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DECODING
BCBS MARKET RISK CAPITAL REQUIREMENTS

LAYING THE BUILDING BLOCKS FOR SUCCESSFUL FRTB IMPLEMENTATION

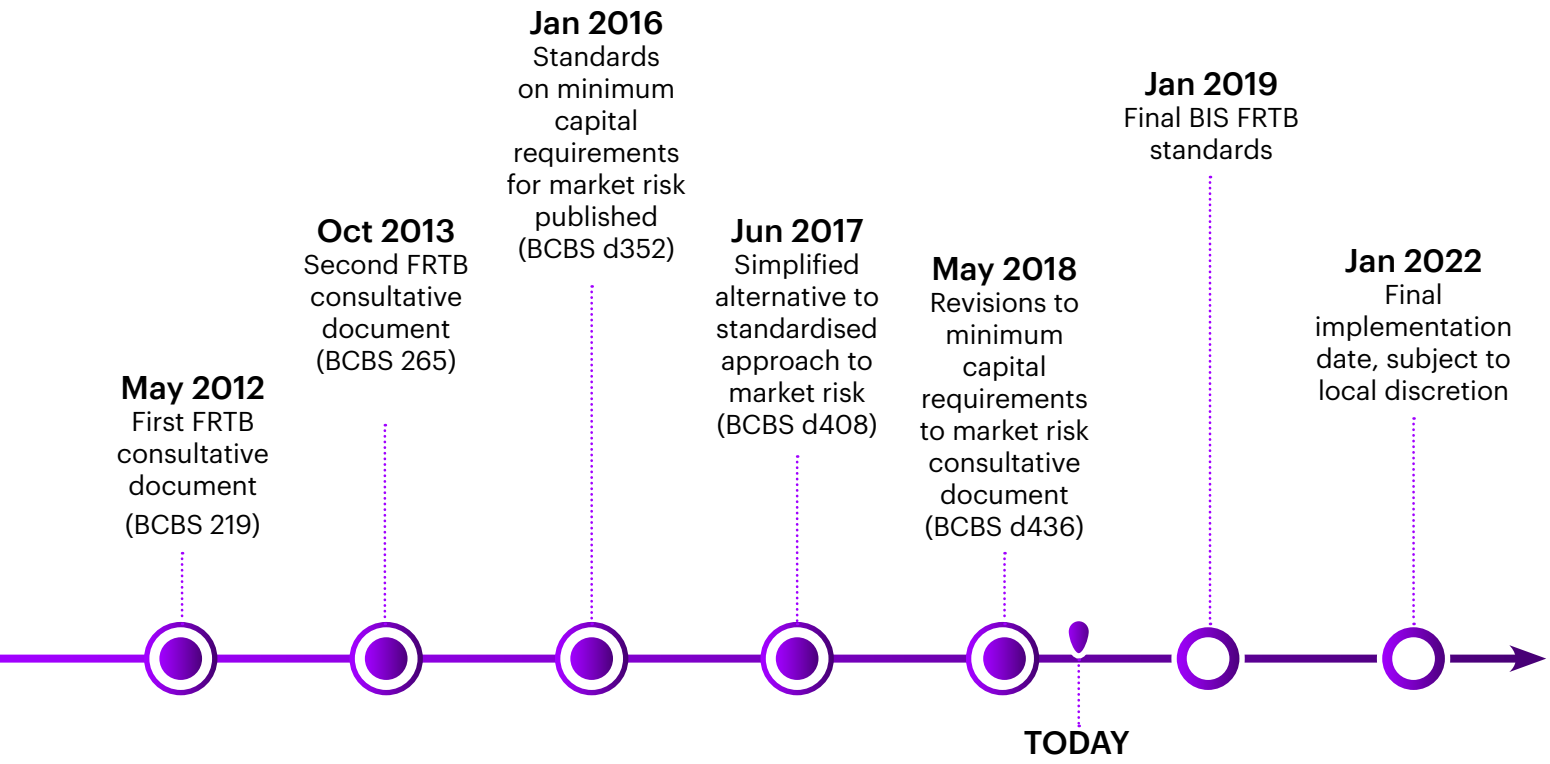
FS PERSPECTIVES

Since publishing the "minimum capital requirements for market risk" in January 2016, the Basel Committee on Banking Supervision ("BCBS" or "the Committee") has been monitoring the global pace of Fundamental Review of the Trading Book (FRTB[1]) implementation as well as its impact on banks' market risk capital requirements. Over the last couple of years, the international banking industry has expressed ongoing concerns and challenges with the revised standards. The Committee, in acknowledgement, has provided the following:

- On March 22, 2018, it released the latest consultative document on the new market risk framework, which follows the publication of both the January 2016 final standard and the subsequent June 2017 consultative document, "Simplified alternative to the standardised approach to market risk capital requirements."
- It extended the implementation date to January 1, 2022, which will constitute both the implementation and regulatory reporting date of the standard.

While the consultative document sought feedback from market participants by June 2018, the deferred implementation date gives banks additional time to develop the systems and infrastructure needed to apply the standard. It also gives the Committee time to address outstanding issues, if any.

Figure 1: Timeline of BCBS consultation and implementation requirements



1 Fundamental Review of the Trading Book (FRTB) generally refers to the revised market risk framework intended to replace the Basel II / Basel 2.5 market risk capital framework. It aims to address the perceived shortcomings of the current market risk capital regime, which became too evident during the financial crisis of 2007-2008 as it did not sufficiently address all the risks in traded products, particularly tail risks, market illiquidity and stressed correlations.

