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RESEARCH ARTICLE

BASEL III CAPITAL REFORMS AND BANK STABILITY IN A CHANGING ENVIRONMENT

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Abstract

The global financial system is operating in an environment marked by heightened geopolitical uncertainty, economic volatility, and rapid technological change. These developments have increased the complexi ty of financial regulation and intensified concerns about systemic risk, particularly in relation to large and interconnected financial institutions. In response,post-crisis regulatory reforms have placed greater emphasis on bank capital adequacy as a central tool for enhancing financial stability. This paper examines the evolution of capital regulation under the Basel framework, with particular attention to Global Systemically Important Banks (G-SIBs) in the United States and the euro area.The analysis reviews the shift from Basel I and II to Basel III, highlighting the introduction of higher-quality capital requirements, expanded risk-weighted asset calculations, and additional capital buffers aimed at stre ngthening banks' loss-absorbing capacity. Existing empirical studies present mixed evidence regarding the effectiveness of these measures. While higher capitalization is generally associated with greater resilien ce and improved crisis performance, concerns remain about regulatory complexity, pro cyclicality, and the potential impact of stricter require ments on lending and financial intermediation.Drawing on recent G-SIB assessments and stress test evidence, the paper shows that despite improvements in aggregate capital ratios, a meaningful share of banks remains vulnerable under adverse macroeconomic conditions, particula rly given strong linkages with non bank financial institutions. The findi ngs support the view that higher and more robust capital requirements can play an important role in limiting systemic risk. At the same time, the results underscore the need for a balanced regulatory framework that strengthens financial stability without unduly constraining banks' ability to support the real economy.

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Introduction:-

The global financial regulatory landscape is becoming increasingly complex and interconnected, shaped by a convergence of geopolitical, economic, and technological factors. According to EY's 2025 Global Financial Services Regulatory Outlook, rising geopolitical tensions, economic volatility, and rapid technological developments present both significant opportunities and notable risks for financial institutions (EY, 2025). Regulators are therefore tasked with the dual challenge of promoting innovation while maintaining robust consumer protection and safeguarding financial stability. Emerging systemic risks, such as cybersecurity threats, operational disruptions, and financial market instability, highlight the critical need for vigilant and adaptive regulatory approaches. The interconnected nature of the global financial system further magnifies these risks, as shocks in one region or sector can quickly propagate across borders, potentially triggering market volatility and deposit runs.

The World Economic Forum's 2025 Global Risks Report underscores the broader context of these challenges. Among surveyed experts, 23% identified state-based armed conflicts, including proxy wars and terrorism, as the foremost global risk for the year, while 14% highlighted geoeconomic confrontations and climate-related extreme weather events (World Economic Forum, 2025). The report further emphasizes that societal polarization, political fragmentation, and the spread of misinformation exacerbate these risks, contributing to an increasingly volatile and unpredictable global environment. These dynamics underline the importance of regulatory frameworks that are not only resilient but also forward-looking, capable of anticipating and mitigating systemic threats, and fostering confidence in the stability and integrity of the global financial system.By situating financial regulation within this broader geopolitical and socio-economic context, it becomes evident that the challenges facing regulators extend beyond traditional banking risks, requiring a holistic approach that integrates capital adequacy, risk management, and macroprudential oversight.

Literature Review:-

In the existing literature, various scholars have offered differing views on the regulation of bank risks and capital requirements. Fischer Black, Merton Miller, and Richard Posner (1978)contend that regulations focusing on everyday risks are particularly relevant when regulators assume the role of bank creditors, a situation more common for smaller banks that rely heavily on retail deposits, given that these creditors are often less sensitive to risk due to government guarantees. In contrast, Andrew Haldane and Vasileios Madourne (2012)argue that a simple capital ratio is likely to be a more effective regulatory instrument for large, complex financial institutions, suggesting that risk-based capital requirements may be overly complex for smaller banks. It is suggested that for Systemically Important Financial Institutions (SIFIs), market forces could be more effective in managing regular risks, although this approach might be less reliable if such institutions are perceived as "too-big-to-fail." Finally, Samuel G. Hanson et al. (2011) caution against the automatic application of risk-based capital requirements, highlighting the potential for pro-cyclical effects that could distort risk assessments during periods of economic expansion and contraction, and advocating for a more discretionary approach to avoid exacerbating financial instability.
Barth and Miller (2018) argue that while Basel capital adequacy standards have become stricter, they are also overly complex, especially in the U.S. They suggest that multiple capital ratios often conflict, and regulatory simplicity may better ensure financial stability. Cohen (2013) finds that banks with higher capital ratios and stronger profitability post-crisis were able to expand lending more. Fraisse et al. (2020) show that a 1 percentage point increase in capital requirements reduces lending by 2.3–4.5%, suggesting that reducing capital requirements could boost lending and bank profits. These findings indicate that lowering capital requirements might enhance bank stock returns and lending activity.

