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Basel Committee on Banking Supervision  
Bank for International Settlements  
CH-4002 Basel  
Switzerland

2<sup>nd</sup> June 2016

Dear Sirs,

In aftermath of the Global Financial Crisis it is clearly appropriate for regulatory authorities to revisit the effectiveness of prudential methodologies and their calibration. But in developing a new methodology which aims to produce a capital requirement with greater “...consistency...simplicity and comparability” whilst being “sufficiently risk sensitive” it is important to understand the root causes of the deficiencies of Basel II.

Quantifying Operational Risk is patently inherently difficult. The proposed Standardised Measurement Approach (SMA) methodology has many merits and is a definite improvement on The Standardised Approach (TSA), through:

- Incorporating historical loss data;
- Extending the period of data considered to 10 years, making the methodology effectively “*through the cycle*”, and hence more akin to Credit Risk models; and
- Removing the volatility from the Business Indicator which meant that loss making trading & sales businesses could depress a firm’s Operational Risk capital under TSA.

As currently designed, however, SMA is not an improvement on the Advanced Measurement Approach (AMA) and hence the IOR has identified three key areas of improvement:

1. Better rewards: Firms need to be better incentivised for good Operational Risk management e.g. allowing some deductions for both pricing / budgeting Operational Risk losses; transferring exposures via insurance policies; and leeway for local regulators to reward good practice.
2. Backward vs forward looking: The SMA approach is backward looking and some of the largest Operational Risk losses from the Global Financial Crisis will soon be dropping out of the 10 year dataset. The backward nature of the methodology means that it will also fail to

capture effectively emerging risks, such as cyber-crime; the consequences of the rise of fintech and the impacts of the reversal of negative rates. It will also be blind to changes in the business strategies of firms. Consequently, there should be a continuing role for Scenario Analysis and modelling as inputs into Pillar 2a capital.

3. Reflecting the Operational Risk profile: Operational Risk is notoriously diverse and complex, and this cannot realistically be reflected in such a simple approach. The Basel Committee should consider changes to better capture the risks of fee generating activities, given the scale of losses during the financial crisis arising from misconduct regarding the manufacture of asset backed securities and the sale of products, such as, PPI and interest rate derivatives. The Basel Committee should also consider better reflecting the impact of losses that crystallise over long periods.

Consequently, this paper briefly sets out:

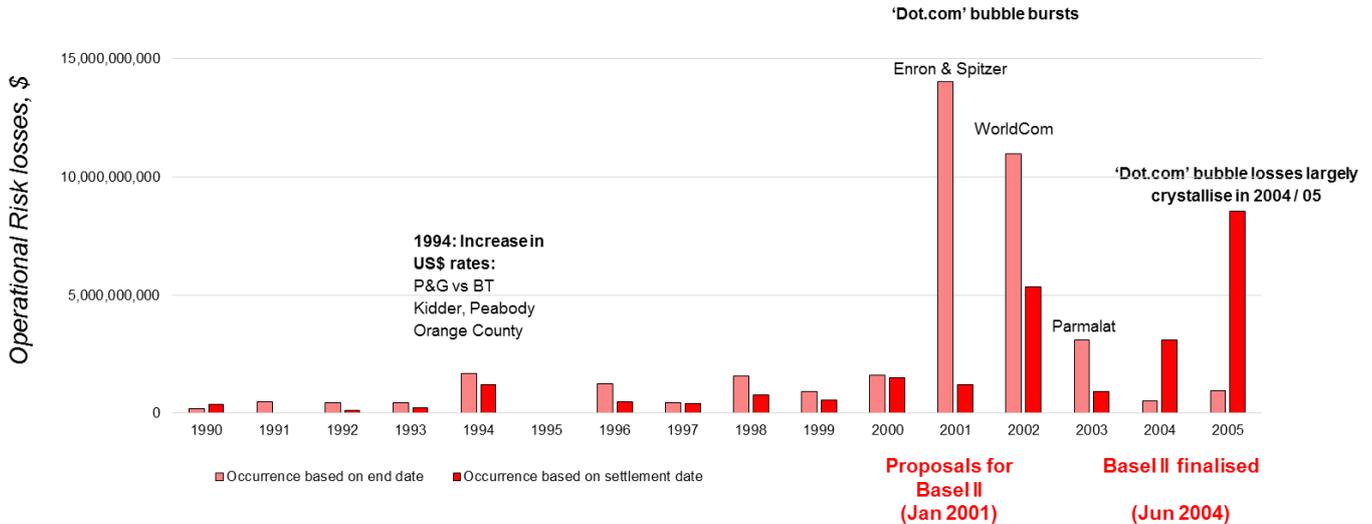
1. Lessons learnt from Basel II;
2. Views on the revised structure and definition of the Business Indicator;
3. Views on the inclusion of loss data into the SMA through the Loss Component; and
4. An integrated vision for Operational Risk capital.

