

Basel Committee on Banking Supervision

Consultative document

Fundamental review of the trading book

May 2012

Dr. Axel Sauer - comments

7 September 2012

Dr. Axel Sauer does permit to publish these comments on the Bank for International Settlements' website.

The commenter does reply to question number 6:

– “on the merits of the desk-based and risk-factor based aggregation mechanisms to deliver the Committee’s objectives of constraining diversification benefits”.

The commenter does reply to question number 9:

– “Which of the two approaches better meets the Committee’s objectives for a revised standardized approach”.

The commenter’s reply – on risk aggregation mechanisms, might be seen as practitioner’s attempt - to kick over hornet’s “market and trading” nest.

Key areas of Committee focus

1. Introduction to alternative trading book / banking book boundary definitions

- **“Trading evidence”** – based boundary:

The definition of a boundary which does not base only on “banks’ (e g traders, accountants and risk managers) intent, but also by evidence of their (e g traders and treasurers) ability to trade and risk manage the instrument on a trading desk.” (Basel Committee on Banking Supervision (BIS) to review and to invite for comments at BIS consultative document, Fundamental review of the trading book, May 2012, Page 2.)

- **Valuation** - based boundary:

In contrast to the concept of banks’ (e g traders, treasurer, accountants and risk manager) trading intent at bank’s trading desks is the by the Committee proposed “...the view that capital requirements for market risk should apply when changes in the fair value of financial instruments, whether recognized in earnings or flowing directly to equity, pose risks to the regulatory and accounting solvency of banks”. (Basel, Fundamental review of the trading book, May 2012, Page 2.)

- **Stressed calibration**

The Committee does enhance the importance, equivalent to look for mechanism or reliable forecasts at bank’s trading desks - to ensure “that regulatory capital is sufficient in periods of significant market stress.” (Basel, Fundamental review of the trading book, May 2012, Page 3.)

- **Moving from value-at-risk to expected shortfall**

The Committee recognizes “... weaknesses ... with using value-at-risk (VAR) for determining regulatory capital requirements, including its inability to capture “tail risk”. For this reason (e g to calibrate and accumulate changes in the fair value of financial instruments), the

Committee has considered alternative risk metrics, in particular expected shortfall (ES).” (Basel, Fundamental review of the trading book, May 2012, Page 3.)

“The Committee is proposing the use of ES for the internal models-based approach **and** also intends to determine risk weights for the standardized approach using an ES methodology.” (Basel, Fundamental review of the trading book, May 2012, Page 3.)

- **A comprehensive incorporation of the risk of market illiquidity**

The Committee recognizes the importance of **incorporating the risk of market illiquidity** (e.g. by concepts anticipating under certain criteria market failure) **as a key consideration** in bank’s regulatory capital requirements **for trading portfolios**. And the Committee does herewith admit that **before** “the introduction of the **Basel 2.5 changes**, the entire market risk framework was based on **an assumption** that trading book risk positions **were liquid**, e.g. that banks could **exit or hedge** these positions over a 10-day horizon. **The recent crisis proved this assumption to be false.**” (Basel, Fundamental review of the trading book, May 2012, Page 3.)

Therefore does **the Committee propose** – “**to factor in market liquidity risk** comprehensively in the revised market risk regime ... of **three elements**:

First, operationalising an assessment of market liquidity for regulatory capital purposes. The Committee proposes that this assessment be based on **the concept of “liquidity horizons”, defined as the time required to exit or hedge a risk position in a stressed market environment without materially affecting market prices.** **Banks’ exposures would be assigned into five liquidity horizon categories, ranging from 10 days to one year.**” (Basel, Fundamental review of the trading book, May 2012, Page 3.)

Comments “to the merits of the desk-based and risk-factor based aggregation mechanisms” and to the approach to assess assets market liquidity by defining liquidity categories:

Example – chicken farmer and eggs distributors might know: “**Eggs which are stored and not moved** – there is **no need to distribute** these eggs to several (identical or even not identical) **baskets**”. **Risk** and even liquidity risk **is related to change, and correlations between eggs in several** (identical or even not identical) **baskets cannot provide ideas about (future) risks or events**, in the meaning what might happen on the moving process of these eggs in their baskets from (a) to (b).

The segregation of banks activities into banking and trading books and the **mapping of** central bank eligible, products and bilateral transactions into different books (e.g. client related transactions are part of trading book) **does not provide** (fringe) **benefits on risk management**. **And, if banking and trading book do not differ by** central bank or other supervising authorities defined risk weights, there is **no incentive** for banks under central bank or other authorities supervision for regulator “arbitrage” (The joint forum, Report on asset securitization incentives, BIS, July 2011).