At first glance, the potential positive effect of higher capital requirements on bank lending seems counterintuitive and at odds with empirical evidence. Conventional wisdom assumes that banks' funding rates, such as deposit rates, do not materially adjust to regulatory changes, forming the basis for studies identifying the effect of higher capital on lending. For instance, Peek and Rosengren (1995) exploit variations affecting only a subset of banks rather than sector-wide changes that could shift equilibrium interest rates. Otherwise, changes in loan supply might reflect factors like loan demand. Empirical studies therefore capture a partial equilibrium response, holding funding rates constant, to higher capital requirements.According to Malik and Xu (2017), GSIBs and GSIIs display strong regional clusters of

return and volatility connectedness. U.S. and European institutions are primary sources of market-based linkages, total system connectedness rises during financial stress, and factors like economic policy uncertainty, interest rates, profitability, and asset quality significantly influence connectednessAccording to Galeone et al. (2023), G-SIBs increasingly adopt sustainability reporting, using various frameworks and standards to disclose environmental, social, and governance performance, highlighting financial institutions' role in promoting socially responsible investments and fostering sustainability culture across the financial system.Grünewald (2025) analyzes the UBS–Credit Suisse merger and finds that, despite the absence of a formal resolution, the intervention was not a classic bailout and broadly conformed to the FSB's Key Attributes. The study emphasizes risks from increased bank concentration, the value of flexibility in resolution planning, and the importance of credible public funding backstops.

Other studies suggest that non-risk-based capital measures are more informative than risk-based measures in explaining bank stock returns and bank risk (Demirguc-Kunt et al., 2013; Hogan and Meredith, 2016). These findings indicate that simpler leverage-based ratios may better capture banks' true financial conditions. In addition, Flannery (2014) documents that during the financial crisis banks formally met regulatory capital requirements based on book values, even as market valuations of bank capital declined sharply below their book values, highlighting a disconnect between regulatory measures and market perceptions of bank strength.Existing research has largely examined the effects of G-SIB regulation from alternative perspectives, focusing on the implications of G-SIB designation for banks' implicit public guarantees and the effectiveness of resolution regimes (Schich&Toader, 2017), the impact of post-crisis regulatory frameworks on stock market valuations of G-SIBs (Moenninghoff, Ongena, &Wieandt, 2015), and the calibration of optimal capital requirements (Passmore & von Hafften, 2017).Against this backdrop, the reforms are expected to have a favourable effect on financial intermediation over the long run, insofar as higher capitalisation and enhanced resilience enable financial institutions to better withstand adverse shocks while maintaining the continuous provision of core financial services to the real economy (Gambacorta and Shin, 2018; Begenau, 2020; Bahaj and Malherbe, 2020).

