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BEYOND 'MORE IS BETTER': A WELFARE-BASED CRITIQUE OF BANK CAPITAL REGULATION

Francisco Rodríguez-Fernández

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Francisco Rodríguez Fernández
University of Granada and Funcas

Abstract

This paper critically re-examines the post-crisis consensus advocating ever-higher bank capital requirements, reframing the issue through a welfare-maximization lens. While robust capital buffers enhance financial stability by reducing moral hazard and crisis risk, they also entail opportunity costs —such as constrained credit supply, reduced intermediation, and risk migration to less regulated sectors. Drawing on recent theoretical models and empirical evidence, the analysis highlights the existence of an optimal capital threshold beyond which marginal benefits decline, and efficiency costs rise. It underscores the importance of buffer usability, dynamic calibration, and holistic regulatory oversight. The findings challenge the simplistic notion that "more capital is always better" and instead support a nuanced, data-driven regulatory framework grounded in the trade-offs that define real-world financial systems.

Keywords: bank capital regulation, financial stability, welfare maximization, capital buffers, systemic risk, credit supply, macroprudential policy, Basel III, regulatory trade-offs, shadow banking.

1. INTRODUCTION

In the wake of the 2007–2009 global financial crisis, a broad international consensus emerged around a central principle: banks should hold substantially larger capital buffers to absorb losses and preserve systemic stability. The crisis exposed the fragility of undercapitalized financial institutions and the enormous public costs of widespread bank failures. In response, global regulatory frameworks —most notably the Basel III reforms— ushered in a new era of significantly higher capital requirements. These included increases in minimum Common Equity Tier 1 (CET1) ratios, the introduction of capital conservation and countercyclical buffers, and a non-risk-based leverage ratio as a backstop.

This regulatory transformation was grounded in a strong narrative: that more capital necessarily leads to safer banking systems. Institutions such as the Basel Committee on Banking Supervision (BCBS), the European Central Bank (ECB), the U.S. Federal Reserve, the Bank for International Settlements (BIS), and the International Monetary Fund (IMF) have consistently advocated for strengthened capital positions, often framing capital as the foundation of financial system resilience. Empirical studies and cost-benefit assessments published by these institutions suggested that the long-run benefits of higher capital —in terms of reduced crisis probability and economic losses—far outweighed the short-run costs, such as slightly higher lending rates.

However, over a decade into this new regime, and following additional shocks such as the COVID-19 pandemic and recent banking sector disruptions, it is appropriate to revisit the assumptions underlying this consensus. While few dispute that capital is a crucial safeguard, the policy maxim “more capital is always better” risks oversimplifying a set of complex and dynamic trade-offs. Capital regulation, like any economic instrument, has costs as well as benefits. Higher capital requirements reduce moral hazard and improve the loss-absorbing capacity of financial institutions, but they may also limit banks’ ability to extend credit, alter their risk-taking behavior, reduce profitability, and displace financial intermediation to less regulated sectors. Moreover, high capital ratios alone are not a guarantee of resilience; factors such as asset quality, supervisory practices, and the usability of capital buffers during stress periods also play critical roles.

This paper reframes the capital regulation debate through a welfare-maximization lens, arguing that the optimal level of bank capital is not necessarily the highest possible, but rather the one that maximizes net social benefits after accounting for all relevant trade-offs. Drawing on recent theoretical contributions —including general equilibrium and macro-financial models— and empirical evidence, the analysis explores how capital affects not only financial stability but also credit supply, bank behavior, and broader economic outcomes. The paper also critically reviews the positions of key regulatory institutions, examining whether their capital frameworks remain well-aligned with theoretical optima or risk drifting into diminishing-return territory. Our aim is not to reject the post-crisis reforms or deny the gains achieved in financial stability. On the contrary, the paper acknowledges that higher capital levels have substantially improved the resilience of global banking systems. But it also emphasizes the need to calibrate capital requirements carefully, considering their marginal effects on both stability and efficiency. In doing so, it contributes to a more refined policy discussion—one that avoids false dichotomies between safety and growth, embraces empirical nuance, and recognizes that financial regulation must evolve alongside the structure of the financial system itself.

By articulating a welfare-based framework for evaluating bank capital, this paper aims to clarify where current policy stands in relation to optimal design, highlight areas where adjustment may be warranted, and support a regulatory philosophy grounded in continuous reassessment rather than doctrinal adherence. Ultimately, the goal is to strengthen the intellectual foundations of capital policy by placing it firmly within the logic of social welfare maximization.

