Basel I ,II,III & IV Summary

Basel I:

- Introduced in 1988 by the Basel Committee on Banking Supervision (BCBS) as a response to the liquidation of Cologne-based Herstatt Bank in 1974.
- Mainly focused on credit risk and appropriate risk-weighting of assets.
- Assets were grouped into five categories according to credit risk, carrying risk weights of 0%, 20%, 50%, 100%, and some assets given no rating.
- Required banks to hold capital equal to 8% of their risk-weighted assets (RWA).
- Introduced three key ratios: the tier 1 capital ratio, the total capital ratio, and the leverage ratio.
- Enforced by law in the Group of Ten (G-10) countries in 1992 and adopted by over 100 other countries

Basel II:

- Published in June 2004 and implemented in 2008 in most major economies.
- Extended and partially superseded Basel I.
- Introduced a new framework to determine the minimum capital that banks should hold to guard against financial and operational risks.
- Introduced a "three pillars" concept: (1) minimum capital requirements (addressing risk), (2) supervisory review, and (3) market discipline.
- Pillar 1: Maintenance of regulatory capital calculated for three major components of risk a bank faces: credit risk, operational risk, and market risk.
- Pillar 2: Introduced the supervisory review process, providing regulators with better tools and dealing with various types of risk, including systemic risk, pension risk, concentration risk, strategic risk, reputational risk, liquidity risk, and legal risk.

- Pillar 3: Aimed to complement the first two pillars by developing a set of disclosure requirements allowing market participants to gauge the capital adequacy of an institution

Basel III:

- Developed in response to the financial crisis of 2007-2008.
- Aimed to improve the banking sector's ability to absorb shocks, improve risk management and governance, and strengthen banks' transparency and disclosures.
- Introduced tighter capital requirements by increasing the mandatory levels of capital for banks.
- Added a new minimum common equity tier 1 (CET1) ratio of 4.5% of RWA and a mandatory capital conservation buffer of 2.5% of RWA, leading to a total of 7% CET1 capital.
- Introduced a minimum 3% leverage ratio and two required liquidity ratios, the Liquidity Coverage Ratio (LCR) and Net Stable Funding Ratio (NSFR)

Basel IV:

- Fast forward to 2023,Often described as the next generation of Risk-Weighted Assets (RWA).
- Encompasses more than just finalizing Basel III, as the requirements of the Basel Committee have expanded significantly.
- The implementation of Basel IV is a remarkable challenge for the banking landscape, as methodologies for the determination of capital requirements are to be revised, leading to fundamental changes in capital calculations across all risk types.
- Leads to more extensive data requirements for Basel monitoring exercises and quantitative impact studies.
- The final implementation of supervisory rules into binding law will be linked to Quantitative Impact Study (QIS) results submitted by banks to their supervisors
- The implementation of these revisions was initially set for January 2022, but it was delayed until January 2023 due to the COVID-19 pandemic

Simple example to help illustrate these complex banking regulations. While it's challenging to provide real-world examples for each point due to the abstract and technical nature of these accords, I will try to simplify and provide hypothetical examples where possible.

Basel I:

Imagine a bank in 1992, after the enforcement of Basel I. This bank has assets like cash, government bonds, corporate debt, etc. These assets are categorized based on their risk levels - for instance, cash has a 0% risk weight because it's not likely to lose value, but corporate debt is riskier and gets a 100% risk weight. The bank is required to hold capital that is at least 8% of

these risk-weighted assets. This means if the total risk-weighted assets are, let's say, $100 million, the bank needs to have at least $8 million as capital.

Basel II:

Picture a bank in 2008 that just adopted Basel II. This bank faces three types of risk: credit risk (the risk that borrowers will default), operational risk (risks from inadequate or failed internal processes), and market risk (risk of losses from market changes). To calculate the required capital for credit risk, the bank could use a standardized approach, which assigns risk weights according to external credit ratings, or the bank could use more advanced approaches that are based on the bank's internal ratings. For operational risk, the bank could use a basic indicator approach, which ties capital to the bank's gross income, or more sophisticated approaches. For market risk, the bank would typically use a statistical model to estimate potential losses.

Basel III:

Now imagine a bank in 2010, in the aftermath of the 2007-2008 financial crisis. Basel III is introduced, and now this bank needs to increase its minimum Common Equity Tier 1 (CET1) ratio to 4.5% of RWA. This means that of the bank's total risk-weighted assets, at least 4.5% has to be in the form of CET1 capital, which primarily consists of ordinary shares and retained earnings. In addition, the bank needs to maintain a capital conservation buffer of 2.5% of RWA, bringing the total CET1 requirement to 7%. Furthermore, the bank needs to meet two liquidity requirements: the Liquidity Coverage Ratio (LCR) and the Net Stable Funding Ratio (NSFR). For instance, under the LCR, the bank must hold enough high-quality liquid assets to cover its total net cash outflows over 30 days in a stress scenario.

Basel IV:

Fast forward to 2023. The bank is now transitioning to what's colloquially referred to as "Basel IV". This involves changes to the way the bank calculates credit and operational risk. For instance, the bank can no longer use its internal models for certain types of loans, and instead has to use a standardized approach prescribed by the Basel Committee. In addition, there's a new "output floor" that sets a minimum limit on the risk-weighted assets calculated by the bank's internal models. This means the bank's internally calculated RWA can't fall below 72.5% of the RWA calculated under the standardized approach. This could potentially result in higher capital requirements for the bank

<u>Notes:</u>

Tier 1 Equity Capital:
This is a measure of a bank's core capital, which is used to absorb losses without the bank needing to cease its trading operations. The more Tier 1 capital a bank has, the more losses it can absorb, hence making it more stable and reliable to the customers.

For example, suppose Bank A has $10 million in Tier 1 Equity Capital and faces losses of $1 million. Even after absorbing the loss, Bank A still has $9 million in Tier 1 capital, which means it can continue its operations without trouble.

Net Stable Funding Ratio (NSFR):
This is a measure introduced by the Basel III accords to promote bank liquidity. It is designed to ensure that banks maintain a stable funding profile in relation to the liquidity of their assets. This ratio is calculated as the amount of available stable funding divided by the amount of required stable funding. A ratio of 100% or more means the bank has enough stable funding to meet its liquidity needs.

For example, suppose Bank B has $20 million in available stable funding and $18 million in required stable funding. The NSFR would be $20m / $18m = 1.11 or 111%, which suggests Bank B is well-positioned in terms of liquidity and funding stability.

Liquidity Coverage Ratio (LCR):
Another liquidity standard introduced under Basel III. It aims to ensure that a bank has an adequate stock of unencumbered high-quality liquid assets (HQLA) that can be converted into cash to meet its liquidity needs for a 30 calendar day liquidity stress scenario. The LCR is calculated as the value of high-quality liquid assets divided by total net cash outflows over the next 30 days. A ratio of 100% or more is required, indicating that the bank can survive a severe liquidity stress scenario for 30 days.

For example, if Bank C has $8 million in high-quality liquid assets and expects $6 million in net cash outflows over the next 30 days, its LCR would be $8m / $6m = 1.33 or 133%. This means Bank C has enough liquid assets to survive a significant liquidity event for the next 30 days.