### **1. Lessons learnt from Basel II**

AMA reflected the quantification approaches for Operational Risk developed by some leading banks during the 1990s. When AMA was incorporated into Basel II in 2004, it was, however, fatally mis-calibrated as:

- AMA firms were led to believe that their Pillar 1 capital would be lower than the number calculated under TSA; but unfortunately
- TSA under-estimated the scale of Operational Risk because the Quantitative Impact Studies (QIS) that were conducted to calibrate the methodology were undertaken during 2001 and 2002, a relatively benign period for Operational Risk losses. (Although these years were subsequently the source of large Operational Risk losses arising from the collapses of both Enron and WorldCom, these losses would not crystallise until 2004 and 2005, or even later. This is illustrated in the following chart.)

Large losses, > \$0.1bn, suffered by 15 banks between 1990 and 2005 analysed by both the end date and the settlement date<sup>1</sup>



Additionally, when Basel II was being developed there was insufficient appreciation that not only was Operational Risk “...unusually fat-tailed, with infrequent but very large losses...”<sup>2</sup> but it also seems to be correlated to economic cycles, and more specifically economic shocks and the bursting of asset bubbles e.g. the impacts of unexpected US dollar rate rises in 1994, following the Savings & Loan crisis; the bursting of the dot.com bubble in 2001 and most recently the US property bubble in 2006 / 07.

These observations are important because it means that any revised methodology for quantifying Operational Risk capital requirements must be both appropriately calibrated and “through the cycle”, as potential Operational Risk losses can clearly build up during benign economic periods.

## 2. Views on the revised structure and definition of the Business Indicator (BI)

The Business Indicator is an improvement over The Standardised Approach as a consequence of its disregard of the sign of revenues. There are, however, a number of areas for improvement:

<sup>1</sup> The chart captures losses >\$0.1 billion suffered by 15 large firms between 1990 and 2005. The data has been sourced from the IBM® Algo FIRST® dataset. The 15 firms comprised 5 US banks, 4 UK banks, and 6 European banks. The data has been analysed both by end of occurrence and settlement date to highlight the distortion in any pattern of losses introduced by potentially lengthy legal and / or regulatory processes.

<sup>2</sup> Statement of Policy “The PRA’s methodologies for setting Pillar 2 capital” July 2015.

## *2.1 Blindness to changes in strategy and new businesses*

Issue: The SMA methodology is essentially backward looking, so it will not capture well the Operational Risks associated with either new challenger banks or new businesses within established banks.

Recommendations: The Basel Committee could supplement the Business Indicator with firms' 3 year business plans to capture changing strategies and new business initiatives.

## *2.2 Inconsistent treatment of Operational Risk losses*

Issue: There seems to be an inconsistent treatment of Market : Operational Risk boundary losses and other Operational Risk losses, i.e.:

- 'Net profit (loss) on the trading book' will include mark-to-market losses as a result of fat-fingered typing, mis-hedging as a result of incorrect reports, and rogue trading.
- 'Other operating expenses' are to include "losses incurred as a consequence of operational loss events (e.g. fines, penalties, settlements, replacement costs of damaged assets)...".

As a consequence, it seems, for example, that a rogue trader event will reduce a firm's Business Indicator whilst a regulatory settlement or penalty will increase it. This would clearly be inconsistent and inappropriate.

