FRTB NON-MODELLABLE RISK FACTORS

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Overview of FRTB capital requirements

Significant changes have been introduced to the Market Risk Capital framework in the Fundamental Review of the Trading Book (FRTB) issued originally in January 2016

Scope

Trading Book

Inclusions: Internal risk transfers – credit and equity
Exclusions : Internal risk transfers – Interest rates

Trading Desk

Definition
Criteria

Capital components

Aggregated Capital Charge

Internal Model Approach (IMA)

- Expected Shortfall (ES)
- Non-Modellable risk Factors (NMRF)
- Default Risk Charge (DRC)

Standardised Approach (SA)

- Sensitivity based risk charge
- Default Risk Charge (DRC)
- Residual risk add-on (RRAO)

Basel 2.5

Expected Shortfall (ES)	Non-Modellable risk Factors (NMRF)	Default Risk Charge (DRC)	Sensitivity based risk charge + Default Risk Charge (DRC)	Residual risk add-on (RRAO)
VaR + Stressed VaR	Partially through RNIVs in certain cases	Incremental Risk Charge (IRC)	Standardised Risk Charge	No pillar 1 change

Other

Additional requirements

- Intraday limit monitoring
- Stress-testing
- Market liquidity
- Disclosures
- PnL Explain
- Inventory aging reports

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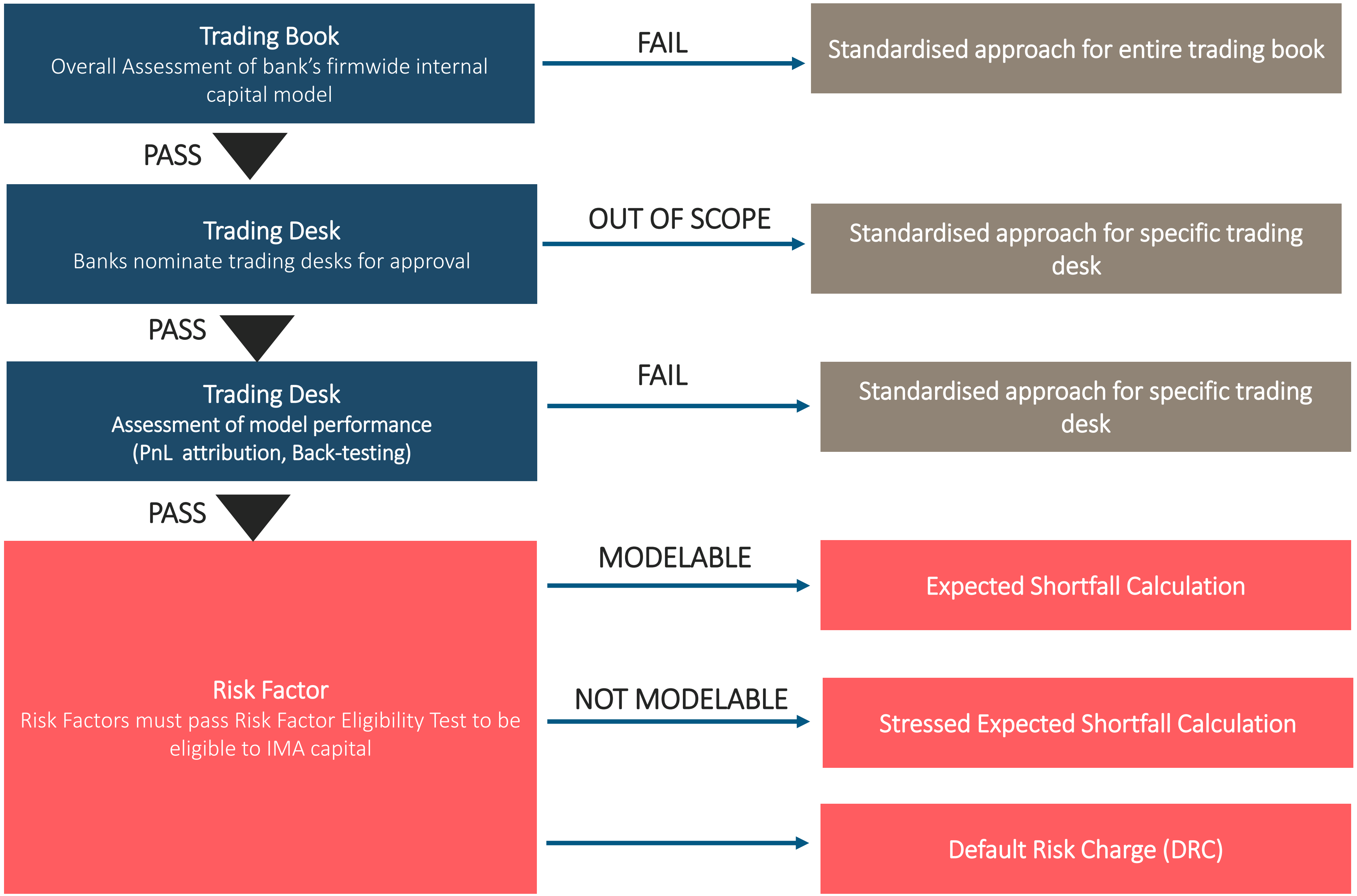
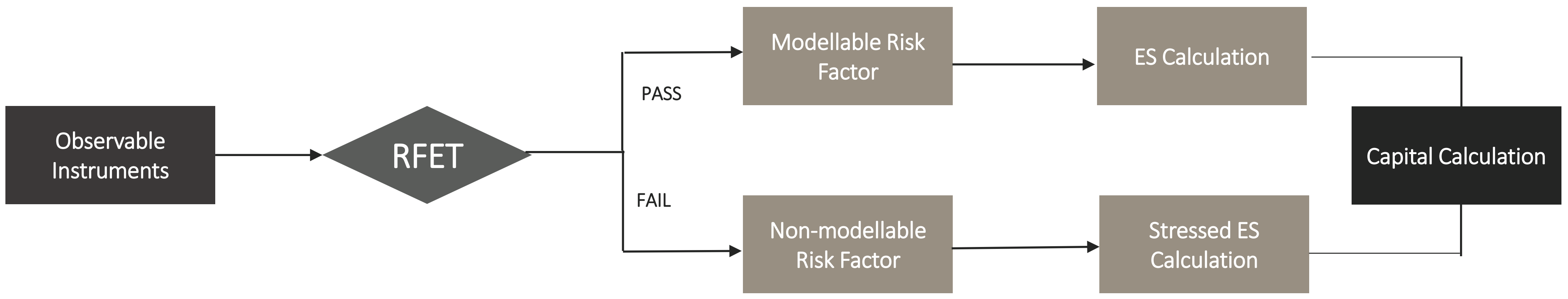
IMA Approval process in FRTB context