Overall, we offer a critical, evidence-based reassessment of the “more capital is always better” mantra by identifying where additional buffers generate meaningful welfare gains—and where they do not. In doing so, the analysis highlights the importance of diminishing marginal returns, opportunity costs, and the interaction between capital regulation and broader financial system dynamics. The remainder of the paper is structured as follows:

Section 2 provides a historical and theoretical overview of bank capital regulation, tracing its evolution from early radical proposals to the Basel framework. Section 3 examines modern welfare-based models and recent empirical findings, including estimates of optimal capital thresholds. Section 4 presents the macroeconomic evidence on the effects of capital requirements on resilience, credit supply, and growth, while highlighting cross-country anomalies that challenge a one-size-fits-all approach. Section 5 analyzes institutional perspectives, focusing on how regulatory bodies incorporate welfare trade-offs into their frameworks. Section 6 concludes with policy recommendations for designing capital regulations that are robust, flexible, and grounded in economic welfare maximization.

2. THEORETICAL TRADE-OFFS OF BANK CAPITAL BUFFERS

2.1. Historical perspective

Historically, regulatory thinking on bank capital has oscillated significantly, reflecting shifting paradigms regarding financial stability, monetary policy, and economic welfare. The Great Depression of 1929 dramatically reshaped the regulatory landscape, exposing the vulnerabilities inherent in highly leveraged banking systems and prompting economists and policymakers to reconsider foundational principles governing bank capital and liquidity.

Immediately following the catastrophic banking collapses of the early 1930s, radical regulatory solutions gained prominence. Foremost among these was the Chicago Plan, articulated prominently by economists at the University of Chicago, notably Henry Simons (1933) and Irving Fisher (1935). These economists advocated a transformative reform: implementing a 100% reserve requirement for demand deposits. Under their framework, banks would be required to back checking accounts entirely with reserves held in cash or government-issued assets, fundamentally separating monetary functions (payments and deposits) from lending activities. The theoretical argument behind this approach was straightforward yet profound—such a separation would eliminate bank runs, as depositors would always have full confidence in the availability of their funds, thereby stabilizing financial and economic cycles. Fisher's (1935) seminal work, *100% Money*, rigorously outlined the perceived benefits of this system, arguing that it could end the destructive cycle of credit booms and busts that had devastated the economy during the Depression years.

While the Chicago Plan was ultimately not implemented in its radical form, its principles persisted and profoundly influenced subsequent economic thinking and policy debates. In the ensuing decades, Milton Friedman (1960) notably revisited and defended the 100% reserve principle within the broader context of monetarism. Friedman, emphasizing the necessity of monetary stability, argued that banking systems built upon stable, fully backed deposits could effectively control inflation and mitigate economic fluctuations. His book, *A Program for Monetary Stability* (1960), explicitly called for reforms aligning closely with the Chicago School tradition, advocating for measures that tightly constrained banks' ability to create money through lending. Friedman's ideas were influential both academically and in broader policy discussions, setting the stage for debates about the proper role and extent of capital regulation that continue to this day.

Despite the intellectual influence of such radical ideas, regulatory practice over the mid-20th century followed a more moderate and incremental path. After World War II, most Western economies developed banking regulations designed primarily to prevent recurrence of widespread bank failures. However, there was significant divergence among countries regarding how much capital banks should hold and how capital adequacy should be measured. It wasn't until the 1980s that a coordinated global regulatory approach emerged. Triggered by crises such as the Latin American debt crisis (1982), international regulators recognized the need for standardization to prevent competitive distortions and regulatory arbitrage. This led to the formulation and eventual adoption of Basel I (1988), the first internationally harmonized capital standard. Basel I mandated banks to hold capital equal to at least 8% of their risk-weighted assets, a significant step toward creating a consistent global framework for financial stability.

As banking and finance evolved rapidly through the 1990s and early 2000s —marked by increased sophistication, globalization, and risk-taking— regulatory frameworks needed further adjustments. In response, Basel II (2004) introduced more granular risk-weighting mechanisms and allowed banks greater flexibility in measuring their risks through internal ratings-based approaches. While Basel II aimed to increase risk sensitivity, it faced criticism for inadvertently allowing banks to underestimate risks, contributing to vulnerabilities that became evident during the global financial crisis of 2007–2009.

The devastating impact of the 2007–2009 crisis prompted another significant evolution in capital regulation. Basel III (2010), arguably the most comprehensive reform since Basel I, substantially raised both the quantity and quality of capital banks were required to hold. It introduced stricter definitions of capital (emphasizing common equity), introduced leverage ratios to constrain excessive borrowing, and established new liquidity standards designed to strengthen banks' resilience against short-term funding shocks. Basel III also implemented counter-cyclical capital buffers, aiming to build up capital in good times that could be drawn down during downturns, thus explicitly incorporating macroprudential objectives into bank capital regulation.

