

# **Solving Regulatory Reporting Challenges**

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# **Agenda**

- » New Regulation and Regulatory Reporting Challenges
- » Principles for Defining, Gathering, and Processing Risk Data Subject to Reporting Requirements
- » Moody's Analytics Regulatory ERM Solutions

# **Environment Subsequent to the Credit Crisis**

The industry and regulatory response to the market dislocations that began in 2008 have necessitated that banks rethink their risk management technology and practices. Traditional approaches to financial risk management did not foresee or prevent the credit crisis. Therefore, in order for banks to remain competitive, they must keep up with the latest developments in risk measurement and management.

- Measure & Consolidate BS Exposure
- Establish Centralized Reporting
- Leverage Risk Mgt and BS Efficiencies
- Balance & Communicate Accounting vs. Economic Risk
- Transfer Pricing

#### **Current Challenges** Lessons Learned Need for effective firm-wide risk identification and Review and update risk management policies, practices and governance structures analysis. Improvement in prospective and contingency measures Establishing firm-wide risk tolerances Consistent application of independent and rigorous Price and Value are two distinct things "Risk" is more complicated than "Price" valuation practices across the firm. Pricing should emphasize a MTM discipline Place reasonable prices on products within HFI banking books, not just AFS and trading positions Develop ALM/BSM "independent" sources of pricing Consider pricing in your stress-scenarios Effective management of funding liquidity, capital and the FTP charge for liquidity Appropriate contingent liquidity risk management balance sheet. Treasury functions aligned with businesses Informative and responsive risk measurement and Risk metrics based on adaptive assumptions Different perspectives on risk exposures management reporting and practices. Stress testing



# **Trends Subsequent to the Credit Crisis**

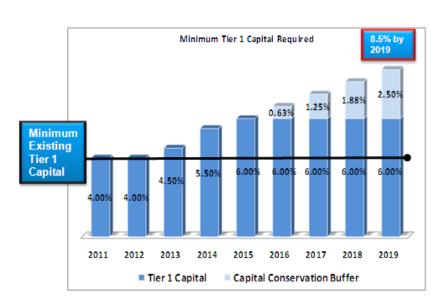
Trends Subsequent to the Credit Chais					
Regulatory					
General Regulatory Themes	Emerging Regulatory Trends				
Bifurcated supervision - Systemically critical firms versus smaller firms	Interest Rate Risk (IRR) - Traditional ALM currently inadequate:				
2) Systemic risk reduction	ALM needs to be more prospective in managing balance sheet risk				
3) More regulation, but more constructive regulation – the need to be pendulum sensitive	Uncertainties over valuation need to be resolved				
4) Greater emphasis on ERM principles (Risk management and not compliance)	Credit risk and market risk convergence				
5) Alignment of risk and compensation - performance and profitability link to incentives	o incentives Deposit growth and retention				
6) Movement away from "silo" based risk management	Expanded importance of funds transfer pricing (FTP)				
7) Back to basics – simplicity and transparency	Liquidity Risk Management (LRM) – Emerging Themes				
8) Less emphasis on originate-to-distribute models	Established risk tolerances				
9) Less emphasis on brokers and wholesale channels	Adequate "cushions" or "buffers" of unencumbered liquid assets				
10) Secularly lower leverage	Incorporation of liquidity costs in product pricing, performance measurement, and new product approvals				
11) Better disclosures and transparency around everything that banks do	Robust assessment of contingent liquidity risks – enhanced stress testing of market scenarios and OBS exposures				
i) Examinations	More robust liquidity contingency planning				
ii) Stress testing	Management of intra-day liquidity risks				
12) Reducing and preventing concentration risk	Active liquidity risk management both within and across legal entities, business lines and currencies				
i) Correlation	More robust public disclosure for promoting market discipline				
ii) No silos	Significant push to create more consistency across supervisors with respect to liquidity risk supervision and regulation				
iii) Concentration risk management – geographic, product, industry	Capital Management				
13) Non-banks and Money Market Mutual Funds will be subject to greater oversight	Definitions for capital change				
<ol> <li>Complex OTC products face escalated disclosure and likely to move to exchange-based protocols (even swaps contracts)</li> </ol>	Reset expectations on quantity and quality of capital				
	Reset aspects of Allowance for Loan and Lease Losses ("ALLL")				



# **Basel III Increased Minimum Capital Requirements**

- » More Stringent Rules on Eligible Capital
  - » i.e., Tier 3 not eligible, increased deductions
- » RWA Will Increase for Some Asset Classes
  - » i.e., OTC derivatives via CVA
- » Increased Capital Ratios
  - » i.e., Core Tier 1, Tier 1, Buffers







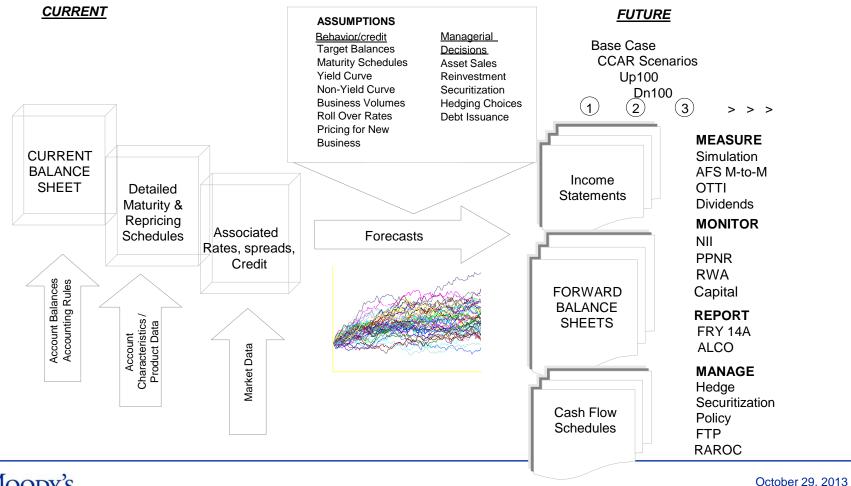
# **Basel III Introduces New Leverage and Liquidity Ratios**

A leverage ratio as a non-risk-based metric to avoid excessive leverage

Liquidity risk ratios: a short term ratio (LCR) with a 30 day time horizon and a more long term measure (NSFR) with a 1 year time horizon relying on rules based stress test scenario factors.

