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Basel Endgame: Bank Capital Requirements and the Future of International Standard Setting

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Over the past half-century, central bank officials and banking supervisors have developed regulatory standards for internationally active banks through the Basel Committee on Banking Supervision. The most recent round of reforms, known as Basel III, might seem esoteric, but it attracted widespread attention, including litigation threats against federal agencies (Kress 2024), numerous congressional oversight hearings, and even advertisements during nationally televised football games.

In 2023, three US bank regulatory agencies—the Federal Reserve, the Federal Deposit Insurance Corporation, and the Office of the Comptroller of the Currency—proposed the "Basel Endgame" rule to implement the most recent Basel Committee standards in the United States. Although the Basel Committee's framework did not explicitly require raising bank capital levels, the US proposal would have increased capital requirements for the largest banks by close to 20 percent. The banking industry and its political allies fiercely opposed the Basel Endgame

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proposal, effectively killing it in its original form. At this writing (in mid-2025), the fundamental question of how or whether the United States will implement the final Basel III standards remains unresolved.

The stakes of this debate are significant. The US failure to implement the final Basel III agreement could undermine international cooperation and multilateral standard setting in bank regulation. The United States' noncompliance also could jeopardize the ability of US banks to compete abroad. There is thus a compelling case that implementing the Basel III agreement serves everyone's interest, despite industry's opposition to the 2023 Basel Endgame proposal.

This essay begins by explaining what bank capital is and why policymakers set minimum bank capital requirements. We review the history of the Basel Committee and international banking standards, including the US implementation of the initial Basel III reforms in 2013 and the core provisions of the final Basel III framework announced in 2017. We then analyze the 2023 Basel Endgame proposal and discuss how the debate conflated two distinct issues: (1) whether to comply with international regulatory standards, and (2) whether to raise capital requirements for large banks. US authorities gambled that they could achieve these goals simultaneously—and so far have achieved neither.

While implementing regulations that address both issues would likely make the US banking system safer and more competitive globally, these questions are logically separable. The United States could implement the final Basel III standards while maintaining current capital levels by making offsetting adjustments to existing capital requirements. Implementing international standards in a capital-neutral manner would preserve global cooperation in banking regulation, leaving the separate question of raising capital requirements for future consideration.

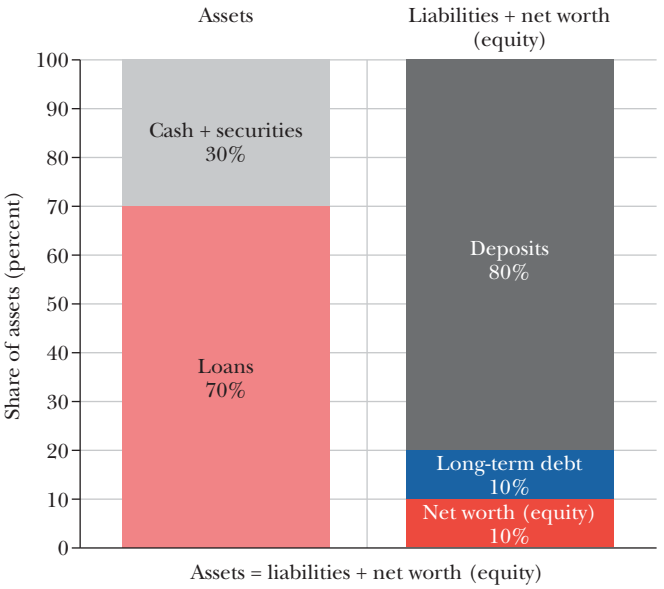
What Is Bank Capital?

Before delving into the details of international bank capital standards, it is useful to explain what bank capital is and why the debate over bank capital requirements is so contentious.

Figure 1 depicts a simplified bank balance sheet. Most bank assets are loans, which can fluctuate in value depending on financial and economic conditions. Funding comes primarily from deposits, with the remainder composed of long-term debt and net worth (equity). Of course, bank assets must always equal liabilities plus net worth, so when the value of assets declines, equity owners take the first loss.

