



A Rating Agency Perspective on Bank Capital

Overview

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Bank Capital – A Perennial Challenge

While Capital is Key to a Bank's Standalone Credit Strength ...

And is a key element in our Bank Financial Strength Rating (BFSR) methodology

Financial Factors in Our Scorecard	
Profitability	Pre-Provision Profit / Average Risk Weighted Assets
	Net income / Average Risk Weighted Assets
Liquidity	(Market Funds – Liquid Assets) / Total Assets
	Liquidity Management
Capital Adequacy	Tier 1 Capital Ratio (%)
	Tangible Common Equity / Risk Weighted Assets
Efficiency	Cost / Income
Asset Quality / (Risk)	Problem Loans / Gross Loans
	Problem Loans / (Equity + Loan Loss Reserve)

- » We use reported and adjusted metrics to determine capital adequacy
- » Our final ratings reflect both a bank's standalone credit profile and external support

...It has always presented challenges in practice

“Banks’ true solvency is unknowable”

- Former Moody’s Managing Director 2001

“Banks are episodically insolvent”

- Former Rating Agency Managing Director 1990

And a regulatory tightening of capital standards after a crisis is nothing new ...

- » From 1973 to 1975, the UK experienced the “Secondary Banking Crisis”
- » Following a lending boom and housing market bubble, around 60 second-tier banks in the UK had to be bailed out or provided with liquidity support
- » Eventually, the Bank of England introduced new capital standards that were documented by the classic paper: “The Measurement of Capital, 1980”
- » The Measurement of Capital introduced two ratios:
 - The Risk Asset Ratio: a risk-weighted concept and a direct predecessor of the “Basel I regime”
 - The Gearing Ratio: a simple measure of balance sheet leverage
- » In practice, the gearing ratio was monitored only, not targeted – just like the Basel III leverage ratio!

The 1980 “Measurement of Capital” paper defined capital as succinctly as any subsequent attempts

“The following have been identified as the important purposes for which capital is required:

- » To provide a cushion to absorb losses;
- » To demonstrate to potential depositors the willingness of the shareholders to put their own funds at risk on a permanent basis;
- » To provide resources free of fixed servicing costs;
- » To be a suitable form of finance for the general infrastructure of the business”

And, “the following have been identified as the two most important aspects of capital ratios:

- » To ensure that the capital position of an institution is regarded as acceptable by its depositors and other creditors; and
- » To test the adequacy of capital in relation to the risk of losses which may be sustained”

Source: The Bank of England, September 1980

Basel III needs to be therefore seen in context

- » The business model of banking is intrinsically highly leveraged (and illiquid) compared to other industries
- » In the deregulated banking systems of the modern era, cycles of excessive leverage followed by new capital standards followed by renewed leverage followed by new capital standards have repeated themselves with growing frequency
- » From a rating agency perspective, the objectives of Basel III are “a good thing”
 - Core equity is intended to become a larger part of banks’ funding base
 - Market activities that were lightly treated under Basel I and II will require much greater capital backing
 - Counter-cyclical buffers have the potential, if used appropriately, to cool excess at the peaks of the cycle
 - For the first time, internationally agreed liquidity principles will be in place
- » But we are unlikely to be rushing to upgrade banks just because of Basel III
 - Transition times are long
 - Governments’ incentives can change
 - Banks and investment banks will be sure to try to find new ways to arbitrage the rules

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Lessons Learned from the Global Financial Crisis 2008 on

Capital Adequacy

Massive failure of regulatory capital measures to consistently assess risk

- » Despite sophistication and complexity, capital measures performed poorly and were heavily manipulated / arbitrated in conflict with their purpose
- » Practices & public disclosures are often inaccurate and not consistent, thus lacking credibility and failing to provide confidence.
- » Capital adequacy tools and measures failed to adequately anticipate forward-looking risk scenarios and ‘tail’ events; Basel III only an incomplete remedy

