4most
ANALYTICS CONSULTING

Navigating ICAAP challenges:

A guide to risk identification, stress testing, and model validation in the UAE

Contents

1 Executive summary

There has recently been increased scrutiny on the Capital Adequacy Assessment Process (ICAAP) by UAE regulators. The ICAAP process is a key activity to ensure banks have sufficient capital to meet their requirements, covering all material risks.

This paper highlights the key challenges banks face in preparing an ICAAP and outlines how banks in the UAE are navigating these challenges to achieve regulatory compliance.

2 Implications for the industry

ICAAP comprises both Pillar I and Pillar II risks:

- Pillar I is the minimum capital requirements banks should hold against credit, market, operational, and counterparty risk.
- Pillar II covers the risks which are not covered as part of Pillar I and involves assessment of the bank's risk profile and compliance with regulatory requirements for capital calculations.

The Central Bank of the UAE (CBUAE) sets out comprehensive requirements regarding the ICAAP in the Capital Adequacy Standards[1] and Capital Adequacy Guidance[2] documents. Both documents are to be used in conjunction to build the ICAAP models and reporting processes.

The Capital Adequacy Standards outline 17 key articles, emphasising the importance of a structured and forward-looking approach to ICAAP. The three key principles include:

1. **Forward- Looking Assessment:** ICAAP should adopt a forward-looking perspective, considering both internal and external drivers over a planning horizon of three to five years.

2. **Comprehensive Capital Forecasting:** Multi-year capital forecasts should be assessed and calibrated under both Pillar 1 and Pillar 2 risk perspectives to ensure capital adequacy.

3. **Holistic Risk Coverage:** At a minimum, ICAAP should address a comprehensive range of risks, including strategic risk, credit risk, market risk, counterparty risk, operational risk, liquidity risk, IRRBB, credit concentration risk, funding risk, reputational risk, and climate risk.

The Capital Adequacy Guidance consists of 45 key articles, providing specific directives to ensure resilience in capital planning and risk management, three key components being:

1. **Stress Testing for Capital Projections**: If the bank forecasts the increase of its capital base (e.g., through capital issuances, rights issues, reduction in the equity, etc.) it must conduct an additional stress scenario to assess the impact if the anticipated capital increase does not materialise.

2. **Supervisory Stress Testing Compliance:** Banks are expected to incorporate regulatory-mandated stress testing, such as the Financial Stability Department (FSD) stress test exercise, as a core component of ICAAP.

3. **Reverse Stress Testing**: Banks should implement reverse stress testing to identify pre-defined scenarios under which their business model would become non-viable, allowing for proactive mitigation strategies.

[1] Standards for Capital Adequacy of Banks in the UAE | CBUAE Rulebook
[2] Guidance for Capital Adequacy of Banks in the UAE | CBUAE Rulebook

This structured approach ensures that ICAAP remains a critical tool for financial resilience, aligning risk management strategies with regulatory expectations and industry best practices. The Capital Adequacy Standards and Guidance have implications for the industry in terms of data acquisition, model development, model validation, processes, and regulatory reporting.

3 Challenges and the response

The key challenges for banks in implementing and enhancing their ICAAP framework are identifying the most material risks, development of a sound approach to stress testing and scenario analysis, development and validation of models, and, governing the ICAAP. Each challenge is explored below.

1. Identification of material risks with defined limits

The first step in the ICAAP process is to identify all the risks exposed by the bank with comprehensive and coherent risk framework, which defines clearly each risk type. Banks are often challenged by how they define risks, particularly when a risk may result from other risks e.g. climate change risk, or model risk. What is important is to ensure there is clarity and consistency, where risks are identified and well managed. Senior management understanding of risks and embedding of a risk culture across the organisation are key aspects of a robust ICAAP framework.