# **US FED CCAR New Stress Testing Requirements**

Evaluate how the balance sheet, Expected Loss (EL), Allowance for Loan & Lease Losses (ALLL), Net Income, Risk-weighted Assets (RWA) and capital will change under multiple rate, macro-economic, and business scenarios for upcoming 9 quarters





# Increased Regulatory Reporting Demands & Challenges

- » More and more regulations
  - => More and more regulatory reports to file with regulators
- » Increased scrutiny on report consistency
  - => Need to reconcile reports when same information reported differently
    - Aggregated vs. detailed views
    - Finance vs. risk views
    - Actual vs. forecast views
    - Group vs. local regulator views

### » Increased reporting granularity

- Up to counterparty level (for example EU large exposures)
- Up to transaction level (for example US CCAR transactional reports)

### » Increased reporting frequency

- CCAR stress testing twice a year
- Up to daily reporting for liquidity risk

### » Increased transparency in Pillar 3 disclosure requirements

- Additional Pillar 3 reporting requirements with Basel 3 (for example on top bankers compensation)
- New Pillar 3 reports requirement around liquidity risk



# **Increased Regulatory Reporting Demands & Challenges**

#### » USA

- Update US call reports for Basel III Standardized
- Update FFIEC101, 102 for Basel III Advanced reports
- FRY-14 CCAR monthly, quarterly and yearly
- FRY-16 DFAST reports for smaller institutions
- FRY-15 systemic reports for G-SIBs
- FR2320 liquidity risk reports

#### » EUROPE

- COREP Basel 3 capital and leverage ratio reports
- Basel 3 LCR & NSFR reports on liquidity risk, plus monitoring ones
- FINREP financial reports
- Large Exposures
- Forbearance and non performing loans reports
- Unencumbered assets reports

#### » UK

- Actual and Forecast FDSF reports for local SIFIs
- Bank Of England reports



# **New Regulation and Regulatory Reporting Challenges**

- Collectively, Basel III, one of the many requirements of Dodd Frank, and CCAR stress testing are forcing banks to <u>invest heavily in risk management infrastructure and software</u>. These new regulatory requirements have redefined the quantity and quality of capital and have imposed new stress testing reporting requirements that are straining existing systems and personnel to the limit.
- To effectively manage the balance sheet and comply with stricter regulatory requirements, financial institutions must <u>select the risk technology infrastructure and</u> <u>risk management tools</u> that are appropriate for the institution's size, complexity and risk management objectives.
- <u>Convergence between risk and finance</u> is also one of the key challenges that institutions have to face to answer increasing regulatory reporting demands from regulators.
- To <u>remain competitive</u>, banks must keep up with the latest developments in risk measurement and management.
- <u>Ultimately, firms that tie risk exposures to capital more effectively will be better</u> <u>able to integrate risk-taking decisions into their strategic and tactical decision-making.</u>

# **Agenda**

- » New Regulation and Regulatory Reporting Challenges
- » Principles for Defining, Gathering, and Processing Risk Data Subject to Reporting Requirements
- » Moody's Analytics Regulatory ERM solutions



# Principles for Defining, Gathering & Processing Risk Data

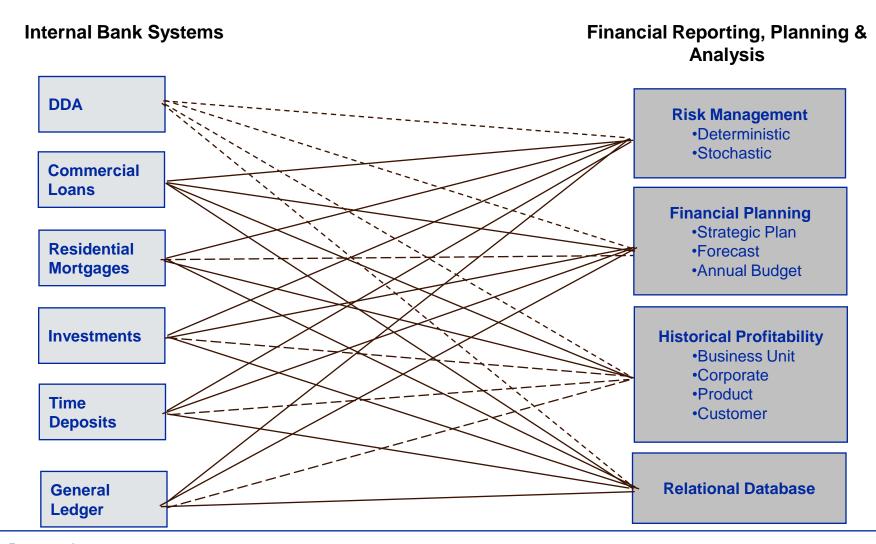
- » Bank information technology (IT) and data architectures were inadequate to support the broad management of financial risks.
  - Many banks lacked the ability to aggregate risk exposures and identify concentrations quickly and accurately at the bank group level, across business lines, and between legal entities.
  - Some banks were unable to manage their risks properly because of weak risk data aggregation capabilities and risk reporting practices. This had severe consequences to the banks themselves and to the stability of the financial system as a whole.

#### Common data issues

- » Missing Data Elements
- » Duplicate/Redundant Interfaces
- » Reconciliation of Interfaces
- » Excessive Interface Maintenance
- » Third-party Data Providers



# **Legacy Data Flow**





### **Streamlined Data Flow**

#### **Internal Bank Systems** Financial Reporting, Planning & **Analysis DDA Risk Management** Deterministic **ERM PLATFORM** Stochastic Commercial Data Extract Loans Data Transform Data Load Residential **Financial Planning** • FTP **Mortgages** Strategic Plan Profitability/Cost Assignment Forecast Annual Budget Aggregation **Investments** Data Staging Data Feeds **Time Historical Profitability Deposits** •Business Unit Corporate Product **Financial Database**

of Record



General

Ledger

Customer

# Principles for Defining, Gathering & Processing Risk Data

- » A bank's risk data aggregation capabilities and risk reporting practices should be subject to <u>strong governance</u> arrangements.
- » A bank should <u>design, build and maintain data architecture and IT infrastructure</u> which supports its risk and reporting practices both during normal times and during times of stress or crisis.
- » A bank should be able to generate <u>accurate and reliable risk data</u> to meet normal and stress/crisis reporting accuracy requirements. Data should be aggregated on a largely automated basis so as to minimize the probability of errors.
- A bank should be able to <u>capture and aggregate all material risk data</u> across the banking group. Data should be available by business line, legal entity, asset type, industry, region and other groupings, as relevant for the risks in question, that permit identifying and reporting risk exposures, concentrations and emerging risks.
- » A bank should be able to <u>generate aggregate and up-to-date risk data</u> in a timely manner while also meeting the principles relating to accuracy and integrity, completeness and adaptability.
- The risk management reports should <u>accurately and precisely convey aggregated</u> <u>risk data</u> and reflect risk in an exact manner. Reports should be reconciled and validated.



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# **Some Thoughts**

- » Banks need to design (or buy) an ERM software application flexible enough to adapt to a rapidly changing regulatory landscape
  - Start by investing in a centralized risk and finance data mart (as rich as possible)
  - Compliant with Basel III IRB, Basel III Standardized and Basel I requirements
  - Compliant with CCAR stress testing requirements
  - Centralize the various finance and risk information required for regulatory reporting
  - Analytics should ideally share a single engine to avoid inconsistent results across IRR, Liquidity Risk Management and CCAR/DFAST reporting
- » Create an "ERM" transverse program management organization and governance
  - Avoid data short cuts for maximum flexibility and granularity to adapt to new requirements later on
  - Focus on data and data quality
  - Maintain "agile" program management and governance policies
- » Reconciliation between the General Ledger and transaction level data is the necessary first step and corner stone to build an enterprise regulatory reporting platform i.e.: "garbage in; garbage out".

