



6 Sigma Group

Portfolio Risk Rating and Stress Testing

The Practical Application of Credit Risk Management

Bankers serving Bankers

List of Attributes

Superior in Every Respect



Superior Functionality

- Ability to import existing portfolio data
- Fully IFRS 9 Compliant with no Overlays
- Basel III & IV Compliant
- APIable with other systems
- End-to-End Digital Processing
- AML and KYC friendly Obligor Database
- Cross Reference Obligor, Buyer, Seller, Affiliate data
- Integrated Financial Analysis module
- PIT and Cash Flow Centric



Superior Analytics

- Financial Modeling capabilities
- System Generated ORR, FRR, PRR, ECL, RORAC and RAROC
- Project Finance Assessment and Evaluation Capabilities
- Obligor Facilities and Collateral data Integration
- Fully Integrated Credit Application Module
- Multiple Reports covering all risk and management requirements



Superior Credit Admin

- Multiple Notification Capabilities across bank
- Full Credit Administration Capabilities
- Dual Maker Checker Capabilities
- Linked Documentation
- Full reporting capabilities and Data Dump for Central Bank reporting



Superior Exposure Mgt

- Automated CA fill-in
- Automated Portfolio Limit Checking
- Credit Process mirrors bank's process and adds multiple dimensions
- Digital CA approval capable
- Complete and fully integrated Facilities and Collateral Management
- System accommodates drawdowns, repayments, extensions, collections, etc.
- SWIFT connection ready
- Automated ticklers
- Automated Client communication - bank specific

PRR & Stress Testing

Core Features

A fully user parametrized system:

Rationale

Portfolio Management is an integral part of the credit process that enables the Bank to manage concentrations, volatility, liquidity and achieve optimum earnings. It does so through portfolio strategies and planning, performance assessment and reporting functions into one comprehensive management process.

Basel Guidelines on Managing Credit Risk (Principle 12):
Banks to adopt systems to monitor composition & quality of portfolio

Closer monitoring of Concentration by:

- Single Obligor
- Group of connected obligors
- Products
- Particular industry or economic sector
- Geographic region
- Individual foreign country or countries with related economies
- Credits with same maturities

PRR Module designed to assess portfolio risk rating, measure ECL & develop strategies

- ORR and FRR
- RAROC and RORAC both Authorized and Outstanding
- Concentration Authorized and Outstanding
- Capital Adequacy (IRB and STD) and PRR measurement
- Breakdown by Industry, Facility, Collateral, Country etc.
- Stress Test the results

- IFRS 9
- PRR Calculation**
- Stress Testing
- Scenario Planning
- Import Log
- PD Calc

Analysis by Industry- Authorized

INDUSTRY	AUTHORIZED	EXP AT RISK	IRB CA	STD CA	RAROC	RORAC %	OBLIGORS	PRR
Finance - Credit Intermediation & Related Activiti	417,109,969	417,109,969	465,410,800	41,710,997	(44,601,867)	(100%)	11	8.00
Manufacturing - Miscellaneous	56,200,000	11,400,000	9,318,976	1,140,000	(1,229,891)	(141%)	2	7.97
Wholesale Trade - Durable Goods	238,703	238,703	184,499	23,870	(18,883)	(105%)	1	7.94
Retail Trade - Motor Vehicles & Parts Dealers	100,000	50,000	29,768	5,000	(3,325)	(113%)	1	7.79
Manufacturing - Chemical	17,000,000	10,600,000	5,576,675	1,060,000	(514,884)	(94%)	2	7.75
Manufacturing - Food	6,485,000	6,445,000	2,725,414	551,358	(247,338)	(88%)	3	7.61
Transportation - Air	6,607,730	6,607,730	1,905,715	480,415	(139,640)	(65%)	4	7.40
Manufacturing - Primary Metals	36,520,092	36,520,092	6,688,025	3,651,000	(667,393)	(87%)	3	7.11
Construction - Heavy & Civil Engineering	1,000	1,000	179	100	(12)	(54%)	1	7.07
Agriculture - Crop Production	63,318,866	63,268,866	10,256,686	6,326,793	(810,342)	(66%)	8	7.04
Manufacturing - Machinery	3,623,507	3,623,507	591,322	328,257	(38,406)	(49%)	1	7.01
Finance - Securities, Commodity Contracts & Other	66,335	66,335	10,661	4,059	(685)	(48%)	1	7.00
Retail Trade - Food & Beverage	1,300,000	260,000	30,431	26,000	(3,996)	(111%)	1	6.78
Wholesale Trade - Nondurable Goods	150,000,000	150,000,000	13,080,885	15,000,000	(866,063)	(47%)	1	6.54
Manufacturing - Electrical Equipment, Appliances	5,446,623	1,089,325	83,572	93,717	7,270	97%	1	6.44
Manufacturing - Leather & Allied Products	10,220,000	3,820,000	279,669	380,661	(3,192)	4%	1	6.37
Utilities	7,390,818	7,390,818	236,931	667,510	(15,614)	(41%)	4	5.38