In summary, the paper proposes modifications on the standardised approach (including a simplified option for qualifying banks), the internal models approach and the overall capital requirements for market risk. These modifications are intended to ease the roll out of the FRTB requirements by most banks, either by providing capital relief or more flexibility and clarity in implementing certain requirements.

STANDARDISED APPROACH

- Revisions to the treatment of liquid forex (FX) pairs
- Revisions to correlation scenarios
- Revisions to capital requirements for non-linear instruments
- Revisions to risk weights

INTERNAL MODELS APPROACH

- Profit and loss (P&L) attribution test
- Testing and treatment of non-modellable risk factors (NMRFs)

SCOPE OF MARKET RISK CAPITAL REQUIREMENTS

- Treatment of structural FX positions
- Boundary between the trading book and the banking book

SIMPLIFIED ALTERNATIVE TO THE STANDARDISED APPROACH

- Application of a multiplier to capital requirements calculated under the Basel II standardised approach, intended as an alternative for banks other than those that are internationally active

WHAT'S NEW?

STANDARDISED APPROACH

Revisions to the treatment of liquid FX pairs

The currency pairs that were considered liquid in the January 2016 standard were notably limited, given the significant increase in trading activity of other cross-currency transactions in the past decade, particularly in emerging markets. This has become an important issue for banks globally, as such "sufficiently liquid" pairs warrant lower capital requirements, i.e., for these specified liquid currency pairs, banks at their discretion may apply a risk weight of 0.3/√2, which is otherwise 0.3.

To address this issue, the BCBS has proposed to combine two currency pairs in the current list of liquid pairs and treat the resulting new FX pair (i.e., the first-order currency pair) as liquid. This will allow banks to warrant lower capital requirements for an enhanced range of currency pairs.

If the above proposal makes it to the final framework, the number of liquid currency pairs would increase to 190 pairs versus the current 23 pairs in the January 2016 standard.