Once risks are identified, risk policies make the risk types meaningful for the business. Risk policies and standards provide the business with a robust basis for identifying, assessing, accepting, managing, and controlling each risk. There are often challenges for banks to contain too much detail in policies, that quickly become obsolete or are onerous to maintain, as the business evolves. A structure to policy that reflects principle statements (requirements) and key structures to manage risks (lines of defence, authority levels, procedure, reporting, and controls) is helpful to separating operational detail from the key policy framework.

As part of embedding the policy and one of the main key risk controls in banks is the risk appetite statement, covering each of the most material risks, including complexities where risk overlap. The statement should set out clear quantified measures in terms of capital and earnings volatility and be structured to reflect the layers of the organisation. There are many challenges in creating a risk appetite statement, not least to making sure it is understood, agreed, visible, used, and relevant to running and monitoring the business.

The risk appetite is a document that is reported to the Board, which quantifies the maximum level of risk that a bank is willing to take to achieve its business objectives. The risk appetite statement is prepared by management and approved by the board each year and includes metrics and limits, which express the maximum risk exposure that the firm is willing to accept. The risk appetite limits are required to be regularly monitored and reported to the board and risk committees. Business units should link their limits to risk appetite limits to make it an effective risk management tool.

A material challenge is making the appetite meaningful and sufficiently relevant, that it is closely monitored and adhered to. Placing responsibility for producing the risk appetite on the business and the owners of risk, can help to ensure it is relevant. This requires a considered approach to setting the statement, which includes oversight and independent challenge from the second line. In the initial iterations it may be useful for both lines of defence to work together to agree the standard and how it will work going forward, delineating 1st line and 2nd line roles in setting the approach to definitions, reporting, measures, data and production, monthly running, thresholds, monitoring and commentary; linking to each part of a risk lifecycle (e.g. in credit risk the concept of origination, account management, arrears and recovery), aggregation overall versus individual levels of risk, and how breaches are to be owned, reported and actioned.

Visibility to key stakeholders requires reporting and discussions as a main agenda item in the key risk forums. This also requires a robust dialogue on performance monitoring against the appetite. Acceptance of ownership of risks and taking timely action is where appetite often lack ‘teeth.’ These are the more nuanced areas where the effectiveness of risk appetite is determined.

An illustrative example of key risks and some recognised risk measures that can be considered in the risk appetite statement are listed below:

Risk	Measures	Indicative Thresholds*
Credit Risk	• Non-performing Loans • Past-due • Coverage Ratio • Country Risk	• 4% - 7% • 0% - 0.3% • 100% - 125% • <10%
Market and Traded Risk	• Value at Risk • Interest Rate Risk in Banking Book • Investment Grade and Non-Investment Grade • Number of FX open position limit breaches	• <$5mn • <$1mn • 80% - 90%, 10% - 20% • <10
Operational Risk	• Operational Losses • Number of Fraud investigations • Number of Transaction Processing Errors • Number of material incidents caused by 3rd party vendors	• <$1mn • <5 • <5 • <5
Liquidity Risk	• Liquidity Coverage Ratio • Net Stable Funding Ratio • Advances to Stable Funding Ratio • Top 10 Largest Deposits	• 110% - 150% • 100% - 120% • 80% - 90% • 20% - 30%
Concentration Risk	• Top 10 Group Exposures • Funded Exposure in Breach of Set Sector Caps • Real Estate Exposure	• <30% • 0% • <20%
ESG Risk	• Environment, Social and Governance Risk	• <10%
Compliance Risk	• Percentage of high-risk customers • Number of overdue ODD reviews • Number of sanction breaches • Number of regulatory breaches • Unimplemented applicable regulations	• <10% • 0 • 0 • 0 • 0
Shariah Risk	• Equity Investment Risk • Shariah Non-Compliance Risk • Return of Islamic Assets	• >30% • 0 • 2% - 3%
People Risk	• Behaviour – Rolling 12M % of employees held in breach of disciplinary policy • Attrition – Rolling 12M % voluntary leavers	• <2% • <15%
Reputational Risk	• Number of complaints received per 100K customers • Percentage of customer complaints handled within SLA	• <100 • >90%
Legal Risk	• Number of pending cases / open cases against the bank	• <10
Model Risk	• Aggregate score of Model Monitoring	• >8
Capital Adequacy	• Capital Adequacy Ratio • Pillar II RWA in relation to Pillar I RWA • Pillar I, Pillar II, and Stress Test Limit	• 15% - 20% • >15% • >15%