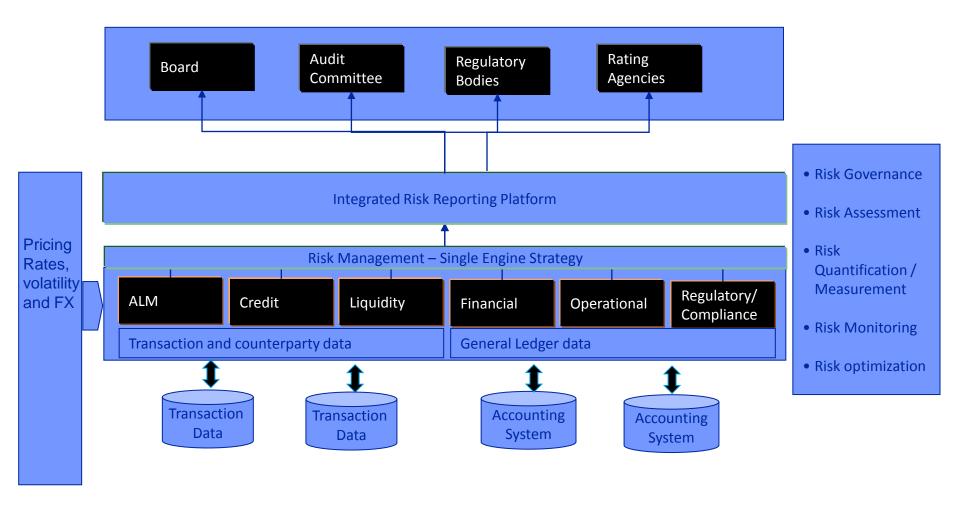


# **Some Thoughts**

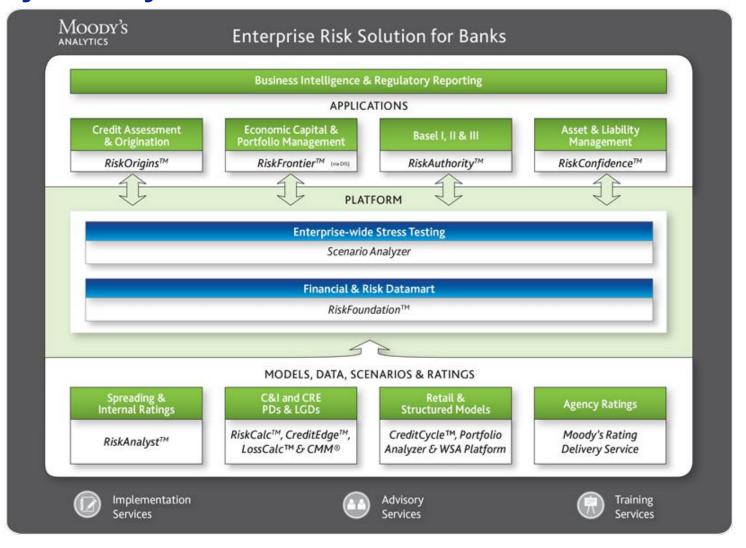
- » Base-line information used in various stress testing and forecasting shall first reconcile easily with current actual information being reported.
- » Regulatory reports validation can be facilitated via:
  - Pre-configured validation rules, highlighting reporting inconsistencies
  - Powerful drill-down capabilities (up to transaction ID or GL account ID)
  - Automated variance analysis rapidly explains changes between two reporting dates (FX impact, impact of new productions and matured transactions ....)
- Volume of underlying data to be aggregated might be important (millions of records), especially when comparing information from several reporting dates. IT should be aware of such large data volume and data manipulation requirements on big data volume at an early stage.
- Defining rules and workflows for data and report adjustments and validation processes shall be part of the project governance policy and shall be as much as possible automated in a software solution.



### The ERM Solution



# Moody's Analytics ERM: ERS Product Suite





# RiskConfidence™ Solution for ALM, Internal Liquidity Risk and FTP

#### **INPUT DATA**

- » Bank Data
- » Rates/Spreads
- » Foreign Exchange (FX)
- » Volatility
- » Market Value Assumptions
- » New Volume Assumptions
- » Mark to Market
- » Prepayment Assumptions
- » Deposit Decay
- » Line of Credit Draw (LOC) Draw/Repayment

#### STREAMLINE PROCESS

Scenario Analysis and Stress Testing Business & Regulatory Reporting

#### RiskConfidence™

- ✓ Balance Sheet Strategy ✓ Parameter Deal Mapping
- ✓ Behavior Modeling
  ✓ Chart of Accounts
- ✓ Funds Transfer Pricing 
  ✓ Formula Builder
- ✓ Deposit Modeling
  ✓ Value at Risk (VaR)

Data Consolidation & Management

#### REPORT RESULTS

#### Interest Rate Risk:

- ✓ Forecast Balance Sheet
- ✓ Income Statement
- ✓ Net Interest Income Sensitivity

#### Liquidity Risk:

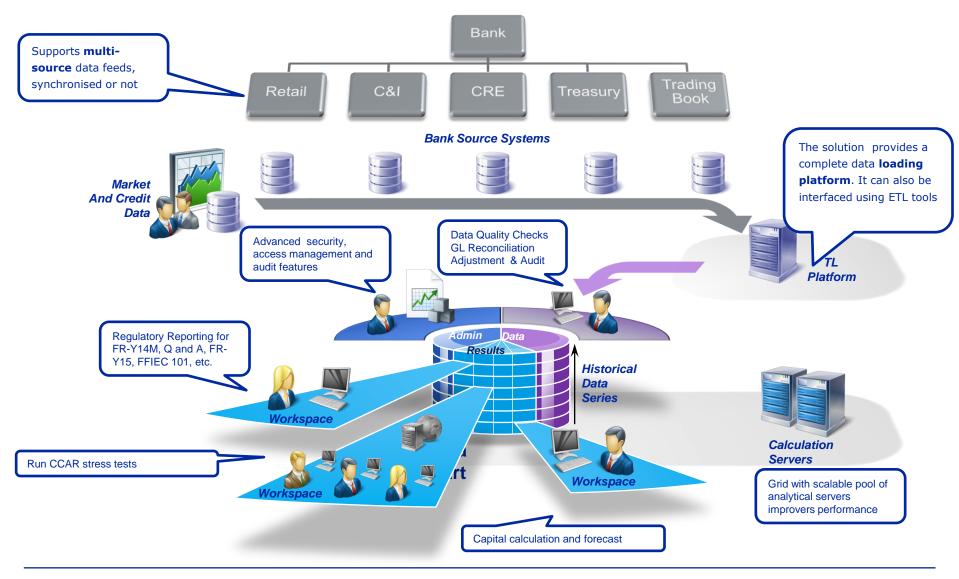
- ✓ Liquidity Gap
- ✓ Stress Testing
- Basel III (Liquidity Coverage Ratio, Net Stable Funding Ratio)