Our response

- » Stress testing to dimension the “Tail-risk” is core to Moody’s bank analysis of capital
 - Incorporates macroeconomic factors, historical economic cycles, portfolio characteristics
- » We have recalibrated ratings in nearly every country, adapting stress tests to the specific situations
- » We continue to adjust for banks’ hybrid capital characteristics [A-E baskets]

Weaknesses in Financial Reporting

Opacity has long been a rating concern

- » Disclosure approached as a “compliance task”
- » Disclosure and accounting standards allowed risks to be hidden in off-balance-sheet vehicles
- » Concentration and contingent risks were not transparent
- » Valuation practices often flawed

Our response:

- » Extraordinary requests for supplemental information
- » Higher degree of conservatism for complex institutions; e.g., wholesale investment banks (WIBs)
- » “Moody’s Financial Metrics”:
 - A globally consistent system of capturing and adjusting financial statements
 - Aims to reflect better underlying economic reality and to improve comparability

Governance and Risk Management

Failure of corporate governance / risk management has been very evident

- » Boards lacked expertise / independence to provide effective oversight
- » Incentive structures misaligned in favor of excessive risk taking / short-term behavior
- » Effectiveness of risk management / CRO often marginalized / overruled by business
- » Many examples of failures, few examples of successes

Our response

- » We are developing changes in Risk Management review process to incorporate these lessons

Macroeconomic & Multidisciplinary Perspectives

Critical to enhancing credit risk analysis of banks / banking systems

- » Going into crisis, credit analysis focused heavily on standardized metrics (earnings, capital ratios, etc.)
- » Macroeconomic conditions, competition & interaction between banks and shadow banking system are equally important

Our response

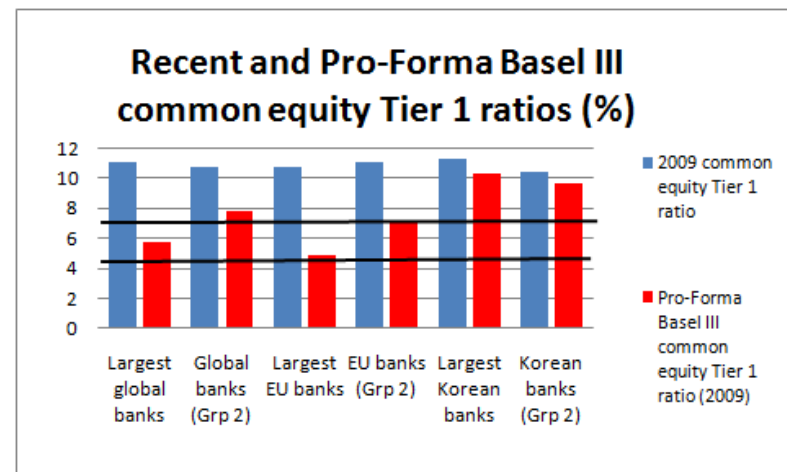
- » Adopt enhanced, multi-disciplinary cooperation among structured finance, sovereign, corporate finance and banking teams; expanded linkages with financial and fundamental economics teams in Moody's Analytics
 - Improved understanding of market dynamics, risks embedded in banks, as well as systemic risks

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Empirical Evidence: Impact of Basel 3 and Current Metrics

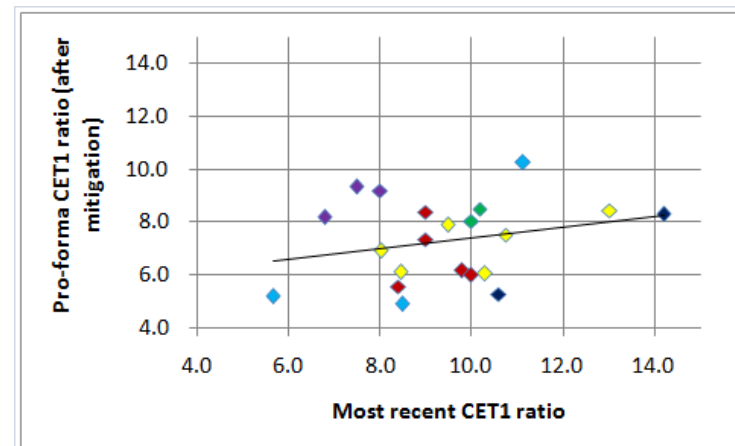
Basel 3 – Banks Need to Raise Substantial Capital