* Setting the thresholds for specific risk measures needs to align to overall levels of tolerance – including how the business plan can be executed safely, how extreme but plausible external events and idiosyncratic risks can result in varying outcomes and how risks mature and aggregate over time and any considerations of diversification on concentration. The use of stress testing scenario analysis is very helpful in identifying meaningful thresholds.

2. Stress testing and scenario analysis

A key challenge for banks is to define stress tests that are relevant to the current external environment, nature, and scale of their business.

Stress testing is a key internal risk management tool and is used as an input into several key business processes for a bank including ICAAP, ILAAP and Risk Appetite. Stress tests show the effects of events which cannot be accounted for under business-as-usual circumstances. They enable policymakers to assess banks' resilience to adverse shocks and ensure they hold sufficient capital to withstand those shocks and support the real economy in a potential future stress. The key benefits of stress testing and scenario analysis include:

- Enabling banks to understand how the business is impacted and where it can safely operate.
- Provides benchmarking of outputs across the industry identifying where the bank has common or specific risks.
- Promotes senior management engagement in the stress testing process that in turn adds to more meaningful contribution and accuracy.

Central banks often publish a set of macro-economic scenarios for banks to test as part of an ICAAP. In addition, banks must develop their own scenarios at enterprise level and portfolio level to specifically highlight idiosyncratic risks to the business. The key considerations for banks when building their own scenarios include:

- The scope of the business including entities, portfolio, and books.
- Risks associated with the portfolio specific to markets, sectors, or regions.
- Time horizon: Short term versus long term.
- Optionality of counterparties.
- Exercise methodology: Top-down versus bottom-up approach.

Reverse stress testing (RST) is a type of stress testing that identifies scenarios that could make a business model fail. Unlike traditional stress tests, which start with macroeconomic events and assess their impact on the business (such as capital and liquidity), RST begins with a defined outcome and works backward to find scenarios that lead to that outcome. Banks should design RST scenarios to be severe enough to break the bank. The main goal is for banks to create timely measures to prevent or mitigate the risks of business failure.

When developing scenarios for the ICAAP, banks should consider the following aspects:

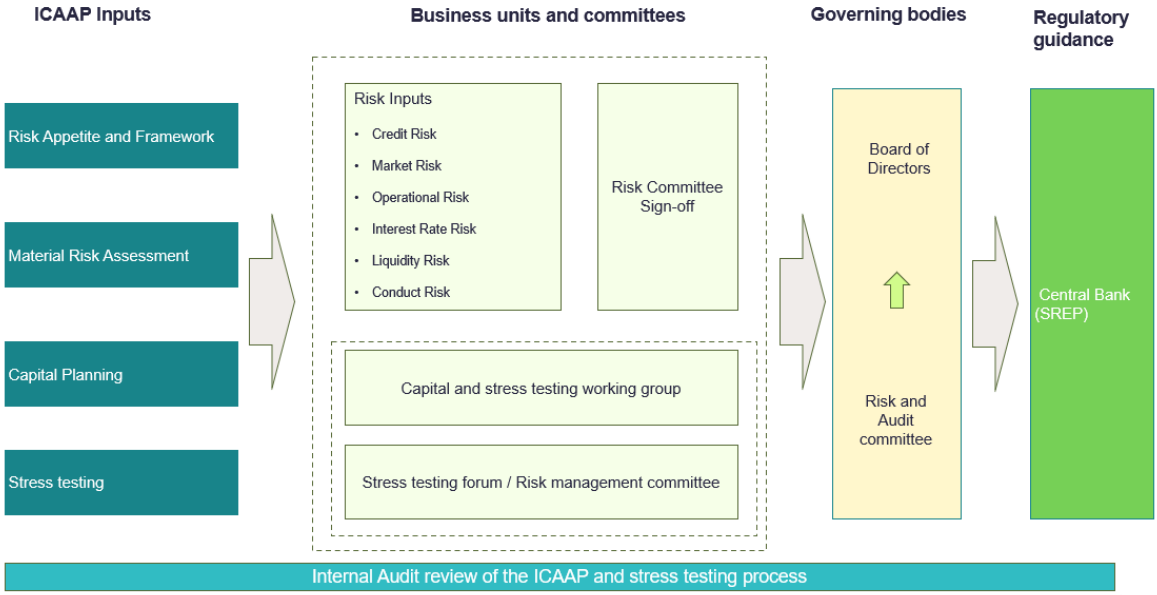
- Scenario description and assumptions:
  - Nature of the risks.
  - Description of the controls in place.
  - Storyboard causation (i.e. scenario narrative).
  - Storyboard consequence.
  - Early warning indicators.
  - Risk response / management actions.
  - Scenario likelihood (i.e. low, medium, high).
  - Scenario timeline (i.e. fast- or slow-moving scenario).