In recent years, scholarly attention has increasingly revisited and critically reassessed the radical ideas from the early 20th century, notably the Chicago Plan. A landmark paper by Benes and Kumhof (2012), titled *The Chicago Plan Revisited*, employed a detailed dynamic stochastic general equilibrium (DSGE) model to explore the feasibility and implications of implementing 100% reserve banking today. Their analysis suggested potentially significant macroeconomic benefits, including substantial reductions in public and private debt levels and heightened financial stability. Similarly, John Cochrane (2014) argued compellingly for a "run-free" financial system through the dramatic increase of bank capital requirements, effectively transforming banks into institutions primarily financed by equity. Cochrane's approach reflects the original Chicago School emphasis on stability through strict financial discipline, promoting equity rather than debt as banks' dominant form of financing.

These recent revisitations are not merely academic exercises but significantly influence contemporary policy debates, providing critical reflections on the trajectory of banking regulation since the Depression. They illustrate the perennial tension between capital robustness and economic dynamism, underscoring the complex trade-offs regulators face. Modern discourse thus balances the radical ideals of complete risk elimination embodied by 100% reserve proposals with practical considerations of economic growth, credit availability, and operational flexibility.

In sum, the historical trajectory of bank capital regulation from 1929 to the present highlights an evolving policy discourse that cyclically revisits foundational economic principles to address contemporary challenges. While radical proposals from the 1930s remain influential in theoretical debates, the regulatory reality has consistently favored a pragmatic, incremental approach, gradually refining capital standards in pursuit of financial stability and economic welfare. Understanding this historical context helps illuminate current debates and challenges policymakers to thoughtfully balance the stability provided by robust capital buffers against the equally important objectives of economic growth and dynamism.

2.2. The theory behind bank capital regulation

In theory, bank capital –primarily common equity– serves as a cushion against losses, thereby reducing the probability of bank failures and systemic crises. Higher equity levels give bank owners greater "skin in the game," mitigating moral hazard and excessive risk-taking incentives that arise from debt financing and safety nets like deposit insurance. With more capital at stake, shareholders have stronger incentives to monitor management and avoid gambles that could wipe out their equity. Sufficient equity also counteracts the classic risk-shifting problem (asset substitution moral hazard), wherein highly leveraged banks might take on outsized risks knowing losses will largely hit creditors or taxpayers. Admati and Hellwig (2013) argue that high capital requirements are not inherently costly and that well-capitalized banks are more likely to internalize social costs of risk-taking.

Acharya *et al.* (2010) note, ensuring banks have "sufficient equity capital" is a direct way to curb risk-shifting behavior. In short, robust capital requirements can realign banks' incentives with societal interests in stability. Thakor (2014) offers a balanced review of the economic trade-offs involved in bank capital regulation, framing it as a fundamental tension between safety and efficiency.

Yet, capital is not free. Under Modigliani–Miller irrelevance theory, in a frictionless world a bank's mix of equity vs. debt should not affect its overall funding cost or lending capacity. However, multiple frictions make equity "costly" for banks. From a private perspective, equity carries a higher required return than insured deposits or debt, partly due to taxes (interest is tax-deductible, dividends are not) and explicit or implicit guarantees that subsidize debt funding. Thus, requiring banks to hold more equity can raise their average funding costs, at least in the short to medium run. Banks may respond by charging higher loan interest rates or cutting back lending to maintain target returns, potentially tightening credit supply to the real economy. This opportunity cost of large capital buffers –the foregone credit and economic activity due to costlier intermediation– is a key counterweight to stability benefits. In regulators' own words, "capital has costs too" and finding the right balance between resiliency and efficiency is crucial.

A higher capital requirement can affect banks' lending in several (not mutually exclusive) ways: (1) banks might raise fresh equity to meet the requirement, which in the long run need not reduce lending if new capital funds asset growth; (2) banks could retain earnings (reducing dividends) to boost capital internally; or (3) banks might shrink assets or constrain loan growth to lift capital ratios (the denominator effect). If many banks choose the third route, credit supply to households and firms could contract, dampening investment and GDP growth. Economic theory on this trade-off highlights that while stronger capital positions improve individual bank and systemic resilience, they may also reduce credit creation and aggregate demand in normal times. The BIS (2010) summarizes this transmission: higher capital reduces the likelihood and severity of financial crises (a stability benefit), but "higher capital requirements directly increase bank funding costs which, in turn, reduces borrowing by households and firms… eventually, GDP". Essentially, the net benefit of capital regulation equals the expected crisis losses averted thanks to sturdier banks, minus the opportunity cost of slightly lower output during non-crisis periods. Policymakers emphasize that an optimal capital regime must trade off these marginal benefits and costs at the margin.

