LSPP Executive Program

Muljono Pringgoharjono
Country Chief Risk Officer

Nov 2014

Here for good

Agenda

- The Basel Journey
- Basel 1 – Perspective for Corporates and Institutions
- Basel 2 – An Internal Rating Based Approach
- Credit Risk Models
- Use and Governance

The Basel Journey

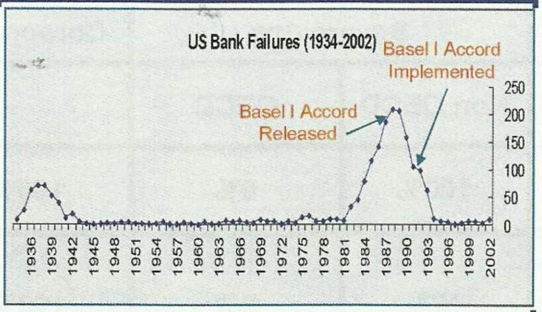
- 1974: The Herstatt collapse
- 1975: G10 forms a Committee on Banking Supervision
- 1982: Latin American debt crisis
- 1988: Basel 1 Accord
- 1997: Asian Financial Crisis
- 1998 - 2004: Basel 2 Policy evolution
- 2007- 10: Basel 2 implementation
- 2007-09: Western Financial Crisis
- 2009 Dec: Basel 3 consultation papers
- 2010 Dec: Revised Basel 3 proposals

Corporate and Institutions

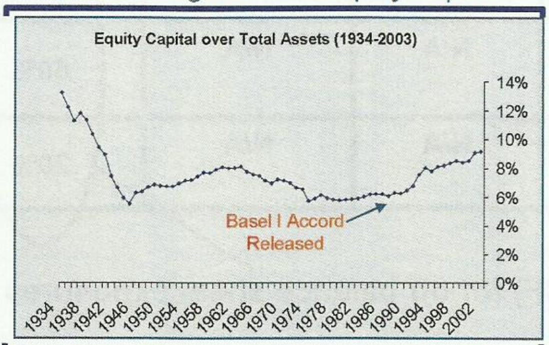
Basel 1

Genesis of Basel 1 Accord

Increased number of bank failures…



…and falling levels of equity capital



…led to Basel I Capital Accord

Basel I Principles

- Strengthen the soundness and stability of the international banking system
- Create minimum risk-based capital adequacy requirements based on types of counterparties dealt with

Basel I Benefits

- Reduced global systemic risk without suppressing competition
- Increased banks' capital

RWA Calculation

RWA =

On-Balance Sheet Risk X Counterparty Weighting

+

Off-Balance Sheet Risk X Counterparty Weighting X Credit Conversion Factor

RWA Weightings – Corporate and Institutions

On-Balance Sheet Risk		Banks		Sovereigns		Corporates
		Non OECD	OECD	Non OECD	OECD	
		100%	20%	100%	0%	100%
Off Balance Sheet Risk (Cont. liabilities)	Financial Guarantees	100%	20%	N/A	N/A	100%
	Transactional Contingents	50%	10%	N/A	N/A	50%
	Secured LCs Issued	20%	4%	N/A	N/A	20%

Credit Conversion Factor (CCF) for off balance sheet exposures

Two Dimension Risk Sensitivity

Counterparty

On-Balance Sheet Risk		Banks		Sovereigns		Corporates
		Non OECD	OECD	Non OECD	OECD	
		100%	20%	100%	0%	100%
Off Balance Sheet Risk (Cont. liabilities)	Financial Guarantees	100%	20%	N/A	N/A	100%
	Transactional Contingents	50%	10%	N/A	N/A	50%
	Secured LCs Issued	20%	4%	N/A	N/A	20%

Product

Drawbacks of Basel 1

Criticisms of Basel I Accord

- Lack of risk sensitivity of capital requirements: Minimum capital ratio requirement was not based on a maximum probability of insolvency
- 'One-size-fits-all' approach to risk management: Banks were not rewarded for sophisticated risk management
- Limited attention to credit risk mitigation: Exponential growth in credit derivatives as a risk management tool not recognised
- Over emphasis on minimum capital requirements: Lack of sufficient emphasis on risk management processes and controls within banks
- Exclusive focus on financial risk: Not sufficient focus on operational risk and corporate governance and accounting practices