The segregation of banking and trading books is designed and will be applied by several banks supervising authorities as a “**snap – shot**” in the meaning of limited (or **no**) **prognostic power** (e.g. which might not be enhanced by assigning Banks’ exposures into five liquidity horizon categories ranging from 10 days to one year).

The Committee’s proposed second element:

“**Second, incorporating varying liquidity horizons in the regulatory market risk metric** to capitalize the risk that banks might be unable to exit or hedge risk positions over a short time period (the assumption embedded in the 10-day VAR treatment for market risk).”

Comments “to the merits of the desk-based and risk-factor based aggregation mechanisms” and on incorporating varying liquidity horizons to capitalize liquidity risk:

At, Basel III: **International framework for liquidity risk measurement, standards and monitoring**, December 2010, amended in January 2012, ... **paragraph 43** is outlined: Purpose of these liquidity criteria is – to address assets that are not liquid, to provide measures (e.g. in addition to credit ratings) which ... “evaluate the liquidity characteristics of assets”.

There might be for **logical** (e.g. deductive or inductive) **reasons no procedures** available or could be developed which are capable - **to enable market participants to evaluate the liquidity characteristics** of assets which are timelessly sold and converted into cash at markets (e.g. particular not in a stressed market environment).

Therefore might at markets participating trader be surprised about the announcement: The Basel Committee will provide “tested criteria including

volume, bid-ask spread, turn-over, and other possible criteria.”(Basel III, Liquidity ... LCR paragraph 43)

And at LCR paragraph 44 is noted - “as these (qualitative and quantitative) criteria become more robust, there should be less emphasis placed on external ratings and more on the additional criteria.”

As for logical reasons at markets participating treasurer are not capable to evaluate sustainable liquidity characteristics of assets, the topic might become inapplicable or simply absurd in times of market stress, or market failure.

The Committee’s proposed third element:

Third, incorporating “**capital add-ons for jumps** in liquidity preemies which are applied only, - **if certain criteria were met**. These criteria would **seek to identify the set of instruments that could become particularly illiquid**, but where the **market risk metric.... would not sufficiently capture the risk** to solvency from large fluctuations in liquidity preemie.” (Basel, Fundamental review of the trading book, May 2012, Page 3.)

Comments “to the merits of the desk-based and risk-factor based aggregation mechanisms” and to capital add-ons for jumps in liquidity preemies on financial instruments or that these financial instruments are becoming particularly illiquid:

The Committee might admit that “**to identify the set of instruments that could become particularly illiquid**”, has to be seen equivalent to **approaches which do forecast** that these financial **instruments are not sellable** to other market participants. As these **forecasts are not reliable** or do not exist, it will be always up **to banks treasurer and other - interrelated counterpart, liquidity and market risks managing humans, to make** up to the best of their knowledge (e g sell) **decisions**.

And therefore is **no need “... to combine” – e g certain criteria “with jumps in liquidity preemie”... as defining correlation, or mapping** financial instruments by in a backward view monitored price volatility into five liquidity horizon categories, **does not provide explanation about future changes in market, liquidity or counterpart risk**.

As **future events** are **not predictable or replicable**, it is also **not possible** (inductive, deductive logical contradiction) **to explain change (risk)** for future time periods, **from in the past** during a certain time period **observed changes** (or past **events**).

And, it is also **not possible to explain** by “proxies ... credit **risk** and funding (il) **liquidity consistently**”; without tapping with this explanation into logical contradictions, even when these defined **proxies** “**show up** as **common predictors** of **volatility** across asset classes”. (*BIS working paper 374, March 2012, “A Comprehensive Look at Financial Volatility Prediction by Economic Variables”, abstract.*)

A further by the Committee’s proposed element:

“**Additionally**, the Committee is consulting on two possible options for incorporating the “**endogenous**” aspect of market liquidity. Endogenous liquidity is the component that relates to bank-specific portfolio characteristics, such as particularly **large or concentrated exposures relative to the market**. The main approach” (Basel, Fundamental review of the trading book, May 2012, Page 4.)

Comments “to the merits of the desk-based and risk-factor based aggregation mechanisms” and particular to “endogenous” aspect of market liquidity, or how traders should sell - large or concentrated exposures, to others at markets:

There are **no intrinsic** or “endogenous” **aspects at markets**, where liquidity and market **risks managing humans**, do **make** up to the best of their knowledge (e g sell) **decisions**.

Treatment of hedging and diversification

“**Hedging**, while generally risk reducing, **gives rise to basic risk** that must be measured and capitalized.” (Basel, Fundamental review of the trading book, May 2012, Page 4.)