Capital buffers also interact with banks' risk appetites in nuanced ways. On one hand, more equity capital discourages reckless risk-taking by increasing owners' loss absorption – a larger buffer means bank shareholders and managers bear more of the downside, which should curb moral hazard from deposit insurance or anticipated bailouts. Higher capital standards after the crisis were indeed intended to force banks to internalize more risk, reducing the incentive to lend to subprime borrowers or invest in highly speculative assets simply because losses would be socialized. On the other hand, some models and recent evidence suggest an ironic twist: when capital requirements become very high, banks might respond by seeking higher asset yields to meet shareholders' return expectations. In effect, low-return, safer assets become less attractive if equity is more expensive – banks may tilt their portfolios to riskier loans or securities to preserve ROE. This is sometimes described as "search for yield" or risk-shifting within the constraints. Altavilla *et al*. (2020) found exactly this dynamic: a phased-in 1 percentage point increase in capital requirements prompted European banks to increase their actual common equity by ~13%, improving loss absorption, but also induced a 6 percentage point rise in average risk weights as banks reallocated toward riskier assets. The effect was most pronounced for large, less-profitable banks that "gambled" for higher returns. Such behavior can partially "crowd-out" the stability gains of higher capital – the study noted that the net reduction in default risk was positive but statistically small. In theory, this points to a trade-off between capital and risk per unit of capital: beyond a point, banks under pressure to boost earnings may innovate around strict capital rules (*e.g*. via off-balance-sheet activities or shifting to unregulated "shadow banking" channels). This underscores that capital requirements alone cannot eliminate risk; complementary measures (robust supervision, risk-weight calibration, and limiting regulatory arbitrage) are needed to ensure higher buffers translate fully into lower risk. Relatedly, Aiyar *et al.* (2014) find that stricter capital requirements can lead to regulatory leakage, as some credit shifts toward less-regulated financial institutions.

Finally, large capital buffers are meant to address the moral hazard of implicit guarantees for systemically important banks. Pre-crisis, big banks operated with thin equity in part because they expected government support if things went awry. Post-crisis regulatory frameworks (including higher going-concern capital and Total Loss-Absorbing Capacity for bail-ins) seek to break this expectation. By forcing even, the largest banks to fund with significantly more equity and junior debt, regulators aim to make failure absorbable by private investors, thereby restoring market discipline. The question remains whether ever-higher going-concern equity further reduces this too-big-to-fail problem, or whether returns diminish once banks already exceed a certain resilience threshold. Modern theory suggests sharply diminishing marginal returns to extra capital in very well-capitalized banks: once a bank can comfortably withstand most crisis scenarios, additional equity mainly impacts equityholders' returns rather than materially further lowering default risk.

3. A WELFARE ANALYSIS: CAPITAL BUFFERS, STABILITY, AND GROWTH TRADE-OFFS

Modern economic theory frames capital regulation as a welfare maximization problem, recognizing that capital buffers play a crucial role in mitigating systemic risk by reducing moral hazard and aligning shareholder incentives with those of broader society (Martínez-Miera & Suárez, 2014). Recent general equilibrium models have consistently determined that optimal capital requirements lie substantially above pre-2008 crisis levels, often significantly higher than traditional regulatory benchmarks (Begenau, 2020; Van den Heuvel, 2022). Dagher *et al.* (2016), for example, estimated optimal capital buffers between 15% and 23% of risk-weighted assets (RWA), far exceeding historical averages. These theoretical findings underscore that, while initial increments in bank capital substantially reduce systemic risk and improve overall economic welfare, the marginal returns to increasing capital buffers diminish beyond certain thresholds, cautioning regulators against unbounded or excessively stringent capital requirements that could impose significant efficiency costs.

Research from recent years (2022–2024) has broadly validated these theoretical predictions. Studies have demonstrated that higher capital buffers significantly enhance systemic resilience, lowering banks' insolvency probabilities and reducing systemic risk indicators (Boyarchenko *et al.*, 2022; Basel Committee, 2022). For instance, analyses from the Basel Committee (2022) have shown that banks adhering to elevated Basel III capital standards weathered economic shocks more effectively than those with lower capital buffers, supporting arguments favoring robust capital regulation.