Consequences in the industry

- Sub-optimal lending behaviour
  - A customer with high probability of default was no different to a 'good' customer
- Increased divergence between regulatory capital and economic capital based on 'true' risks
- Regulatory capital arbitrage through product innovation
  - Securitisation e.g. Mortgage-backed securities through Fannie Mae attracted 20% risk weight as opposed to 50% under Basel I
  - Credit derivatives: Separation and isolation of credit risk allows the transfer and hedging of credit risk

Standard Chartered

Corporate and Institutions

Basel 2

Standard Chartered

Components of Basel 2

BASEL II

	PILLAR I	PILLAR II	PILLAR III
PILLAR	**Minimum capital requirements** A new risk based capital requirements to:	**Supervisory review process** Overall assessment of risk by the bank covering:	**Market disclosure** New disclosure requirements around risk management to the market place covering:

PRINCIPLE	▪ Better align regulatory capital with economic risk (i.e. Market Risk)
	▪ Different levels of sophistication in the requirements both for Credit Risk and Operational Risk
		▪ Risks not adequately covered in Pillar I e.g. concentration risk
		▪ Risks not in Pillar I e.g. interest rate risk in the banking book
		▪ Industry use of stress testing
		▪ Assessment of capital needed to cover the risks
		▪ Review by the supervisor of the adequacy of this capital
			▪ Effective disclosure of:
			  ▪ Banks' risk profiles
			  ▪ Adequacy of capital positions
			▪ Specific qualitative and quantitative disclosures
			  ▪ Scope of application
			  ▪ Composition of capital
			  ▪ Risk exposure assessment
			  ▪ Capital adequacy

Standard Chartered

Basel 2 Components

Pillar I

- **Historic Performance and scorecards** → **PD**, **LGD**, **EAD** → **Credit Risk Capital** (Advanced IRB)
- **Current approach – aggregate component parts of market risk** → **Market Risk Capital**
- **% Gross Income per business line** → **Operational Risk Capital** (Standardized)

Pillar II

Internal Capital Adequacy Assessment Process ("ICAAP")

Banks perform own assessments of capital requirements to include model risks, stress events, and other risks. Concentration risks, settlement risks, and risk diversification / mitigation techniques.

Supervisory Review & Evaluation Process ("SREP")

Regulators review Bank's ICAAP, assess its adequacy, coverage, risk appetites, governance, systems, controls and ensure all risks are covered.

Pillar III

Disclosure in the financial statement

Scope of disclosure is still under discussion

Need to demonstrate "usage" of risk-based parameters

Total Minimum Capital Requirement + **Capital Add-on based on SREP** = **TOTAL CAPITAL REQUIREMENT**

Standard Chartered

Basel 1 vs Basel 2

Fundamental changes to the calculation of Regulatory Capital

Regulatory Capital Calculation

$$\frac{\textbf{Capital}\ \text{(Core, Supplementary)}}{\textbf{Credit Risk} + \textbf{Market Risk} + \textbf{Operational Risk}} = \textbf{Capital Adequacy Ratio}$$

Pillar I = 8%

Pillar II = ? Depends on total risks

Credit Risk	Market Risk	Operational Risk
Changed Substantially	Unchanged	New
from single Approach to three Alternative Approaches	Two Alternative Approaches	Three Alternative Approaches

Note: Supplementary Capital limited to 100% Core Capital

Corporate and Institutions

Credit Models

Basel 2 – Risk Sensitive Components

	Model Types			Metrics	Note
Borrower Specific	1. What is the probability that a client is going to default?	Probability of Default Model	=	PD (%)	More than 10 models for Corporate, Specialised Lending, FI & Sovereign
Facility Specific ($LGD)	2. How high should we expect the amount outstanding to be in such a case?	Exposure at Default Model	=	EAD ($)	Drawdown factors for products & commitment status
	3. How much of the outstanding amount do we expect to lose?	Loss Given Default Model	=	LGD (%)	Recovery parameters for products, collateral & unsecured
	4. Tenor of facility	Maturity	=	M	Actual remaining maturity of facility

5. Firm Size = S

Risk Weighted Assets (RWA) = f (PD, EAD, LGD, M,S)

WB sets Threshold Returns on RWA (RoRWA) which feature prominently in decisioning processes

PD – Probability of Default

ECMS (Corporate / NBFI)

New CG	Mid-Point PD (BPS)	S & P	Old CG
1A	1.0	AAA	1
1B	2.0	AA+	
2A	3.0	AA	2
2B	4.0	AA-	
3A	5.0	A+	
3B	7.0	A	3
4A	9.0	A-	
4B	13.0	BBB+	4
5A	22.0	BBB	
5B	39.0	BBB-	5
6A	51.1	BB+	
6B	67.0		6
7A	88.5	BB	
7B	117.0		7
8A	154.1	BB-	
8B	203.0		8
9A	266.9	B+	9
9B	351.0		
10A	462.0	B	10
10B	608.0		
11A	800.5	B-	11
11B	1054.0		
11C	1377.0		
12A	GSAM's CG12+		
12B	GSAM's CG12		12
12C	GSAM's CG12-		