Recommendation: The guidance needs to be clarified to ensure a consistent treatment between all types of Operational Risk losses. This could be achieved by explicitly including Market Risk boundary losses in 'Other operating expenses', whilst excluding them from 'Net profit (loss) on the trading book'.

## *2.3 Penalising the pricing for Operational Risk*

Issue: The cost of fraud on riskier retail products can be budgeted for and priced into the margin of the product. In these circumstances, under SMA, firms would receive a higher capital charge for pricing Operational Risk into their products, via the Business Indicator, rather than not doing so.

Recommendation: This could be addressed by allowing firms deductions for budgeted Operational Risk, as was potentially possible under AMA.

## 2.4 Lack of differentiation and risk sensitivity

**Issue:** The Business Indicator treats all revenue as being equal in terms of the generation of Operational Risks. This, however, seems to be incorrect, as the table below illustrates that banks expose themselves to a variety of different risks depending on the sources of their revenues. Analysis of large Operational Risk losses suffered during the Global Financial Crisis also highlights that some of the largest losses were associated with the provision of fee generating services which primarily expose firms to Operational Risk, rather than lending and trading activities, which expose firms to a range of risks.

Type of income	Primary risk i.e. the source of the income	Examples of large losses suffered during the Global Financial Crisis	
<ul style="list-style-type: none"> <li>Interest income</li> </ul>	<ul style="list-style-type: none"> <li>Primarily Credit Risk.</li> <li>By-products include Liquidity, Market and Operational Risks.</li> </ul>	<ul style="list-style-type: none"> <li>Inappropriate foreclosure</li> </ul>	\$25bn
<ul style="list-style-type: none"> <li>Net trading book revenues</li> </ul>	<ul style="list-style-type: none"> <li>Primarily Market and Credit Risks.</li> <li>By-products include Liquidity and Operational Risks.</li> </ul>	<ul style="list-style-type: none"> <li>Manipulation of LIBOR</li> <li>Manipulation of FX</li> <li>Mis-marking ABS</li> </ul>	<ul style="list-style-type: none"> <li>&gt;\$9bn</li> <li>&gt;\$9bn</li> <li>\$3bn</li> </ul>
<ul style="list-style-type: none"> <li>Fee income</li> </ul>	<ul style="list-style-type: none"> <li>Primarily Operational Risk.</li> </ul>	<ul style="list-style-type: none"> <li>Mis-sale of MBS</li> <li>Mis-sale of PPI</li> <li>Madoff litigation</li> <li>Mis-sale of swaps</li> <li>Mis-sale of CDOs</li> </ul>	<ul style="list-style-type: none"> <li>&gt;\$80bn</li> <li>&gt;\$45bn</li> <li>&gt;\$5bn</li> <li>&gt;\$3bn</li> <li>&gt;\$1bn</li> </ul>

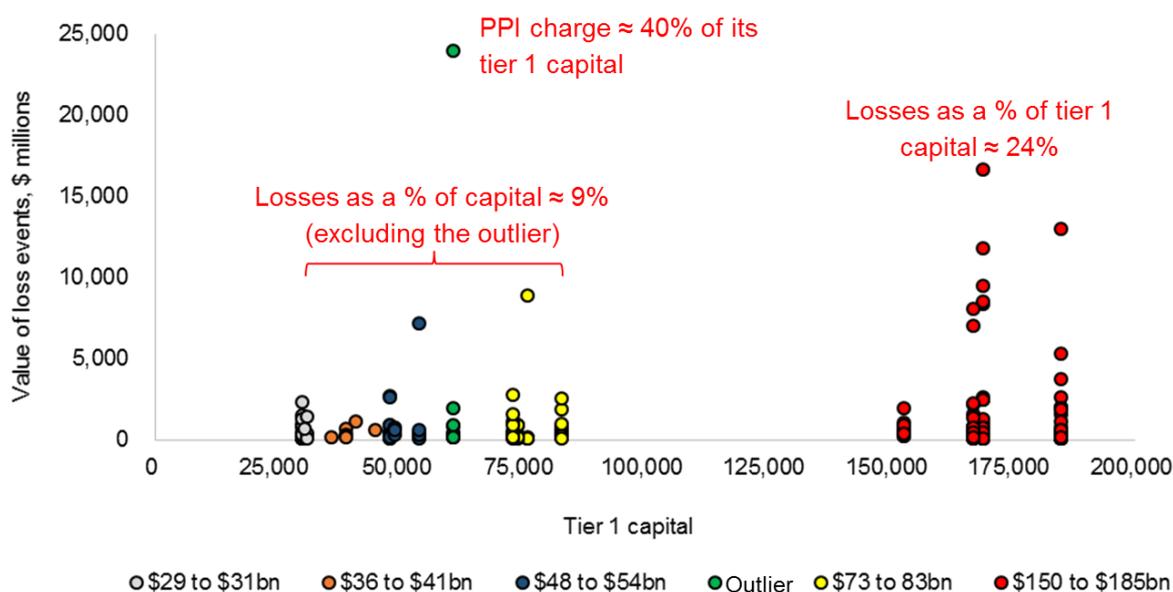
So each € of revenue generated from fee income will have lower associated RWAs than either interest income or trading revenues, as these revenues also attract significant Credit and Market Risk RWAs. This may naturally lead banks to take more Operational Risk to optimise their return on capital.