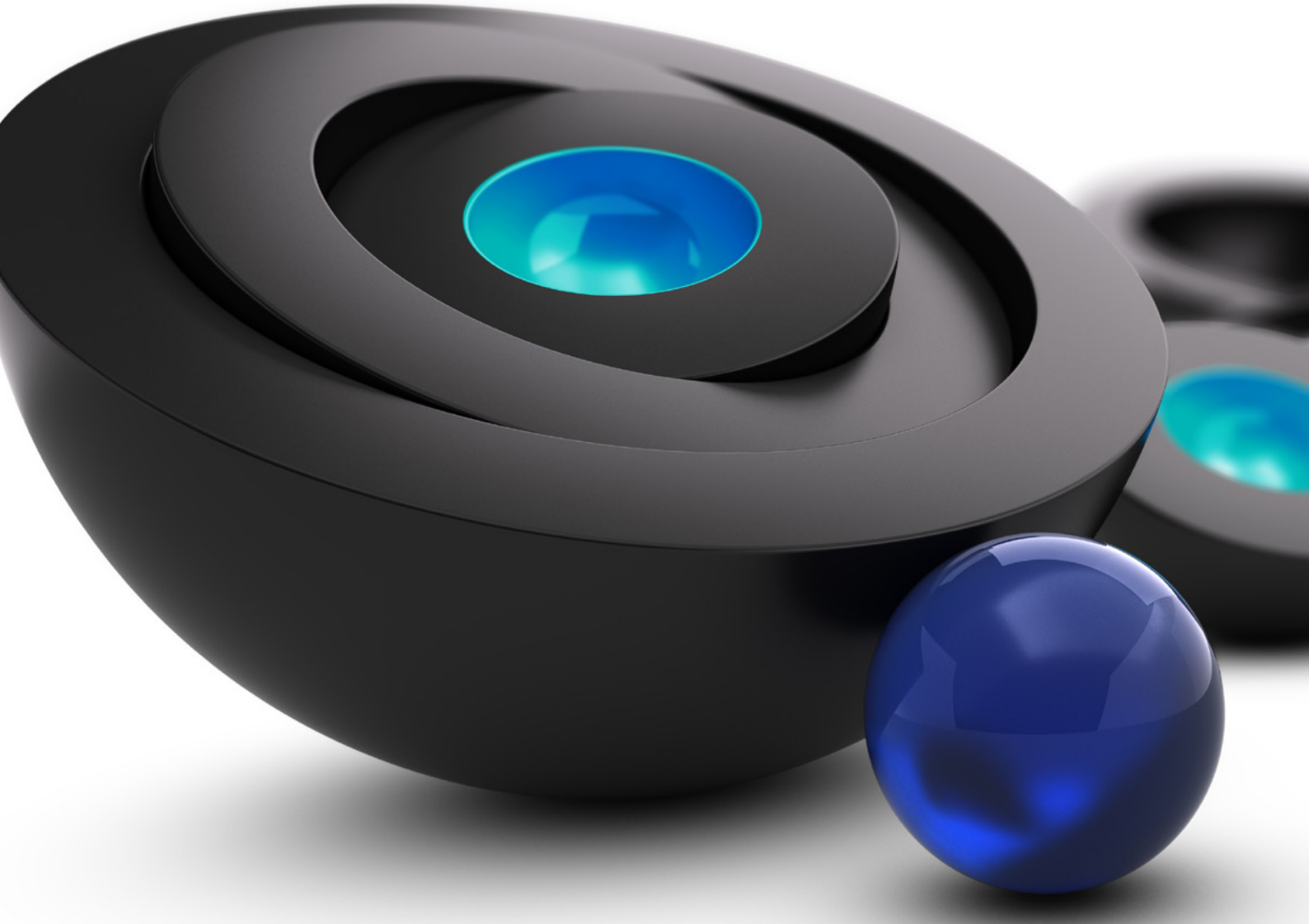
Revisions to correlation scenarios

The January 2016 standard requires banks to calculate capital requirements for each risk class under three different correlation scenarios—High, Medium and Low—to determine the ultimate capital requirement. However, for some risk factors, it has been observed that the low correlation scenario was resulting in capital requirements even more conservative than what actual observed data would suggest.