**Funds Transfer Pricing** 

Market Risk: VaR

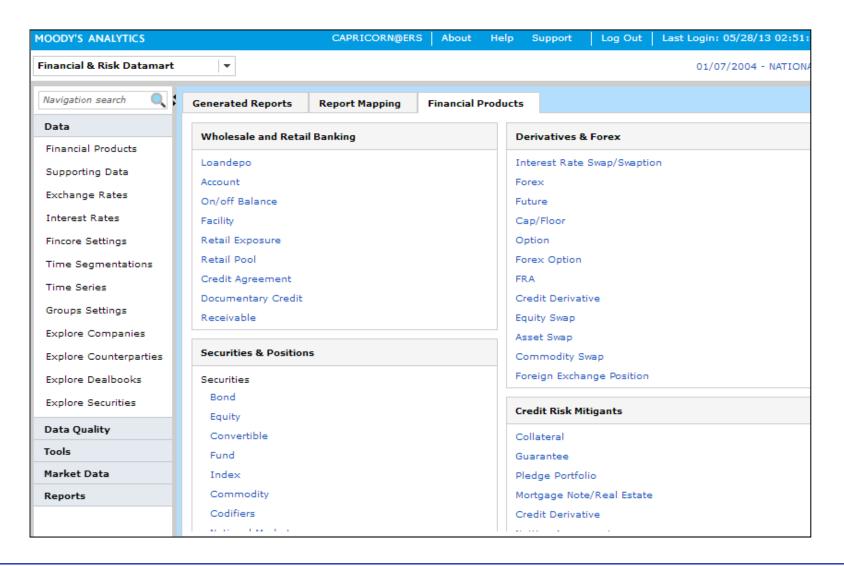


# **RiskFoundation™ Platform: Integrated Risk and Finance Data**





# RiskFoundation Platform: Integrated Risk and Finance Data

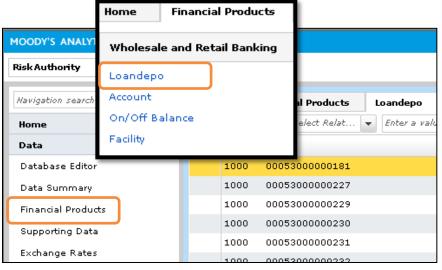


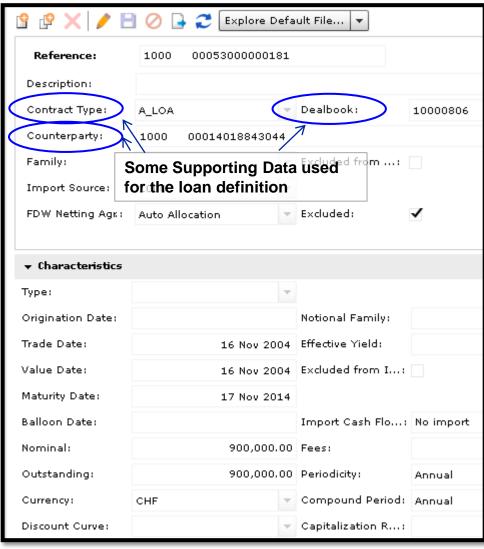


# An Example of a Financial Product: Loan

#### Retail loans are entered into LOANDEPO table

- » Counterparty field is used to link a loan to the bank counterparty
- Deal book field is used to link a loan to the bank deal book

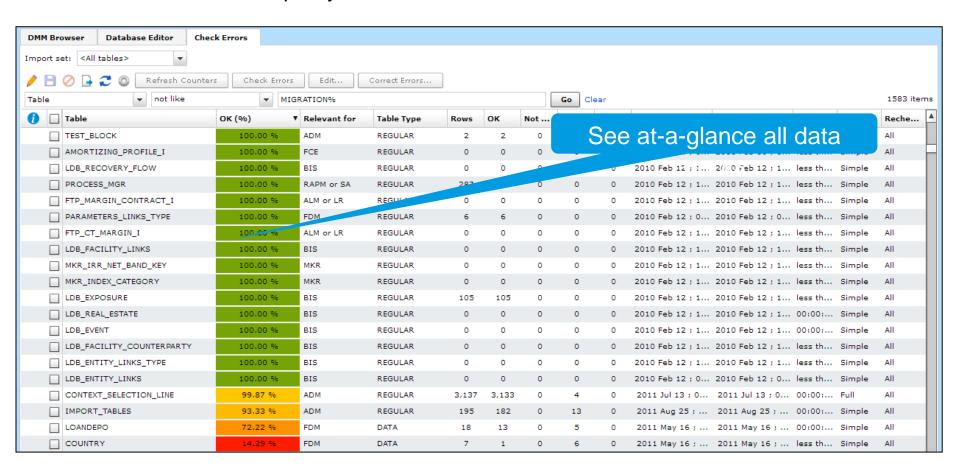






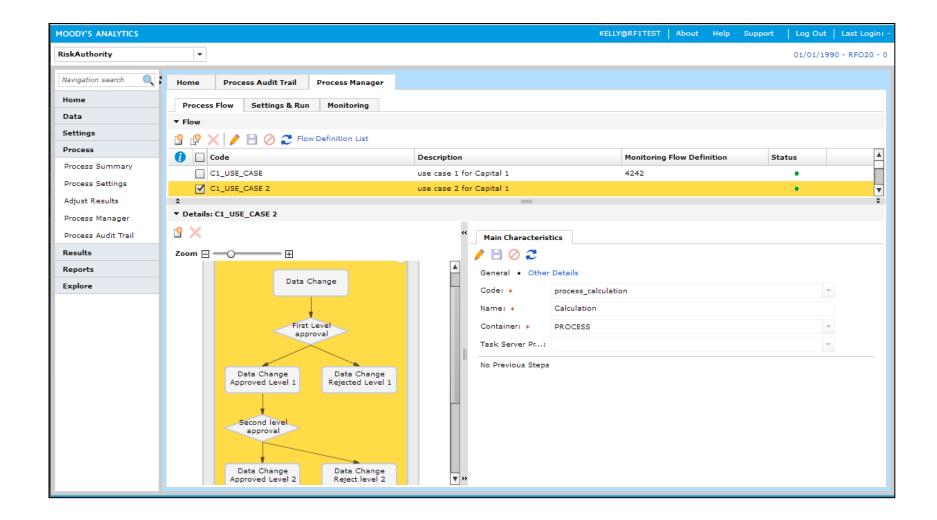
# **Quickly Identify and Fix Data Errors**