Comments “to the merits of the desk-based and risk-factor based aggregation mechanisms” and to the liquidity impact on applied hedging strategies: Basic risk at asset portfolios **is defined** (e g by internationally applied accounting standards, since IAS 39) as the risk **that prices** (e g present values of expected cash flows) of financial instruments in a hedging strategy **will move in a way** (e g becoming unsellable, or only sellable by a large price discount) **that reduces the effectiveness** (e g how long it might take to convert assets into cash) **of the hedging strategy**.

Hedging does mitigate market risk but does usually increase counterparty default (credit) risk.

And the Committee is underscoring: “In addition, **portfolio diversification benefits**, whilst seemingly (market) risk-reducing, **can disappear in times of stress**. And ... while **recognition of** such (e.g. IAS 39) **market risk hedging** benefits **is strictly limited under the standardized approach** ... the **Committee’s concerns that** ... the internal models-based approach ... may significantly overestimate **portfolio diversification benefits that do not materialize in times of stress.**” (Basel, Fundamental review of the trading book, May 2012, Page 4.)

Comments “to the merits of the desk-based and risk-factor based aggregation mechanisms” and to (market) risk-mitigating through hedging - in times of stress:

The **Committee’s concerns cannot by** treasurer and portfolio manager **be mitigated** through – “**stress anticipating diversification**” concepts. But it seems that - since the 2008 financial markets crisis, portfolio manager and treasurer are keeping themselves **- timelessly informed about** how long it takes **to** monetize or **convert “assets” into local, or foreign currency, (liquidity) cash.**

Regardless whether or not these assets were **categorized** (e.g. “stress tested”) by banking supervising authorities - **as Central Bank eligible or by** (Basel III: International framework for liquidity risk ...) **mapped into level 1 and level 2 portfolios.**

- **LCR does underscore at paragraph 38** – “all high-quality liquid assets should ideally be **Central Bank eligible for repos**” **and** therefore capable to cover banks intraday liquidity needs.
- **LCR does also in paragraphs 32, 33, 34 recommend** - to map assets into different (e.g. level 1 and level 2) portfolios.

(Basel III: International framework for liquidity risk measurement, standards and monitoring (December 2010).)

Hereby might the Committee keep in mind that **categorizing or mapping** assets into different portfolios, **does not provide** to assets selling treasurers at banks, **reliable information about** (e.g. assets monetization) **the usability of these assets to generate cash** (e.g. in local or foreign currencies).

The lack of **prognostic power** of assigned assets **into five liquidity horizon categories ranging from 10 days to one year**, to at banks assets selling treasurers - **particular in times of (market failure) or stress, cannot be overcome by making mandatory** - e.g. **categorizing or mapping** assets into different portfolios and buckets.

And the lack of **prognostic power** of assigned assets **about** (e.g. assets monetization in local or foreign currencies), **cannot be mitigated by making mandatory** - “**Any item included in the regulatory trading book would need to be marked to market daily with changes in fair value recognized in earnings.**” (Basel, Fundamental review of the trading book, May 2012, Page 2.)

The “Committee’s concerns that ... the internal models-based approach ... may significantly overestimate portfolio diversification benefits” (Basel, Fundamental review of the trading book, May 2012, Page 4.), might be based on the observation that risk manager and other investment decision making humans, do rely on myths, or do believe into the “*automatism*” (e g *efficient markets*) and the *mechanic of internal pricing models, capable to aggregate risks* (e g *simulated by proxies, at future time buckets*).

The Committee should further tackle and discuss the issue that there is for logical reasons no mechanic available to enhance or mitigate internal models-based performance, by aggregating or subtracting risk - e g simulated by proxies, at future time buckets.

And by taking this into consideration the Committee might recommend: “For the time being, the Committee anticipates that open questions regarding the practicality of integrated modeling of CVA and market risk could constrain moving towards such integration. In the meantime, the industry should focus (for practicality or logical reasons) on ensuring a high-quality implementation of the new concerns over the degree of reliance on internal models and the over-estimation of diversification benefits.” (Basel, Fundamental review of the trading book, May 2012, Page 7.)

Comments “to the merits of the desk-based and risk-factor based aggregation mechanisms” and to Committee’s concerns over the degree of reliance on internal models, and the over-estimation of diversification benefits:

Humans acting as treasurer and risk manager know - there is for investment decision making humans - handicapped to make reliable forecasts, no applicable alternative on the investment decision making process, as to diversify risk, without leaving the logic of humans inductively or deductively applied or admitted, inability to make reliable forecasts (e g on the process to make investment decisions).