**Recommendation:** The Committee should consider weighting the Business Indicator by the nature of the revenues, for example, fee income, which exposes firms to primarily Operational Risk should attract a larger Operational Risk capital requirement than interest income.

## 2.5 Calibration for size

**Issue:** Larger banks do clearly suffer disproportionately more large Operational Risk loss events than smaller firms, as illustrated by the following analysis. Whether the Business Indicator is appropriately calibrated remains to be seen. Additionally, the following chart clearly indicates the potential for even small firms to suffer disproportionately large losses.

The relationship between share capital and large losses (>\$0.1bn) for 5 groups of 4 banks<sup>3</sup>



**Recommendations:** Given the mis-calibration of TSA described earlier, the Committee should both publish more detail on how it has calibrated SMA and also indicate the frequency with which it will periodically review its calibration. The Committee should also consider whether the additional capital requirements of G-SIFIs already adequately reflect the above chart.

### 3. Views on the inclusion of loss data into the SMA through the Loss Component

The inclusion of loss data into the SMA is also a definite improvement over The Standardised Approach. There are again, however, a number of areas for improvement:

#### 3.1 A lack of reward for insurance

**Issues:** SMA gives no credit for Operational Risk transfer via insurance, as the historical data incorporated into the methodology is gross of insurance recoveries.