More than 3,000 data quality checks built-in



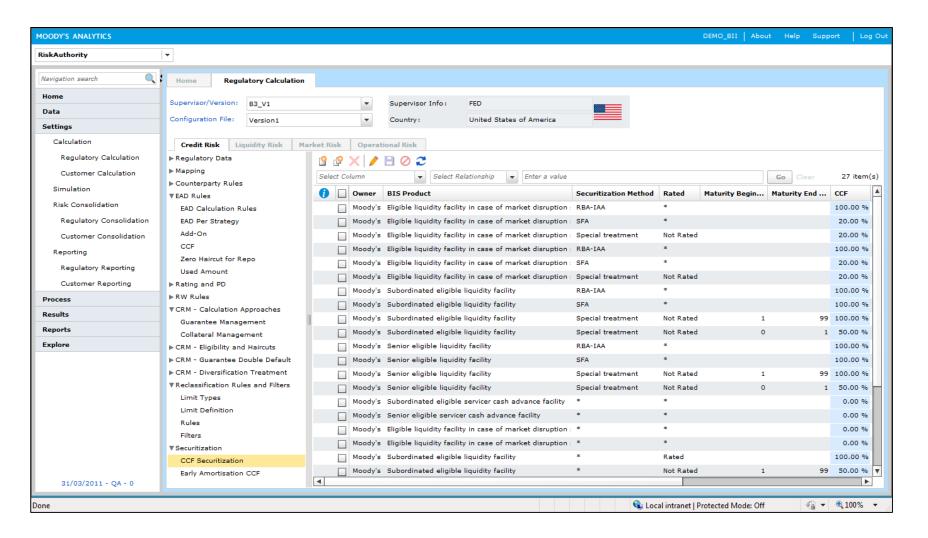


# **Data Change Workflow**





# Built-in Basel I, II & III Rules Per Regulator

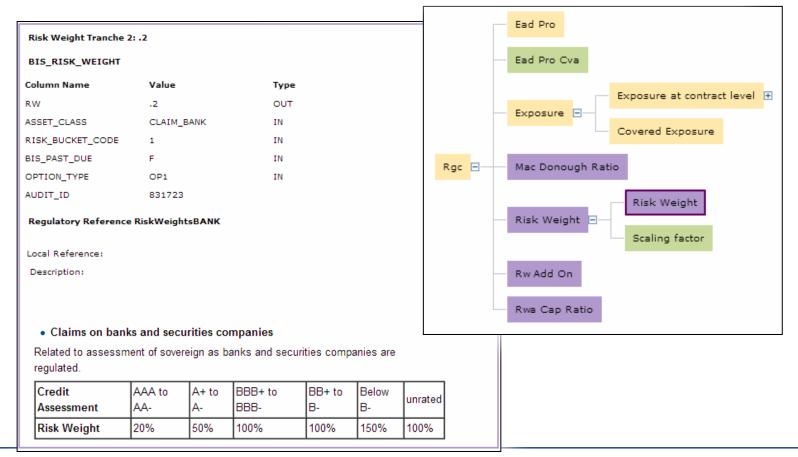




# Ability to Audit Risk Weighted Assets (RWA) Results

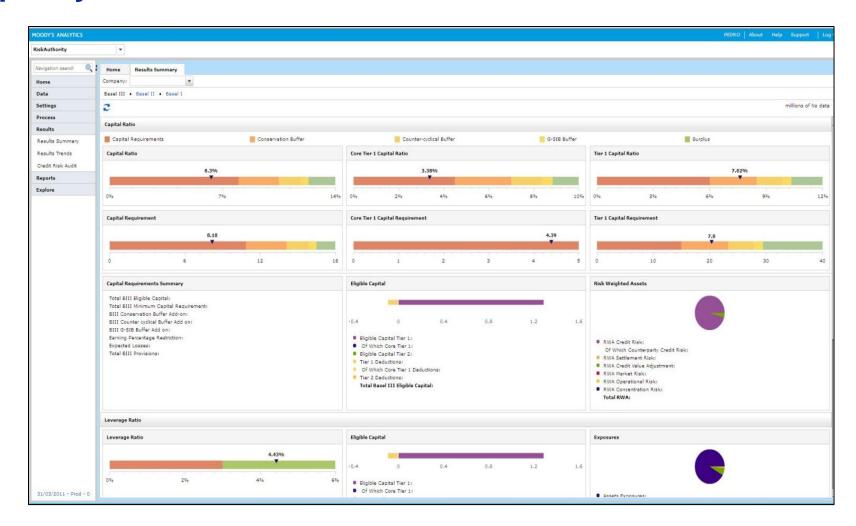
» Each parameter of the RWA calculation is auditable

Tranche	Contract Reference▼	Tranche Collateral T	EAD	Rgc
Tranche 1	Loan_FI_0012	COLLATERALIZED	1,000,000	0
Tranche 2	Loan_FI_0012	NOT COLLATERALIZED	3,000,000	48,000



