

Governance, Risk & Compliance Applications

The KnowCo Stress-testing and ALM System



Overview

The KnowCo Stress-testing and Asset and Liability Management (KnowCo-ALM) system answers the following questions, and more:

- What will my LCR be in [90] days' time in Scenario [X]
- Which of my businesses will make/lose money over time, in Scenario [Y]?
- What are their respective Returns on Capital over time?
- How much Capital will I need in [Z] years' time?
- How do I stress-test credit concentration risk, and compare my internal number with the regulatory floor?
- What effect would margin compression have on my Net Income and Capital?
- What happens to my Earnings if interest rates rise steeply in the short term?
- What is the effect on Liquidity, Capital and Earnings if I introduce this new product (or deal)?
- How long will my liquidity last in an extended firm-specific stress scenario?
- What if my top [n] depositors ask for their money back?
- What transfer price should I apply to my new product?

K-ALM is modular and scalable:

Most users have started with the liquidity module only, and then over time chosen to implement either or both of the IRRBB and credit capital risk (Pillars 1 and 2A) options

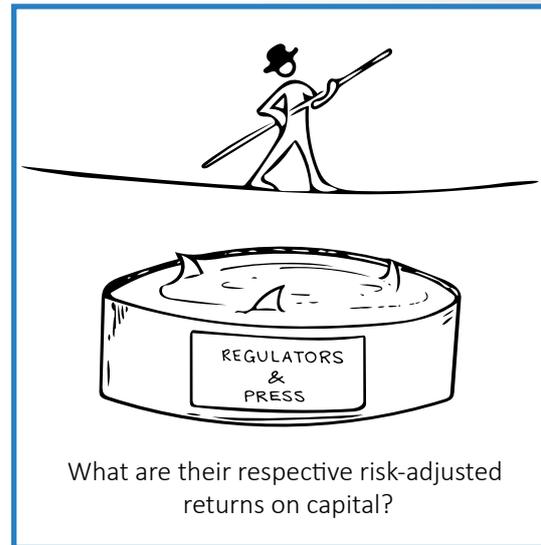
K-ALM is built on KnowCo's established solution set:

- A Stress Testing engine (KST) that enables the user to set up business plan scenarios and stress scenarios to establish the impact on liquidity, IRRBB and Credit Risk Capital (Pillars 1 and 2A) in a manner consistent with latest regulatory standards
- Balance Sheet Risk Management (BSRM) reporting enables the user to assess the impact of business and risk scenarios on liquidity, the P&L and Balance Sheet at Portfolio/Product/Report Line/Asset Class/Currency level
- Funds Transfer Pricing (K-FTP) allows the user to more actively manage the firm's liquidity risk profile over time in a manner compliant with internationally-recognised good practice



By using K-ALM, users are able to:

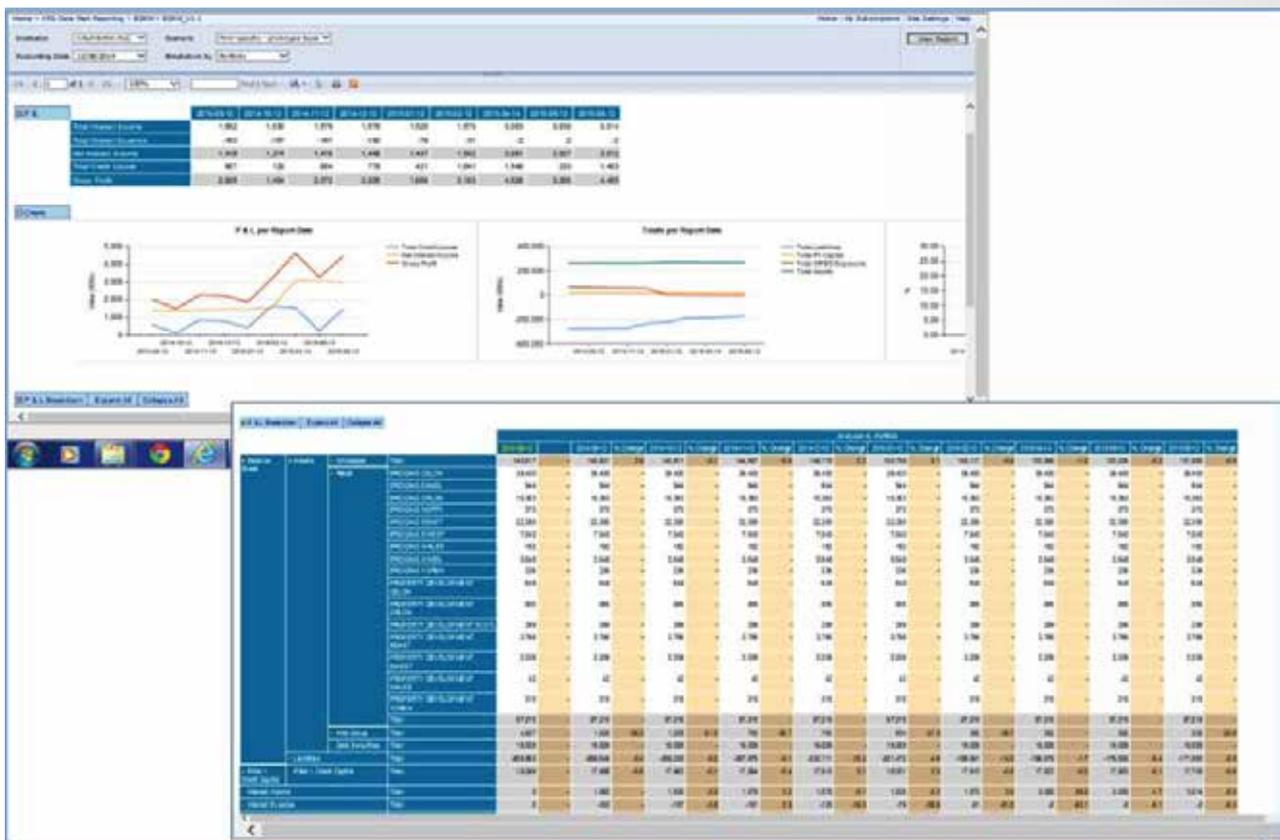
- Reduce the significant and fast-growing workload on risk and compliance professionals involved in ALM, business modelling and stress-testing
- Fulfil all relevant regulatory and best practice expectations, including the most recent standards (for example, credit concentration risk functionality and associated reports)
- Reverse Stress Test, using multiple variables
- Integrate risk and business modelling activities (e.g. for ICAAP)



Users can produce a set of performance and risk metrics and reports for day to day business and risk management, and in addition are able to drill down into more detailed information contained within these reports

Balance Sheet Risk Management

The balance sheet risk management reports (BSRM) enable at-a-glance visualisation of the results of integrated stress-testing and business modelling for ICAAP and viability, in cognisance of regulators' emphasis on this aspect of risk management:



The reports are built on a risk intelligence data repository (the KnowCo Reporting Datamart) which is populated from the results of the KnowCo Stress Testing engine. The summary results from the stress testing engine are shown below:

The screenshot displays the KALM software interface with the following data sections:

Scenario and Data

- Scenario: Firm-specific - prolonged base
- Status: Edit Mode
- Scenario Type: KST Base Scenario
- Reporting Currency: GBP '000
- Accounting Date: 12/08/2014
- Institution: KALM BANK PLC
- Stress Start Date: 12/08/2014
- Scroll Bal/Sheet, Current Pos: 12/08/2014

Documentary Products and Derivatives

T/F Off B/S Commitments	67,781.39
T/F On B/S Balance	0.00
OTC Derivatives Long	0.00
OTC Derivatives Short	0.00
OTC Derivatives Net	0.00
Exch Derivatives Long	0.00
Exch Derivatives Short	0.00
Exch Derivatives Net	0.00

Marketable Assets

Equities	0.00
Debt Securities	19,028.71
Commodities	0.00

Non Marketable Assets/Liabilities

Assets:	
Wholesale Assets	140,517.44
Retail Assets	97,214.84
IntraGroup Assets	4,826.61
Other Assets	0.00
Liabilities:	
Wholesale Liabilities	(111,525.77)
Retail Liabilities	(80,424.74)
IntraGroup Liabilities	(77,909.88)
Other Liabilities	0.00