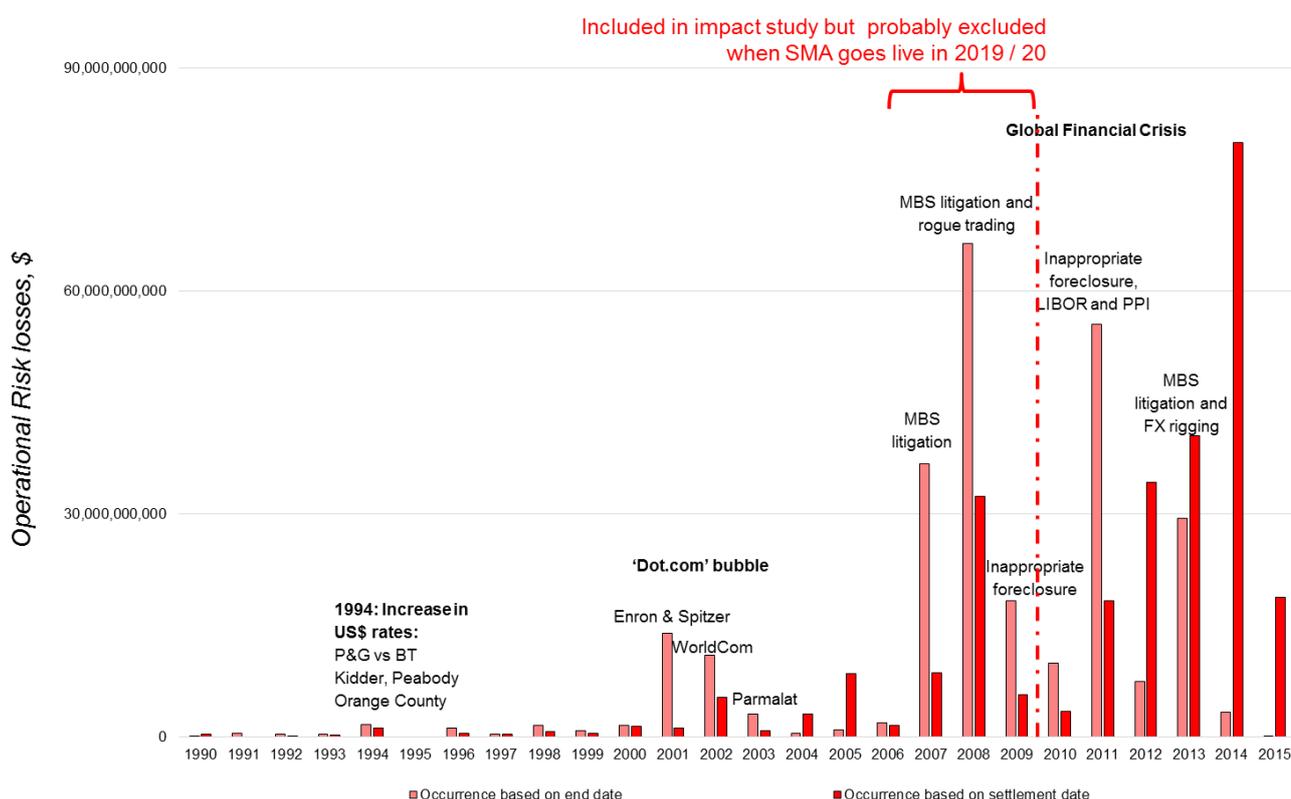
**Recommendations:** The Committee should allow firms to include their historical losses net of insurance recoveries. This is both objective and reflects a firm's control framework at the time of an incident, as well as, any uncertainty over payment on policies. This would primarily relate to risks such as "Damage to Physical Assets" and "Employee Safety and Workplace Practices". Alternatively the Committee could allow capital deductions for insurance cover as was again previously allowable under AMA.

<sup>3</sup> The loss data was collected for 21 banks from the IBM® Algo FIRST® database. The banks were grouped into 5 groups of 4 banks each with similar Tier 1 capital, based on the 2014 BBA league table of banks. One outlier was separately included in the analysis. The data was collected for the period between January 1989 and December 2015, and was based upon the end of occurrence.

### 3.2 Cliff effects due to the use of date of discovery

**Issue:** The use of the date of discovery of a loss may mean that a significant proportion of the Operational Risk losses suffered during and after the Global Financial Crisis may soon drop out of the 10 years of historical data to be included in the SMA calculation. The chart below illustrates how an implementation date of 2019 would exclude many of the largest loss events from the Global Financial Crisis. Also the ~\$45 billion of PPI losses suffered by UK banks will subsequently drop out of the dataset in 2021, as provisions were first established in 2011. As a consequence the Operational Risk capital requirements of these firms should significantly reduce between 31<sup>st</sup> December 2020 and 1<sup>st</sup> January 2021.

*Large losses, >\$0.1 billion, suffered by 15 large firms analysed by both end date and settlement date*