In view of this, the BCBS revised the parameters for the low correlation scenario in the consultative document by introducing a correlation floor (within a bucket and within a risk class), calculated as:

$(2\times\text{correlation}_{\text{within a bucket}}-100\%), (2\times\text{correlation}_{\text{within a risk class}}-100\%)$

where the resulting correlation figures cannot go below the correlation floor. Ultimately, this revision renders a more reasonable capital requirement calculation.



Revisions to capital requirements for non-linear instruments

The January 2016 standard specifies additional capital requirements for some non-linear financial instruments, which are defined as curvature risk capital requirements. These need to be calculated by considering the worst loss of two shock scenarios—an upward shock scenario and a downward shock scenario. The BCBS has now proposed minor changes to simplify the requirements as below.

The approach of applying shock scenarios: With the current approach of using the worst loss of two shock scenarios (i.e., upward and downward) for each risk factor in calculating capital requirements, it has been observed that, in certain cases, two very closely related financial instruments are calculated based on different shock scenarios. To address this issue, the BCBS has proposed an approach to apply a consistent scenario for all the risk factors that are defined in the same bucket. In addition to this proposal, the BCBS is seeking feedback from banks on the potential merits and drawbacks to consider an alternative approach to introducing "sectors" as a subset to the "buckets."

Cliff effects caused by the approach to calculate aggregate capital requirements: The current formulae, which calculate the aggregate curvature risk capital requirements of some trading portfolios where curvature risk positions are negative, result in very high capital requirements. In its consultative document, the BCBS proposes a simple fix of applying the floor value to the part of the formula causing the cliff effect, which ultimately results in lower capital requirements.

Potential double counting of FX curvature risk: The January 2016 standard requires banks to define FX exposures relative to their reporting currency. The BCBS has observed that in the scenario of FX options where neither of the underlying currencies is the bank's reporting currency, then the current approach to calculating curvature risk capital requirements may lead to double-counting.

To address this issue, the BCBS has proposed a potential revision by allowing banks, at their discretion, to divide the resulting curvature risk sensitivities by a scalar [x] consistently across all the FX instruments where none of the underlying currencies is the bank's reporting currency.

Revisions to risk weights

By comparing currently reported capital based on the January 2016 standard with its expected capital impact, the BCBS has identified that higher risk weights resulted in higher capital requirements that did not match initial expectations.

In its consultative document, the BCBS proposes to reduce the risk weights for the general interest rate risk class by 20–40 percent, and equity and FX risk classes by 25–50 percent to bring market risk capital requirements closer to the originally intended level. Figure 2 provides an example of reduced risk weights in the latest revisions:

Figure 2: Sample of suggested revisions to risk weights for interest rate, equity and FX exposures

RISK CLASS	CATEGORY	PREVIOUS RISK WEIGHT	SUGGESTED RISK WEIGHT
Interest Rate	Vertex: 0.25 year	**2.4%**	**1.5–1.9%**
Equity	Equity Spot Price, Bucket 1	**55%**	**27.5–41.25%**
FX	All FX sensitivities	**30%**	**15–22.5%**

Note: Specific value within the suggested range to be determined by the Committee based on further analysis of impact data provided by banks and feedback provided on the March 2018 consultative document.

INTERNAL MODELS APPROACH

P&L attribution (PLA) test

The January 2016 standard introduced the PLA test to assess whether banks' internal models appropriately measure all material risks associated with each trading desk. The PLA test aims to measure the divergence between the hypothetical P&L (HPL) and the risk-theoretical P&L (RTPL). If the divergence is under the prescribed thresholds, a trading desk is permitted to use the Internal Model Approach (IMA). With the new consultative document, the BCBS has proposed revisions to address some of the issues related to the "PLA test input data," the "PLA test metric design," the "PLA test failure consequences" and the "trading desk requirements."

PLA test input data: The January 2016 standard had no clear guidelines on the collection of market data, in terms of the timing and source, required for calibrating HPL and RTPL. The BCBS addresses the data-related concerns by proposing that banks collect the market data for both HPL and RTPL at the same time and from the same source.