Methods:-

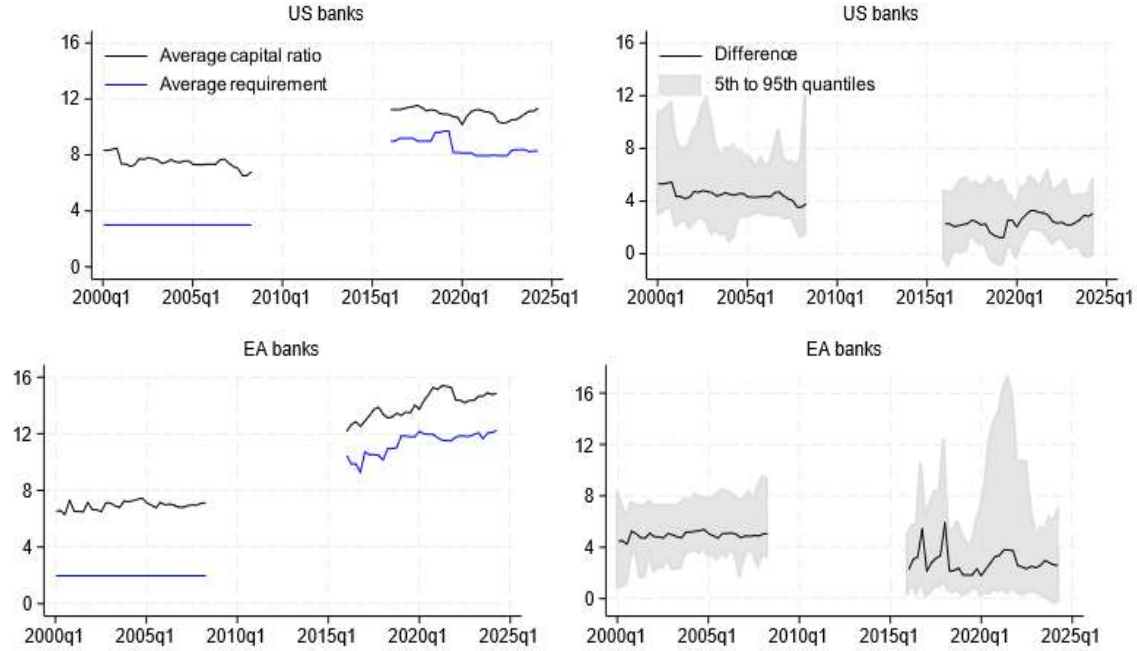
This study examines how Basel III capital reforms have influenced the stability and resilience of major banks, focusing on Global Systemically Important Banks (G-SIBs) in the United States and the euro area. We measure bank strength using the ratio of high-quality regulatory capital—Common Equity Tier 1 (CET1)—to risk-weighted assets (RWA), capturing both pre-crisis (Basel I and II) and post-crisis (Basel III) periods. Our analysis considers key regulatory elements, including capital conservation buffers, G-SIB-specific surcharges, and countercyclical buffers, to understand how these measures affect banks' ability to withstand shocks. Data are drawn from public disclosures, stress test reports, and supervisory sources, complemented by market indicators of performance. We use descriptive statistics, time-series comparisons, and correlation analysis to explore the connection between capital levels and bank resilience. By combining regulatory and market perspectives, this approach highlights not only the effectiveness of reforms but also the practical ways banks adapt to a constantly changing financial environment.

Results:-

The analysis relies on the ratio of the highest-quality regulatory capital to risk-weighted assets (RWA). Both the numerator and the denominator of this ratio have evolved over time. Prior to the global financial crisis (GFC), when Basel I and Basel II were in force, the numerator was generally referred to as core equity capital. Under Basel III, common equity Tier 1 capital—characterised by its superior loss-absorbing capacity—became the highest-quality form of regulatory capital.With respect to the denominator, Basel I relied exclusively on the standardised approach (SA), which classified exposures into relatively coarse risk categories and explicitly accounted only for credit risk. Basel II expanded the scope of RWA to include market and operational risks and created incentives for large banks to adopt internal ratings-based approaches. Smaller banks, constrained by more limited modelling capacity, continued to capture these risks primarily through the SA. Basel II was implemented in the European Union through the Capital Requirements Directive, which entered into force on January 1, 2007, while the use of advanced approaches for credit and operational risk calculations was permitted from January 1, 2008.Relative to Basel II, Basel III introduced a more conservative framework for risk measurement. In particular, it

reduced banks' incentives to rely on IRB approaches by imposing SA-based floors and increased the risk sensitivity of the SA by enhancing the granularity of the associated risk categories. Although only a subset of these RWA-related reforms was implemented during the sample period in the United States and the euro area, all other Basel III elements relevant for the analysis were already in place.The construction of the market bufferrequires subtracting applicable capital requirements from the regulatory capital ratio. The corresponding time series combine information from several US public sources (see below) with non-public supervisory data for the euro area. Figure 1 provides an overview, while Table 1 presents institutional details.

Figure 1. Average capital ratios and regulatory requirements



A central regulatory component of the highest-quality capital-to-RWA ratio is the Pillar 1 minimum requirement. Under Basel I and Basel II, this requirement amounted to 2% of RWA. Although not stated explicitly, it was implied by: (i) a Tier 1 capital requirement of 4%; (ii) the condition that at least half of Tier 1 capital be met with core equity; and (iii) banks' incentives to minimise the use of relatively costly core equity. During this period, a prompt corrective action (PCA) add-on of 1 percentage point applied in the United States but not in the euro area. Formally, the PCA add-on corresponded to a Tier 1 capital requirement of 2% of RWA (Svoronos, 2018). Consistent with the assumed relationship between minimum Tier 1 and core capital requirements, half of the Tier 1 PCA add-on is treated as core equity.Basel III raised the Pillar 1 minimum requirement to 4.5% of RWA. Post-GFC PCA measures in the United States (GAO, 2011), as well as the corresponding early-intervention measures in the euro area, are subsumed within additional regulatory requirements discussed below.

