES (2)	NMR (3)	IDR (4)	Total IMA	SA w/o DR charge	SA DR charge(5)	Total SA	IMA/SA	Risk Type: Risk Factor	ES	Model Independent Assessment: Exposure	Ratio
FX	Spot FX	10	0	0	10	15	0	15	67%	FX	28	300	3.3%
	FX derivatives	15	0	0	15	20	0	20	75%			485	3.1%
Equity	Domestic cash equity	13	0	2	15	20	3	23	65%	Equity	83	278	5.4%
	Domestic equity derivatives	18	0	3	21	22	4	26	81%			500	4.2%
	Foreign equities	25	0	4	29	30	6	36	81%			325	8.9%
	Emerging market equities	28	3	8	39	35	9	44	89%			423	9.2%
Interest rates	Domestic interest rates and derivatives	19	0	3	22	30	5	35	73%	Interest rates	45	1250	1.8%
	International interest rates and derivatives	19	0	5	24	32	2	34	75%			984	2.4%
	Dom structured products				**NA**	**40**	**3**	**43**	**NA**			**NA**	
	Global structured products				**NA**	**38**	**5**	**43**	**NA**			**NA**	
Credit	High grade credit	19	0	1	20	24	2	26	77%	Credit	48	698	2.9%
	High-yield credit	13	2	4	19	25	6	31	61%			502	3.8%
	Distressed debt	16	5	8	29	25	12	37	78%			**298**	9.7%
	Syndicated loans				**NA**	**30**	**8**	**38**	**NA**				
Commodities	Agricultural commodities	17	2	0	19	21	0	21	90%	Commodities	34	198	10%
	Energy	17	2	0	19	19	0	19	100%			126	15%
Other	Macro hedge portfolio	36	4	7	47	59	9	68	80%			1845	3%
Total		**265**	**18**	**45**	**328**	**485**	**50**	**535**	**55%**		**238**		
Internal bank-wide consolidated ES		**200**				**Internal consolidated diversification benefit (6)**						**-38**	**-16%**
Sum of risk factor ES		**238**				**Rho**							**0.75**
Rho * internal bank-wide ES		**150**				**Regulatory ES-based capital charge (7)**							**210**
(1-Rho) * sum of risk factor ES		**60**				**Regulatory capital diversification benefit (8)**						**-28**	**-11%**
Total regulatory capital charge (9)		**397**											

Desks highlighted in yellow have securitisation exposures and are required to be capitalised using the standardised approach.

Desks highlighted in green have failed backtesting and/or P&L attribution and are capitalised under the standardised approach.

Source: BIS

Likely Impact:

Many banks will have to invest to improve their MIS systems, in particular in the allocation of costs and RWA to a trading desk-level. The backtesting of risk models will also be a challenge for some banks.

The move from VaR to Expected Shortfall and capturing liquidity

A well known shortfall of the VaR methodology is that, while it works well in quantifying the scale of losses for a given probability and time horizon, it provides no guidance on the scale of any tail loss beyond this point. The Committee therefore of proposes moving to the use of Expected Shortfall (ES) reflecting the use of this approach by a number of banks internally.

The Committee also wishes banks to capture liquidity risk. To do this, The Committee proposes that ES calculations should factor in a specified liquidity horizon for each product. Many banks, not surprisingly, wished to set their own liquidity horizons; the Committee, however, views liquidity as a systemic issue.

The Committee defines a liquidity horizon as ‘the time required to execute transactions that extinguish an exposure to a risk factor, without moving the price of the hedging instruments, in stressed market conditions’. Liquidity horizons range from 10 to 250 days. The shortest liquidity horizon (applied to large cap equities) is in line with the current regulatory 10-day VaR. The longest liquidity horizon (structured credit) matches the banking book horizon at one year. The concept is broadly in line with the direction taken under Basel 2.5, which introduced varying liquidity horizons as part of the Incremental Risk Charge and the Comprehensive Risk Measure. The Committee’s proposed liquidity horizons are set out below.

