Dow Corning's Counterparty Risk Solution

- Why did we do this?
    - Historical approach was reactive vs. proactive
    - Counterparty Limits were based upon relationships vs. underlying fundamentals

- How did we do this?
    - Made it a priority
    - Created a cross-functional team from Credit Risk Management and Treasury

- Solution framework is based upon two elements:
1. Risk Limit Model
    - In-house quantitative measures
    - Market leading credit risk measurement tools
    - Independent sources of counterparty and default risk metrics
        - Balance Sheet health at Parent and Subsidiary
        - Regulatory Requirements, including Basel III Risk Ratios
    - Monitors counterparty & sovereign risk

2. Dashboard

Dow Corning Risk Limit Model

Credit Ratings
25%

Probability of Default
25%

Dow Corning Intangible
10%

CFS Quantitative Measure
40%
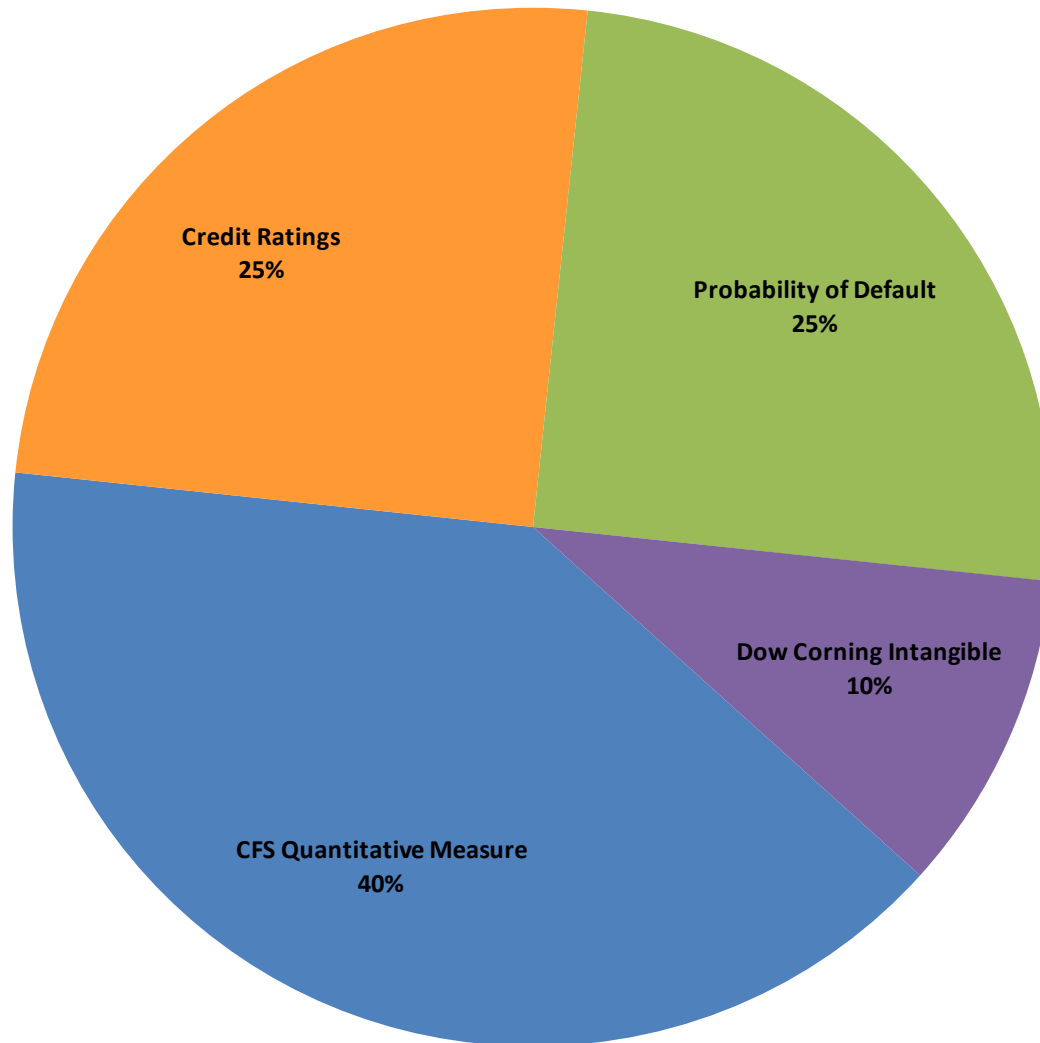
Methodology Explained – Credit Ratings

Credit Ratings = 25% Weight

•The stronger the credit rating, the higher the score

•S&P Short Term & Long Term Ratings – measures only the probability of default

•Moody's Short Term & Long Term Ratings – measures total expected losses

Dow Corning assigned score

S&P ST	ST Score	Moody's ST	ST Score	S&P LT	LT Score	Moody's LT	LT Score
	5		5	AAA	5	Aaa	5
A-1+	5		5	AA+	5	Aa1	5
	5	P-1	5	AA	5	Aa2	5
	5		5	AA-	4.75	Aa3	4.75
A-1	5		5	A+	4.5	A1	4.5
	5		5	A	4.25	A2	4.25
A-2	2	P-2	2	A-	4	A3	4
	2		2	BBB+	3.5	Baa1	3.5
A-3	0	P-3	0	BBB	3	Baa2	3
	0		0	BBB-	2.5	Baa3	2.5
	0		0	BB+	0	Ba1	0
	0		0	BB	0	Ba2	0
B	0		0	BB-	0	Ba3	0
	0		0	B+	0	B1	0
	0		0	B	0	B2	0
	0	Not Prime	0	B-	0	B3	0
	0		0	CCC+	0	Caa1	0
	0		0	CCC	0	Caa2	0
C	0		0	CCC-	0	Caa3	0
	0		0	CC	0	Ca	0
	0		0	C	0	C	0
	0			D	0		0

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Methodology Explained – Probability of Default