- » Regulatory capital requirements become much more challenging
- » Average common equity tier 1 (CET1) ratio of largest global banks drops almost by half under Basel 3
- » Largest global banks had combined shortfall of EUR 577 billion to reach 7% CET1 ratio (31 Dec '09 pro-forma)
- » European and Korean impact studies and individual bank data confirm capital need
- » Banks' mitigation efforts (e.g., deleveraging) will only partly offset higher capital needs



Sources: Quantitative impact studies (QIS) from Basel Committee, European and Korean bank regulators

Banks' recent and pro-forma Basel 3 CET1 ratios

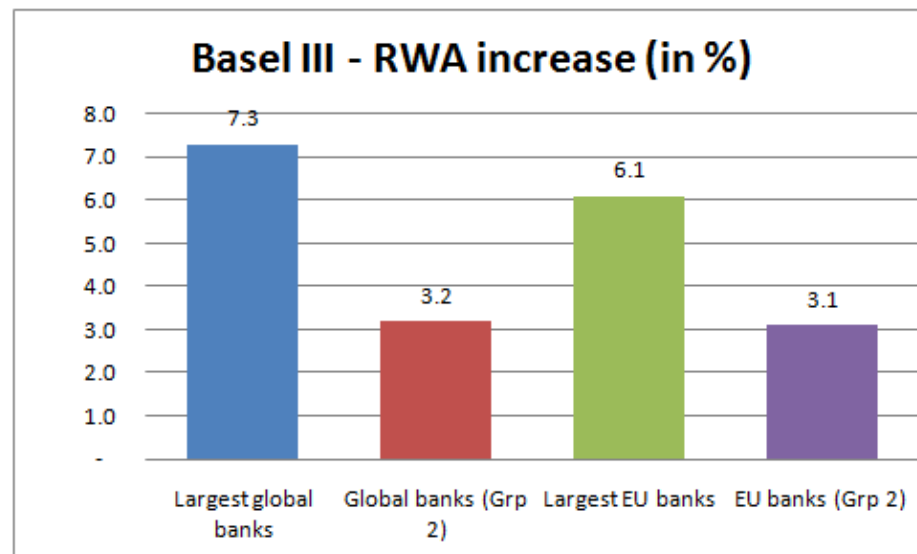
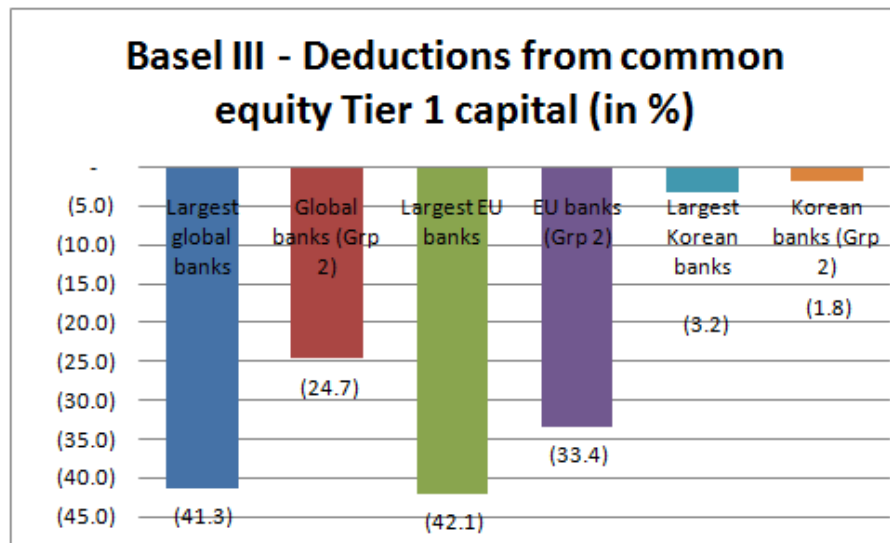