[Dashboard](#)
[Obligors](#)
[Exposures](#)
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IFRS 9	PRR Calculation
PRR	Stress Testing
PD Calc	Scenario Planning
	Import Log

Portfolio Capital Adequacy

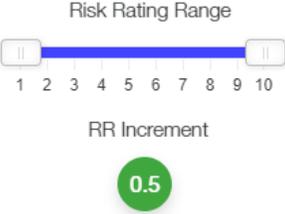
PORTFOLIO CAPITAL ADEQUACY	AUTHORIZED		OUTSTANDING	
	BEFORE STRESS TESTING	AFTER STRESS TESTING	BEFORE STRESS TESTING	AFTER STRESS TESTING
Capital Adequacy Expected Loss	254,607,880	322,962,621	1,804,319	1,048,558
Capital Adequacy Unexpected Loss	262,380,924	247,588,314	2,496,178	1,185,413
Exposure & Outstanding at Risk Totals	814,429,668	814,429,668	102,293,175	102,293,175
PRR Expected Loss	7.84	8.00	6.01	7.21
Unexpected Loss % EAR & OAR	32%	42%	2%	10%
Standardized Approach Capital Charge	81,043,569	58,945,156	10,100,724	1,090,812

Historical Risk Adjusted Return on Capital

HISTORICAL RAOC	AUTHORIZED		OUTSTANDING	
	BEFORE STRESS TESTING	AFTER STRESS TESTING	BEFORE STRESS TESTING	AFTER STRESS TESTING
Total Revenue	1,693,745	392,990	647,141	57,402
Cost of Funding	(1,319,550)	(121,683)	(410,971)	(78,613)
Total Net Revenue	374,196	271,307	236,170	(21,211)
Gross Margin %	22%	69%	36%	(37%)
Operating Expenses	(187,098)	(135,653)	(118,085)	10,605

Print Export Generate

- IFRS 9
- PD Calculator**
- PRR
- RR Validator
- PD Calc



Saved Reports

Criteria

Backstop Value

Saved Criteria

[Save](#) [Delete](#)

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PRR Data Source Details

EMM Data Imported On: 23 Feb 2023 07:47:00 AM Month of Dump File: 2 Generated On: 23 Feb 2023 07:51:24 AM

From	To	# Obligors	PD Rate
1.00	1.50	0	0 %
1.51	2.00	0	0 %
2.01	2.50	0	0 %
2.51	3.00	0	0 %
3.01	3.50	0	0 %
3.51	4.00	1	0 %

