Banking on Basel

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"We are pleased to have achieved approval for use of our Basle II rating systems. This means that the benefits of Basle II enable us to increase our 2007 interim dividend by 30%. Going forward our dividend payout rate increases to 50% of underlying EPS from around 40%. . . . The medium term outlook for the Company is very positive."

Adam J. Applegarth
Chief Executive, Northern Rock Group, June 30, 2007

Northern Rock – Report of Interim Results, 30 June 2007

"The implementation of Basle II results in our Pillar I risk weighted assets at 30 June 2007 falling from around £33.9 billion under Basle I to £18.9 billion under Basle II, a reduction of some 44%. The risk weighting for our residential mortgages reduces to mid-teens %, treasury assets to around half of Basle I requirements, also around mid teens %, reflecting the low risk nature of these portfolios and personal unsecured loans to slightly below Basle I requirements."

Modes of Capital Regulation

- Leverage ratio (capital/total assets)
- Risk-weighted – by regulation
  - Basel I
  - Basel II – Standardized Approach
- Risk-weighted – by bank
  - Basel II – IRB approaches
- [Market-based]
- [Pre-commitment]

Basel I

- Assign exposures to risk buckets—0, 20, 50, and 100%—and adjust value
- Convert OBS items to asset equivalents, assign to risk buckets, and adjust value
- Add all adjusted assets values: RWA
- Define Tier 1 and Tier 2 capital
- Requirements:
  - Tier 1 Cap / RWA $\geq$ 4%
  - (Tier 1 + Tier 2 Cap) / RWA $\geq$ 8%

Basel I – Assessment

- Safety & Soundness
- Competitive Equality
- Pro-cyclicality
- Regulatory Arbitrage
- Meaningless metric?

Basel II

- Largest banks to use internal models to set capital requirements
- Other banks to use external ratings agencies to set capital requirements
- Reduce risk-weighting of residential mortgages

The Three Pillars of Basel II

- Pillar 1: Minimum Capital Rules
  - Standard, Foundation IRB, Advanced IRB
- Pillar 2: Supervisory Review
- Pillar 3: Market Discipline

A-IRB Approach – Credit Risk

- Exposures allocated to risk categories based on internal bank assessments of probability of default (PD), loss given default (LGD), exposure at default (EAD), and maturity (M)
- PD, LGD, EAD, and M used as inputs for risk-weighting functions provided in the revised framework
- Separate functions for sovereign, bank, corporate, retail, and equity exposures
- Corporate exposure function varies for project finance, object finance, commodities finance, income-producing real estate, and high-volatility commercial real estate
- Retail exposure function varies for residential mortgage loans and revolving exposures (credit cards)
- Expected losses dealt with through provisioning and adjustments to capital
- Extensive requirements for IRB eligibility—e.g., rating system design, validation of internal estimates, disclosure requirements
- Scaling factor to IRB capital requirement to be imposed in order to achieve aim of maintaining aggregate levels of capital

A-IRB Approach – Credit Risk

Formula for Corp., Sov., Bank Exposures

Correlation (R) = 0.12 x (1 - EXP(-50xPD)) / (1 - EXP(-50) + 0.24 x [1 – (1 – EXP(-50 x PD)) / (1 – EXP (-50))]

Maturity Adjustment (b) = (0.11852 – 05478 x ln(PD))^2

Capital Requirement (K) = [LGD x N[(1 – R)^-0.5 x G(PD) + (R / (1 – R))^0.5 x G(0.999)] – PD x LGD] x (1 – 1.5 x b)^-1 x (1 + (M – 2.5) x b)

Risk-weighted assets (RW) = K x 12.5 X EAD

A-IRB Approach – Other Risks

Securitization Exposures

- For external agency rated exposures, use ratings as basis for risk-weighting, but adjust for seniority and granularity of exposure
- Unrated exposures generally risk-weighted through highly complex supervisory formula that incorporates certain bank-supplied inputs
- Bank may use internal assessment approach for exposures to an asset-based commercial paper program
- Special capital requirements for early amortization provisions

Operational Risk

Capital charge equal to risk measure generated by internal operational risk measurement system

A-IRB Approach – Assessment

- Risk sensitivity
- Reliability of credit risk models
- Impact on capital levels
- Implementation/Enforcement problems
- “Common language” for credit risk
- Incentive to improve risk management
- Pro-cyclicality
- Competitive Equality

Basel II – International Dimensions

- Detailed Harmonization vs. Common Requirements
- Negotiation vs. Implementation
- Mutual monitoring

Alternatives

- Retain Standardized Approach
- Mandatory Subordinated Debt
- Pre-commitment Approach

Recommendations

1. Accelerate work on redefining capital
2. Adopt international leverage ratio(s)
3. Add subordinated debt requirement
4. Substitute for detailed Pillar 1 rules
   - Some form of RWA ratio
   - Requirement for rigorous credit modeling
   - PCA
5. Strengthen monitoring functions of Basel Committee
   - Reporting on capital ratios and supervision
   - Establish model validation capacity