As, any attempt to leave or to ignore the above described inductive or deductive logic of decision making processes (e g applied by market participants), put’s decision maker into environment

- either to become “en lighted” or to use “models” which do make decision making, and market participants, redundant (e g as these models might be powered by “invisible forces”). And for these logically reasons, might be for humans - admitting their inability to make reliable forecasts, no sustainable or exploitable benefits given, from any over-estimation of diversification effects.

Relationship between internal models-based and standardized approaches

The Committee might take into consideration: *Decision making humans – who are putting all efforts by up to the best of their knowledge, on the process to derive (e.g. inductively or deductively) their decisions, are using as “logical” rule – increasing or decreasing informational content (e.g. not equivalent to probability statements but complementary to conventional (e.g. main stream) banking).*

Example: A market participant has to make an investment decision - on two (future) cash flows which are from the same counterparty, do have identical yields, and the same remaining maturity.

Calibrating and comparing “yields” (e.g. internal rate of return, for a defined time period, between present value and future value, by tableaus or by calculators) of cash flows (e.g. “bullet loan, zero coupon bond”, and “installment loan, fixed coupon bond”) with the same but more than one year outstanding maturity, issued, and taken by the same “borrower”, will enable decision maker to distinguish between these cash flows (e.g. zero coupon bond, fixed coupon bond, installment loan) by informational content.

And, based on investment decision maker’s interest to mitigate expected losses, the decision making investor will purchase the “fixed coupon bond” (e.g. as there is in case of identical yields, the same underlying borrower, the same maturity, same redemption payment (=100), at least one additional outstanding payment (<100) more which is capable to mitigate in money terms investor’s expected losses).

At the fixed coupon bond – compared by investors with a zero coupon bond, only one future payment more – will mitigate investors expected losses, but the probability to receive this additional payment will be smaller.

“Let **a** be the installment, and **b** the final payment, and **a b** the installment and the final payment: it is then obvious that the informative content of the conjunction **a b**, will exceed that of its component **a** and also that of its component **b**.

But: The probability or likelihood to receive a b will be smaller than that of either of its components.

Writing $Ct(a)$ for the content of the statement a , and $Ct(a \ b)$ for the content of the conjunction a and b , we have

$$(1) \ Ct(a) \leq Ct(a \ b) \leq Ct(b)$$

This contrasts with the corresponding law of the calculus of probability, (e g the probability to receive (a) the installment might be 50% and the probability to receive (b) the final payment might be 50%, than the probability to receive both is only in the highly unlikely case of certainty 100%)

$$(2) \ p(a) \geq p(a \ b) \geq p(b)$$

where the inequality signs of (1) are inverted.

Together these two laws, (1) and (2), state that with increasing content (to receive more than one payment, which does mitigate the outstanding amount), probability (to receive both outstanding payments) decreases, and vice versa; or in other words, that content increases with increasing improbability.

This trivial fact has the following inescapable consequences: - if growth of science (or to mitigate the risk getting back an outstanding amount of money) means that we operate with theories of increasing content (e g additional payments, installment loans or fixed coupon bonds), it must also mean that we operate with (concepts) theories of decreasing probability (in the sense of calculating probabilities to receive future installment, coupon payments).

Thus if our aim is the advancement (or “to mitigate by additional payments expected losses”), then a high probability (in the sense of the calculus of probability) cannot possibly be our aim as well: these two aims are incompatible.”

(Karl, R. Popper, *Conjectures and Refutations: The growth of scientific knowledge*, 1968 by Harper & Row, New York, N. Y. 10022, chapter 10, paragraphs 2 and 3)

To strengthen the relationship between the **models-based and standardized approaches** the Committee is consulting on three proposals:

1. Establishing a closer link between the calibrations of the two approaches.
2. Requiring **mandatory calculation of the standardized approach** by all banks.
3. Considering the merits of introducing **the standardized approach** as **a floor** or surcharge **to the models-based approach** (e.g. a floor on internal models capital charges could, for example, be set at a percentage of the capital charge under the standardized measurement method).” (Basel, Fundamental review of the trading book, May 2012, Page 4.)

Revised models-based approach

“The Committee has identified a number of weaknesses with risk measurement under the models-based approach. In seeking to address these problems, the Committee intends to (i) **strengthen requirements for defining the scope of portfolios** that will be eligible for internal models treatment; and (ii) **strengthen the internal model standards to ensure that output of such models reflects the full extent of trading book risk that is relevant from a regulatory capital perspective.**” (Basel, Fundamental review of the trading book, May 2012, Page 5.)

Comment “to the merits of the desk-based and risk-factor based aggregation mechanisms”: The strengthening of **internal model standards** and **the standardized approach as a floor** - **is not compatible** with aggregating or accumulating cash flows which are related to probability statements **and /or informational content** (e.g. simultaneously).