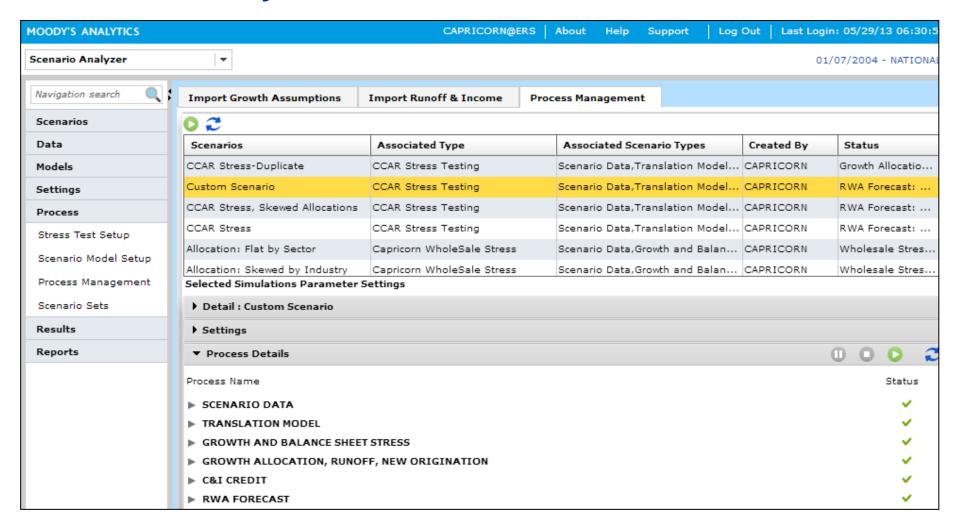


# Consolidate Regulatory Ratios: Capital, Financial and Liquidity Ratios



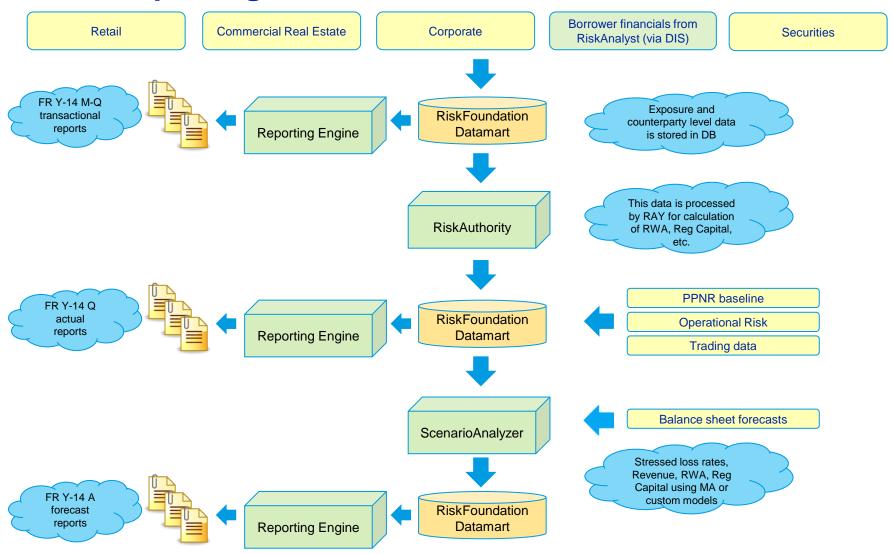


# **Scenario Analyzer**

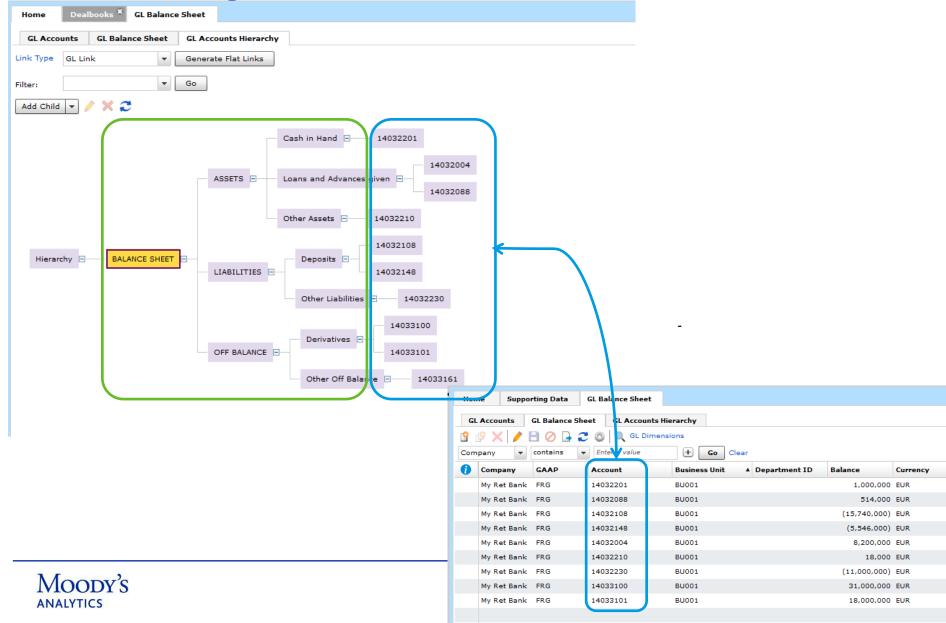




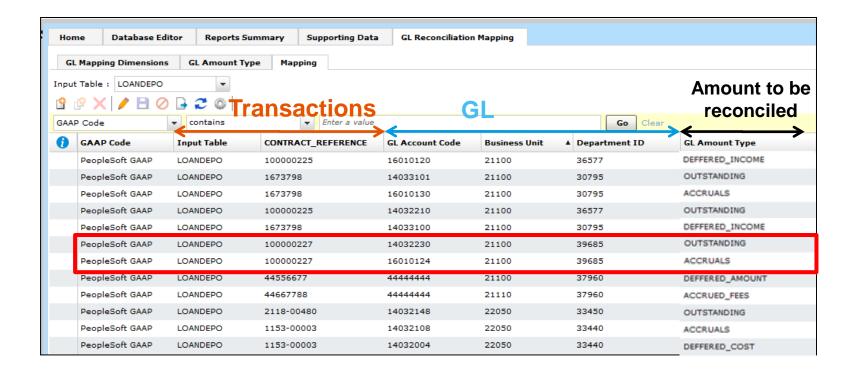
# **CCAR Reporting Workflow**



**General Ledger Information** 

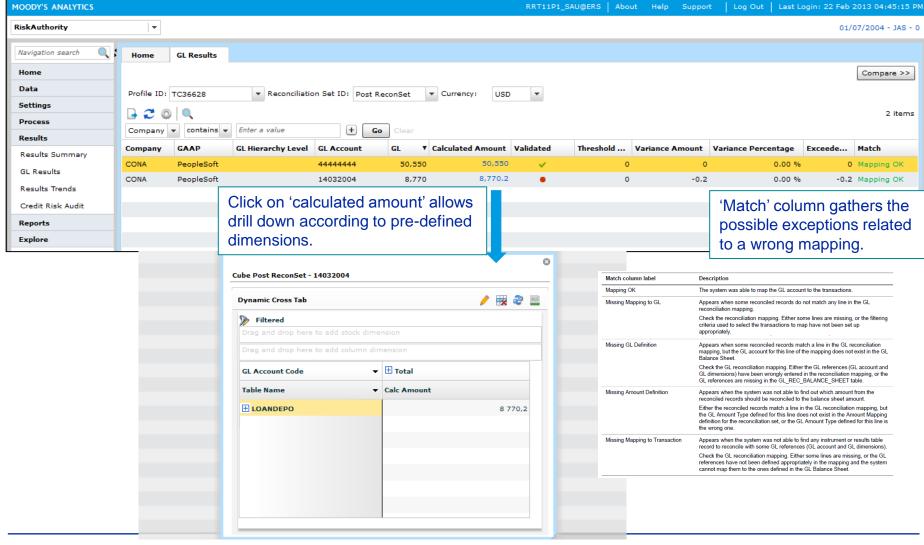


# **GL** Accounts vs. Transactions Mapping



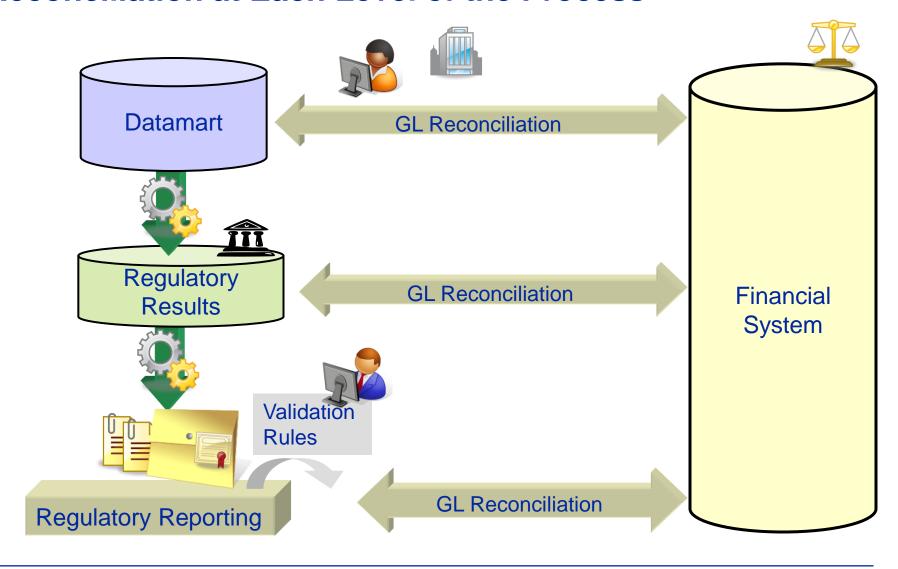


### **GL** Reconciliation Results



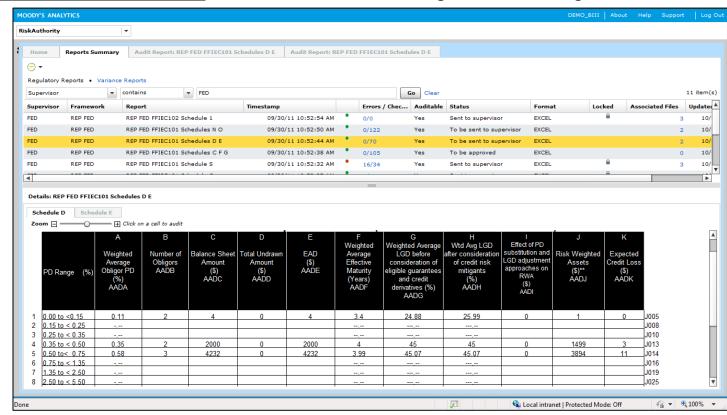


### **Reconciliation at Each Level of the Process**



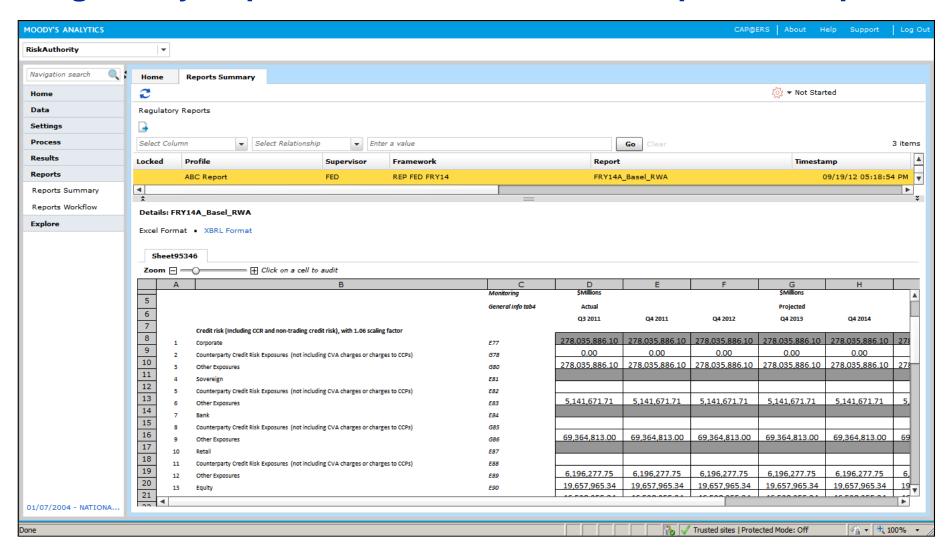
# Regulatory Reporting – FFIEC101, FR Y14 reports

- » Moody's delivers regulatory templates and publication rules <u>out-of-the-box</u>
- » Moody's delivers reports in the required regulatory format (ASCII, XML, ...)