Assessment of Market Risk Factor Modelability

- FRTB has introduced NMRF framework in order to mitigate the possibility of internal models underestimating market risk in illiquid market
- NMRF framework requires banks to evidence sufficient market liquidity for the market risk factors related to the positions in their regulatory trading book that are capitalized using approved internal models
- Rationale
  - Banks use historical time-series data to calibrate their internal market risk capital models
  - For risk factors where the associated instruments trade infrequently, the time-series data may become stale which causes the portfolio's P&L to tend to zero
  - Therefore, the internal model mistakenly concludes the level of market risk is low, when what's really being observed is a lack of activity in the market

Risk Factor Eligibility Test (RFET) aims to provide assurance that the risk factors included in IMA are sufficiently liquid and observable



Overview of Risk Modelability Test

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Final NMRF Revisions

Number of revisions have been made to reduce the conservatism and operational burden of the NMRF framework in final revisions to the Minimum Capital Requirements for Market Risk issued by BCBS on the 14th of January 2019

01 Risk Factor Eligibility Test

New set of rules have been introduced to change the observability criteria and bucketing approach to achieve higher pass rates

02 Data transparency

New rules have been introduced around the transparency of the 'real' price data sourced

03 External vendor data

New criteria defined for using third party vendor data for risk factor eligibility

04 Capital aggregation

New rules have been introduced to allow banks to recognise diversification in NMRF

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Revisions to Risk Factor Eligibility Test (REFT)

Risk Factor Eligibility Test

BCBS has revised RFET requirements to allow banks to classify a risk factor as modellable if it passes either one of two criteria :

1 Minimum of 24 real price observations over the 12 previous months
AND
Minimum of four real price observations in a 90-day period

OR

2 Minimum 100 "real" price observations over the previous 12 months

Risk Factor Bucketing

Banks may group risk factors that can be represented as curves, surfaces or cubes into buckets for the purpose of passing the RFET.