PLA test metric design: The BCBS has monitored the performance of the original PLA metrics' abilities to identify models with deficiencies. In the latest consultative document, the Committee proposes to replace the existing metrics to measure the correlation between HPL and RTPL with more sophisticated metrics:

1. To measure the correlation between the values of the HPL and the RTPL, comparing the "Spearman correlation" with predefined thresholds, and

2. To measure the similarity of the distributions of the HPL and the RTPL, either by using the "Kolmogorov-Smirnov" (K-S) test or the "Chi-squared" test.

The proposed PLA metrics are deemed to provide banks with more reliable measures to assess the P&L generated by a risk management model.

PLA test failure consequences: As per the January 2016 standard, trading desks that fail the PLA test will not be eligible to use the IMA and will be subject to use the standardised approach, which results in a significant increase in capital requirements. To address concerns over volatility in capital requirements, the BCBS proposed a modified "traffic light" approach to smoothen a trading desk's transition to the standardised approach.

Figure 3: Modified "traffic light" approach

RED ZONE
Trading desks failed the PLA test and must use the standardised approach.

AMBER ZONE
Trading desks did not meet the full requirements of the PLA test but have not performed so poorly so as to necessitate an immediate fall-back to the standardised approach.

GREEN ZONE
Trading desks passed the PLA test and can continue using the internal models approach.

With the introduction of the Amber Zone, which charges additional capital over the IMA-calculated figure but may not necessarily render results as punitive as under the standardised approach, banks would avoid the cliff effect and reduce overall volatility in capital requirements calculated for market risk.

Trading desk requirements

The BCBS, in the latest consultative document, redefines what constitutes a trading desk. A single trading desk can feature up to two head traders with clearly defined roles and responsibilities and can head one trading desk. An individual trader may be assigned to two trading desks upon supervisory approval.

Non-modellable risk factors

The IMA model requirements of the January 2016 standard allow a bank to use a risk factor in an internal model if it passes the risk factor eligibility test (RFET).[2] Should a risk factor fail the RFET, it will be classified as a non-modellable risk factor (NMRF). However, the industry has raised concerns for both:

1. RFET, as the standards are not sufficiently clear on the definition for "real price observations" and requirements on the use of data to calibrate internal models, and
2. Approach defined for NMRFs in calculations that it may be subject to design flaws that result in disproportionately high capital requirements.

Updates on RFET

The January 2016 standard does not elaborate on the process to assess whether the observed transactions are "sufficiently representative" to be counted as real price observations (RPO). To address this deficiency, the Committee proposes (a) that a bank can also consider RPOs based on data collected from third-party vendors, and (b) there should be two alternatives for mapping RPOs to risk factors.

Real price observations based on data collected from third-party vendors are also allowable, as long as the vendor agrees to the following:

1. Provide the number of "real" prices observed and the corresponding dates
2. Provide identifier information to enable the bank to map real prices observed to risk factors
3. Be subject to audit by the supervisor, regarding validity of pricing information.

Two alternatives have also been proposed to determine how similar a risk factor of an observable transaction must be to the risk factor for a financial instrument in order to count as an observation for the RFET. The first alternative would be for the bank to establish its own buckets, and the second, for the regulator to specific buckets that banks must use.

Clarity on what constitutes a real and observable price, as provided above, would be welcomed by most banks—particularly by those that rely on third-party vendor data to obtain risk factors. On the other hand, adoption of the alternatives for the RFET bucketing may introduce operational complications and additional taxonomy for banks to implement.

2 To pass the RFET, a risk factor must have at least 24 "real price observations" of its value over the previous 12 months, with no more than a one-month gap between any two observations.

NMRFs

Unlike with the RFET, the Committee does not currently propose any revisions on the treatment of NMRFs, and has sought further feedback from the industry that would support a final decision.

SCOPE OF MARKET RISK CAPITAL REQUIREMENTS

Treatment of structural FX positions

In the January 2016 standard, FX positions that are entered into a full or partial hedge against adverse effects on banks' capital ratio have been excluded from the calculation of "net open currency positions." This exclusion was limited to the maximum of the amount of investments in consolidated subsidiaries or non-consolidated affiliates.