Basel III also introduced several regulatory buffers on top of the minimum requirements. First, the capital conservation buffer (CCoB) was implemented in 2016 at a level of 0.625%, increased in equal annual increments to 2.5% by 2019, and has remained at that level thereafter. Second, the buffer for global systemically important banks (G-SIBs), also introduced in 2016, rose in equal annual steps through 2019. The level of this buffer varies across banks according to their G-SIB scores. Third, the countercyclical capital buffer (CCyB) is set at the discretion of national authorities. Over the sample period, the CCyB was positive in several euro-area countries but remained at zero in the United States (Juselius, M., Marques, A. P., &Tarashev, N., 2025).

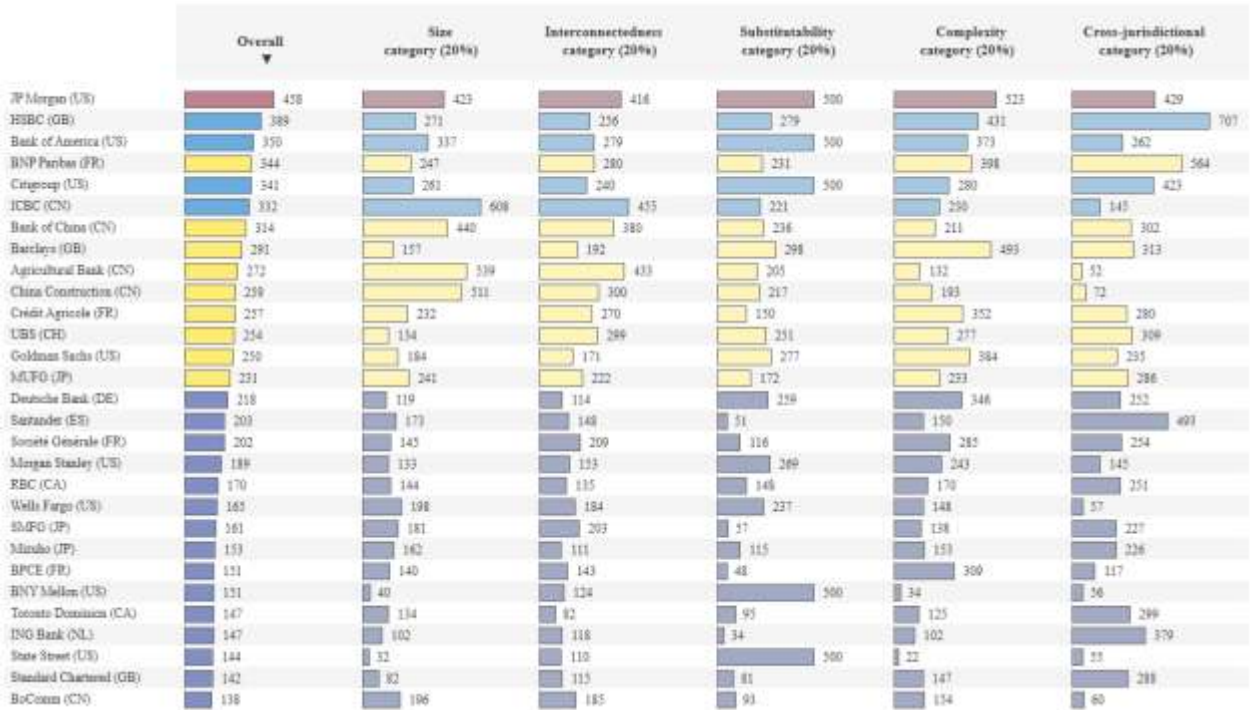
Table 1. Regulatory requirements

	2000-2008q2	2016	2017	2018		2019	2020-2024q2
UnitedStatedandEuroarea							
CCyB(CET1,nationallevel,max)	-	0.625%	1.25%	1.875%		2.5%	2.5%
CCoB(CET1)	-	0.625%	1.25%	1.875%		2.5%	2.5%
UnitedStates							
GSIBbuffer(CET1)	-		ByGSIBscore,fourequalyearlyincreases				
Promptcorrectiveactionadd-on(coreeq)	1%		-				
Stresstestbuffer(CET1)	-		version1				version2
Euroarea							
MaxGSIIand OSIIbuffer(CET1)	-		Pernationalspecification(upto2%)				
Systemicriskbuffer(CET1)	-		Pernationalspecification(min.0.5%)				
Pillar2 guidance(CET1)	-		Bankspecific,outcomeoftheSREPprocess				
Pillar2requirement(CET1)	-		Bankspecific,outcomeoftheSREPprocess				
Regulatoryregimes							
RegimesEuroarea,US	pre-GFC:r1		post-GFC:r2				
Internationalstandards	BaselIandII		Basel III				

