Introduction:
Capital Planning Concepts

Capital Planning Concepts /
Pillar 2/ ICAAP Overview

Session Objectives

1. Evolution of and context for supervisory expectations with respect to Capital Adequacy Process (CAP)
2. Regulatory developments (international and U.S.) regarding bank capital levels and instruments
3. Capital Adequacy Concepts: Basel II Pillar 2
4. Overview of approaches to internal capital adequacy assessment

Objective 1: Evolution of CAP Supervisory Expectations

1. **Evolution of and context for supervisory expectations with respect to CAP**
2. Regulatory developments (international and U.S.) regarding bank capital levels and instruments
3. Capital Planning Concepts: Basel II Pillar 2
4. Overview of approaches to internal capital adequacy assessment

Evolution of CAP Supervisory Expectations

- The adequacy of a firm's CAP is based on both:
  - The risk management and controls in place to mitigate risk exposure
  - The level of capital available to absorb unexpected losses and adverse operating outcomes
- Capital adequacy assessments have historically focused on regulatory capital measures and stock metrics of capital adequacy
  - Assessed against Prompt Corrective Action (PCA) thresholds in the U.S.
  - However, these measures are:
    - Typically point-in-time, static, and backward-looking
    - Based on the Basel I risk-weighting scheme
    - Insufficient to evaluate the distinct capital needs arising from different business models, exposure profiles, and risk appetites

CAP Supervisory Expectations – Turning Point

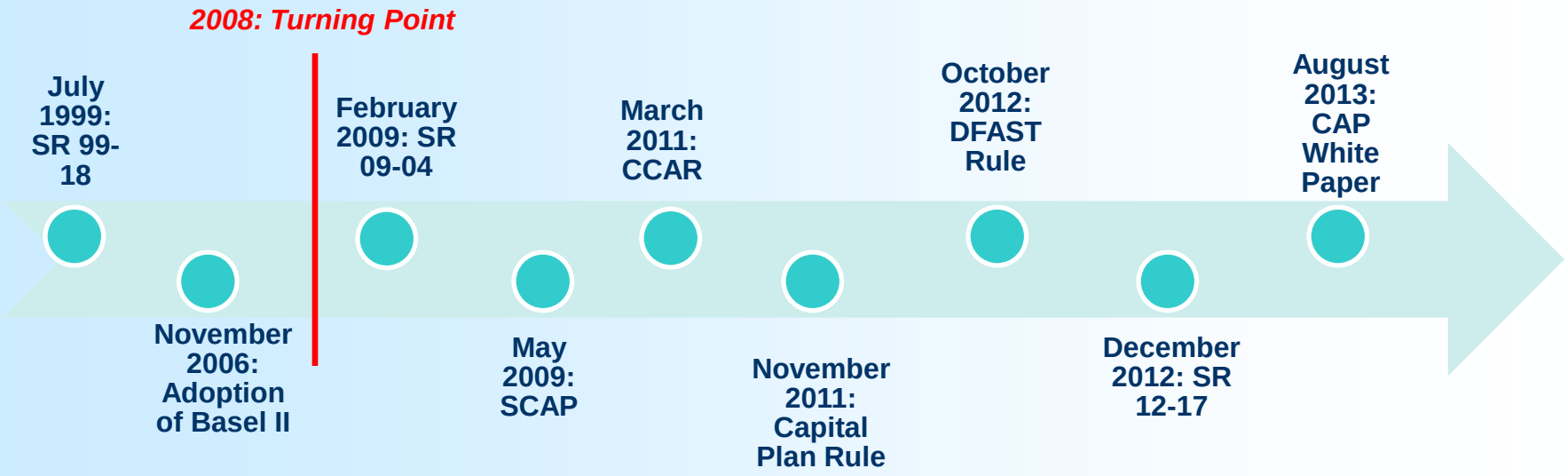
- Pre-2008
  - Most work conducted under Pillar 2 (Basel II mandatory firms), or 99-18 (complex banks that weren't subject to Basel II advanced approaches)
  - Capital adequacy analysis based more directly on aggregate risk measures, *not* "financial analysis"
  - Limited evaluation of the link of capital adequacy process and capital planning

- Post-2008
  - Significant overhaul of supervisory process aimed at evaluating capital adequacy processes
  - Supported by new rule-making and guidance provided to supervised banks
  - *Substantial penalty in place for not meeting expectations in the form of objection to planned capital distributions!*