BCBS has confirmed 2 approaches, where granularity of risk factor buckets has been reduced, especially at the short end maturity:

1 Banks define the risk factor buckets, ubject to certain limitations and supervisory approval

2 Regulators prescribe the risk factor buckets

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Data Sourcing and transparency

Real prices definition

- Banks will be allowed to use internally executed trade and committed quote
- Banks will need to own the risk factor to 'real' price observation mapping process, irrespective of where that data has been sourced from
- Collateral reconciliations or valuations cannot be considered real prices to meet the RFET

Transparency for usage of third-party vendors

Banks will be able to complement their observation set with 'real' observation data from third-parties if:

1. The vendor communicates to the bank the number of corresponding real prices observed and the dates at which they have been observed
2. The vendor provides, individually, a minimum necessary set of identifier information to enable banks to map real prices observed to risk factors
3. The vendor is subject to an audit regarding the validity of its pricing information

NMRF Capital Calculation and Aggregation

Impact assessment of the new amendments to the framework provided in the revised BCBS's paper is estimated to result in a reduction of 60 % of the amount of NMRF capital requirement

01

Stress Period

Common stress period for all risk factors relevant to a particular risk class, reducing the complexity in calculating different stressed window for different NMRFs

02

Liquidity Horizon

Less conservative liquidity horizon of the stress scenario that must be the greater of the liquidity horizon assigned to the risk factor specified for the Expected Shortfall, with a floor of 20 days

03

Correlation

Aggregation approach to calculating the overall NMRF capital requirement will incorporate additional, but limited, diversification benefits; Zero correlation for credit spread and equity idiosyncratic risk and 60% across other NMRFs

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Key challenges and how to address them

Despite new FRTB revisions, NMRFs remain one of the key burdens for banks as many implementation challenges remain:

	CHALLENGES	APPROACH	WHAT IS NEEDED

NMRF Framework	• Defining fewer risk factors can lead to PLA failures and hence IMA ineligibility, while defining too many risk factors can lead to unreasonable NMRF
	• As banks define their desk structures, they must find their optimal balance between:
	  ◦ Organisation complexity
	  ◦ Impact of test fails
	  ◦ NMRF concentration
	• There may be some rationale for allocating a standard approach right away to specific desks, to avoid test volatility and NMRF hit
		• Building a hierarchy of risk factors
		• Proxies to isolate the non-modellable basis
		• Ramp up NMRF to Value-at-Risk projects to assist in passing model eligibility
		• Build-up What-if reporting capabilities
		• Take a holistic view including interdependent initiatives and programs such as TRIM, IBOR Transition and stress testing
		• Implement comprehensive data management processes and work with data vendors
		• Run an NMRF early-watch
			• Project team members knowledgeable on market data and valuation
			• Process-designing skills to articulate the FRTB response with current Valuation, IPV, P&L and Attribution processes
			• Big picture covering a large scope of Bank regulations and knowledge of Risk framework
			• Organisational Transformation skills

AUREXIA can help in seeking for better efficiency for your FRTB program.
Our consultants built an expertise by accompanying tier-1 and tier-2 banks in the scoping and implementation of local regulatory topics.