Liquidity Results GBP '000

	Principal Cash Flow	Interest Cash Flow
12/09/2014	2,085.98	1,419.20
12/10/2014	(97.79)	1,373.55
12/11/2014	89.52	1,418.36
13/12/2014	(35,765.46)	1,447.86
12/01/2015	(10,477.95)	1,447.01
12/02/2015	(31,409.75)	1,541.76
14/04/2015	(3,161.17)	3,080.79
13/06/2015	(10,079.15)	3,027.36
12/08/2015	(4,956.87)	3,012.11

Capital Results GBP '000

	Pillar 1 Capital	Pillar 2A Capital
12/09/2014	17,987.96	586.59
12/10/2014	17,962.66	120.31
12/11/2014	17,893.92	853.70
13/12/2014	17,914.55	778.37
12/01/2015	18,000.81	420.87
12/02/2015	17,910.03	1,641.06
14/04/2015	17,821.68	1,547.67
13/06/2015	17,803.05	232.92
12/08/2015	17,700.09	1,452.76

Business Modelling and Stress Testing in K-ALM

K-ALM allows a user to create and define bespoke forecasting and stress parameters that will compute liquidity and capital requirements, and the effects of interest rate stresses and credit impairments on earnings, under a potentially unlimited number of scenarios. It enables users to apply a wide range of tests to their current and projected balance sheet and cashflows, including the behavioural modelling of cash flows with no contractual maturity.

Data is captured at cash-flow level, while risk drivers and stress parameters are applied at segment level (portfolio, product, regulatory report line, etc.) and at account, client and connected counterparty level (for concentration risk assessment and large-exposure stress- testing).

Loading Pre-defined Scenarios

Once created, scenarios can be saved and applied to different data sets as required. A set of scenario templates, based on the stress parameter benchmarks set by regulators, is also provided to support the definition of the scenarios.

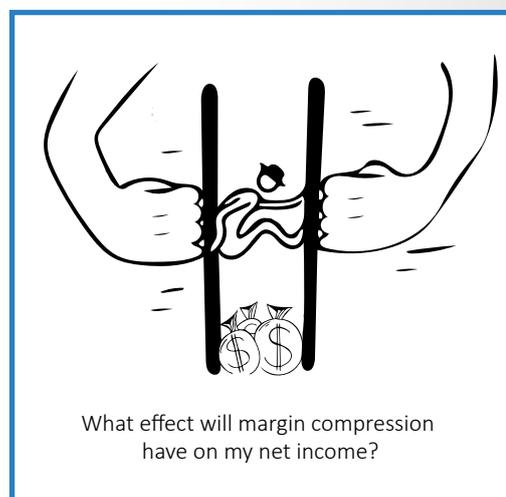
Understanding the Impact of a New Product or Deal on Liquidity, Capital and Earnings

Financial flows derived from a potential new product or deal can be input into the system and the impact on Liquidity, Capital and Earnings is provided through the BSRM reports.

Range of Stress Parameters

K-ALM allows the user to stress and model:

- Non-marketable Assets, Wholesale and Retail, including credit concentration risk
 - Marketable Asset risk (for example Securities, Equities, Commodities, Derivatives etc.)
 - Wholesale and Retail Liabilities, including funding concentration risk
 - Intra-Group Assets and Liabilities
 - Off-balance sheet items (such as guarantees and Letters of Credit)
 - Cross-currency risk
 - Interest-rate risk – basis risk, yield curve risk, optionality and repricing
 - Over different intervals and horizons e.g. 30 days for Basel III LCR-type scenarios, 5 years for business planning - these and other common horizons are in-built, and new horizons can be easily created by the user.
- Hidden intra-bucket peaks and troughs in liquidity are revealed by the Daily Cash Flow Report



Reverse Stress Testing

The Reverse Stress Testing functionality allows the user to generate scenarios stressing multiple variables in automated iterations until given capital, liquidity or earnings-at-risk resources are depleted. Other possible uses of the reverse stress-testing functionality include:

- Allowing the user to determine what type of business growth can be achieved with the capital and liquidity resources in hand and planned;
- Allowing the user to test how sensitive portfolios are towards certain risk drivers.