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Risk Management - CAR

Portfolio Capital Adequacy

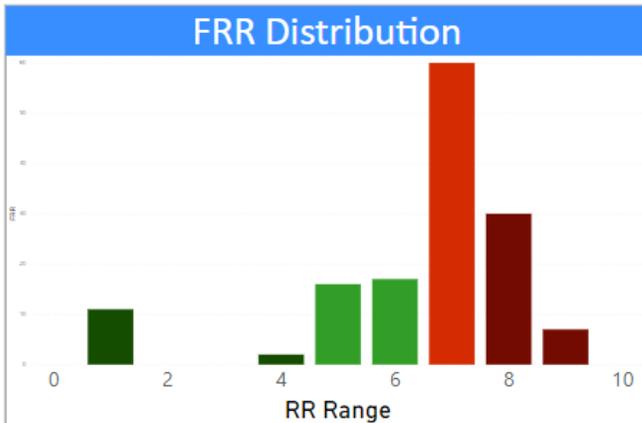
Authorized Concentration Calculation

Excess Utilization Information

Analysis By Industry

Stress Testing

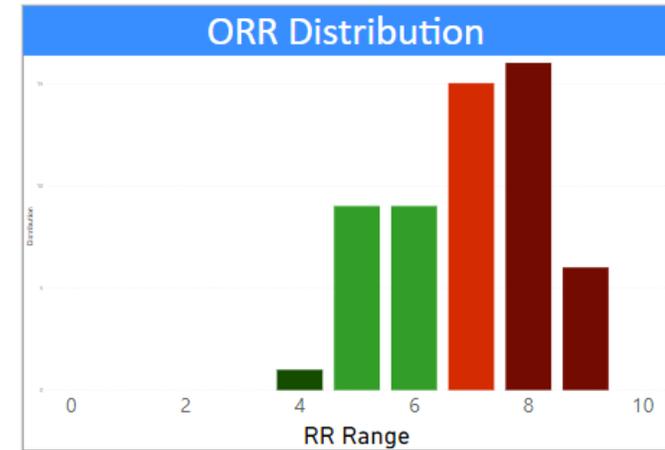
FRR Distribution



Portfolio Capital Adequacy

PRR EL Authorized	7.45
PRR EL O/S	7.45
CA EL Authorized	65,312,651.14
CA EL O/S	38,273,556.13
CA UL Authorized	71,493,907.09
CA UL O/S	41,480,353.63
Total EAR Authorized	452,339,565.63
Total EAR O/S	264,763,887.13
Std. Approach Charge Authorized	44,742,758.16
Std. Approach Charge O/S	26,437,417.89
Single Granulated CA Authorized	190,907.12
Single Granulated CA O/S	160,542.12

ORR Distribution



Implementation

Roll-out

*14 days
Fully Loaded*

Systematic roll-out with full support.

- Fully managed environments on cloud
- Regular releases and upgrades
- Cloud infrastructure and tools; underlying infrastructure (database, operating system, app servers)
- IT Operations and BAU services, including WAF monitoring

Development, Test and Production Environments

- Provision environment for integrations and development
- Provision environment for 6 Sigma testing and sign off
- Environment to support incident management & analysis...

Release, Upgrades

- Frequent Updates
- Frequent hotfixes
- Monthly / Quarterly service packs and patches

Includes:

- Azure Run Costs as an option
- Underlying technology: SQL, Microsoft licenses, WAF
- Cloud tools: Azure Backup, Azure Site Recovery, DB

Implementation

- Installation 14 days premise or cloud
- Fully loaded with default settings plus Loss Norm table
- UAT process to include training and Configurations
- Sign off and shift to Production within 5 business days
- Ongoing 6 Sigma Account Management support

Structure

On Premise or Cloud

Cloud



Load Balancers
for users > 500

Applications
Windows IAS

On Premise



Database Layer
Microsoft SQL

Technology Stack		
#	Category	Details
1	Client	Standard Web Browsers (MS Edge and Google Chrome)
2	Hardware	Intel X86-64
3	Application Server OS	Windows 2019
4	Database Server OS	Windows 2019
5	Database	SQL
6	Reporting	ActiveReports
7	Developer Login	Bastion
8	Monitoring	Site 24x7 / Azure Monitoring Tools
9	Backup	Azure Backup / Veeam
10	DR	Azure Site Recovery / Veeam Replica
11	WAF	Sucuri