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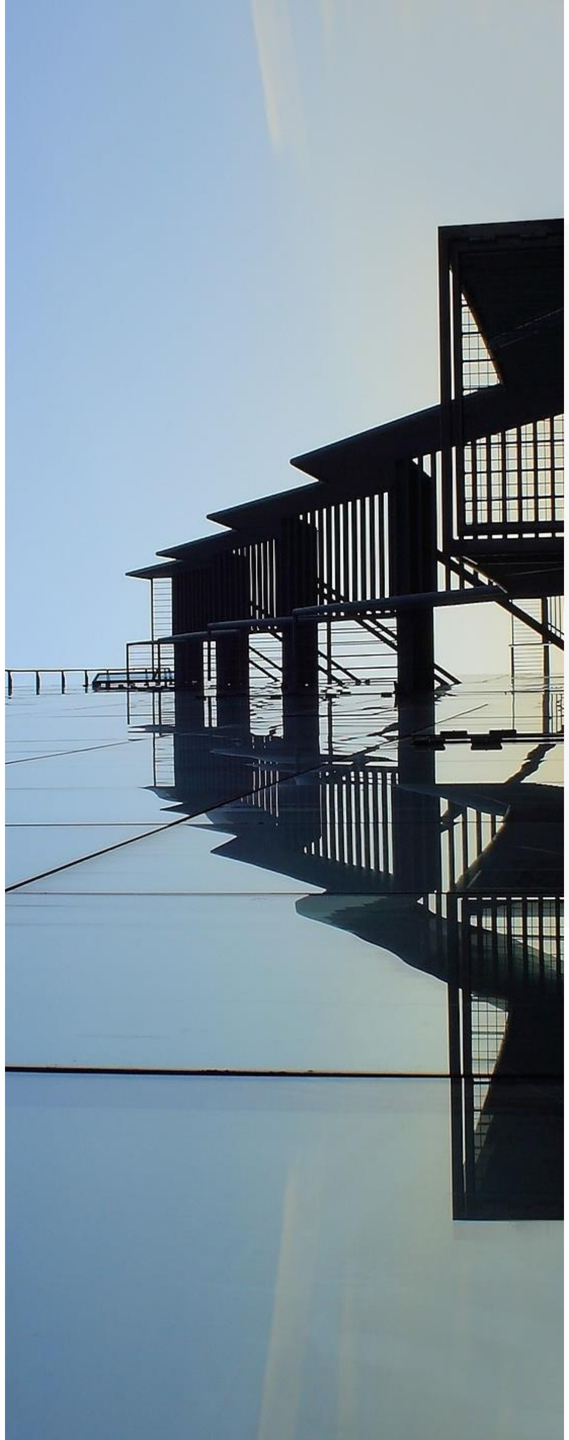
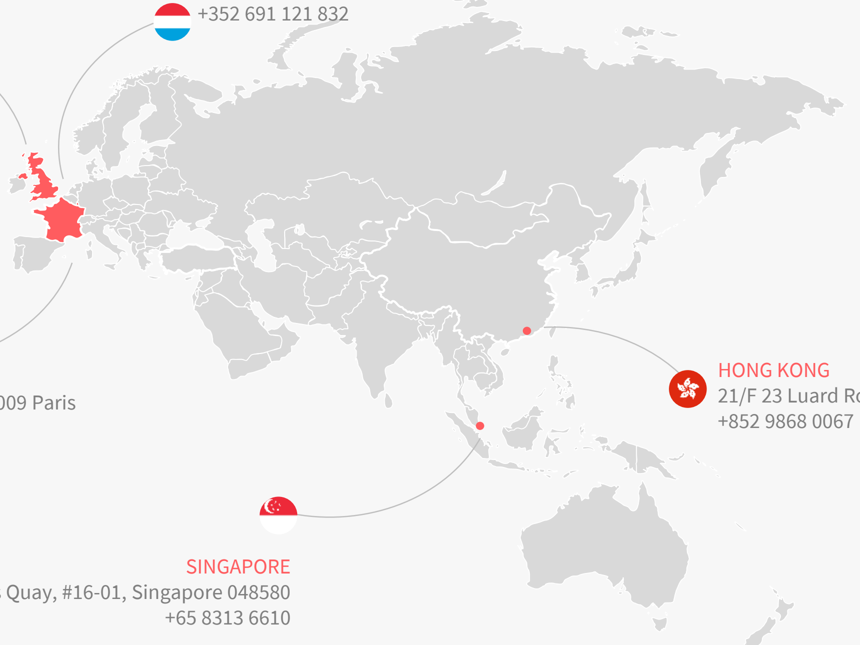


Our offices



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