Figure 1 illustrates two consistent definitions of a bank's capital (or, equivalently, its net worth). First, capital is the accounting residual that remains after subtracting a bank's liabilities (deposits and long-term debt) from its assets (cash, securities, and loans). If a bank's liabilities are fixed, when its assets decline in value, its capital shrinks. For example, if a borrower fails to repay a loan or a security loses value, the bank's capital will decline commensurately. Second, capital is the buffer that separates the bank from insolvency, which occurs when a bank's liabilities exceed its assets.

Figure 1
A Stylized Bank Balance Sheet



Source: Authors' creation.
Note: Percentages are roughly based on aggregate data for the US banking system.

Contrary to a common misconception, bank capital is neither cash locked away in a vault nor reserves held at the central bank. Rather, bank capital is a source of funds that banks routinely deploy for lending, trading, and other activities—it is never idle. Accordingly, as Figure 1 highlights, capital appears on the liability side, *not* the asset side, of a bank's balance sheet. Furthermore, new equity is an instrument that the bank "issues," rather than an asset the bank "holds." A bank also can add to its equity by retaining earnings, rather than making payouts to shareholders.

Bank managers (accurately) view equity capital as a relatively costly source of funding because the owners of equity demand a higher return than the interest rate that banks pay to depositors.[1] Thus, banks prefer to fund their assets by borrowing—issuing deposits or bonds—rather than by issuing equity (or through retained earnings). Stating it slightly differently, to increase their return on equity, profit-seeking banks will try to increase their leverage (the ratio of assets to equity).

[1] According to the Modigliani-Miller theorem (as discussed in this journal by Miller 1988), a firm's value is independent of its liability structure, so owners and managers should be indifferent between debt and equity financing. However, the theorem assumes that there are no subsidies, taxes, or bankruptcy costs. As we will see, it is precisely these deviations from the Modigliani-Miller assumptions that lead banks to favor debt over equity financing.

But banks' preference for debt over equity financing largely reflects public policies that create a gap between the *private* and *social* costs of capital. Three key factors drive this wedge. First, corporate tax law favors debt: interest payments to depositors and bondholders are treated as an expense that lowers a bank's tax burden, but a bank must pay dividends to equity investors from after-tax profits. Second, limited liability creates perverse incentives when bank capital is low. Shareholders enjoy the upside if risky bets pay off, but creditors and taxpayers bear the losses if the bank fails.

Third, banks benefit from explicit and implicit government guarantees that reduce their borrowing costs. Deposit insurance represents an explicit guarantee that protects smaller depositors and prevents runs and panics to which banks are inherently vulnerable (Diamond and Dybvig 1983; Anginer and Demirguc-Kunt 2018). "Too big to fail" policies represent an *implicit* guarantee: while governments do not formally promise to rescue large banks, their investors expect systemically important institutions to receive public support during a crisis, because a large bank failure could undermine the financial system. Both types of guarantees make banks appear safer to creditors, allowing them to borrow at lower cost than they would without government backing.

These policy distortions create a classic moral hazard problem. Shielded from downside risk by government guarantees, bank shareholders and managers have strong incentives to maximize leverage and pursue risky strategies. If high-risk bets succeed, shareholders capture the upside, but if the bets fail and the bank collapses, the Federal Deposit Insurance Corporation and taxpayers foot the bill through deposit insurance payouts and bailouts. This asymmetric payoff structure encourages banks to operate with minimal capital while taking on dangerous levels of risk.

Bank capital requirements directly counter these warped incentives. That is, capital requirements limit the moral hazard created by government guarantees. While government-supplied downside protection motivates banks to take more risk, capital requirements limit leverage and constrain risk-taking. Put differently, capital requirements support optimal contracting in the presence of government guarantees (Cooper and Ross 2002).