Probability of Default = 25% Weight

- The lower the probability of default, the higher the score
- Bloomberg derived – assigns a default risk measure as a high-level summary of their credit health and is balance sheet focused
- Default defined as the first of the following: failure to pay interest/principal on an interest bearing bond, bankruptcy filing, or FDIC takeover
- Takes into consideration off balance sheet risks (SPVs, trusts, & conduits)
- Short Term = 1 year probability of default
- Long Term = 5 year probability of default

*Probability of Default is at the parent level

Bloomberg Credit Risk Scale	Default Likelihood Range		ST Score	LT Score
Investment Grade-1	0.0000%	0.0020%	10	10
Investment Grade-2	0.0020%	0.0040%	10	10
Investment Grade-3	0.0040%	0.0080%	10	10
Investment Grade-4	0.0080%	0.0152%	10	10
Investment Grade-5	0.0152%	0.0286%	10	10
Investment Grade-6	0.0286%	0.0529%	10	10
Investment Grade-7	0.0529%	0.0960%	9.5	10
Investment Grade-8	0.0960%	0.1715%	9	10
Investment Grade-9	0.1715%	0.3001%	8.5	9.5
Investment Grade-10	0.3001%	0.5200%	8	9
High Yield-1	0.5200%	0.8800%	7	8
High Yield-2	0.8800%	1.5001%	6	7
High Yield-3	1.5001%	2.4000%	5	6
High Yield-4	2.4000%	4.0001%	4	5
High Yield-5	4.0001%	6.0001%	3	4
High Yield-6	6.0001%	10.0001%	2	3
Distressed-1	10.0001%	15.0001%	0	0
Distressed-2	15.0001%	22.0001%	0	0
Distressed-3	22.0001%	30.0001%	0	0
Distressed-4	30.0001%	50.0001%	0	0
Distressed-5	50.0001%	99.9990%	0	0
DDD	99.9990%	100.1000%	0	0

Dow Corning assigned score

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Methodology Explained – Dow Corning Intangible

<u>Dow Corning Intangible</u> = 10% Weight

This score is at the discretion of the Global Cash and Investments Committee and can include some or all of the following:

- Relationship
- Earnings credit
- Global lending
- Country risk, e.g. US domiciled vs. other locations, etc.
- Thought leadership
- Other services

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Methodology Explained – Quantitative Model

Quantitative Model = 40% Weight

This portion of the methodology is based on the rating agency guidance for banks.

- Profitability Measures:
    - Pre-Provision Profits as a % of Average Risk Weighted Assets
    - Net Income as a % of Average Risk Weighted Assets