Evolution of CAP Supervisory Expectations

- The financial crisis generated a significant amount of new thinking and evolution around CAP expectations
  - Re-enforced the importance of:
    - Looking beyond static measures of capital adequacy based on the current exposures and risk levels of a firm
    - Considering the dynamics of its capital position over a range of forward-looking baseline and stress scenarios
  - Shifted focus to enterprise-wide scenario analysis as the primary means of evaluating consolidated capital levels in relation to firm-wide risk
  - Resulted in several new rules, supervisory programs, and guidance
    - SR 09-04 and Temporary Addendum
    - SCAP / CCAR
    - Capital Plan Rule
    - DFAST Rule
    - SR 12-17
    - Supervisory Expectations paper

Evolution of CAP Supervisory Expectations



Objective 2: Regulatory Developments

1. Evolution of and context for supervisory expectations with respect to CAP

2. **Regulatory developments (international and U.S.) regarding bank capital levels and instruments**

3. Capital Adequacy Concepts: Basel II Pillar 2

4. Overview of approaches to internal capital adequacy assessment

Regulatory Developments

- Basel III (International Rule)
  - Goal: Increase the resiliency of the banking system by:
    - Strengthening the Basel I definition of capital
    - Increasing the Basel I minimum capital requirements
    - Introducing minimum capital buffers
    - Improving risk coverage under the Basel II framework
  - Applies to all internationally active banks
  - Changes are subject to transitional arrangements

Regulatory Developments

- Basel III (continued)
  - **New common equity tier 1 (CET1) risk- based ratio = 4.5%**
    - CET1 = common equity plus limited minority interest minus deductions
      - Regulatory deductions from CET1 include: goodwill and other intangibles (except mortgage servicing rights), gain on securitization sales, certain defined benefit pension fund assets, and investment in own shares
      - DTAs, MSRs, significant investments in financial institutions are subject to strict limits
  - **New Capital Conservation Buffer = 2.5%**
    - Additional 2.5% of tier 1 common equity cushion above regulatory minimums required to avoid restrictions on dividends
  - **New Countercyclical Capital Buffer [0-2.5%]**
    - Can require an extension of the capital conservation buffer up to 2.5% in times of excessive credit growth

Regulatory Developments

- Basel III (continued)
  - **Minimum tier 1 risk-based ratio = 6% (increased from 4%)**
  - Quality of tier 1 capital enhanced
    - Tier 1 capital instruments are subject to certain criteria, including:
      - Perpetual (i.e., no maturity date)
      - No incentives to redeem (e.g., no step-ups)
      - Prior supervisory approval required for redemption
      - Full discretion over coupon/dividend payments
      - If classified as liabilities, instruments must embed principal loss absorption mechanism (e.g., conversion)
    - Includes limited amounts of minority interest (as long as the instrument meets the tier 1 criteria)

Regulatory Developments

- Basel III (continued)
  - **Minimum total risk-based ratio = 8% (same)**
  - Tier 2 and total capital
    - Tier 2 instruments are subject to criteria, including:
      - Minimum 5-year original maturity
      - No incentives to redeem (e.g., no step-ups)
      - Instrument may be callable after 5 years
      - Prior supervisory approval required for redemption
    - Limited amounts of loan loss provisions includable in Tier 2 capital:
      - Up to 1.25% of credit RWAs under the Basel II standardized approach
      - Up to 0.6% of credit RWAs under the Basel II Internal ratings-based approach

Regulatory Developments

- Basel III (continued)
  - **New Tier 1 supplementary leverage ratio = 3%**
    - Numerator is tier 1 capital
    - The denominator includes off-balance sheet exposures:
      - On balance-sheet items generally follow the accounting
      - Off-balance sheet items generally subject to a 100% credit conversion factor
      - 10% credit conversion factor for unconditionally cancellable commitments
  - **U.S. enhanced supplementary leverage ratio**
    - Requires 8 largest US BHCs to maintain an additional 2% buffer of tier 1 capital above the 3% supplementary leverage ratio
  - **U.S. Tier 1 leverage ratio = 4% (same)**
    - Denominator includes only on-balance sheet exposures

Regulatory Developments

- Basel III (continued)
- More risk sensitive RWA calculations, including:
  - Higher risk weight for residential mortgages (35 – 200%) based on borrower characteristics
    - U.S. adoption of Basel III, mortgage risk-weights will remain the same
  - Higher risk weight for High Volatility Commercial Real Estate (150%)
  - Higher risk weight for exposures more than 90 days past due (generally 150%)
  - Higher capital charge for those with significant trading activity
  - Higher counterparty credit risk capital charges

Objective 3:
Capital Adequacy Concepts

1. Evolution of and context for supervisory expectations with respect to CAP
2. Regulatory developments (international and U.S.) regarding bank capital levels and instruments
3. **Capital Adequacy Concepts: Basel II Pillar 2**
4. Overview of approaches to internal capital adequacy assessment