ECMS (Banks)

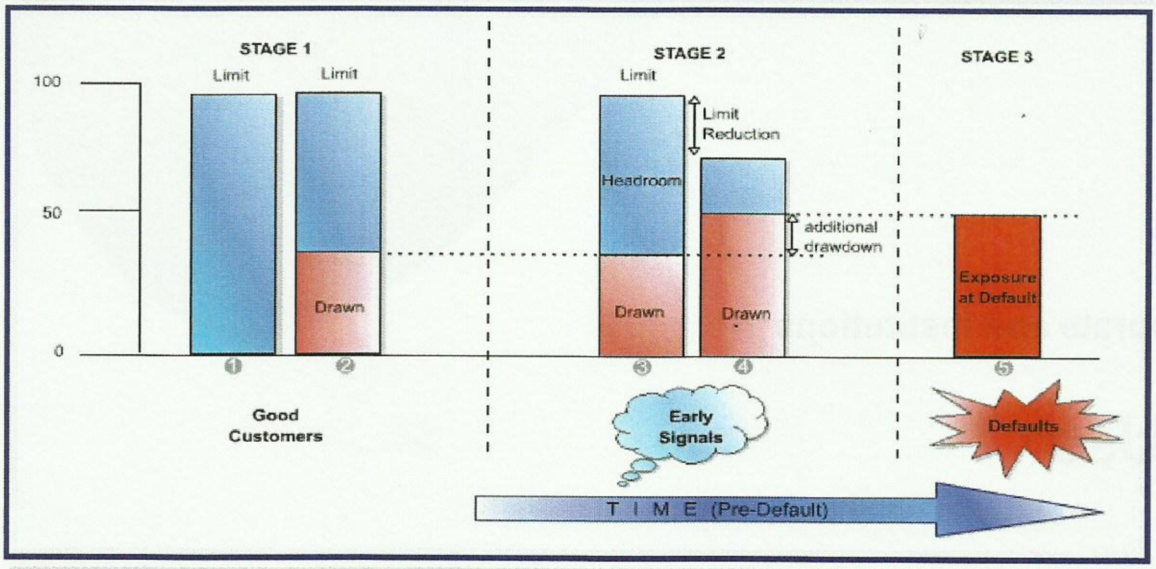
New CG	Mid-Point PD (BPS)	Bank S & F	Old CG
1A	1.0	AAA, AA+	1
1B	2.0	AA, AA-	
2A	3.0	A+	2
2B	4.0	A	
3A	5.0	A-	
3B	7.0	BBB+	3
4A	9.0	BBB+, BBB	
4B	13.0	BBB	4
5A	22.0	BBB-	
5B	39.0	BB+	5
6A	51.1	BB+, BB	
6B	67.0	BB	6
7A	88.5	BB, BB-	
7B	117.0	BB-	7
8A	154.1	B+	
8B	203.0	B+, B	8
9A	266.9	B	9
9B	351.0	B, B-	
10A	462.0	B-	10
10B	608.0	B-, CCC	
11A	800.5	CCC	11
11B	1054.0	CCC	
11C	1377.0		
12A	GSAM's CG12+		
12B	GSAM's CG12		12
12C	GSAM's CG12-		

- A master scale is a set of risk classes for both the performing and defaulted assets.

- The different performing risk classes are defined by different probability of default (PD), whereas the defaulted risk classes are defined by specific default events as defined by GSAM.