However, a number of studies also emphasize nuanced trade-offs involved in tightening capital standards. During the transition phase to higher capital requirements, banks typically experience modest but measurable short-term credit contractions, as institutions adjust their balance sheets by curbing lending or reallocating portfolios towards less risky but also less economically productive activities (Lang & Menno, 2025). These temporary disruptions highlight that regulatory transitions must be managed carefully, with phased implementations and supportive macroeconomic policies to mitigate adverse short-term impacts on credit availability and economic growth.

Furthermore, some research raises significant concerns about unintended regulatory consequences, particularly the migration of credit intermediation activities from regulated banking sectors into less supervised financial markets and institutions, commonly known as shadow banking (Lee *et al.,* 2024). Such migration can undermine the systemic risk reduction intended by tighter banking regulations by shifting risks outside regulatory purview, potentially creating new vulnerabilities. This evidence underscores the necessity for comprehensive financial oversight frameworks that extend beyond traditional banking institutions to monitor and manage systemic risks effectively.

Overall, integrating these theoretical insights and empirical findings provides regulators and policymakers with clearer guidelines for designing balanced capital regulation frameworks. Optimal capital buffer policies should not merely aim at maximizing bank solvency but should carefully weigh the broader economic costs and benefits, pursuing a balanced approach that maximizes overall economic welfare. This involves calibrated capital buffers that are sufficiently robust to prevent severe financial disruptions yet flexible enough to avoid unintended

economic consequences, combined with rigorous supervision, proactive macroprudential policies, and inclusive oversight extending beyond traditional banking boundaries.

4. EMPIRICAL EVIDENCE: CAPITAL REQUIREMENTS, RESILIENCE, AND ECONOMIC OUTCOMES

Empirical research over the past decade has extensively probed the effects of higher bank capital on both financial stability and macroeconomic performance. We review the evidence in three parts: (1) Systemic resilience and crisis outcomes; (2) Credit supply, lending, and growth effects; and (3) Notable anomalies and cross-country observations that challenge a one-size-fits-all view.

4.1. Systemic Resilience and Crisis Mitigation

A robust finding is that better-capitalized banks and banking systems are more resilient in the face of shocks. Berger and Bouwman (2013) provide empirical evidence that banks with higher capital ratios perform significantly better during financial crises. Banks with higher equity ratios were significantly less likely to fail or require bailouts during crises. Moreover, economies whose banks had thicker capital cushions have endured milder financial downturns historically. A New York Fed study (Boyarchenko *et al.*, 2022) provides striking evidence on "growth-at-risk": it finds that an increase in the aggregate Tier 1 capital ratio compresses the left-tail of future GDP growth – in other words, higher bank capital reduces the probability of severe recessions or financial crashes. Quantitatively, an additional 100 basis points of bank capital was estimated to cut the probability of negative GDP growth by about 10% at a one-year horizon. Crucially, this improved downside protection came with no significant drag on the average growth rate. This supports the view that stout capital buffers enhance stability (fewer deep crises) without compromising normal-times economic performance. Likewise, global regulatory studies have concluded that the long-term benefits of higher capital requirements far exceed the costs. The Basel Committee's landmark assessment (2010) found that raising common equity requirements yields large net gains by reducing the frequency and severity of banking crises, which outweigh the modest output costs of slightly higher loan spreads. In their simulations, the optimal Tier 1 capital ratio (where marginal crisis-risk reduction equals marginal economic cost) often lies well above pre-crisis levels, suggesting that from a societal perspective banks were undercapitalized prior to Basel III. Indeed, IMF researchers estimated that had banks held around 15–23% of risk-weighted assets in equity, most historical banking crises would have been avoided – beyond that range, marginal stability benefits of extra capital drop off sharply. This evidence underpins regulators' push toward "higher loss-absorbing capacity": it indicates that capital buffers on the order of one-fifth of risk-weighted assets (or roughly 8–10% of total unweighted assets for a typical bank) materially improve systemic safety, whereas the "returns" to going from, say, 20% to 30% RWA in capital are much smaller in terms of crisis prevention.