Finally, Basel III gave rise to jurisdiction-specific regulatory requirements. In particular, US banks in the sample have been subject to two distinct versions of a stress test-based buffer. From the beginning of the post-GFC period through 2020:Q3 (version 1), the effective regulatory buffer was determined as the maximum of: (i) the capital shortfall implied by the stress test and (ii) the sum of the CCoB and the G-SIB buffer. From 2020:Q4 onward (version 2), this requirement was replaced by the sum of the G-SIB buffer and the maximum of the stress capital buffer (SCB) and the CCoB.According to the results, attached is the G-SIB scores dashboard for 2024, which presents the assessment scores of Global Systemically Important Banks (G-SIBs) for the year. The dashboard was last published on November 27, 2025, and includes data up to July 30, 2025. According to the findings, JP Morgan Chase was ranked as the most systemically important bank in the world. This requirement, introduced in 2014, forms part of regulatory reforms following the 2008 financial crisis triggered by the collapse of Lehman Brothers. Banks designated as systemically important are considered critical to the stability of the global financial system, and are therefore subject to stricter capital requirements. These institutions are classified into different "buckets" based on their level of systemic importance (Basel Committee on Banking Supervision, 2025).

According to the IMF's 2025 Global Financial Stability Report, while capital ratios in the banking sector have improved, stress tests reveal that 18% of global banks could see their Common Equity Tier 1 (CET1) capital ratio fall below 7% under adverse macroeconomic conditions. The share of weak banks could rise to 21% if shocks affect Non-Bank Financial Institutions (NBFIs), underscoring the interconnectedness between banks and NBFIs (International Monetary Fund, 2025).

Figure 2.G-SIB scores in 2024



This dashboard is a key component of the Basel Committee on Banking Supervision's methodology, which evaluates the systemic importance of banks globally. It provides insight into the banks' scores, which determine their allocation to specific buckets used to assess their additional loss absorbency requirements. The scores are derived from a set of aggregated indicators reported by the banks and are subject to supervisory judgment, allowing for adjustments to the categorization based on broader systemic considerations.This list is based on data from the end of 2024 and follows a methodology established in July 2018, which was first applied in the G-SIB assessment for the end of 2021. The changes in bucket allocations are largely driven by alterations in the banks' activities, with the complexity category being the primary contributor to the movement of scores. G-SIBs are subject to several regulatory requirements, including higher capital buffers, which are determined by their bucket assignments. These requirements will take effect on January 1, 2027 for banks that experience a bucket increase. Additionally, G-SIBs are required to comply with the Total Loss-Absorbing Capacitystandard, which began its phased implementation on January 1, 2019, in line with Basel III regulations. Further requirements include resolvability assessments and increased supervisory expectations, particularly in areas such as risk management and internal controls (Financial Stability Board, 2025).

The G-SIB Dashboard is integral to assessing the systemic importance of banks by assigning scores based on factors like size and complexity. These scores determine each bank's regulatory bucket, which influences their capital requirements and additional measures. The methodology, updated annually, ensures banks with greater systemic risk maintain higher capital buffers and meet strict requirements, such as Total Loss-Absorbing Capacity standards, to reduce the potential impact of a failure on the global financial system.

Conclusions:-

Limiting the systemic risk posed by large, complex financial institutions is a critical and complex challenge for modern regulatory frameworks. While there is consensus on the need to address the disproportionate leverage of these institutions and the resulting economic fragility, the means to achieve this remain contentious. This article proposes a regulatory approach that seeks to significantly increase the capital held by banks, thereby reducing the likelihood of bank failures and mitigating the systemic externalities associated with them. While it is uncertain whether such capital regulations can effectively mitigate large-scale financial risks without stifling economic activity,

there is a compelling case for experimentation with this approach. Unlike market-based solutions, such as contingent capital, this model relies on existing regulatory mechanisms and avoids radical institutional changes. Most importantly, it holds the potential to meaningfully enhance the current system, offering a more effective path toward managing systemic risk while supporting stable economic growth.

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