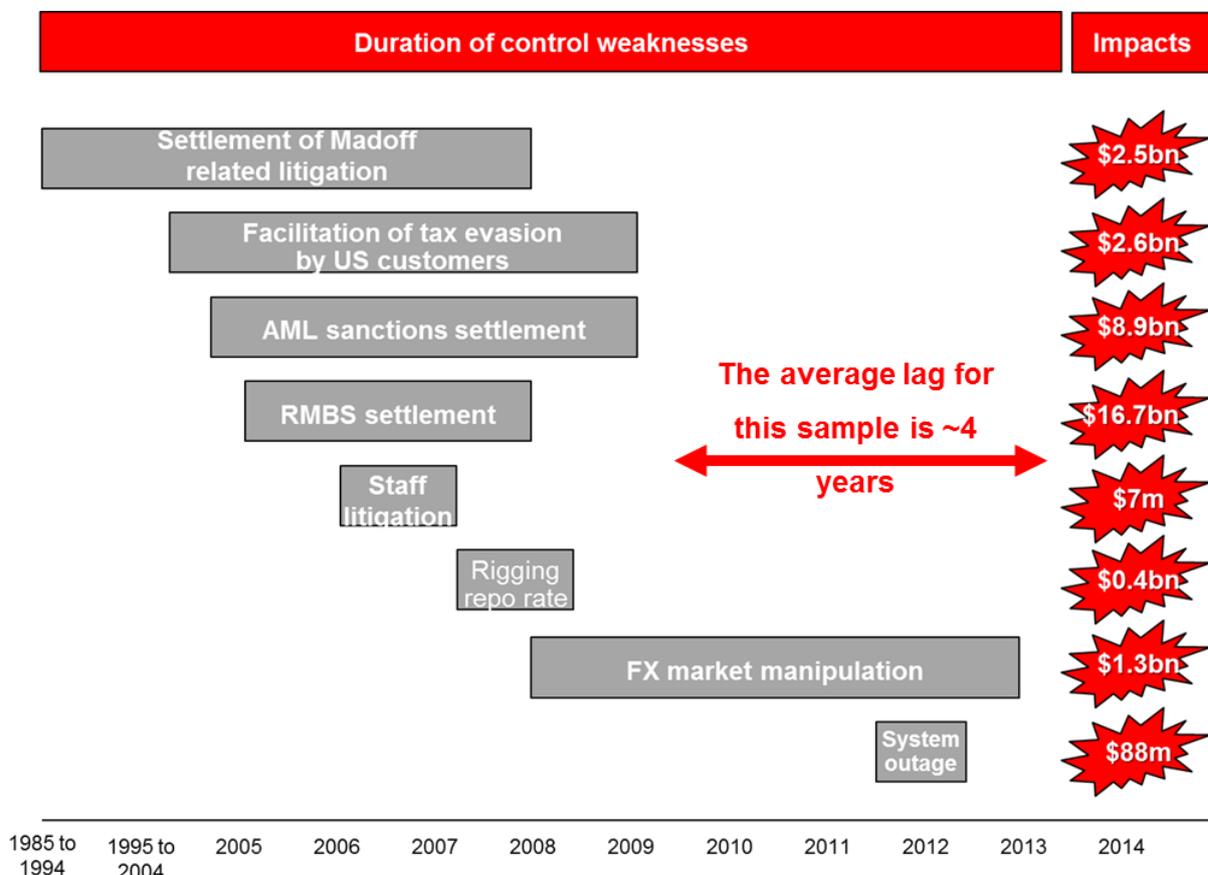
**Recommendation:** The Committee could address this 'cliff effect' by reflecting losses within the Loss Component based on the year in which provisions are established, e.g. PPI losses for one particular UK bank would not appear as a single £16 billion loss event that occurred in 2011 but instead a series of ~£3 billion losses spread across 2011 to 2015.

### 3.3 Inconsistency of treatment of losses with long lags between discovery and realisation

**Issue:** The combination of the option of the use of discovery date and the significant lags that can take place in the crystallisation of some Operational Risk loss events involving regulatory /

legal processes may lead to some of the largest losses not appearing in the Loss Component for the full 10 years. This is illustrated below:

*Example loss events highlighting the duration of control weaknesses and also the lags between discovery and settlement*



**Recommendation:** Again reflecting losses within the Loss Component based on the years in which provisions are established would remove the potential for some losses not to influence Operational Risk capital for a full 10 years.

### 3.4 Blind-spot of emerging risks

**Issues:** Firms are exposed to a range of emerging risks, which will not be adequately reflected in either their Business Indicator or their historical data. Good examples of this currently are the growing threat of cyber-crime, the impacts on the industry of fintech / algo-trading and the potential impacts on customers and investors when interest rates switch from being negative to positive.