Any investor with purchasing interest of fixed coupon bond **or** Zero-Coupon Bond **does compare** – up to the best of his knowledge (e.g. **duration changes**, please compare 1. appendix),

- (i) **increases in** the Zero-Coupon Bond current **yield** (e.g. decreasing present value or price), by **keeping the maturity constant**,
- (ii) **any shortening** of Zero-Coupon Bond current **maturity**, by **keeping constant yield** and present value or price, **cannot be offered** by other market participants with selling or disinvestment interests.

Any investor with disinvestment **or selling interest** of fixed coupon bond **or** Zero-Coupon Bond **does** – based up to the best of his knowledge, **offer**

- (i) **decreasing present values or prices** for the Zero-Coupon Bond equivalent to **yield increases**, by **keeping the maturity constant**,
- (ii) **shortening** of Zero-Coupon Bond current **maturity**, **cannot be offered** by market participants with selling or disinvestment interests, **but**
- (iii) **any shortening of** Zero-Coupon Bond current **duration**, **will be achieved by yield increases** (e.g. please compare 1. appendix).

The concept of shortening maturities of outstanding payments at cash flows **is related to increases** in the **informational content** (e.g. any debt restructuring between current investors and the borrower needs to be negotiated between and agreed by the involved parties).

The concept of **shortening duration** of outstanding payments at cash flows, it **is not related to informational content**, **as by keeping the maturity constant, increases in the Zero-Coupon Bond yield** which do base on – e.g. decreased or lowered present values or prices, are reflected in **lower duration**.

Comments “to the merits of the desk-based and risk-factor based aggregation mechanisms” to strengthen **internal model standards** and **the standardized approach as a floor**:

If, any ratio between informational content versus duration has to be rejected, than increased informational content cannot be compensated by higher yield (in the sense of probabilities to receive future payments).

- a) This will have in escapable consequences at the **statute of indifference** of decision maker, **usually interpreted by market advocates** as **“market” equilibrium**.

Market advocates **who do focus on the difficult to observe “fact” of indifference** are **stating**:

- What seems not be predictable or not possible to forecast, **is** decision makers **preferred method to adjust** (e.g. cash flows) **by content or price changes**.

And, the by market advocates **proposed solution: Decision maker** at markets do **adjust - yield and/or maturity**.

But this solution is logically contradicting:- As each **other attempt as price or yield changes** at **cash flows**, to achieve **the same duration or equilibrium** between Zero-Coupon Bond, or other **installment** payment cash flows: - **is not applicable without commingling** the target **high probability with high informational content**.

And **to make it very clear, addressed to market advocates:-** **if** any commingling of high probability with high informational content, **has to be rejected, than any increase of informational content** (e.g. at cash flows), **cannot be compensated by higher yield**.

And traders and other some markets participants might even interpret - “**market failure**” and their “either or decisions”, as **result of commingling - high probabilities with high informational content**.

- b) In escapable consequences out of the fact that **the option pricing theory is referring to bets or probabilities** – of cash flow items which cannot be compensated by any increases of informational content

The option pricing theory is referring to bets or probabilities at cash flows, and **not to informational content** of (e.g. project related) cash flows. Black-Scholes (1973) and Merton (1973) do **propose – to derive** forward or future interest rates **from observations**, and **to calculate** option prices **in a “backward” view**, in response to changing parameter values.

And Black-Scholes (1973) and Merton (1973) **leaf it up - to** advisors, traders, each market participant's, **interpretation, to use** their “**model results**”.

The usage of model results **by traders, as appropriate approximations, will differ from** model **descriptions** of “**invisible forces**” between five parameters (e.g. the price of the underlying asset, the strike price, the risk-free rate of interest, the movements in the underlying asset prices (volatility), and the time remaining to maturity), **also called - logically consistent “model” of the option pricing process at complete markets**.

The difference - between description and usage of models, does become obvious:- **By leaving it up** to traders and other market participants **to apply** option pricing “**model**” **results**, as in this case the traders’ **decision problem went lost**. And, **any question** – **can** market participants acting as decision maker, expect **any help** - going beyond their guesses, **by “models or trading concepts”, got lost** -as this request **is sent back to the asking market participants** (e.g. acting as decision maker).

Let's put aside the fact that for traders who are **applying** option pricing **models results**, there is **no decision problem**.

And, let's assume there is **at option pricing processes on complete markets no informational content** than any **logically derived conclusion** has to be

- **market participants decision making does base in case of** purchasing and selling options, **exclusively on** accumulating of **probability statements** (e.g. forward contracts).