Additional Management Reports

In addition to the BSRM reports, the data collected in the Datamart is rich in detailed, cash data for both contractual maturities and scenarios. MI reporting for liquidity gaps, capital buffers, risk appetite, early-warning signals monitoring and other BSRM reports can be produced from the Datamart. A combination of high-level and detailed reports in the form of dashboards and drill-downs, which can be customised to suit the client's management requirements are facilitated by the use of the Datamart.

The following screens show examples of risk profile reports produced:

Liquidity Monitoring

Daily Liquidity Buffer Monitoring

Liquidity Gap Reports

ILG Summary

Scenario PRA ILG Scenario : Accounting date 20160103

Result	ALL CURRENCIES	GBP	USD	EUR
Buffer Stock Held Over 3 Months	123,700,000.00	123,700,000.00	0.00	0.00
Maturity				
Total WHL Requirement	(55,459,706.27)	(5,392,303.97)	(89,164,704.47)	0.00
Buffer Position net of WHL Requirement	68,240,293.73	118,307,696.03	(89,164,704.47)	0.00
Total Non WHL Requirement	(6,935,314.04)	(1,494,068.48)	(5,293,909.55)	(400,626.20)
Intraday Fixed Add-on	(4,500,000.00)	0.00	0.00	0.00
Concentration risk	(9,436,000.00)	0.00	0.00	0.00
Systems and Controls	(4,340,000.00)	0.00	0.00	0.00
Additional Buffer Requirement	0.00	0.00	(95,458,614.02)	(400,626.20)
Excess Buffer	43,928,979.69	116,813,627.55	0.00	0.00



Top n Depositors Walk-out

Home > Demo Reports > Top Depositors

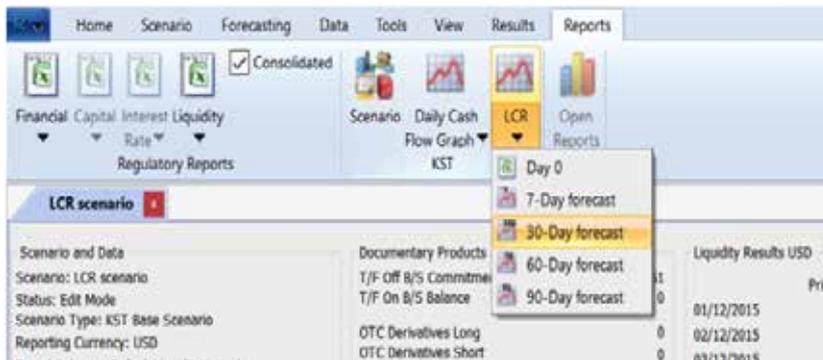
Top Depositors

DEMO_BANK3 As At 20150630 for 20 depositors, evaluated by Liabilities

Rank	Client	Amount	% of Total
811		25.20	
250		22.41	
537		5.26	
440		4.83	
082		4.33	
227		2.96	
499		2.20	
031		1.71	
341		1.71	
922		1.63	
319		1.62	
629		1.45	
904		1.39	
056		1.35	
241		1.11	
094		1.03	
033		0.92	
590		0.89	
349		0.83	
279		0.76	



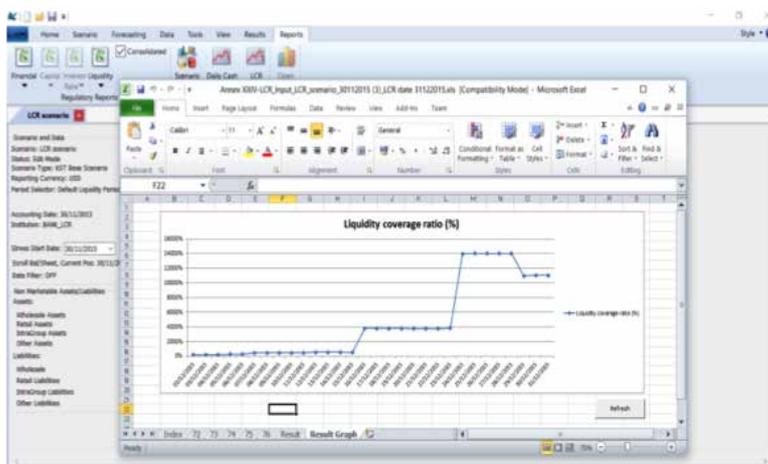
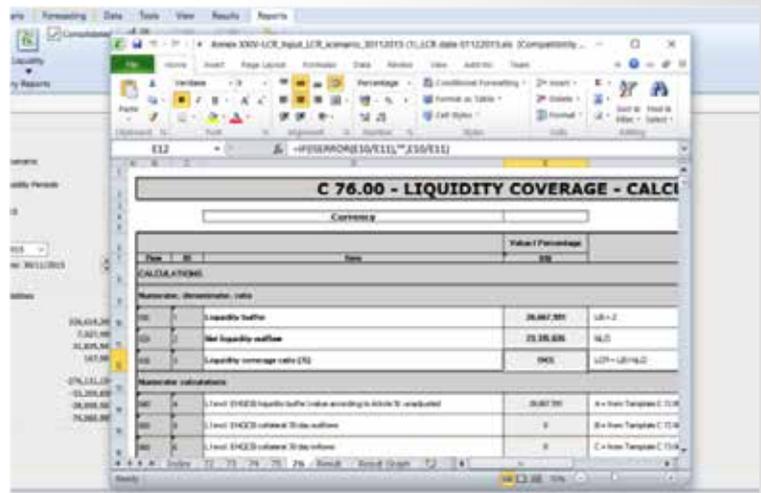
Daily and Forecast LCR