- Capital Adequacy Measures:
    - Tier 1 Ratio
    - Tangible Common Equity as a % of Risk Weighted Assets
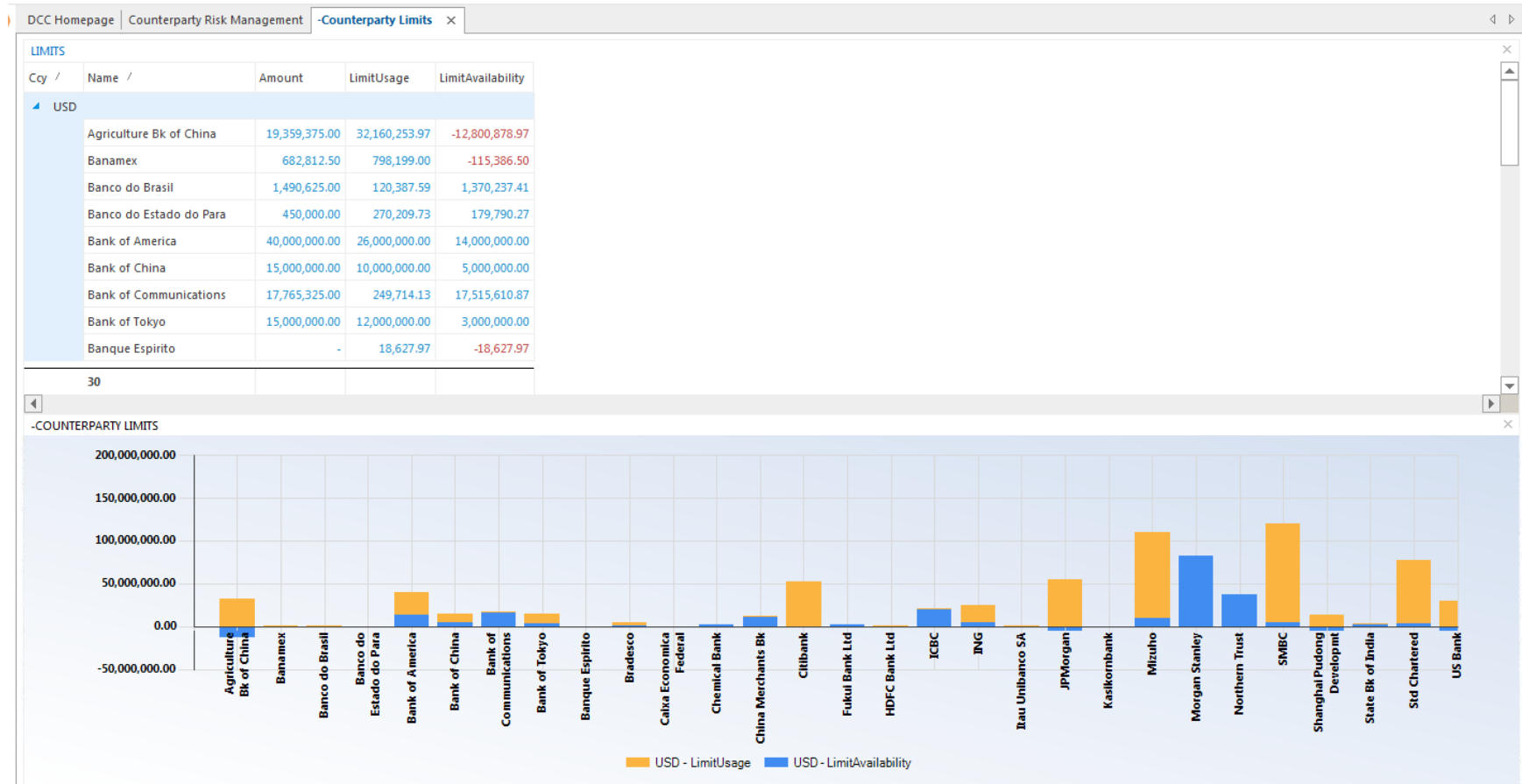
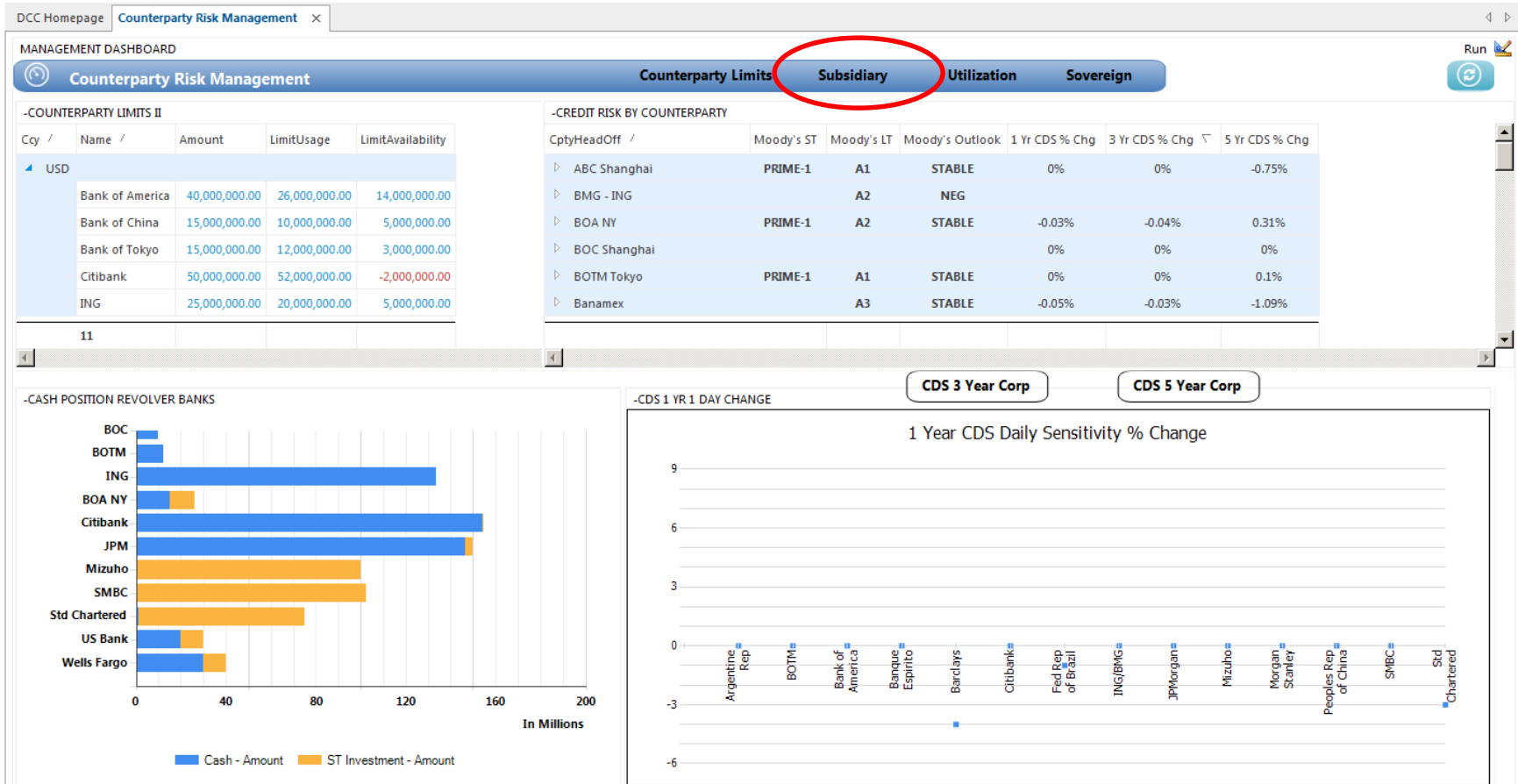- Efficiency Measure:
    - Cost/Income Ratio