Basel II Pillar 2 Concepts

- Pillar 2 guidance identifies three key elements for a firm's internal capital adequacy assessment process (ICAAP):
  - Identify and assess material risks; measure risks that are reliably quantifiable
  - Set internal capital adequacy goals that relate directly to risks, and assess whether capital is adequate for risks (regardless of whether risks are easily measured or not)
  - Incorporate a governance process to ensure the integrity of the internal capital adequacy assessment

Basel II Pillar 2 Concepts

- BHCs should identify and assess all material risks
  - Some types of difficult-to-measure risks, such as reputation and strategic risks, may be quite significant for some BHCs
  - Quantitative approaches should be used to assess some risks
    - Recognize possible model and measurement error, and offset uncertainty and potential error with appropriate conservatism
    - Try to use several quantitative approaches, not just one
  - Qualitative approaches are an important complement to quantitative tools, even for the best modeling
    - Risks that cannot be reliably measured can be addressed qualitatively
    - Models may require an overlay of sound judgment for sound use

Basel II Pillar 2 Concepts

- Setting capital goals requires translation of risk estimates into assessments of capital adequacy
  - BHCs should employ several tools to estimate capital needs
    - Can be more “typical” quantitative approaches (such as economic capital)
    - Should also include other quantitative approaches that take a different perspective (such as stress testing)
    - Should also have qualitative approaches, particularly to estimate capital needs for “difficult to quantify” risks and to determine overlays to model output
  - Aggregating capital needs across risks is not a simple task
  - BHCs should set capital adequacy goals that relate to risk
    - ICAAP should not focus on just a single number to estimate capital needs but on range of outcomes
    - Use the full set of information from capital demand and supply

Basel II Pillar 2 Concepts

- BHCs must establish adequate governance of ICAAP
  - Including clear responsibilities, periodic review, and appropriate response to any deficiencies or inconsistencies
  - Board of directors and senior management must be engaged
    - Should not focus on the capital ratios, but the process that produces them
    - Should not focus on “expected” outcomes, but on various scenario results
    - Should challenge assumptions on an ongoing basis
  - ICAAP should include robust internal controls and documentation
    - Strong validation at all levels of the process
    - Effective internal audit
  - ICAAP should be consistent with other internal processes
    - Should not be just a compliance exercise

Objective 4: Approaches to Capital Adequacy Assessment

1. Evolution of and context for supervisory expectations with respect to CAP
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3. Capital Adequacy Concepts: Basel II Pillar 2
4. **Overview of approaches to internal capital adequacy assessment**

Capital Adequacy Assessment

- Approaches to Assessing Capital Adequacy
  - **Pro Forma Financial Analysis:** Forward-looking assessment of the projected future financial condition of a BHC, based on current financial statements
  - **Stress Scenario Analysis:** Forward-looking assessment of the potential impact of various adverse events and circumstances on an BHC's financial condition and capital levels
  - **Ad Hoc Stress Tests:** Assessments of the impact of specific, targeted scenarios on a BHC's capital and liquidity positions
  - **Economic Capital (EC):** Methodology that translates risk into the amount of capital required to support that risk based on a specified confidence level
  - **Reverse Stress Tests:** Assessments that assume a known adverse outcome and then deduce the types of events that could lead to such an outcome

Pro Forma Financial Analysis

- Pro forma financial analysis is an assessment of the projected future financial condition of a BHC, based on current financial statements
- BHCs use pro forma financial analysis for:
  - Budgeting and planning
  - Analysis of potential transactions or other strategic changes
  - Scenario analysis
- Pro forma financial analysis is often led by a corporate/financial planning function and generally involves:
  - Input from and review and challenge by business lines and corporate and control functions
  - Oversight by senior management and the board

Pro Forma Financial Analysis

- Complexity of projection methodologies will depend on the objective of the analysis and materiality
  - For example, more complex loss estimation approaches may be needed for stress scenario analysis than for analysis of a potential acquisition
  - More complex, sophisticated projection methodologies should be used for more material portfolios and revenue/expense components
    - Materiality can be defined in different ways (e.g., asset size, contribution to total losses, capital at risk, impact to PPNR)
  - However, more complexity is not always better – consider the trade-offs
    - Complex models can be more difficult to understand and use appropriately
    - BHCs may be inclined to over-rely on the output of more complex models