- » Moody's maintains and updates its built-in rules when regulations change
- » FFIEC101
- » FFIEC31
- » FFIEC41
- FR Y-9C
- FR Y-14
- » FR Y-15



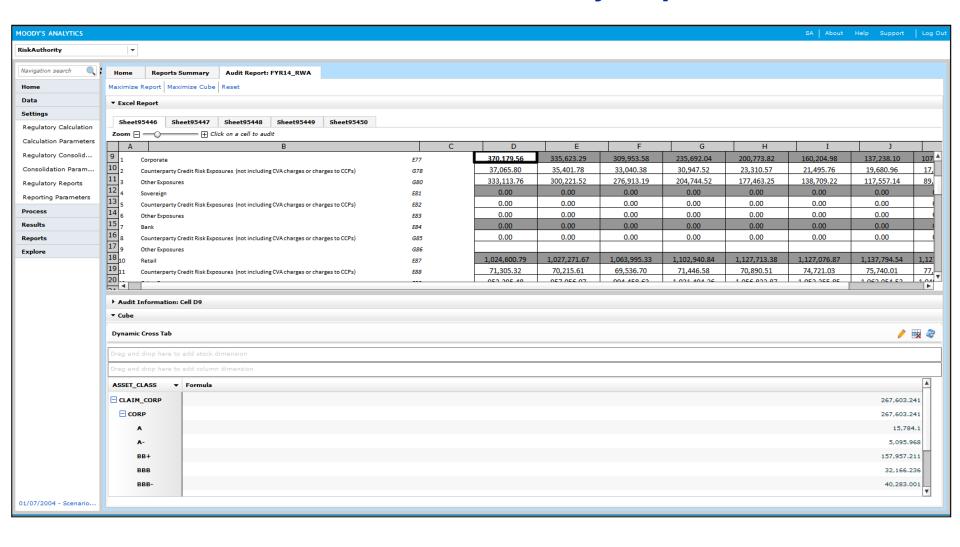


# Regulatory Reports are Published with Required Templates



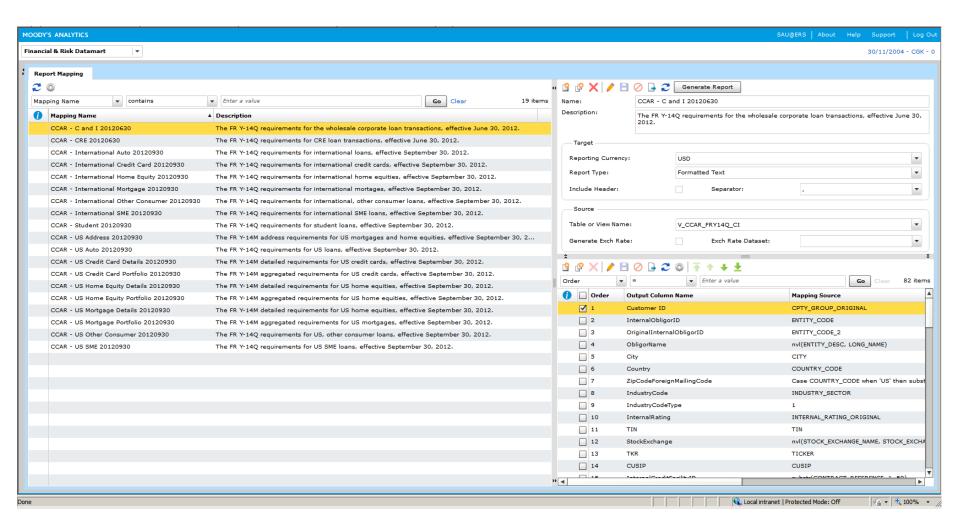


# **Drill-down Allows Users to Audit Any Report Value**





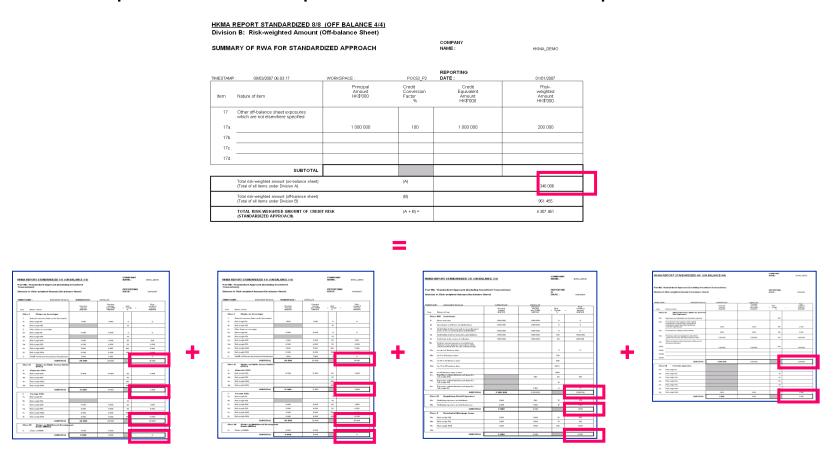
# FR Y-14 Q & M Reports: Off-the-shelf Mappings





# **Regulatory Reporting: Validation Checks**

• Intra Reports & Inter Reports validation rules are provided, such as:



As a result, a validation log is generated, reporting about inconsistent amounts.



October 29, 2013

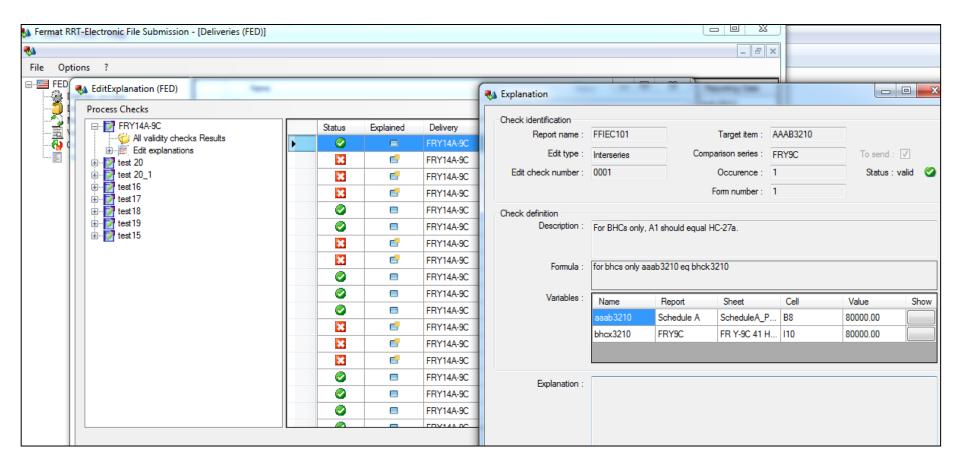
# **Regulatory Reporting: Validation Checks**

» Errors are detected by reports.