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Counterparty Risk Management Dashboard
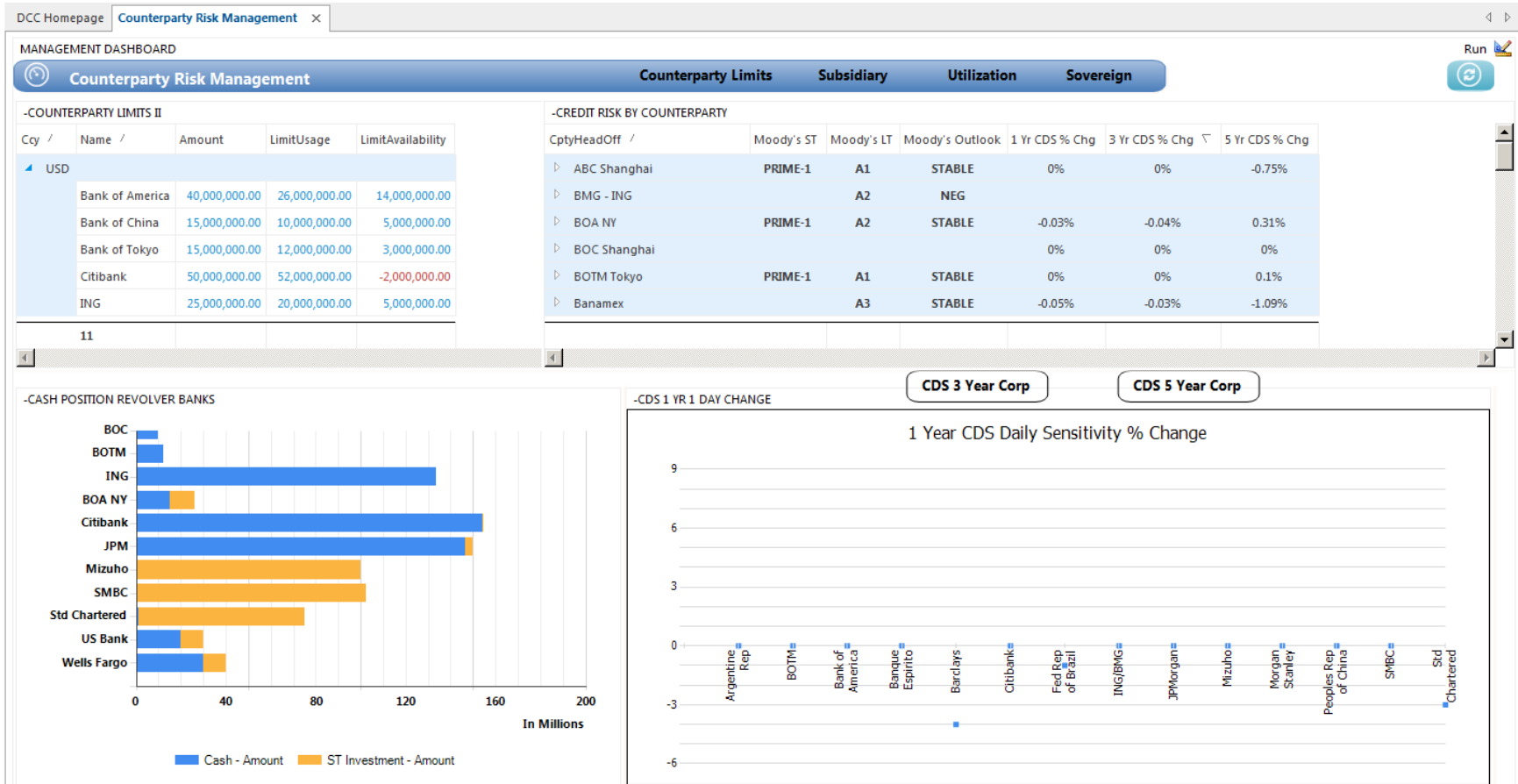
Counterparty Risk Management Dashboard

Counterparty Limits – All

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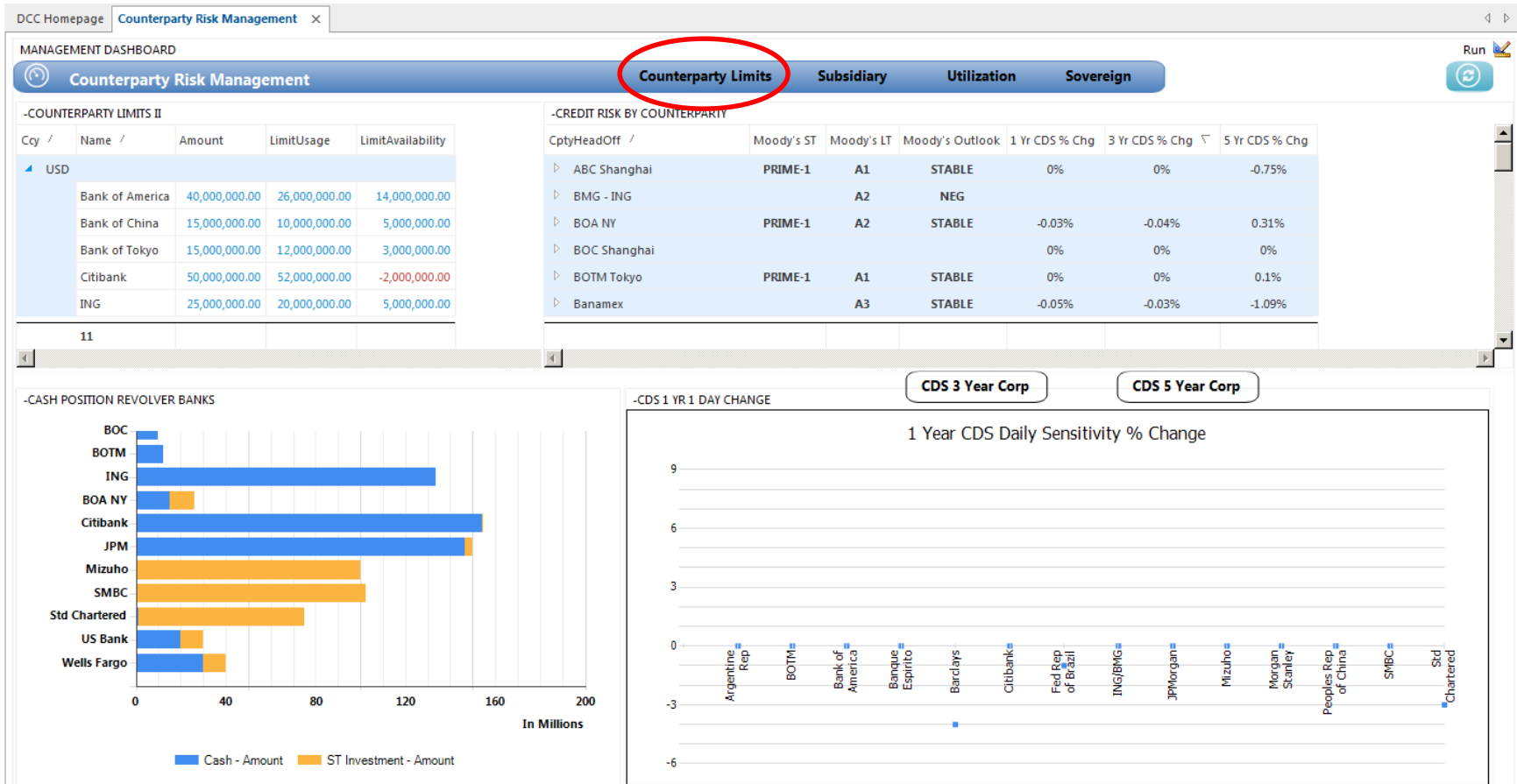
Counterparty Risk Management Dashboard