In the consultative document, the BCBS proposed revisions to consider the amount of structural FX positions that may be exempted from market risk capital requirements to be measured based on the FX risk arising from an investment, rather than the amount of investment itself. In addition, it proposes that structural FX positions in foreign branches of a bank can be included in the scope of the structural FX exemption.

Boundary between trading book and banking book

The Committee has identified that there can be cases where a financial instrument can belong to two separate books, and it may not be clear which requirement takes precedence.

To clarify the approach in these situations, the BCBS has proposed revisions for the inclusion of equity investments in the trading book. With this, banks may assign to the trading book funds:

1. for which daily price quotes are available;
2. which track a non-leveraged benchmark;
3. which demonstrate a tracking difference, ignoring fees and commissions, for which the absolute value is less than 1 percent.

SIMPLIFIED ALTERNATIVE TO THE STANDARDISED APPROACH

The increased complexity presented by the FRTB poses a significant challenge for smaller and regional banks that typically have a low concentration of trading book activity and do not have sufficient infrastructure for the sensitivities-based method.

In response, the Committee came up with a consultative document in June 2017, proposing a simplified alternative to the standardised approach. The document introduces a reduced form of the January 2016 standard's sensitivities-based method. However, this version still raised concerns as it leads to higher capital requirements for smaller banks. Also, reference data remains a challenge, as the method did not meaningfully reduce the size of the tasks required to collect and maintain reference data. And with the very stringent requirements of applying this method, it would likely prevent other regional banks from using the simpler approach.

With this latest consultative document, the BCBS has proposed to further revise the simplified alternative to the standardised approach to market risk capital requirements by applying a multiplier to the capital requirements in each risk class of the Basel II standardised approach. However, this approach should not be implemented for global systemically important banks (G-SIBs) or banks applying IMA to calculate capital requirements. The multipliers for each risk class is proposed as:

Figure 4: Suggested range of multiplier on Basel II capital requirements for each risk class

RISK CLASS	SUGGESTED MULTIPLIER ON BASEL II CAPITAL REQUIREMENTS
Interest Rate	**1.50–2.0 0**
Equity	**3.00–3.50**
Commodity	**1.50–2.00**
FX	**1.25–1.50**

Note: Final calibration within a suggested range to be determined by the Committee based on further analysis of impact data provided by banks and feedback provided to the March 2018 consultative document.

NEXT STEPS

Though the BCBS has extended the FRTB implementation timelines from December 2019 to January 2022, banks have a lot of further analysis to perform to understand the full impact of the proposed changes and plan appropriate implementation measures. As illustrated above, while the general trajectory of the proposed changes is positive for the industry, a lot of the nuances are still to be worked out. The deferment of the compliance due date is in fact a clear acknowledgement of the challenges ahead, and banks should be prudent to utilise this additional time to review the impact and reframe their respective implementation challenges. This will help them hit the ground running when the revised rules are published in 2019.

We believe that focus on core areas of trading book boundaries, risk and P&L processes, and computation challenges will remain even if the final requirements may vary somewhat. Banks should continue to revisit their business model and prioritise the reorganisation of trading desks as they set the foundation for other project tasks. The final rules are also less likely to make any radical changes to what is already espoused by the BCBS. Significantly, more work may be required by the new provisions for market data, and banks would be well-advised to explore the new possibilities that this consultation paper introduces.

Accenture is well-positioned to harness collective insights from our global experience and accelerators to help clients in Asia make their wise pivot to the New. Rapid progress in the reorganisation of trading books and market data assessments are the need of the hour, and we would be happy to help in those endeavours.

REFERENCES

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3. "Revisions to the minimum capital requirements for market risk," Basel Committee on Banking Supervision, March 2018. Access at: https://www.bis.org/bcbs/publ/d436.htm

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