**ANALYTICS** 

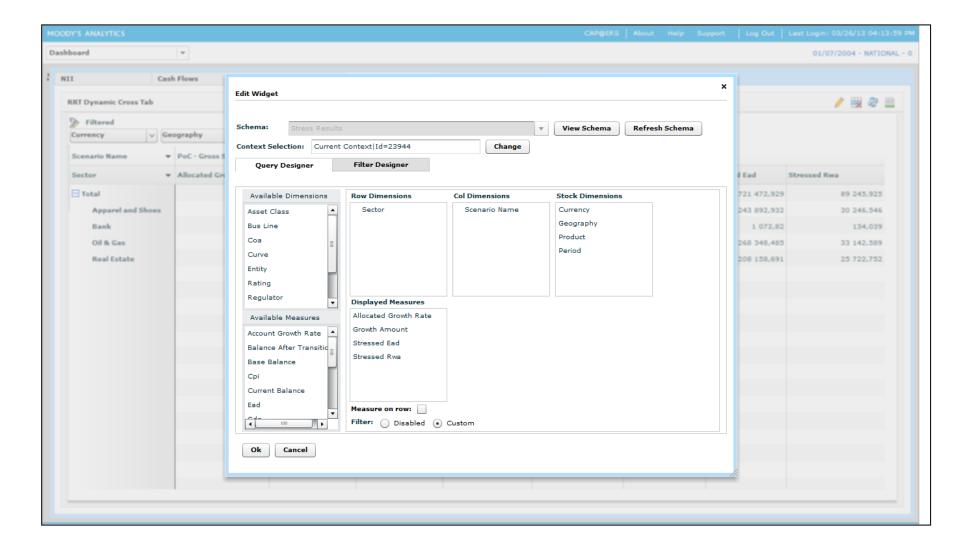
We provide and maintain official Validity ▲ Value Formula Status Checks from regulators and users can R30\_C130\_CRSA.010\_INSTITUTIONS Invalid -1000000 also create their own validation rules. [C130\_CRSA.010\_INSTITUTIONS] - [C130\_CRSA.011\_INSTITUTIONS] - [C130\_CRSA.012\_INSTITUTIONS] >= 0 CORPORATES INSTITUTIONS SECURED ON REAL ESTATE SOVEREIGNS TOTAL SA EXPOSURE CLASS Cells in error are highlighted and F Click on a cell to audit Zoom 🖂 🛶 formula are detailed. 43 980 000 -1 000 000 Format EXCEL - ENVELOPE - INSTANCE **Valuation Details** Formula ID: 149,310 Status: Invalid Value Reported: -1000000 Formula Rules Definition: [C130\_CRSA.010\_INSTITUTIONS] - [C130\_CRSA.011\_INSTITUTIONS] -[C130\_CRSA.012\_INSTITUTIONS] >= 0 Interpreted Rules Definition with Values: [-1000000] - [0] - [0] >= 0

# Validity Checks Ensure Intra/Inter Report Consistency and Reconciliation within Regulatory Reporting



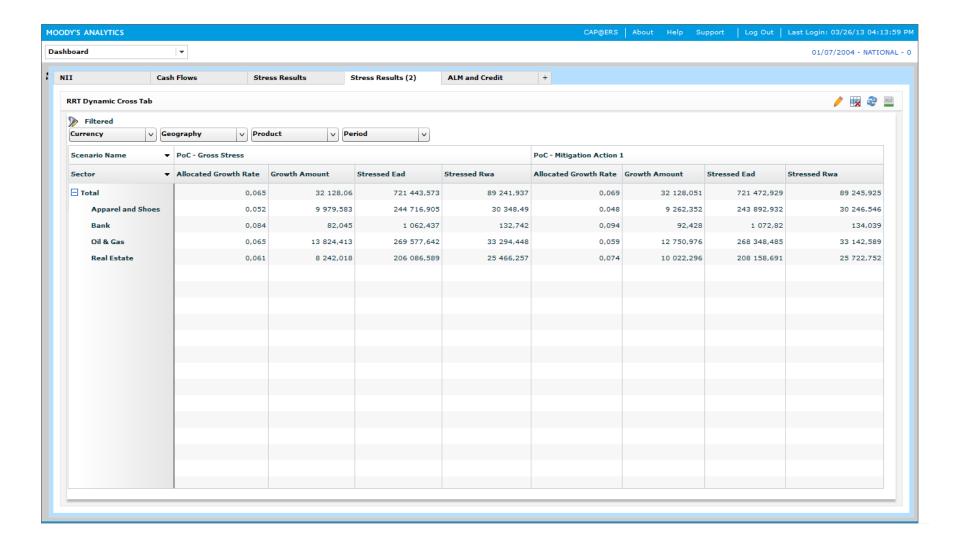


# **Create Reports Using Any Dimensions and Measures**



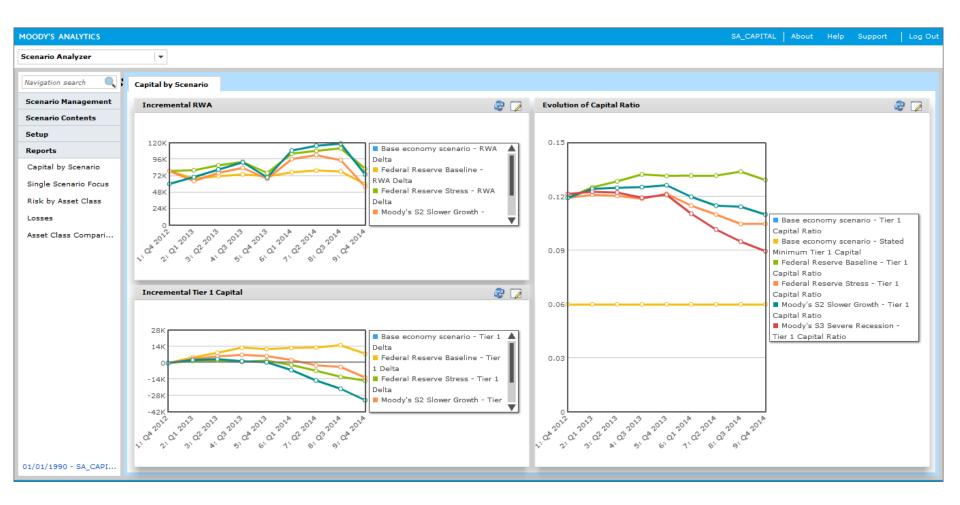


# **Create Reports Using Any Dimensions and Measures**





# **Create Dashboards Using Any Combination of Reports**







Q&A



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