Risk by Counterparty (Subsidiary)

DCC Homepage | Counterparty Risk Management | -Credit Risk by Counterparty ✕

POSITION ANALYSIS

CptyHeadOff /	Moody's ST	Moody's LT	Moody's Outlook	1 Yr CDS % Chg	3 Yr CDS % Chg ▽	5 Yr CDS % Chg
▷ ABC Shanghai	PRIME-1	A1	STABLE	0%	0%	-0.75%
▷ BMG - ING		A2	NEG			
▷ BOA NY	PRIME-1	A2	STABLE	-0.03%	-0.04%	0.31%
▷ BOC Shanghai				0%	0%	0%
▷ BOTM Tokyo	PRIME-1	A1	STABLE	0%	0%	0.1%
▷ Banamex		A3	STABLE	-0.05%	-0.03%	-1.09%
▷ Banco Estado do Para	Not Prime	Ba3	STABLE	-0.62%	-1.15%	-0.88%
▷ Banco de La Nacion	Withdrawn			0.47%	1.52%	1.76%
▷ Banco do Brasil S.A.		Baa2	NEG	-0.62%	-1.15%	-0.88%
▷ Bank of Comm Shnghai	PRIME-1	A2	STABLE	0%	0%	0%
▷ Banque Espirito				0%	0%	0%
▷ Bradesco		Baa2	NEG	0%	0%	0%
▷ Caixa Economica Fed		Baa2	NEG	-0.62%	-1.15%	-0.88%
▷ China Merchants Bank		Baa1	STABLE	0%	0%	0%
▷ Citibank NY	PRIME-1	A2	STABLE	-0.05%	-0.03%	-1.09%
▷ Fukui Bank Ltd Fukui				0%	0%	0%
▷ HDFC Bank Ltd		Baa3	POS	0%	0%	0%
▷ Hana Bank		A1	STABLE	0%	0%	0%
▷ ICBC Shanghai	PRIME-1	A1	STABLE	0%	0%	0%
▷ Itau Unibanco S/A		Baa3	NEG	0%	0%	0%
▷ JPM NY	PRIME-1	Aa3	STABLE	0.03%	-0.02%	0.32%
▷ Kasikornbank		Baa1	STABLE	0%	0%	0%
▷ Kiup Bank	PRIME-1	Aa3	POS	0%	0%	0%
▷ Mitsubishi UFJ Trst	PRIME-1	A1	STABLE	0%	0%	0.1%

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Risk by Counterparty - Subsidiary

DCC Homepage | Counterparty Risk Management | -Credit Risk by Counterparty ✕

POSITION ANALYSIS

CptyHeadOff /	Moody's ST	Moody's LT	Moody's Outlook	1 Yr CDS % Chg	3 Yr CDS % Chg ▽	5 Yr CDS % Chg
▷ Bradesco		Baa2	NEG	0%	0%	0%
▷ Caixa Economica Fed		Baa2	NEG	-0.62%	-1.15%	-0.88%
▷ China Merchants Bank		Baa1	STABLE	0%	0%	0%
▲ Citibank NY	PRIME-1	A2	STABLE	-0.05%	-0.03%	-1.09%
▷ Citibank Amsterdam				-0.05%	-0.03%	-1.09%
▷ Citibank Argentina	Withdrawn			-0.05%	-0.03%	-1.09%
▷ Citibank Auckland				-0.05%	-0.03%	-1.09%
▷ Citibank Australia				-0.05%	-0.03%	-1.09%
▷ Citibank Bangkok				-0.05%	-0.03%	-1.09%
▷ Citibank Berhad				-0.05%	-0.03%	-1.09%
▷ Citibank Brazil	PRIME-2	Baa2	NEG	-0.05%	-0.03%	-1.09%
▷ Citibank Brussels	PRIME-1	A2	STABLE	-0.05%	-0.03%	-1.09%
▷ Citibank Colombia				-0.05%	-0.03%	-1.09%
▷ Citibank Dubai	PRIME-2	Baa2	STABLE	-0.05%	-0.03%	-1.09%
▷ Citibank Frankfurt	PRIME-1		STABLE	-0.05%	-0.03%	-1.09%
▷ Citibank Hong Kong				-0.05%	-0.03%	-1.09%
▷ Citibank Istanbul				-0.05%	-0.03%	-1.09%
▷ Citibank Jakarta				-0.05%	-0.03%	-1.09%
▷ Citibank London				-0.05%	-0.03%	-1.09%
▷ Citibank Luxembourg				-0.05%	-0.03%	-1.09%
▷ Citibank Madrid				-0.05%	-0.03%	-1.09%
▷ Citibank Manila				-0.05%	-0.03%	-1.09%
▷ Citibank Milano				-0.05%	-0.03%	-1.09%
▷ Citibank Moscow				-0.05%	-0.03%	-1.09%