Source: Individual bank disclosure (data not directly comparable)

Deductions Drive Capital Shortfall

- » Largest global and EU banks are particularly affected by capital deductions under Basel 3 because of:
 - Goodwill (already deducted)
 - Investments in financial institutions, DTAs, minorities (new deductions)

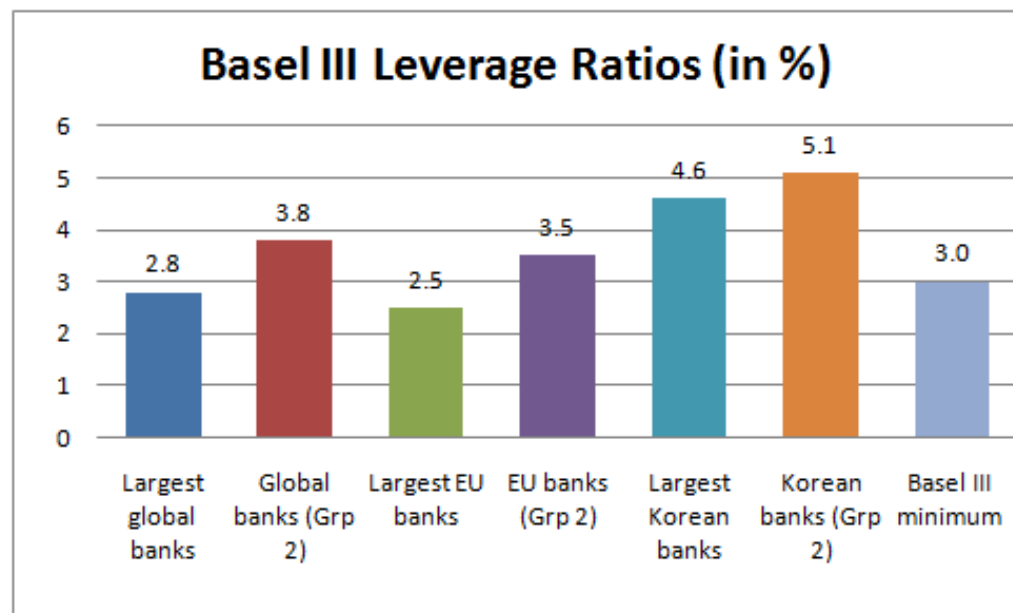
- » Higher risk-weighted assets (RWAs) add to capital needs
 - Banks with large capital markets exposure particularly affected by higher risk weights for their trading and investment portfolios



Source: QIS from Basel Committee, European and Korean regulators

3% Leverage Ratio Would Constrain Many Banks

- » Many large banks currently do not meet proposed leverage ratio
 - 60% of the largest banks did not meet minimum leverage ratio in global QIS
- » Some banks need to adjust their business models to comply
 - Covered bond banks
 - Banks with low-risk-weight capital markets exposures
- » BUT leverage ratio subject to parallel run and review clause
 - Pressure from banks and some national regulators to soften leverage ratio



Source: QIS from Basel Committee, European and Korean regulators

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Stress Testing – Why It Is Needed, How It Is Applied

Stress Testing – Why It is Needed

Relevant and Reliable Ratings Must be Forward-Looking

- » Banks are inherently risky
 - High leverage: magnifies asset volatility
 - Credit cycles: economic swings can create crises
 - Collateral / secured lending: creates exposure to asset price swings
 - Asset / liability mismatch: maturity mismatches, funding can be highly confidence-sensitive
- » Bank accounting is highly opaque, often unreliable
 - True solvency is unknowable* (contributing to run risk)
 - Banks usually have good numbers ... till they collapse

*For detailed discussion of this point, see the Special Comment “The Truth About Bank Credit Risk”, 2001.