Pro Forma Financial Analysis

- Uncertainty is inherent in any forward-looking exercise/analysis
  - Uncertainty requires forecasters to make assumptions about the future
- Assumptions are critical components of any forecasting exercise, including pro forma financial analysis
  - Key assumptions can drive outcomes
- Sensitivity analysis is a key tool to help senior management and the board understand:
  - The sensitivity of the overall results to changes in key assumptions
  - The range of possible outcomes
  - The uncertainty in pro forma financial analysis

Stress Scenario Analysis

- Stress scenario analysis is an assessment of the impact of various adverse scenarios on a BHC's projected future financial condition
- It provides the analytical foundation for the capital planning process
- Key elements of stress scenario analysis include:
  - Scenario Development
  - Forecasting / Estimation Process
  - Capital Projections and Impact Assessment

Stress Scenario Analysis

Scenario Development:

- BHCs develop scenarios internally or acquire scenarios from vendors
  - Internally developed scenarios are either model-based or judgment-based
    - Stronger practice – using a combination of both models and judgment rather than relying solely on one or the other
  - Externally developed scenarios can be off-the-shelf or customized
    - Stronger practice – tailoring vendor scenarios to the BHC's risk profile and unique vulnerabilities
- Key elements of a scenario design process:
  - Scenario design should be linked to a BHC's risk identification process
  - Severity – scenarios should stress a BHC's unique risks/vulnerabilities
  - Variable coverage – variable set should address all material risks

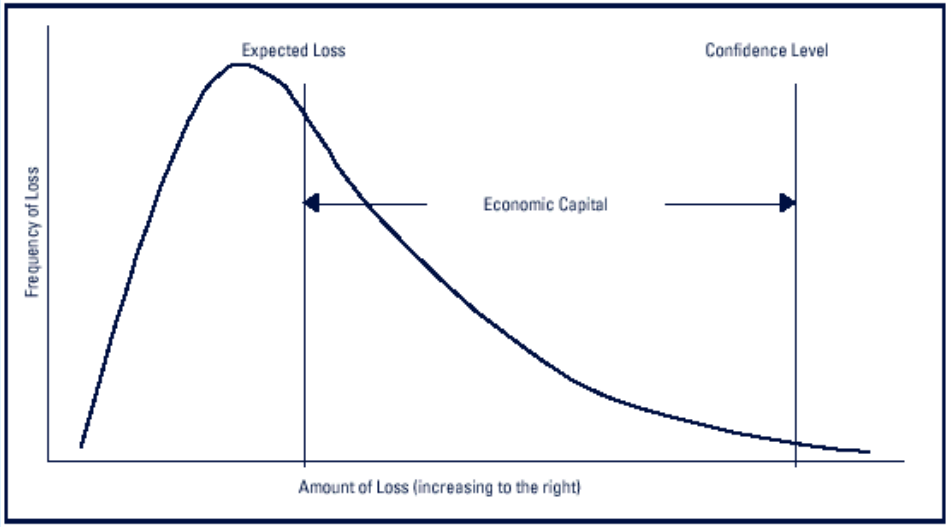
Ad Hoc Stress Tests

- Ad hoc stress tests can be used to assess the risk of a specific scenario and its potential impact to a bank's capital adequacy
  - Scenarios are often more targeted and idiosyncratic than the broad macroeconomic stress scenarios intended to stress all material risks across the full enterprise
    - For example: natural disaster (e.g., earthquake), government shutdown, Greek euro exit, cyber attack
  - Used to supplement the enterprise-wide stress tests conducted on a semi-annual basis
  - Can, in some cases, be layered onto enterprise-wide stress tests to provide senior management and the board additional perspective
    - For example, what if an earthquake occurred during a severe macroeconomic downturn?

Economic Capital (EC)

- EC relates to methods or practices that financial institutions use to attribute capital to absorb losses from risk-taking activities for various time horizons and confidence levels

  - EC can be expressed as the amount of unexpected losses at a given confidence level (99.5% percentile for AA rating)
  - Confidence level is determined by the bank and is related to a bond rating and/or the risk appetite of the firm.