- Scenario impact on indicators and quantification:
  - The impact on capital, liquidity, profitability, asset quality, market, or macroeconomic indicators, as appropriate, should be shown (e.g. impact on CET1, LCR/NSFR or ELAR/LSRR).
  - Not all indicators maybe relevant for each scenario, but the most pertinent should be chosen based on system/model limitations.

3. Robust governance for ICAAP reporting

Defining a robust ICAAP governance framework is a key challenge for banks. ICAAP governance refers to the processes to ensure effective management, review, and validation of the capital adequacy assessment. The governance structure setup by the bank should evaluate the integrity of regulatory outputs including the post model adjustments, ensuring ICAAP compliance with CBUAE requirements. In addition, there should also be review and challenge scenario outputs for changes in ICAAP process.

This is essential for institutions to manage risks and comply with regulatory requirements. The ICAAP governance framework is summarised below as recommended in the “The principles of Banking by Moorad Choudhry”.



Banks should consider the below key components for an ICAAP governance framework:

- **Inputs:** Includes risk appetite statement (defines the risk appetite of the firm based on the firm’s objectives and strategies), material risk assessment (identifies material risks which the firm holds based on current and expected future positions), capital planning (assess capital needs and strategy) and stress testing.

- **Business Units and Risk Management Teams:** Risk inputs include all the material risks identified in the material risk assessment from the various business units which are calculated for capital adequacy by the capital and stress testing working group. The entire process and governance are overseen by the risk management committee. The final capital requirement is reviewed and signed off by the risk committee.

- **Governing bodies**: Includes the risk and audit committee to review and validate the ICAAP process and board of directors to oversee the ICAAP process and approve the final report.

- **Regulatory Guidance:** ICAAP report should be aligned to regulatory requirements and industry standards. The ICAAP is submitted as part of the Supervisory Review and Evaluation Process (SREP) to the central banks.

- **Internal Audit:** Independent internal audit team to review the completeness and accuracy of the ICAAP report and provide recommendations for improvement.

