

#### \* Credit risk capital charge

##### 1) Standardized approach

→ Regulator defines - the methodology & weights

##### 2) FIRB: Foundational Internal Ratings Based approach

→ Hybrid of regulator & internal models driven approach

##### 3) IRB: Internal ratings based approach

→ devise internal models for credit risk measurement

#### ② Standardized approach

→ On balance sheet exposures: loans

a) Principd o/s

b) Undrawn

→ Off-balance sheet exposures:

a) Market related: Derivatives

b) Non-market related: LC, SBLC, guarantees

#### \* On-balance sheet exposures

→ Claims on domestic sovereigns: RW driven by who guarantees the exposure

→ Claims on foreign sovereigns: RW driven by ratings

→ Claims on multilateral development banks

→ Claims on <sup>Indian</sup> banks: Driven by level of capitalization of the investee bank

→ Claims on foreign banks: Driven by ratings

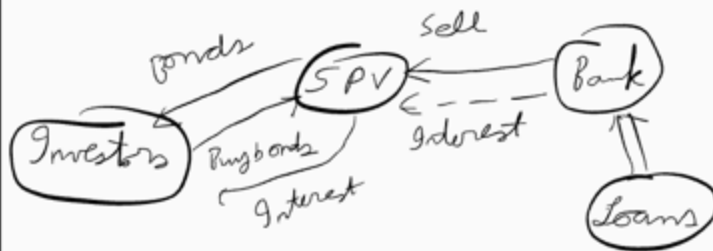
→ Claims on domestic & foreign PSUs, primary dealers, corporate entities: Driven by ratings

→ Housing loans: RW driven by whether loan is restructured

→ Loans backed by commercial real estate: Driven by the purpose of the pledged real estate  
i.e. residential use or commercial use

→ Personal loans: Flat risk weight

### Securitization



→ Whether securitization originated from the bank itself

whether rated or unrated

If rated, RW based on rating

\* Non market related off-B items

→ LCs

→ Guarantees

→ Commitments

→ SBLs (standby LCs)

counterparty type

↓  
Ratings

↳ Purpose for which item is issued

↳ Residual/original maturity of issue

\* GRB approach

PD

LGD

EAD

1) Probability of default: Likelihood of default over time  $t$

a) Wholesale loan (loan to a company):

→ History of current account performance

→ Capital structure & finances

→ Credit rating

→ Industry: Level of competition, barriers to entry, industry outlook, govt. policies, etc.

→ Management

Development of internal scorecard

↳ use CDS on traded instruments

Eg: 2-year CDS on RIL quotes at

1%  
i.e. I have to pay a premium of 1%  
to a bank to insure against the  
risk of default

Higher the premium, higher the chances  
of default,  $\Rightarrow$  higher the PD

↳ use default rates from annual  
default studies published by rating  
agencies

b) Retail loans:

→ Collateral/No collateral

→ CIBIL score

→ Period of loan

→ Age

→ Income

Bifurcate loans into homogeneous pools  
expected to have a similar prob. of default  
↳ can be done through various statistical  
techniques

eg: Region / Age / Income / Gender / Collateral /  
Type of loan

b) Loss Given Default: How much do I lose  
if the customer defaults

→ Liquidity of the collateral provided

→ Exposure at default

→ Whether insured

→ Value of the collateral

→ Costs of recovery: Legal expenses, recovery  
agency costs, etc.

→ Whether collateral is available

c) Exposure At Default: Amount you're exposed to if the loan defaults

- Repayment schedule of the loan
- Expected drawdowns for loans not fully disbursed
- Prepayment rates, if applicable

d) Maturity: Life of the loan

- Can consider weighted average time to maturity i.e. effective maturity or duration

Under IRB approach, Maturity = Effective maturity

$$M = \frac{\sum t \cdot CF_t}{\sum CF}$$

\*. Computation of RWA

$$RWA = \underbrace{\text{Exposure}}_{\downarrow \text{EAD}} \times \underbrace{\text{Risk Weight}}_{\downarrow PD \times LGD \times M}$$

$$\therefore \boxed{RWA = EAD \times PD \times LGD \times M}$$