Economic Capital (EC)

- Advantages of EC framework
  - Imparts statistical rigor to estimating potential future losses under significant stress (i.e., stress levels that have not be historically been observed)
- Challenges
  - Sensitive to data availability and distributional choices, hence bias potential
  - Cross-risk diversification not well understood but benefits often taken
  - As implemented historically, generally focused on a one-year loss horizontal and did not consider minimum remaining capital needed to sustain operations at the end of the estimation horizon

Economic Capital (EC)

- Key Considerations:
  - Economic capital is an internal risk management tool
  - Economic capital is specific to a firm; cross firm comparisons are not valid
  - Economic capital models, assumptions and methodologies vary by BHCs
  - Stress testing is the preferred mechanism in U.S. for assessing capital adequacy across BHCs;
  - Economic capital models can supplement other capital adequacy tools and methods

Reverse Stress Tests

- Reverse stress tests can be used to determine what types of events or conditions could result in a worst-case outcome for a bank
  - For example:
    - How bad would conditions need to be for a firm's tier 1 common capital to fall below 5%?
    - What would it take for the firm to become insolvent?
  - Provides valuable information to senior management and the board regarding the bank's risk exposure and allows them to consider:
    - Is the bank's risk profile consistent with its risk appetite?
    - What is the likelihood that such an event or such conditions would occur?
    - Are management and the board willing to accept the risk as is? Or should adjustments be made to the bank's strategy or capital levels?

Questions?

Appendix

Regulatory Developments

U.S. versus International Basel III

Topic	U.S. Basel III	International Basel III
Scope of Application	• Applies to all U.S. banking organizations except small BHCs and non-covered SLHCs	• Designed for internationally active banking organizations
Leverage Ratio	• For all banking organizations, a minimum 4% U.S. leverage ratio, which does not take into account off-balance sheet exposures • For advanced approaches banking organizations only, a minimum 3% Basel III supplementary leverage ratio	• Minimum 3% leverage ratio • The Basel Committee has proposed to revise the Basel III leverage ratio; most revisions relate to how derivatives and securities financing transactions should be taken into account in the denominator
Capital Floor	• Advanced approaches banking organizations are subject to a permanent Collins Amendment capital floor based on the standardized approach	• Does not set a capital floor based on the standardized approach • Basel Committee may explore relationship between standardized approach and advanced approaches
External Credit Ratings	• Dodd-Frank prohibits references to external credit ratings in federal regulations • U.S. Basel III uses non-ratings based alternatives	• Standardized approach relies extensively on external credit ratings
Additional Tier 1 eligibility	• Only instruments classified as equity under U.S. GAAP may qualify as Additional Tier 1 • This would generally prevent contingent capital instruments, which are classified as liabilities, from qualifying as Tier 1 capital	• Instruments classified as liabilities for accounting purposes can be included in Additional Tier 1 capital if they have a principal loss absorption feature

Regulatory Developments

Basel III Phase-In Arrangements (BIS)

	Phases	2013	2014	2015	2016	2017	2018	2019
Capital	Leverage Ratio		Parallel run 1 Jan 2013 – 1 Jan 2017 Disclosure starts 1 Jan 2015				Migration to Pillar 1	
	Minimum Common Equity Capital Ratio	3.5%	4.0%	4.5%				**4.5%**
	Capital Conservation Buffer				0.625%	1.25%	1.875%	**2.5%**
	Minimum common equity plus capital conservation buffer	3.5%	4.0%	4.5%	5.125%	5.75%	6.375%	**7.0%**
	Phase-in of deductions from CET1*		20%	40%	60%	80%	100%	**100%**
	Minimum Tier 1 Capital	4.5%	5.5%	6.0%				**6.0%**
	Minimum Total Capital		8.0%					**8.0%**
	Minimum Total Capital plus conservation buffer		8.0%		8.625%	9.25%	9.875%	**10.5%**
	Capital instruments that no longer qualify as non-core Tier 1 capital or Tier 2 capital		Phased out over 10 year horizon beginning 2013					

*Including amounts exceeding the limit for deferred tax assets (DTAs), mortgage servicing rights (MSRs) and financials.

– – transition periods

Regulatory Developments

U.S. Basel III Transition Schedule

Year (as of January 1)	2015	2016	2017	2018	2019
Minimum common equity tier 1 capital ratio	4.5%	4.5%	4.5%	4.5%	4.5%
Common equity tier 1 capital conservation buffer	N/A	0.625%	1.25%	1.875%	2.5%
Minimum common equity tier 1 capital ratio plus capital conservation buffer	4.5%	5.125%	5.75%	6.375%	7.0%
Phase-in of most deductions from common equity tier 1 (including threshold deduction items that are over the limits)	40%	60%	80%	100%	100%
Minimum tier 1 capital ratio	6.0%	6.0%	6.0%	6.0%	6.0%
Minimum tier 1 capital ratio plus capital conservation buffer	N/A	6.625%	7.25%	7.875%	8.5%
Minimum total capital ratio	8.0%	8.0%	8.0%	8.0%	8.0%
Minimum total capital ratio plus capital conservation buffer	N/A	8.625%	9.25%	9.875%	10.5%

Note : Table does not address 2014 transition items that affect advanced approaches banking organizations.