Stress Testing – Moody’s Framework

Create a Range of Future Loss Expectations

Expected Loss (EL) = Probability of Default (PD) X Loss Given Default (LGD)

- » Stressed Case – Small probability of materializing, high expected loss. *Relatively static scenario of an envisioned “worst case”*
- » Base Case – Conservative expectation based on current environment / information. *Dynamic and a moving target.*

How the scenarios differ in effect:

- » Healthy Asset Classes: distance between base and stressed case likely to be large
- » Distressed Asset Classes: distance between base and stressed case likely to be narrow

Stress Testing – Forward-Looking, Top-Down Approach

- » Key Macro features by region / country
 - Macroeconomic cycle (aim to rate through cycle)
 - Inflationary / deflationary trends
 - Leverage (enterprises, consumers, etc)
- » Position major asset classes within this setting
 - Broad pooling of assets by major risk drivers (e.g., corporate, residential mortgages, consumer debt)
 - Tailor to product features and legal environment (e.g., risk in foreign currency lending)
- » Ensure plausible but conservative outcomes
 - Based on data for each macro / asset setting
- » Ensure implementation consistent across jurisdictions

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CoCos and the Future of Hybrid Capital

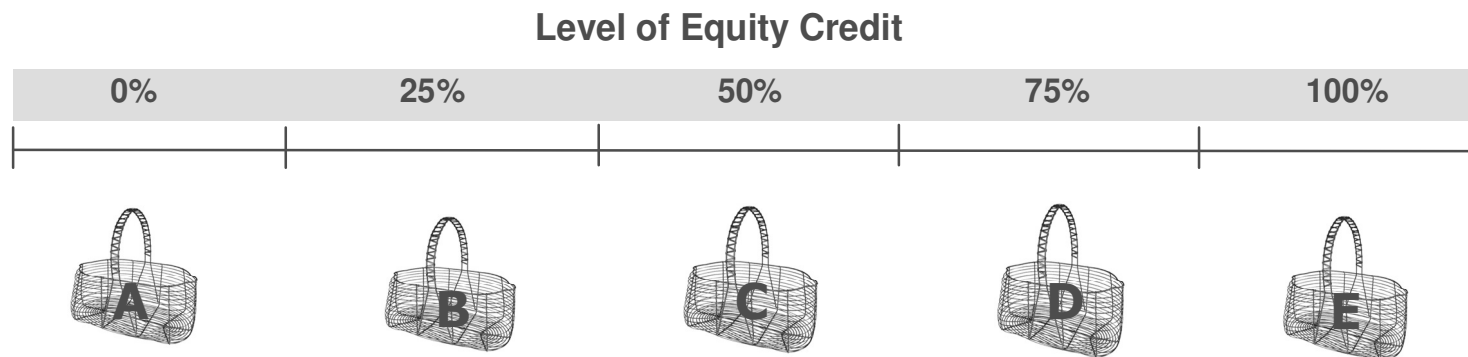
Background

- » Due to the financial crisis, hybrids were tested broadly for the first time since their introduction
- » Many “innovative” features did not necessarily improve the hybrids’ loss absorption
 - Alternative Coupon Settlement Mechanisms are cumulative in nature
 - Presence of replacement language does not add to hybrid’s loss absorption
- » Move to a simpler and more principal-based framework, based on the following three questions:
 - Does the hybrid absorb losses for a “going” concern?
 - Does the hybrid absorb losses for a “gone” concern?
 - Is the loss absorbing capital there when needed?
- » Better alignment between equity credit and notching practices