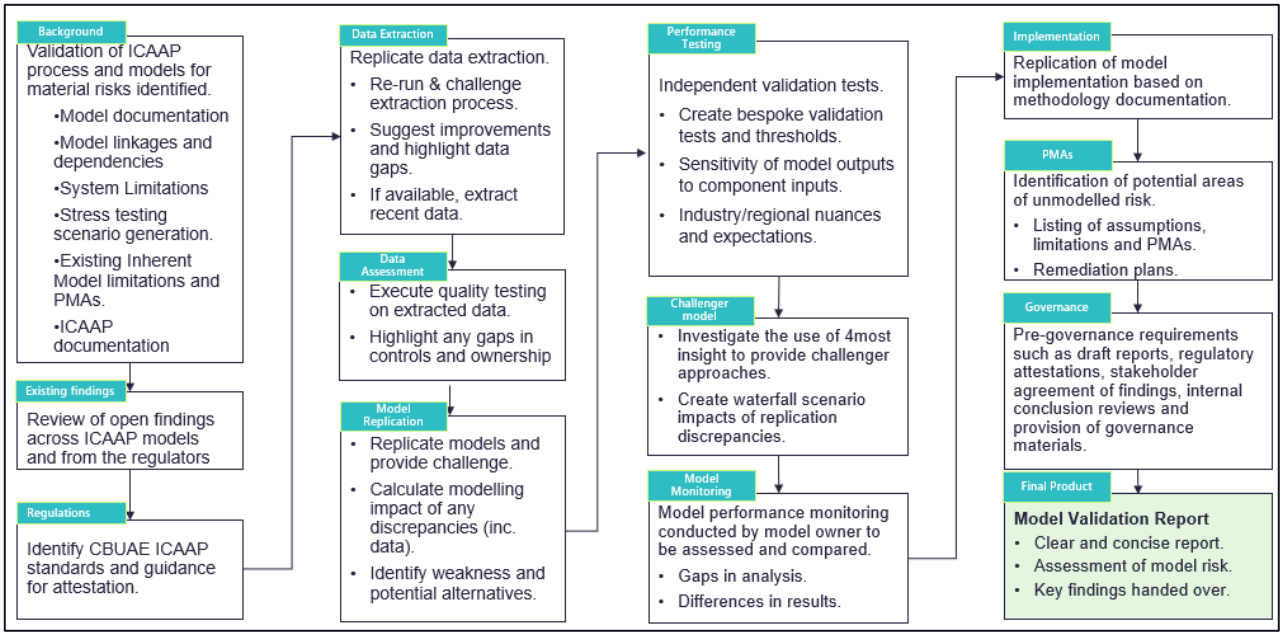
4. Model development and validation

Once the bank identifies its key material risks, and appropriate risk measures, the challenge becomes ensuring that the model development and validation process aligns with the CBUAE Model Management Guidance (MMG) and Model Management Standards (MMS) methodology and stress testing procedures, ensuring that the models are capable of effectively capturing the bank's risk profile.

This CBUAE model risk regulation emphasizes the critical role of independent validation in assessing model performance, accuracy, and reliability, ensuring that model is not only well-calibrated but also robust under various scenarios. It also includes a comprehensive review of model assumptions and data integrity,

The below model validation approach ensures effective qualitative, quantitative, and regulatory validation within the second line of defence, and alignment with regulatory expectations, the bank's overall risk management and the capital adequacy assessment process. The depth of validation and thresholds are primarily driven by materiality; but its key to provide effective challenge of design, implementation, use and ongoing monitoring of the model.

An ICAAP model validation approach



4 The way forward for banks

Banks should demonstrate that the ICAAP is a critical management tool that is fully integrated into business and risk decisions and be able to provide evidence of effective integration between ICAAP, ILAAP, Recovery and Resolution Planning, Stress Testing, and the Risk Appetite frameworks.

They should also invest in robust model development and validation processes for material risks identified in section 3.1 to ensure accuracy and reliability of key risk drivers.

Weakness in the availability of historical data will affect the model outputs and lead to expert judgements in the production of stress test results, while diverting attention from model development and validation to data cleansing and IT infrastructure.

Management should check the list of risk mitigation actions are still valid against the stress scenarios being tested. ICAAP preparation requires cross functional collaboration, which is not easy to achieve in larger organizations. A single owner will help to drive a consistent comprehensive approach.

5 How 4most can help?

Founded in 2011, 4most have grown to become one of the leading independent credit risk, market risk, data management and actuarial consultancies in the UK, Europe, and the Middle East. 4most's team of risk experts can help banks with model validation, model development, documentation enhancement, regulatory gap assessment, risk governance, regulatory reporting and delivering customised risk training.

For further questions regarding ICAAP, please don't hesitate to contact us. Learn more about how we help our clients at www.4-most.co.uk.

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