4.2. Credit Supply and Macro Growth Effects

The flip side of resilience is the potential impact on credit availability and economic growth. Empirical findings here are more mixed, with short-run costs more evident than long-run costs. During the transition to higher capital standards in the 2010s, many banks did tighten lending or raise lending rates, contributing to slightly slower credit growth – however, these effects appear to be modest in magnitude. The Basel Committee's Macroeconomic Assessment Group (MAG) projected that each 1 percentage point increase in bank capital ratios, phased in over four years, would likely trim the level of GDP by only ~0.2% relative to baseline, spread over several years. This translates to a tiny reduction in annual GDP growth (around 0.03–0.05 percentage points for a few years) during the phase-in, after which growth catches up to baseline (BIS, 2010). Real-world data post-Basel III largely affirm this limited impact: banks met stricter capital rules gradually by retaining earnings and issuing equity, while credit supply was supported by accommodative monetary policy in many jurisdictions. Long-run studies find that once banks adjust, higher steady-state capital has minimal effect on credit costs – any increase in lending rates due to a higher equity share is often offset by banks' lower risk and funding cost advantages over time (the so-called "Modigliani-Miller offset" in practice). Consistent with this, several studies report no clear link between higher capital ratios and lower loan volumes in the long run,

suggesting that well-capitalized banks can continue to lend normally once new norms are internalized. For example, in a historical perspective, early research by Bernanke and Lown (1991) and others found that bank capital shortages explained only a small part of credit crunches, with weak loan demand playing a larger role in downturns.

Nevertheless, many empirical papers do find a short-term reduction in lending growth when capital requirements increase or when banks experience capital shortfalls. A survey by the Dutch central bank notes that "most evidence suggests that higher capital requirements reduce bank lending, leading to a slowdown of economic growth," although identification is tricky (DNB, 2010). For instance, in the case of the UK, Bridges *et al.* (2014) found that a 1% increase in capital requirements was associated with banks shrinking risk-weighted assets by a few percent and reducing loan growth for a couple of years. In the euro area, banks facing larger supervisory capital demands in the 2010s tended to constrain credit to certain borrowers relative to unaffected banks, especially if those banks had weaker profits. Recent research also highlights heterogeneity: well-capitalized, profitable banks can meet higher requirements with less impact on lending, whereas weaker banks under pressure may cut lending more sharply (Altavilla *et al.*, 2020). Overall, the empirical consensus is that higher capital requirements have at most modest adverse effects on credit and growth, especially if implemented gradually and in supportive conditions. Moreover, these costs are one-off or transitory, whereas the financial stability benefits (crisis avoidance) are enduring. Even in the short run, the credit supply reduction from a capital hike is relatively small – and regulators can design countercyclical buffers to be released in downturns, precisely to avoid a credit crunch when the economy is weak. Indeed, during the COVID-19 shock, regulators encouraged banks to draw down their conservation buffers to keep lending, a real-world test of buffer usability (though banks were hesitant due to market stigma). Importantly, empirical data so far do not show a permanent depression of GDP growth from higher bank capital; if anything, by reducing the incidence of devastating crises, strong capital rules likely raise the average growth rate over the long run (since severe recessions are very costly).

4.3. Anomalies and Cross-Country Insights

While global trends support "higher capital equals higher stability", there are interesting exceptions that caution against a purely mechanistic view of capital ratios. One notable case is Spain. Spanish banks entered recent European Banking Authority (EBA) stress tests with capital ratios slightly below the European average, yet they proved to be among the most resilient under adverse scenarios (Carbo-Valverde and Rodriguez, 2021). In the 2021 EU-wide stress test, for example, Spanish banks' starting Common Equity Tier 1 (CET1) levels were lower, but their capital depletion under stress was also considerably lower than that of many peers, leaving them with higher post-shock ratios. In effect, despite thinner buffers on paper, Spanish banks withstood the hypothetical recession scenario better than the European average. Analysts attributed this anomaly to several factors: Spanish banks had aggressively provisioned for losses and written down bad loans after their 2012 crisis, they benefited from a profitable business mix (*e.g*. variable-rate mortgages that boosted income when rates rose), and the stress test scenario –while very severe for Spain – may have been even tougher for countries whose banks had higher starting capital. This illustrates that capital quality and risk management can matter as much as the absolute ratio. A high capital ratio built on low-risk-weight assets or optimistic risk models might prove less resilient than a slightly lower ratio built on conservative asset valuations and hefty provisions. It also highlights the role of risk-weighted vs. leverage measures: Spain's banks tend to have conservative risk weights, so their leverage ratios (equity to total assets) were closer to peers even if risk-weighted CET1 was lower. The Spanish example cautions that "more capital" is not a panacea unless it comes with prudent risk assessment; it's possible to have somewhat lower capital and yet achieve strong resilience through other measures (and vice versa). Jiménez *et al.* (2017) examine Spain's dynamic provisioning scheme, demonstrating its countercyclical effects and showing it as a viable complement to static capital buffers.