**Recommendation:** The Committee / local regulators could address the SMA's blind-spot to emerging risks by requiring firms to continue to conduct Scenario Analysis to both better understand their exposures to emerging tail risks, and as an input into a Pillar 2a add-on.

### 3.5 Further 'cliff effects' in the Loss Component

**Issues:** The weighting of losses of different sizes for >€10 million and >€100 million creates further 'cliff effects' with similar value losses having significantly different impacts i.e. €99.9 million vs €100.1 million. Additionally, for banks that do not have Euros as their base currency, exchange rate movements may result in similar losses receiving different weightings in different periods. For example, if the UK voted for Brexit and Sterling devalued significantly, as predicted by some forecasters, exclusively UK retail bank businesses would have to report fewer Operational Risk losses using this approach.

**Recommendation:** The Committee should employ a more graduated progressive multiplier to avoid 'cliff effects' and reduce the significance of exchange rate fluctuations.

## 4. An integrated vision for Operational Risk capital

Operational Risk is just too fat-tailed and complex for a single measurement methodology. So the solution has to reflect all of the Pillars. This is illustrated in the figure below:

Pillar 2b – should:

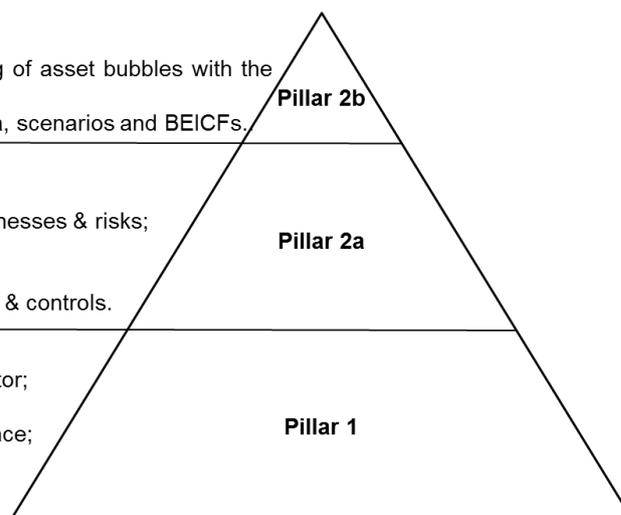
- Capture the pro-cyclical nature of Op Risk through:
  - Stress testing e.g. for Brexit and also for the bursting of asset bubbles with the return to positive interest rates; and
  - Op Risk capital modelling: internal & external loss data, scenarios and BEICFs.

Pillar 2a – should:

- Reflect emerging threats and new risks through:
  - Scenario Analysis e.g. for cyber, rogue algos, new businesses & risks;
  - Op Risk capital modelling (per above).
- Correct for any remaining anomalies in the SMA.
- Capture regulatory concerns with a firm's strategy, culture & controls.

Pillar 1 – SMA, however, should be enhanced to:

- Reflect business plans / forecasts in the Business Indicator;
- Reward good risk management e.g.:
  - Reducing Op Risk capital for risk transfer via insurance; and
  - Budgeting and pricing for Op Risk.
- Remove anomalies and smooth out the 'cliff effects'.
- Introduce greater risk sensitivity by weighting riskiness of different categories of revenues.