1. Example to **informational content** of interest related bets or options

Connecting - observable interest rates of term deposits with different maturities, in a diagram **to a “yield” curve**, and apply on 3 month time buckets and identified interest rates of deposits, a mathematical calculus, **to design** – 3 months forward “yields”.

Market advocates are promoting - **to offer** these **by** mathematical **calculus designed forwards** (e.g. “yields”), **as bets** to other individuals (e.g. market participants).

Humans or market participants entering into this bet (e.g. forward rate or right agreement, FRA) have the right and the obligation to pay in three months, for three months, this - today between two parties (bettors) **agreed interest rate**.

The fact that a single, or several **individuals are entering into this** type of **bet**, **does say nothing about the truth** (reliability), **of - by mathematical calculus derived** (approximated) figure, number, in comparison to - **after three months**, as fact, for 3 months term deposits, **given**, and observable, **interest rate**.

A mathematical calculus has no explanatory power – even when humans are betting on it. And this derived (e.g. calculated) number, **cannot be verified** (“approved”) **by observations**.

But the applied **mathematical calculus** (e.g. for FRA) **can be rejected** – e.g. by **profits or losses out of the bet** (e.g. FRA, FX bet), **at settlement date**.

In case of numerical identity of calculated, and at settlement given (e.g. at the “market” at a certain time observable) **interest rate**:

- **There is no profit or loss for the bettors.**

2. Example to **informational content** of hedging bets with counter bets, to “cement” or “to freeze in”, particular positive margins

A positive margin out of two bets is not equal to bettor's profit (even not in the backward view of accountants).

A positive margin out of two bets does become **a profit – at settlement date**, and after the involved bettors did fulfill their duties. (**A profit** out of two bets will be realized or **does become certain** after settlement of both bets.)

Comments to market advocates recommendation – e.g. to in forwards transactions participating decision maker, to “cash in today” the margin out of bets, via true sale to a third party.

*But, **any true sale of two bets to a third party, does not change** the underlying settlement risk, or involved bettors (e g parties) duties to fulfill their contractual obligations.*

*Related to “contractual obligations” market participants might ask: - **is “cashing in”** a positive or negative margin out of **a pair of hedged bets**, via **true sale to a third party**, **always possible?***

And, if not** - should we (e g the market participants) **call this event** (e g on “FRAs, FX – bets”) **not to find “betting”** or in “**a true sale**” interested **partners**, **a market failure?

The answer of decision making market participants** should be - **Yes!

***And this was reflected in two changes of the Basel III (1)** package to the capital treatment of trading activities and market risk:*

The treatment of unrealized gains and losses: Under the changes to the definition of capital - unrealized gains and losses will no longer be filtered out of Common Equity

Tier 1 capital. This means that changes to the valuation of all financial instruments held at fair value for accounting purposes **will flow directly through to regulatory capital resources.**

Eligible capital for trading book risks: As part of the general improvements in the quality of eligible regulatory capital, **Tier 3** capital, previously available to meet market risks, will **no longer form part of the regulatory capital structure.**

(1) Basel Committee on Banking Supervision, *Basel III: A global regulatory framework for more resilient banks and banking systems* (revised June 2011), June 2011 (www.bis.org/publ/bcbs189.pdf).

The fact that **increases of cash flow’s informational content** - **cannot be compensated by higher yield**, might also be seen as - **essence of** “the merits of the desk-based and **risk-factor based aggregation mechanisms**” and the approach to strengthen **internal model standards and the standardized approach** (e g as a floor).

*As, there are **only few “market advocates”** who are **arguing** - **cash flows with** identical yield, same underlying borrower, and **differences by informational content** (e g maturities), **cannot be made equal by** changing **cash flows relation between - yield and risk** (e g measured by and summed up as probabilities of future payments).*

Might some **main stream “market advocates” – mudding waters** by stating, **there is** at cash flows with identical yield, same underlying borrower, but different maturities, **an observable relation between yield** (e g measured by and summed up as **probabilities of future payments**), **and informational content** (e g shortening or extending maturities of future payments).

It is observable that **there are market advocates who are stating** (e g with reference to their backwards made observations):

There might be observable or “given”, **a yield level** which is **capable to tempt ate any investor – to revise**, to change his investment **decision**.

And – as it is “logically impossible to derive theories from observations” (Karl R. Popper, Conjectures and refutations, the growth ... chapter 8), these **market advocates did establish the myth: – at markets** with or without deciders, **“yield level temptations and decision revisions” – do and will take place**.

And as these are observable, **and intuitively by humans except able items, the myth** was established: - **At markets do human traders** make purchase and sell decisions, **despite higher degree of informational content** (e g shifting “yield based” from installment payment cash flows to “zero coupon bonds”).