Another cross-country insight is that optimal capital levels may differ by banking system structure. Countries with volatile macroeconomic cycles or weaker safety nets might benefit from higher buffers. Meanwhile, nations with stable banking systems, strong supervision, and robust resolution regimes might manage with slightly lower capital without increasing systemic risk. For instance, Canadian and Australian banks historically operated with lower headline Tier 1 ratios than U.S. or European banks but were still considered

quite safe pre-2008 due to stricter underwriting and structural factors. Conversely, some emerging markets have enforced high capital floors (sometimes above 15%) to compensate for greater economic volatility. These nuances imply that context matters: the absolute number of "how much capital is enough" can reasonably vary. Thus, the blanket statement that "more is always better" should be tempered by recognition of diminishing returns and bank-specific or country-specific factors (asset risk profile, quality of regulation, etc.).

5. INSTITUTIONAL AND REGULATORY PERSPECTIVES THROUGH THE LENS OF WELFARE MAXIMIZATION

The post-crisis capital reforms championed by global regulators rest implicitly —and increasingly explicitly— on a welfare-maximization logic. Higher capital requirements are not justified as ends in themselves but as tools to reduce the probability and severity of financial crises, which impose massive welfare losses. Yet, raising capital also entails costs: equity is more expensive than debt, and the transition can temporarily constrain credit or shift intermediation to less regulated areas. Understanding how institutions weigh these trade-offs reveals the extent to which current regulatory stances align with optimal policy design.

5.1. Basel Committee on Banking Supervision (BCBS)

The Basel Committee's capital reforms after 2008 —particularly Basel III— embody a textbook welfare calculus. The Committee's cost-benefit analysis explicitly sought to identify capital levels that would minimize the net present value of GDP losses from financial instability, while accounting for the potential credit cost of higher equity financing. Its long-term impact assessments suggest a concave welfare function: substantial benefits from initial capital increases, followed by diminishing marginal returns beyond certain thresholds (typically around 15% CET1/RWA). This is consistent with theoretical models (Dagher *et al*., 2016; Van den Heuvel, 2022). The BCBS has never argued for infinite capital but for a robust buffer within an empirically grounded optimal range.

Even so, some critiques question whether Basel's models fully internalize systemic tail risks or behavioral feedback loops. Nonetheless, the Committee's approach —phased implementation, targeted buffers, and countercyclical flexibility— demonstrates a practical awareness of dynamic trade-offs in the welfare function regulators aim to optimize.

5.2. European Central Bank and EU Regulators

The ECB and European Banking Authority also operate from a welfare-based rationale, albeit shaped by the painful memory of Eurozone banking crises. European regulators emphasize that well-capitalized banks are able to support lending through the cycle, reducing procyclicality and stabilizing credit supply during downturns. This approach aligns with models where capital reduces the marginal welfare cost of shocks by enhancing banks' intertemporal smoothing capacity.

Stress test outcomes and empirical studies support this position: EU banks with stronger capital have withstood shocks without significant credit contraction. However, concerns persist regarding whether capital rules have overshot the welfare optimum in some jurisdictions. Low bank profitability, in part due to elevated capital and low-risk portfolios, may impair intermediation in structurally weaker economies. Here, the policy challenge is not just optimizing capital *ex ante*, but ensuring buffer usability *ex post*, an issue highlighted in recent IMF and ECB analysis.

5.3. U.S. Federal Reserve and Domestic Agencies

The Fed's evolving position articulates the resilience-efficiency trade-off directly. Officials acknowledge that while capital boosts bank solvency and systemic stability, equity is a more expensive form of funding, and

excessive requirements might constrain lending, particularly to smaller borrowers. However, U.S. data post-2010 suggests that the social cost of higher capital has been modest, and that well-capitalized banks have maintained lending during crises, including the pandemic shock. Recent proposals under the "Basel III endgame" reflect the Fed's aim to nudge capital levels closer to the theoretical welfare-maximizing range.

Industry opposition often frames this as a competitiveness issue, but regulators counter that the welfare loss of financial crises far outweighs marginal declines in bank ROE, especially when credit availability is preserved.

5.4. International Monetary Fund (IMF)

The IMF has evolved from crisis-response advocacy to a more calibrated welfare perspective, emphasizing that adequate capital —not maximal capital— is the goal. It has cautioned that low profitability under high capital requirements could incentivize risk-taking or deter equity investors, thus undermining long-run welfare. IMF research highlights that buffer usability is critical: if banks cannot draw down capital in stress due to stigma, the social insurance function of capital fails. Its position is consistent with dynamic models where time-consistent use of buffers improves welfare relative to static targets.