Moody's Debt-Equity Continuum Remains the Same

- » We continue to classify hybrids in a basket from A (100% debt) to E (100% equity)
- » The equity credit associated with the assigned basket is used to adjust financial statements, subject to a cap on the maximum amount of allowable equity credit:

$$\text{Hybrid Equity Credit} \leq 25\% (\text{Equity} + \text{Equity Credit})$$



Contingent Capital

- » Good for senior creditors, but is it debt?
- » We will rate contingent capital where triggers are credit-linked, objective and measurable, but ratings likely to be below investment grade
- » We won't rate securities where conversion is:
 1. At the bank's option
 2. Tied to the breach of pre-specified triggers unrelated to the bank's financial health
- » We won't rate now, but may rate in the future:
 - Securities where conversion is subject to regulatory discretion, the breach of regulatory capital triggers, or upon non-viability of the bank because regulatory uncertainty is currently too great
- » If conversion or principal write-down is at the option of the issuer or regulator, timing to these events is hard to predict

Contingent Capital is no panacea

The Future of Hybrids

The landscape for bank hybrids is likely to change significantly under new regulation

- » Tighter requirements for Tier 1 securities – “going” vs “gone” concern capital
- » Innovative instruments and Tier 3 to be phased out
- » Harmonisation of Upper and Lower Tier 2
- » Length of grandfathering period has now been clarified

Will there be a sufficiently big investor base and how will it look?

- » It is unclear how “new generation” hybrids will be priced and the investors that will buy them
- » For conversions to equity or principal write-downs, same difficulties to price as to rate
- » Investors take significant downside risk with limited upside potential

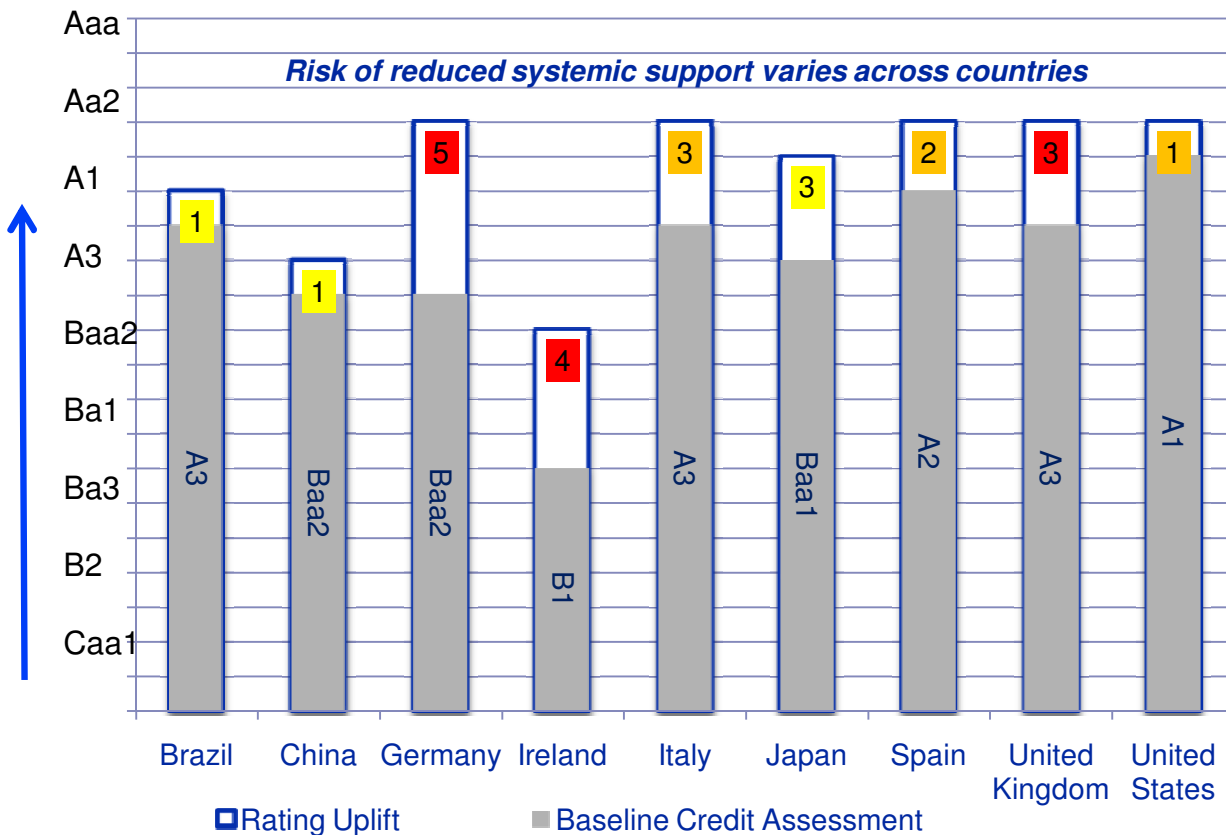
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Government Support Assumptions – The Anchor Shifts