Western Europe,
Asia Pacific, USA

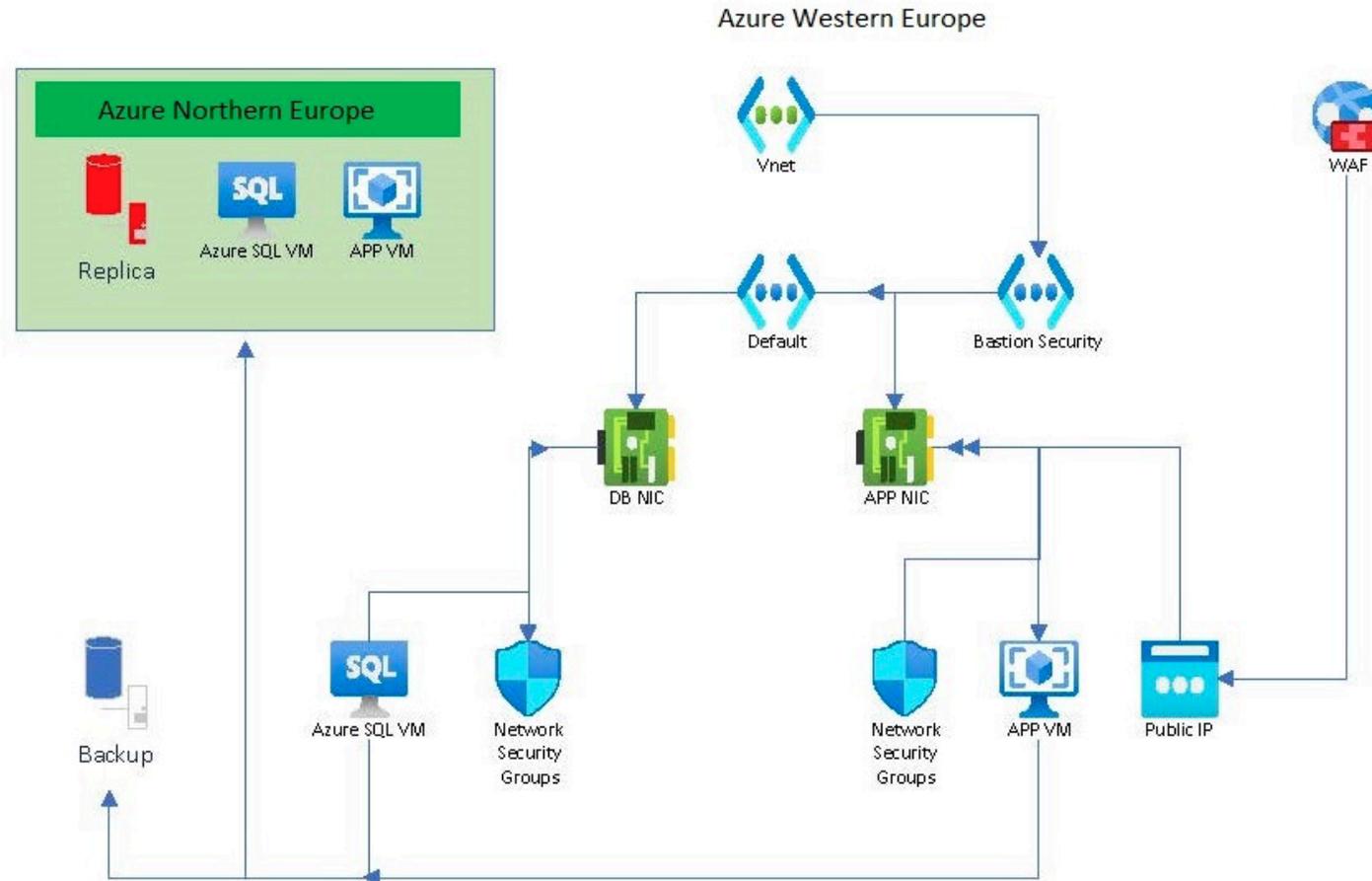
Schematic

Systematic roll-out with full support.



CRMS Network Diagram

Fully Flexible



BU and DR

Backup and Disaster Recovery

Backup

Leverage Cloud Native tools:

- Azure Backup Service
- Azure Recovery Vault



Disaster Recovery

Azure Site Recovery for VMs **SQL**
for Database



Leverage Cloud Native tools (ASR)

- 15 minutes Recovery Point Objective (RPO)
- All changes replicated to another region
- PaaS deployed active across two regions

*Best
Practice*

The Rules: Virtual Machine (Web and DB)

- Daily: Full backups are done daily and are retained for a minimum of 30 days.
- Weekly: Weekly backups are retained for a minimum of 5 weeks.
- Monthly: Monthly backups, which include the last and first day of the month, are retained for a minimum of 13 months.
- Yearly: Yearly backups, which include the last and first day of the year, are retained for a minimum of 7 years (GDPR)