In summary, are institutional positions welfare-aligned? Largely, yes. Across jurisdictions and institutions, there is convergence around the notion that an optimal capital range exists—typically 10–15% CET1/RWA— where marginal stability benefits match marginal efficiency costs. Regulators increasingly recognize this as a concave welfare problem: initial capital increases generate large systemic benefits, but above certain levels, the returns flatten or even reverse. Still, execution matters: poor sequencing, unusable buffers, or narrow focus on capital ratios alone can distort incentives and shift risks into the shadows. Future regulatory refinements should build on the welfare framework explicitly, balancing stability and growth while accounting for institutional heterogeneity, behavioral feedback, and the evolving financial landscape.

6. CONCLUSION AND POLICY IMPLICATIONS

This paper has critically assessed the prevailing consensus favoring high bank capital buffers, framing the issue explicitly within a welfare maximization context. Theoretical analysis reveals a clear trade-off: while higher capital enhances resilience by curbing moral hazard and aligning incentives toward prudent risk management, it also incurs opportunity costs in the form of potentially reduced credit availability and short-term efficiency losses.

Empirical evidence broadly supports regulators' post-crisis capital reforms. Higher capital levels have demonstrably improved banking system stability and reduced the frequency and severity of crises. Importantly, the feared long-run costs—slower credit growth or impaired economic activity —have largely failed to materialize. Transitional effects have been observed, but these tend to dissipate when reforms are phased in carefully and when macroeconomic conditions are favorable. In short, the net welfare gain of stronger capital requirements is supported by both theory and data.

However, the analysis also cautions against simplistic extrapolations. Capital buffers are subject to diminishing marginal returns, and excessively high requirements may trigger unintended effects: regulatory arbitrage, risk migration to non-bank sectors, or increased risk-taking within banks seeking to preserve profitability. Moreover, capital ratios are imperfect proxies for systemic resilience—asset quality, supervisory effectiveness, and buffer usability also matter. As Spain's recent stress tests highlight, resilience depends on multiple dimensions, not just headline capital figures.

Thus, while the institutional momentum toward higher capital has been broadly justified, the future of bank capital policy should rest on refinement, not escalation. Four key recommendations follow:

- Anchor policy in evidence-based optimal ranges. Rather than continually escalating capital ratios, regulators should use macroeconomic models, stress testing, and loss-absorption analyses to identify optimal capital bands—ranges within which social welfare is maximized. Many studies point to ~15% CET1/RWA as a robust baseline for large banks. Pushing beyond this range should require case-specific justification grounded in measurable systemic risk, rather than precautionary inertia.

- Ensure risk-sensitive, incentive-compatible supervision. Capital regulation should be integrated with supervisory tools that monitor risk weights, asset composition, and potential gaming. If banks respond to higher capital by taking on riskier portfolios, authorities should counterbalance with Pillar 2 adjustments or targeted asset-side measures (*e.g.*, LTV caps, sectoral buffers). Welfare maximization requires both quantity and quality of capital, aligned with genuine loss-absorbing capacity.

- Promote buffer usability and countercyclicality. Buffers can only deliver welfare gains if they are used in downturns. Regulators should establish clear frameworks and incentives for buffer release during stress periods—clarifying that temporary reductions are not a sign of weakness but a feature of a well-designed system. Releasing buffers at the right time helps prevent credit crunches and supports the real economy, turning capital into a stabilizing, not static, instrument.

- Expand the regulatory perimeter. As tighter bank regulation pushes activity into less supervised sectors, financial stability becomes a system-wide concern. Regulators must develop macroprudential tools that address leverage and maturity mismatch beyond banks—including non-bank financial intermediaries, fintechs, and shadow banking entities. Only by internalizing these spillovers can the systemic welfare function be optimized.

In conclusion, the post-crisis emphasis on "more capital" was a rational and necessary corrective to decades of undercapitalization. Stronger buffers have increased resilience at relatively low macroeconomic cost. But the optimal level of capital is not infinite—there exists a range where the marginal benefits of additional capital decline, and the marginal costs (in terms of intermediation, innovation, and risk displacement) rise. A rigorous welfare perspective urges policymakers to seek this optimal point, not as a fixed target but as a dynamic balance adjusted over time. Capital is indispensable for a stable financial system. But it must be embedded within a broader regulatory architecture—one that aligns incentives, mitigates distortions, and responds to evolving financial structures. When capital policy is guided by evidence, theory, and humility, it can promote both resilience and growth, enabling banks to support their essential economic function without endangering the system they serve.

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