Standalone Credit Profile and External Support → Rating

Our bank deposit ratings reflect banks' standalone financial strength (→ BFSR / Baseline Credit Assessments) and external support (→ Uplift)

Average Long-Term Bank Deposit Ratings



Source: Moody's Investors Service
30 Jun 10, asset-weighted

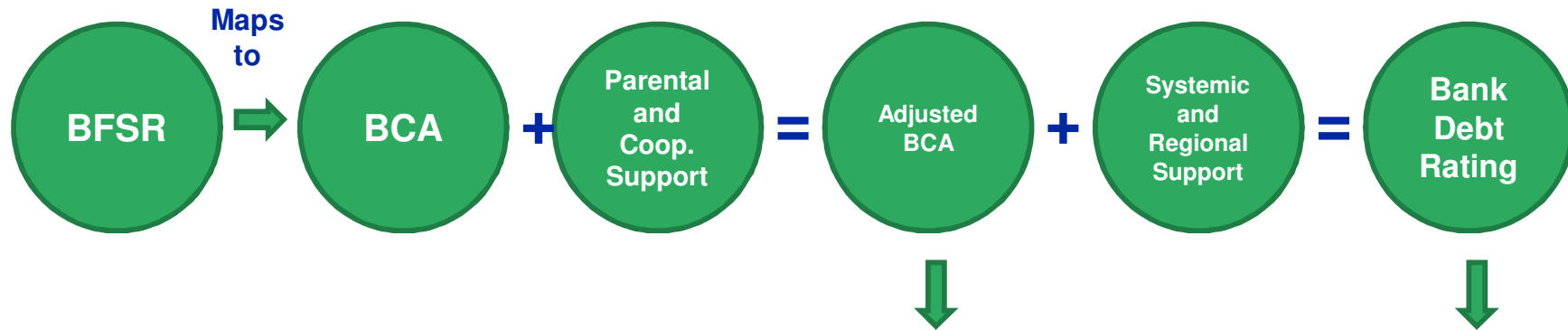
Ratings as of

- » We expect declining government support to pressure ratings
- » Resolution regimes reduce likelihood of systemic support
- » Improving standalone credit profiles crucial to offset declining systemic support

Country	Score	Degree of Potential Pressure
Brazil	1	Moderate
China	1	
Japan	3	
Germany	5	High
Ireland	4	Moderate
Italy	3	Low
Spain	2	Moderate
United Kingdom	3	
United States	1	

Support Assumptions Are Changing

Resolution Regimes Shift “Anchor” on Subordinated Debt



New rating anchoring expected after assessment of resolution regimes	
Sub	-1
Jr Sub	-1 to -2*
Prefs	-2 to -4*

Current rating anchoring for sub debt and previous anchoring for hybrids	
Sub	-1
Jr Sub	-1
Prefs	-2

*Hybrids are already notched off from the Adjusted BCA. For dated junior subordinated securities with principal write-down features, the rating may be positioned 4 notches below the Adjusted BCA.