BIS Proposed Liquidity Horizons by Risk Category

Liquidity horizons of broad risk factor categories

Table 2

Risk factor category	10 days	20 days	60 days	120 days	250 days
Interest rate		X			
Interest rate ATM volatility			X		
Interest rate (other)			X		
Credit spread – sovereign (IG)		X			
Credit spread – sovereign (HY)			X		
Credit spread – corporate (IG)			X		
Credit spread – corporate (HY)				X	
Credit spread – structured (cash and CDS)					X
Credit (other)					X
Equity price (large cap)	X				
Equity price (small cap)		X			
Equity price (large cap) ATM volatility		X			
Equity price (small cap) ATM volatility				X	
Equity (other)				X	
FX rate		X			
FX ATM volatility			X		
FX (other)			X		
Energy price		X			
Precious metal price		X			
Other commodities price			X		
Energy price ATM volatility			X		
Precious metal price ATM volatility			X		
Other commodities price ATM volatility				X	
Commodity (other)				X	

Source: BIS

Likely Impact:

We expect this move will have the greatest impact will be on the - already diminished - structured credit market. It may also further reduce liquidity in high yield credit trading and emerging market bond markets. Liquidity in the commodity markets is less likely to be impacted due to the rising importance of commodity trading firms that are not subject to the same BIS regulatory framework.

The calculation of Market Risk RWA

The Committee sets out details for how mRWA would be calculated. In essence, all products would be decomposed into one or more of nine risk categories, each with additive mRWA charges. For example, a bond would typically be decomposed into the following notional positions:

- A series of fixed cash flows, which should be assigned to the general interest rate risk category;
- The market value of the bond, which should be placed into the ‘default risk’ category;
- A series of cash flows, which should be assigned to the relevant category in the credit spread category.

The standardised approach also includes modifying factors which take into account hedging and diversification benefits. At the same time, banks using the internal models approach will be subject to some constraints on recognising diversification benefits, possibly reflected in floor charges.

The table below summarises the mRWA range that would apply to main product areas.

Indicative Decomposition of Risk By Product

	General Interest Rate	Credit Spread (non-Securitisations)	Credit Spread (Securitisations)	Equity Risk	Commodity	Foreign Exchange	Default Risk (non-Securitisation)	Default Risk (Securitisation)	Options (non-Delta)
FX Spot						x			
FX Forwards & Swaps	x					x			
FX Options	x					x			x
Rates Cash	x	x				(fixed rate bonds)	x		
Rates Repo	x								
Rates Swaps	x								
Rates Options	x								x
Longevity/Mortality	x				x				
Credit Cash	x	x				(fixed rate bonds)	x		
Credit CDS	x	x					x		
Credit Indicies	x	x					x		
Credit CDOs	x		x					x	
Commodity Spot					x				
Commodity Derivatives					x				x
Securitisation	x		x					x	
Cash Equities				x			x		
Equity Derivatives Swaps	x			x			x		
Equity Derivatives Options	x			x			x		x
Prime Services	x								
mRWA	0.4% - 30%	5% - 80%	0.9% - 100%	30% - 70%	20% - 80%	15%	0.5% - 50%	75% - 100%	0.4% - 30%
Buckets defined by	0.25 to 30 Yr	HG/HY by sector and duration	Credit rating, sector and duration	Large Cap/Small Cap, Developed/EM and sector	Commodity type	1 year to over 3 years	Credit rating	Tranche type	Scenario matrix calculation

Source: Tricumen analysis

Likely Impact:

Overall, the approach brings the regulatory treatment of risk much closer to the internal treatment of risk and the standardised approach closer to the internal models approach. With regard to individual product areas:

- The use of sectors in Credit Spread Risk is likely to add further skewing to the credit markets as banks will be less likely to hold inventory and/or will demand wider bid-offer spreads for longer dated bonds in sectors such as telecommunications. For example, a 10 year HY telco bond would attract a charge of 35%, versus a comparably low 25% for a 10-year HY utility bond;
- Similarly, the division between developed and emerging equities and the use of sectors in the Equity Risk category may have a wider impact. For example, companies in countries defined as emerging (such as South Korea) may favour listing on developed market exchanges, possibly depriving local exchanges of star names;
- A quirk of the risk category bucketing is that all 'unusual underlyings' (e.g. temperature in the case of weather derivatives, or mortality in the case of mortality bonds), would be assigned to an 'Other' bucket in the commodities asset class. We believe that while making weather derivatives part of the commodities category is sensible, risk such as mortality and longevity would be much better dealt with in the general interest rate category, albeit with time-banded charges;
- As the credit risk weights for securitisations will lead to consistency across trading and banking books, opportunities for regulatory arbitrage in this area will decrease;
- By the Committee's own admission, the treatment of implied volatility in options is imperfect. For example, gains due to changes in the implied volatility of options on one underlying can be offset by the losses due to changes in the implied volatility on options on another (possibly similar) underlying - such that the two options are likely to hedge each other; the proposed approach, however, aggregates the charges on both.

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