EAD – Exposure at Default

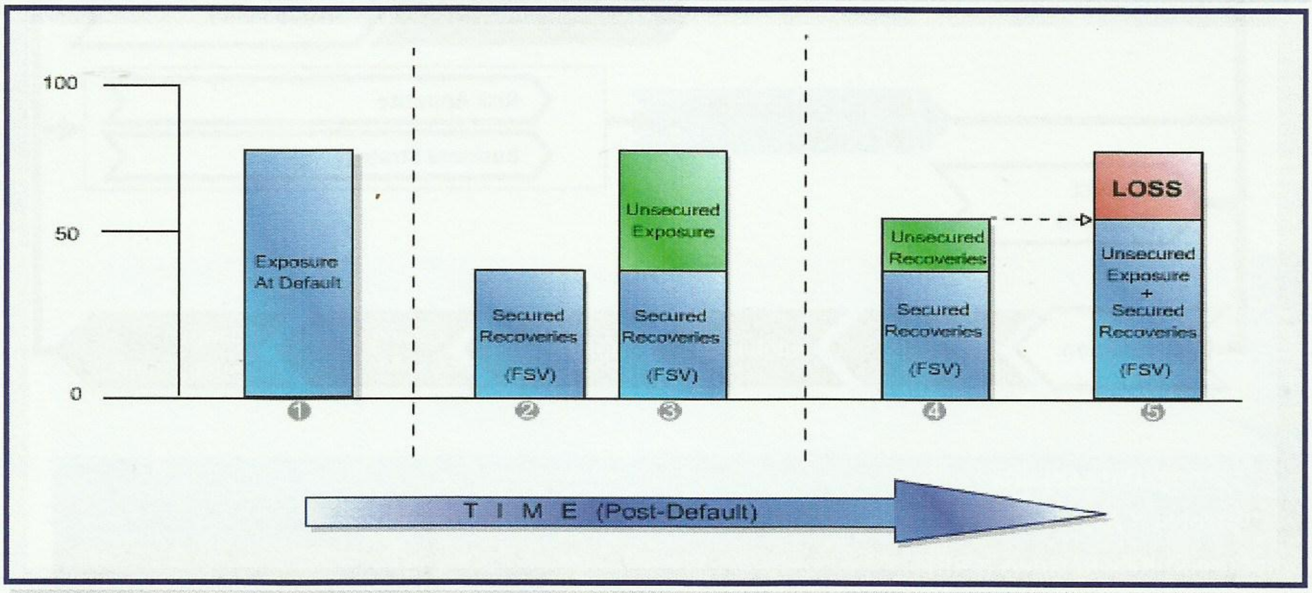
An EAD model estimates the likely exposure to the borrower at the point of default



Internal EAD models have to account for both the drawn and the undrawn portion of the commitment

LGD – Loss Given Default

An LGD model estimates how much we expect to lose per $ of exposure



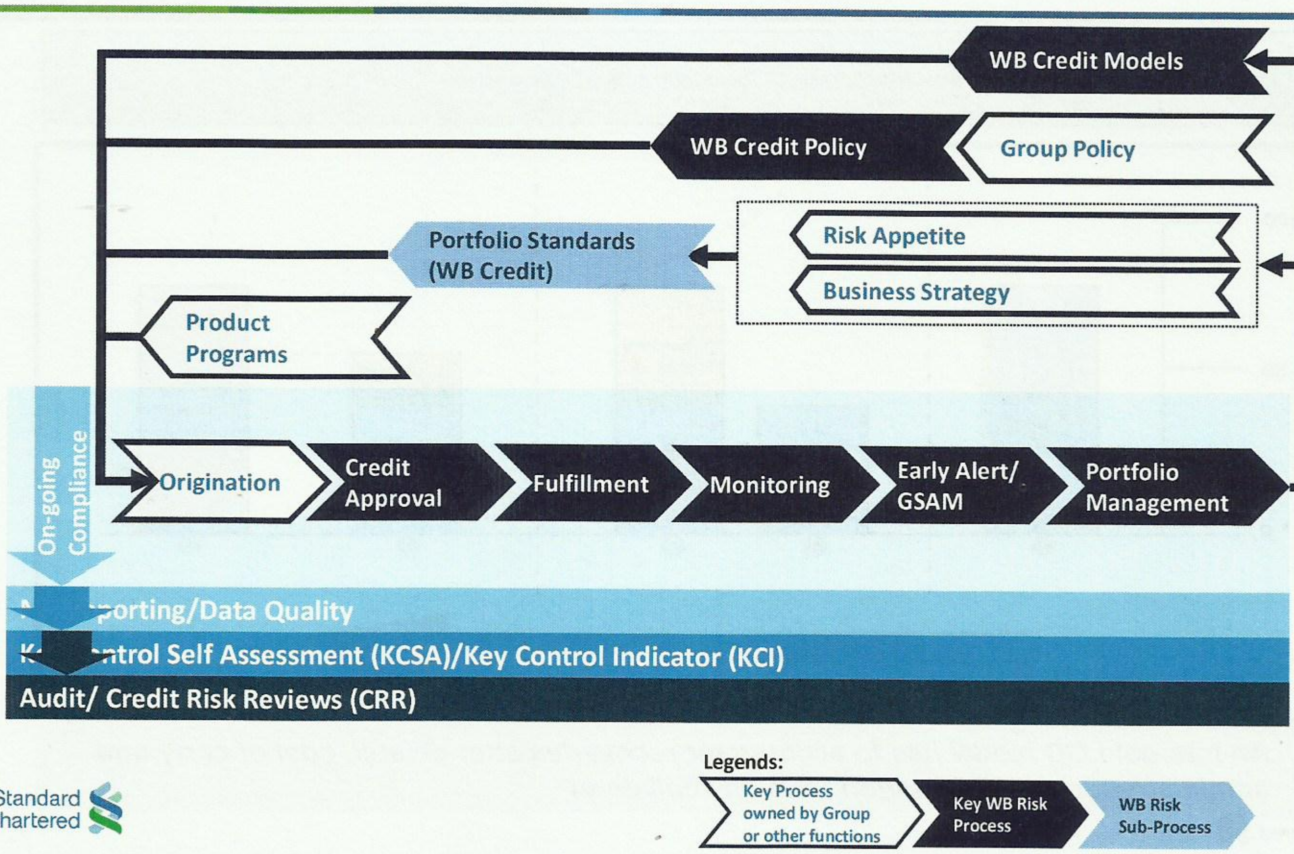
An internal LGD model has to account for recoveries after default, cost of carry and administration, and realisation from any collateral