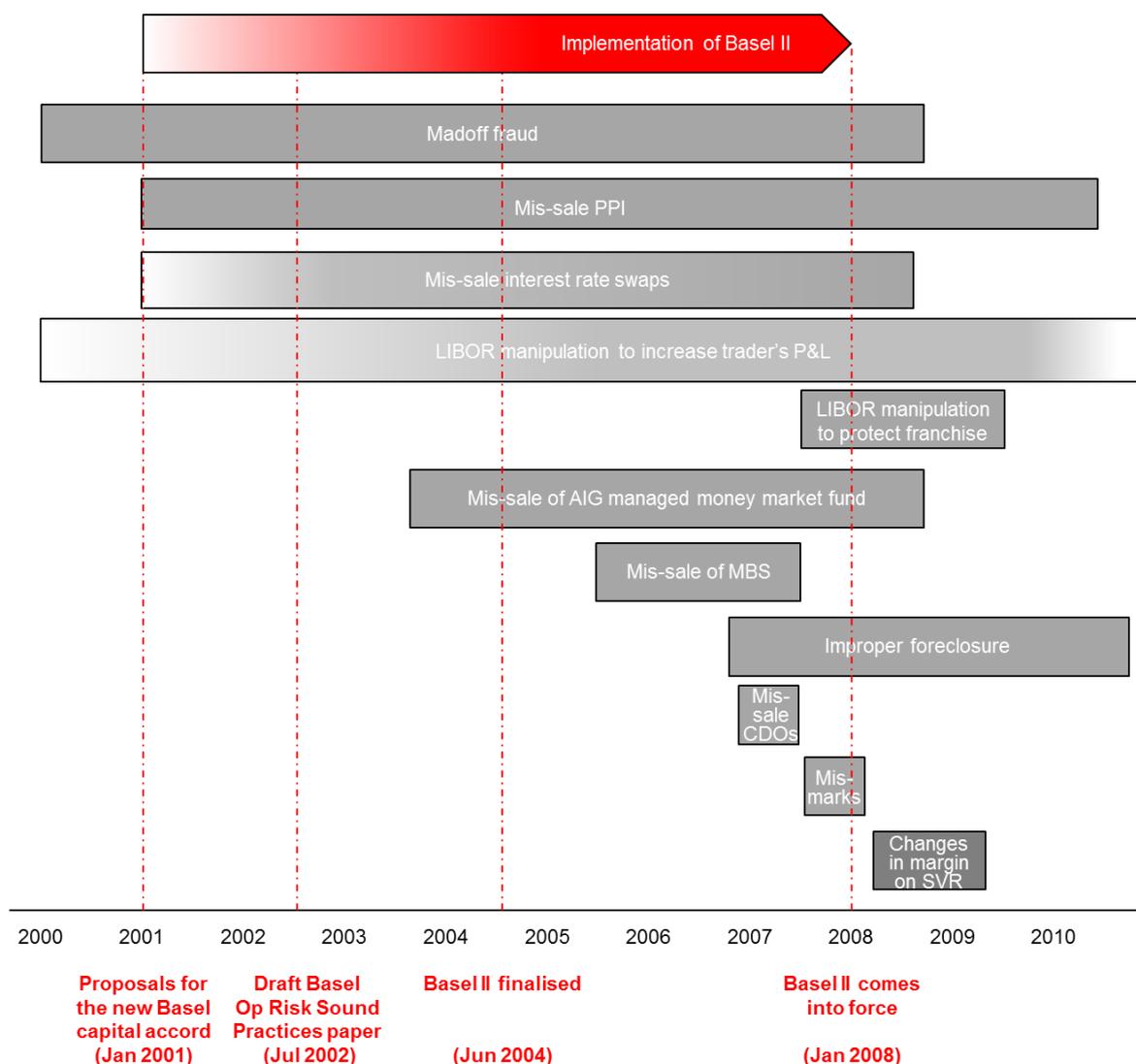
Given the extremely fat-tailed nature of Operational Risk then there continues to be an opportunity for firms and regulators alike to use AMA-style Operational Risk capital models to calculate Pillar 2a and 2b capital requirements.

**Recommendation:** The Committee should set out how a Pillar 1 capital requirement calculated through the SMA will interact with:

- Pillar 2a: capturing emerging risks and new businesses and rewarding good practice; and
- Pillar 2b: capturing the pro-cyclical nature of some Operational Risks.

Finally the industry and regulators must not lose sight that the origins of many large losses suffered after the financial crisis were concurrent with the implementation of Basel II and the enhancement of Operational Risk management frameworks.

*The timeline for the implementation of Basel II and the occurrence of major Operational Risk scandals*



**Recommendation:** The Committee should articulate how firms will be rewarded for good risk management and penalised for weaknesses in their culture and controls.

**Next steps**

The Institute of Operational Risk would welcome the opportunity to participate in any further discussion or consultation on these proposals.

Yours faithfully,

**George Clark**

Chair of the Council of the Institute of  
Operational Risk

**Michael Grimwade**

Director with Portfolio for Regulatory &  
Industry Bodies