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Counterparty Risk Management Dashboard
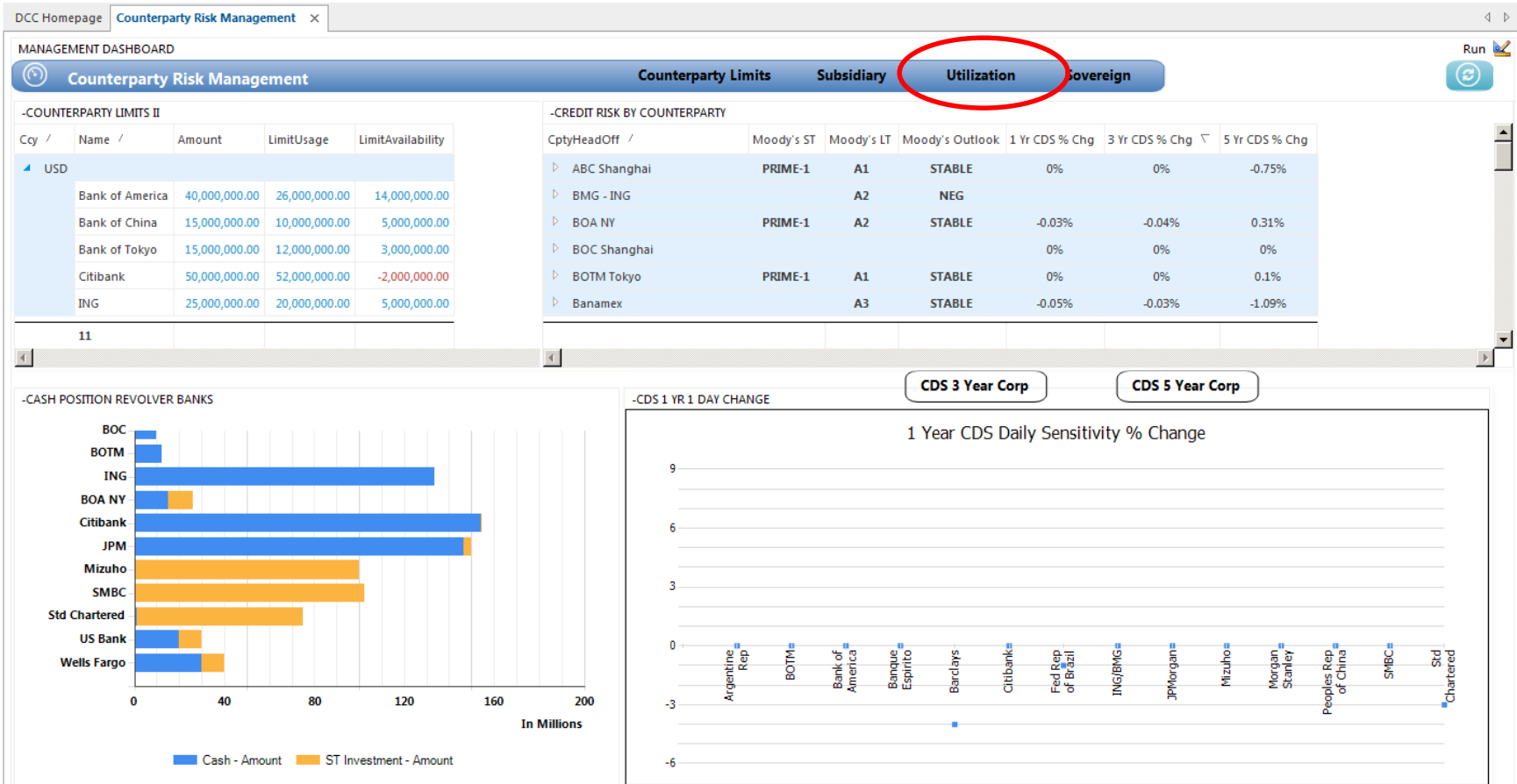
Utilization – All Limits Comparison

DCC Homepage | Counterparty Risk Management | -All Limits ×

LIMIT &USAGE

	BDECPTY Utilised (USD)	BESPCPTY Available (USD)	BESPCPTY Utilised (USD)	BOACPTY Available (USD)	BOACPTY Utilised (USD)	BOCCPTY Available (USD)	BOCCPTY Utilised (USD)	BOTMCPTY Available (USD)	BOTMCPTY Utilised (USD)
5/21/2015	270,209.73	-18,627.97	18,627.97	14,000,000.00	26,000,000.00	5,000,000.00	10,000,000.00	3,000,000.00	12,000,000.00
5/22/2015	270,209.73	-18,627.97	18,627.97	14,000,000.00	26,000,000.00	5,000,000.00	10,000,000.00	3,000,000.00	12,000,000.00
5/23/2015	270,209.73	-18,627.97	18,627.97	14,000,000.00	26,000,000.00	5,000,000.00	10,000,000.00	3,000,000.00	12,000,000.00
5/24/2015	270,209.73	-18,627.97	18,627.97	14,000,000.00	26,000,000.00	5,000,000.00	10,000,000.00	3,000,000.00	12,000,000.00
5/25/2015	270,209.73	-18,627.97	18,627.97	14,000,000.00	26,000,000.00	5,000,000.00	10,000,000.00	3,000,000.00	12,000,000.00