Corporate and Institutions

In Use

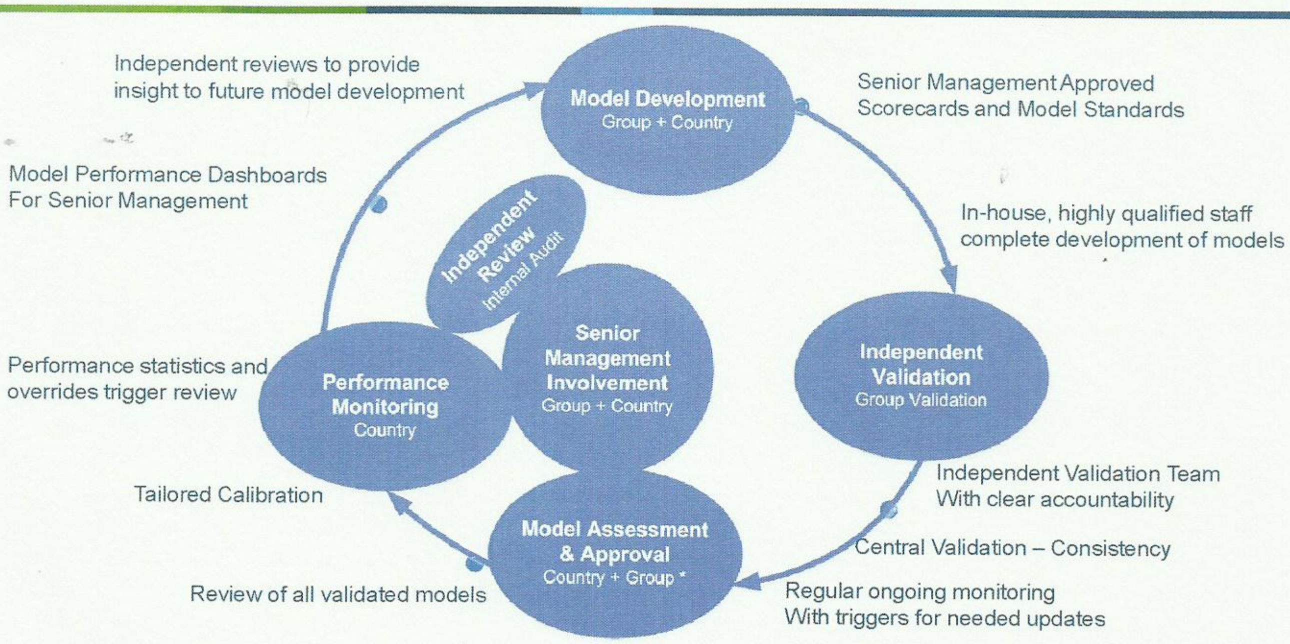
Standard Chartered

Credit Risk Management



Standard Chartered

Governance



- Model Life Cycle ensures multiple levels of independence and assurance
- Long history of "Use" – Adds to the comfort level
- Adequate Co-work between country and group – further checks and balances

Standard Chartered

Country: Local MAC Reviews and recommends for Risk Review Committee approval
Group: Group MAC Reviews and recommends for Business Risk Committee approval