Or, at markets with human deciders, **we (the economists, and market advocates)** have to acknowledge - **as verifiable or at least derivable by observations: – Market participants do make their decisions not only by maximizing and comparing informational content of investment alternatives**.

Hereby have market advocates to ignore:

If, despite higher degree of informational content, **there is** or might be **always – at markets** with participating humans, **a yield level, capable to tempt ate** to review, or to put on hold **the decision maker at the process to decide, this must also mean that humans at markets** are not able to make decisions up to the best of their knowledge, and therefore **do act – arbitrary**.

But, these economists, and market advocates should be aware about **the logical implication of a theory: – assuming or defining arbitrary acting market participants**.

This theory **has no explanatory power**, on human decisions. **The theory of arbitrary acting market participants** is in the best case **a backward looking (behavior) description** which is **highlighting – the decision to diversify investments, can by the same humans logically not be reversed**.

There are market advocates who cannot resist the temptation: - **to refer** to “market environments or places” with **simultaneously**, on investment alternatives **content and probabilities, maximizing decision makers**.

The reference to simultaneously, content and probabilities, maximizing decision makers did and will fail for logically reasons: - **As this** “observation statement” **is “making” traders** and other market participants **to contradictions ignoring humans**, or to **idiots** (e g only sloppy, irresponsible traders are accumulating - on probabilities related

cash flows **and** content based cash flows, income. *J P Morgan probe into London role in loss*, Financial Times (FT) May 14, 2012, pages 1, 9, 17).

The Committee might therefore acknowledge: Decision making humans – who are applying the rule – increasing or decreasing informational content, are making decisions at markets in a “logical” consistent, not decision conflicting, way (e.g. as reflected by the Committee in the revision of the standardized approach).

Hereby might the Committee target - e.g. on the measurement of market risk, the abolishment of maximizing probability statements and informational content as simultaneously decision making, to strengthen herewith market participants confidence – not to act as contradictions ignoring traders, what might mitigate financial market failures.

The revised standardized approach

“A standardized approach serves two main purposes. Firstly, it provides a method for calculating capital requirements for banks with business models that do not require sophisticated measurement of market risk (e.g. small banks or banks which are engaged only in relatively simple financial instruments).

Secondly, it provides a fallback” (Basel, Fundamental review of the trading book, May 2012, Page 5.) in case a bank’s (or some of its trading desks’) internal market risk model is inadequate. (Quid juries argument)

To address shortcomings of the current standardized measurement method (SMM), the Committee proposes a “partial risk factor” approach as a revised standardized approach.

The partial risk factor approach

At this approach are **historical prices are the starting point for the calibration of buckets**, risk weights and correlation parameters. And consistent with the models-based approach, **liquidity horizons would be determined for each bucket.** (Basel, Fundamental review of the trading book, May 2012, Page 41.)

The fuller risk factor approach

The “fuller risk factor approach” does work by **mapping instruments to a set of prescribed regulatory risk factors and then apply empirically calibrated standard deviations of risk factor shocks to these underlying risk factors.** (Basel, Fundamental review of the trading book, May 2012, Page 46.)

The comparison of the two approaches

“The fundamental difference between these two proposals is their starting point. While the **partial risk factor approach** is based on a risk weight multiplied by the market value of an instrument, the **fuller risk factor approach** is based on a regulatory mapping to a wide set of risk factors.” (Basel, Fundamental review of the trading book, May 2012, Page 47.)

Limited model reliance: Neither approach relies on banks’ risk factor scenarios or forecast distributions.

The partial risk factor approach relies on banks’ pricing models **only** for the determination of deltas for **options**.

The fuller risk factor approach relies **more** on banks’ pricing models as those are also used to determine sensitivities to interest rates and credit spreads, and for risks from nonlinear instruments not captured by delta.

As - on the revision of standardized approach, by the Committee – “finally it is noted that for simple linear instruments such as equities, the two approaches (**partial risk factor and fuller risk factor approach**) may likely lead to similar capital outcomes (assuming they are calibrated consistently)”. (Basel, Fundamental review of the trading book, May 2012, Page 49.)

Here might the Committee replace for logical consistency reasons – “may likely lead to similar capital outcomes,” by **will lead to the same required volume of capital**, although the mechanics of the approaches differ, both (approaches do) recognize risk drivers common to multiple equities such as possibly industry, national market/index and FX in order to recognize hedging between equities.” (Basel, Fundamental review of the trading book, May 2012, Page 49.)

And **the Committee should treat** more complex portfolios, such as those with complex derivative instruments, **as exceptions**.