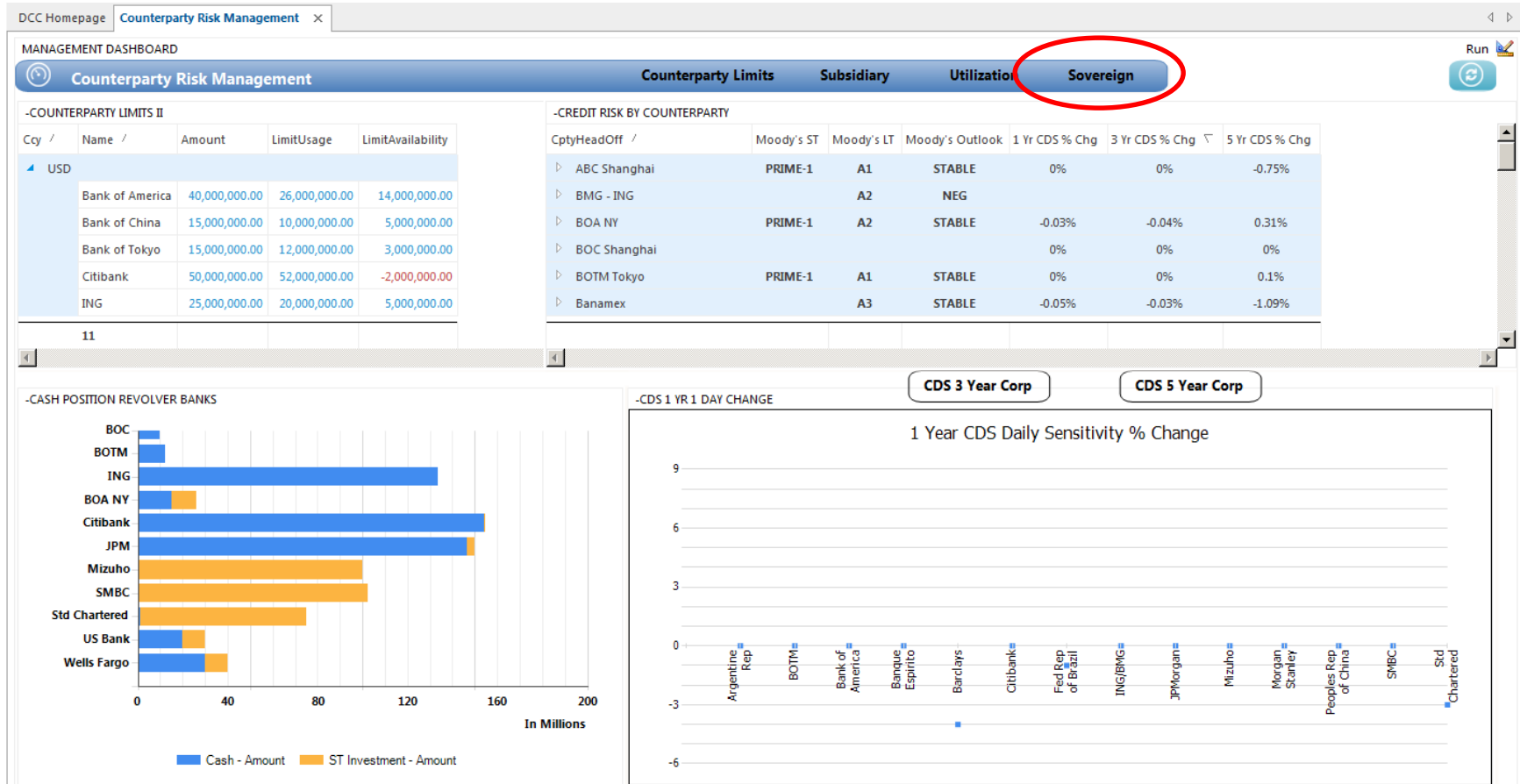DEALS/ACCOUNTS IMPACTING BOACPTY ON 5/21/2015

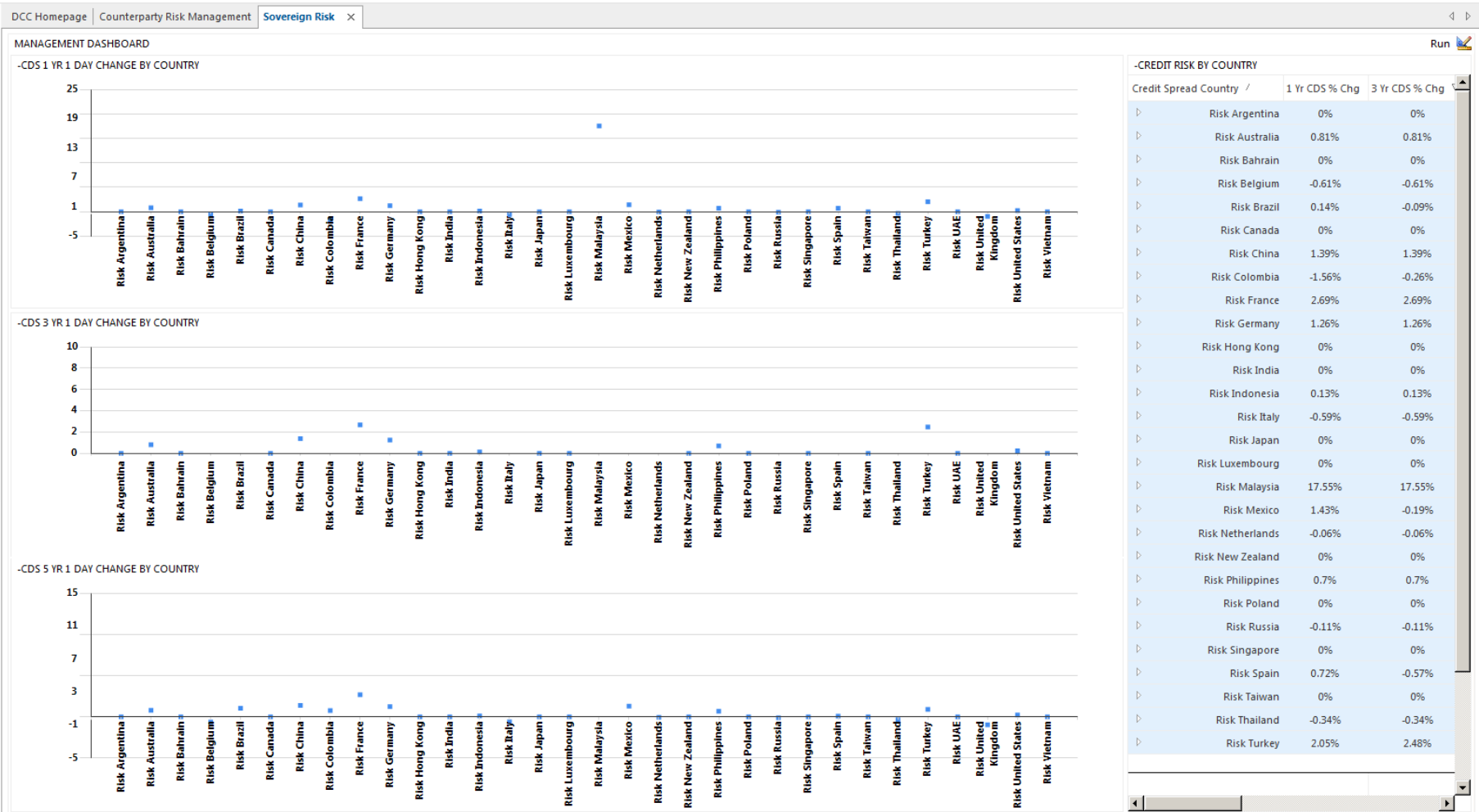| DealtDate	DealType	DealNumber /	AccountCode	ImpactedLimits	Company /	Counterparty	DealtAmount	DealCurrency	LimitImpact
	ACC	828	0001BOA-USD123456	BOACPTY		BBOANYC1	15,000,000.00	USD	15,000,000.00
5/21/2015	SDP	8179		BOACPTY	0001	BBOANYC1	10,000,000.00	USD	10,000,000.00
5/21/2015	SDP	8180		BOACPTY	0001	BBOANYC1	1,000,000.00	USD	1,000,000.00
									26,000,000.00