LCR Day 0 gives you the LCR as-at Accounting Date

LCR N-Day forecast is forward-looking and gives you the LCR values for each day after the Accounting Date under a stress scenario

Allows you to generate an EBA LCR template for each date



Shows potential high/low LCR points under any stress scenario

KnowCo HHI Credit Concentration Risk

DEMO_BANK_2: Scenario - (Input Data) AccountingDate - 31/03/2015 Report Date - 31/03/2015 CCR Portfolio - (All)

FSA078 - Concentration Risk - Minimum Data Requirements			
Concentration risk type	Total RWIA	HHI	
Single Name	1,883,575.3	2.41	
		77	
Sector	1,883,575.3	100.00	
		77	
Geographic	2,213,850.0	66.78	
		88	

FSA079 - Concentration Risk - Additional Data Required							
Top 20 Single name exposures	EAD	RWIA	Sovereign	CCP?	Sector Distribution	EAD	RWIA
Wissae2	22,181,099	88,924,885	N	N	Unknown	479,752.84	1,883,575.3
Srtan1	20,000,000	40,000,000	N	N		3	77
TQid1	18,979,168	112,369,795	N	N			
			5				
Lessa7	15,427,998	102,103,992	N	N			
			2				
PfFce1	15,000,000	37,500,000	N	N			
Ofrs1	14,800,000	29,600,000	N	N			
Ael s1	13,128,324	88,871,301	N	N			
FmPa1	12,333,333	24,666,666	N	N			
Bredd1	11,032,025	28,840,081	N	N			
SUU2	11,597,551	28,094,490	N	N			
Cfsho1	11,597,551	28,094,490	N	N			
Zril e2	10,842,335	71,755,837	N	N			
MND1	10,000,000	82,500,000	N	N			
DyGp1	10,000,000	82,500,000	N	N			
Caest3	10,000,000	82,500,000	N	N			
lptat1	10,000,000	25,000,000	N	N			
Acmsa1	10,000,000	25,000,000	N	N			
Cr in1	10,000,000	25,000,000	N	N			
Eras1	8,300,000	18,600,000	N	N			
Hine1	7,739,212	17,413,227	N	N			

Sector Distribution		
	EAD	RWIA
Unknown	479,752.84	1,883,575.3
		3
		77

Geographic Distribution		
	EAD	RWIA
Unknown	424,098.88	1,704,258.8
		2
		42
Middle East and North Africa	72,524,279	295,915.85
		6
United Kingdom	35,037,390	153,080.38
		7

About KnowCo

KnowCo provides Governance, Risk and Compliance ('GRC') support to financial institutions in UK, Europe, the Middle East and Africa.

This support is across the organisational spectrum from GRC strategy, through the policy and process-system infrastructure, to assurance and risk intelligence.

Our value proposition is based on a combination of regulatory and technical GRC subject-matter expertise and pragmatic, proportionate delivery and implementation skills.

Our ALM and risk management applications help banks and other institutions deal more quickly and cost-effectively with business and GRC challenges.

Please contact us for an informal discussion

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