9. Which of the two approaches better meets the Committee’s objectives for a revised standardized approach?

Comments to the answer: the partial risk factor approach.

As regulators do capture up to the best of their knowledge risk drivers, this simply cannot include - **all drivers of risk**.

Regulators attempting to capture up to the best of their knowledge drivers of risk in the risk weights should for logical reason **give up** – risk

measuring through correlation parameters calibrated by using a historical distribution of returns under stressed conditions.

And regulators **should keep** for logical and practical reasons **a set of predefined buckets** – approximately five **risk classes**, each with around 20 buckets.

Regulators should for logical reason **give up** – risk measuring by **defining correlation parameters for each bucket** which should include “cross-cutting”, and should include correlations across buckets.

Regulators attempting to capture up to the best of their knowledge **drivers of risk by risk weights** - **should set out a list of instruments** that need to be split into two or more elementary instruments (e g a swap or future, convertible bonds, securitized or structured assets).

Example to a list of instruments that need to be split into two or more elementary instruments:

*As investor might see since 2008 in attempts **to reverse** the process of risk **diversification to enhance performance** by products and processes like the securitization of assets, the origination of structured assets, the risk assessment (e g “rating”) by agencies of structured assets, defined as “snap shot” but applicable (e g by investors) for one year, **that these “processes”** - securitization of assets, and **“origination and placement of structured products”** **did fail** (e g investors received compensations paid by originators of structured assets, investors did monitor that originators did shut down their structured assets departments), a list of **instruments** that need to be split into two or more elementary instruments, might be helpful to enforce the conclusion (e g the Paul Volker – rule) that any differentiation in equity absorbing risk weights - between banking and trading books, might not sufficient to “limit” proprietary trading activities in - e g structured assets and other low or zero risk weighted securities. (Financial Times (FT), Wall St to sidestep Volker rule, Nov. 11, 2010, page 14)*

*The partial risk factor approach applied by banks and supervising authorities as **“snap – shot”**, will be of limited (or **no**) **prognostic power**, but **reviewed daily** by Banks’ - e g traders, treasurer, accountants and risk manager, responsible according to Basel II (pillar 2, “Capital Adequacy Assessment Process” (ICAAP), **will improve market risk management**.*

And**, as it will become mandatory that **bank’s trading desk opening and closing positions**, and any **“item included in the regulatory trading book would need to be marked to market daily with changes in fair value recognized in earnings”**, (Basel, Fundamental review of the trading book, May 2012, Page 2.) combined with by the Committee defined: - **“Tight limits to bank’s ability to shift instruments across the boundary following initial classification ...”**, and **“... to keep items in the regulatory trading book

once they are placed there (e g as it is the relevant characteristic for determining capital requirements)” will enhance Banks’ - e g traders, treasurer, accountants and risk manager, ability to manage trading desks risks in a **sustainable way**. (Basel, Fundamental review of the trading book, May 2012, Page 2.)

10. Do commenter’s propose any amendments to these approaches?

Yes, regulators should enforce the idea: - as risk – e g liquidity, market, credit, basic ... risk, is related to change, **and** as human decision maker who do make up to the best of their knowledge content related decisions, might admit – e g based on their in the past (e g since 2008) made experiences, **it is “only” possible to mitigate risk by diversification.**

1. Appendix

Duration of 6-years, 8% coupon bond,

PV present value = 1,000, R = yield = 8%; cash flow CF

t	CF_t	$PV_t = \frac{CF_t}{(1+R)^t}$	$w_t = \frac{PV_t}{1000}$	$t * w_t$
1	80	74.07	0.0741	0.0741
2	80	68.59	0.0686	0.1372
3	80	63.51	0.0635	0.1905
4	80	58.80	0.0588	0.2352
5	80	54.45	0.0545	0.2725
6	1080	680.58	0.6806	4.0836
Total		1000.00	1.0	D=4.993

Observation: Maturity=6 year, but Duration=4.993 year.

Duration of Zero-Coupon Bond

- The Zero-Coupon Bond

- Duration equals maturity since 100% of its present value is generated by cash flow redemption payment (CF) at maturity.

e.g., the duration of a Zero-Coupon Bond with 6 years maturity and 1000 redemption payment CF equals 6 years.

t	CF_t	$PV_t = \frac{CF_t}{(1+R)^t}$	$w_t = \frac{PV_t}{630.2}$	$t * w_t$
6 th year	1000	630.2	1.0	6.0
Total		630.2	1.0	D=6.0

- Duration gives us **the average life to maturity of a payment stream** (anything else?).

For all other bonds with installment or coupon payments: **duration < maturity**

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