LIMITS

CtpyIssuer /	LimitCode	LimitName ▽	LimitType	LimitClass	LimitAmount	LimitCurrency	LimitFirstAvailable	LimitLastAvailable
▷ BABC*								
▷ BBAN*								
▷ BBCM*								
▷ BBDB*								
▷ BBDE*								

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Counterparty Risk Management Dashboard

Risk by Country - Sovereign

Dow Corning Escalation Matrix

*Daily CDS Sigma Breach Escalation Matrix

SIGMA

- 5σ : (1/1,744,278)
- 4σ : (1/15,787)
- 3σ : (1/370)
- 2σ : (1/22)
- 1σ : (1/3)

1 Day   2 Days   3 Days   4 Days

CONSECUTIVE DAYS

🟥 Red	Notification to Treasurer
🟧 Orange	Notification to ATs
🟨 Yellow	Treasury Manager Review
🟩 Green	Treasury Analyst Review

*Daily change in CDS must be positive in direction
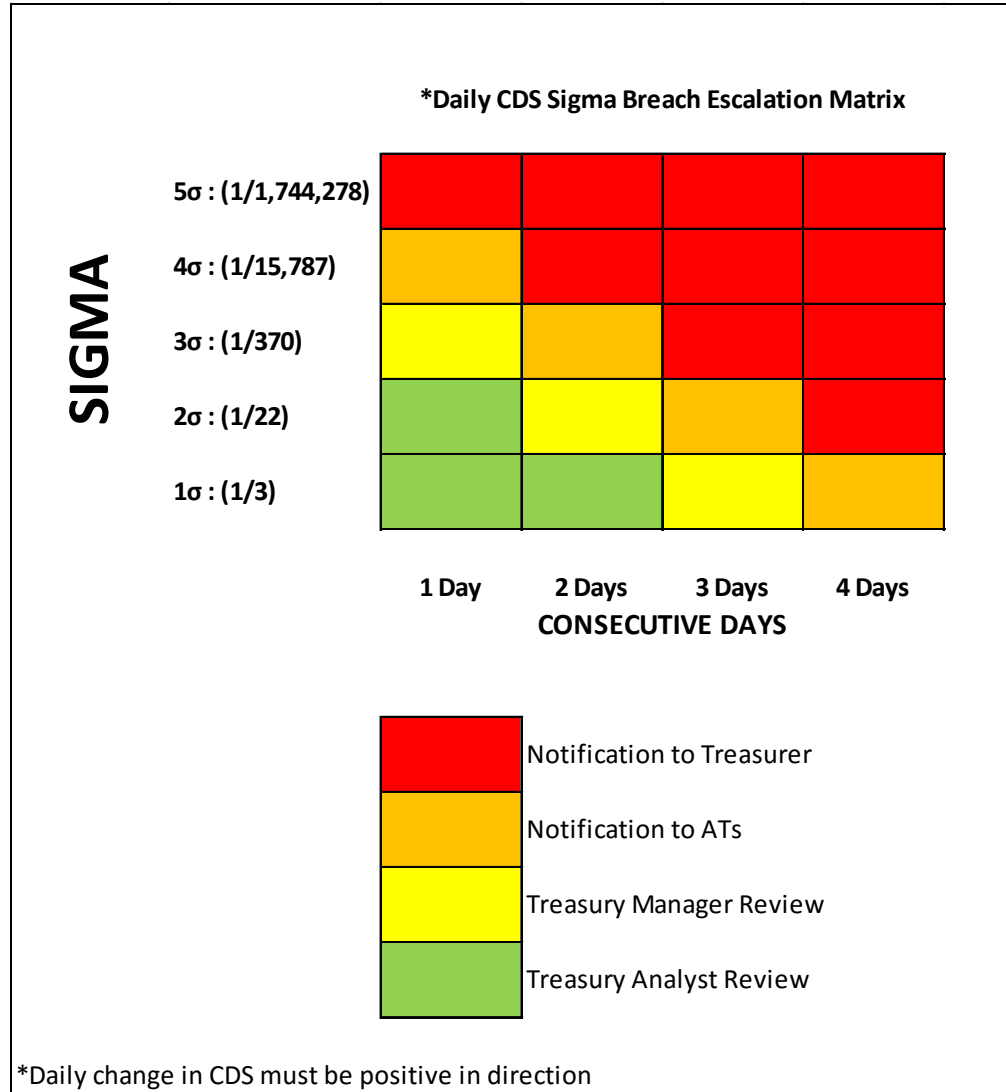
Counterparty Breach Notifications

- Notifications can be triggered when a counterparty limit is breached with several options for handling it from there:

  – Additional review/verification by upper management

  – Email notifications to key personnel

  – Hard or soft messages when entering a deal