Bank capital requirements also make the financial system safer by creating a cushion that absorbs losses when asset values decline (as illustrated in Figure 1). Larger capital buffers reduce the risk of bank runs by uninsured depositors, who are prone to panic when a bank appears financially vulnerable. The 2023 failures of Silicon Valley Bank, Signature Bank, and First Republic Bank illustrate this dynamic: as rising interest rates eroded these banks' asset values, uninsured depositors rushed to withdraw their funds, accelerating the banks' collapse (Cecchetti and Schoenholtz 2023; Acharya et al. 2023; for a discussion in this journal, see Metrick 2024).

In addition to making the financial system safer, bank capital requirements also make it more efficient. When bank shareholders have sufficient "skin in the game," they are more likely to insist that their agents running the bank manage risk prudently. As a result, well-capitalized banks are less likely to lend to unprofitable

and highly indebted firms—sometimes called "zombies"—that may be willing and eager to promise high interest payments but can only survive if someone provides them with even more credit (Acharya et al. 2022).

While banks face significant *private* costs when funding operations with capital, the *social* costs are far lower. Critics contend that capital requirements reduce the willingness of banks to lend and make markets (that is, to provide liquidity for securities trading). However, the social benefits of bank capital likely outweigh these potential costs, because well-capitalized banks can maintain credit flows and market liquidity precisely when they are needed most—during economic downturns.

Moreover, the various legal provisions that make debt financing artificially cheap for banks—namely, the tax deductibility of interest payments, the limited liability of shareholders, and the range of public guarantees for deposits and other bank liabilities—do not affect the social cost. By forcing banks to internalize more risk, capital requirements reduce these distortionary subsidies. Put differently, higher capital requirements help align private incentives with those of society (for more discussion, see Admati and Hellwig 2024; Cecchetti and Schoenholtz 2018, 2020).

International Capital Standards: The Implementation Challenge

The early 1970s were a time of considerable disruption in international financial markets. The collapse of the Bretton Woods exchange rate system in 1973 coincided with rising global inflation, creating widespread currency volatility. Foreign exchange losses brought down West Germany's prominent Bankhaus Herstatt in 1974, sending shock waves through the global banking industry. Partly in response, central bank leaders from the Group of Ten countries formed the Basel Committee on Banking Supervision that same year as a forum to promote more collaborative oversight of internationally active banks.[2]

In the 1980s, bankers saw the opportunity to expand their operations across national boundaries as restrictions on cross-border capital flows eased. While this development generally was welcomed by bank customers, it gave rise to two related concerns: the potential for financial instability due to inadequately capitalized, globally active banks; and the then-perceived competitive threat from the rapid growth of banks with relatively lax capital requirements (and hence low financing cost) in jurisdictions like Japan (Tarullo 2008).[3]

[2] The Group of Ten—actually composed of eleven high-income countries—met regularly to discuss economic, monetary, and financial matters at the Bank for International Settlements (BIS). The countries are Belgium, Canada, France, Germany, Italy, Japan, the Netherlands, Sweden, Switzerland, the United Kingdom, and the United States. Over the years, the membership of the Basel Committee has increased so that now it includes 27 countries plus the European Union (for membership, see https://www.bis.org/bcbs/membership.htm).

[3] The perceived advantage of Japanese banks ended abruptly in the early 1990s when Japan's asset-price collapse highlighted the catastrophic risks of inadequate capitalization (Hoshi and Kashyap 1999).

These concerns led to a movement to create an international regime of minimum regulatory standards that would promote financial stability within and across countries, while maintaining a competitive balance among banks operating globally. Officials turned to the Basel Committee to develop such standards, and the result was the 1988 Basel Accord. Although the Accord was merely a nonbinding recommendation that each jurisdiction could choose to enact, it represented an unprecedented effort at international regulatory cooperation.

The original Basel Accord revealed the challenges of designing bank capital standards. The 1988 framework required internationally active banks to maintain capital equal to at least 8 percent of their "risk-weighted assets"—a measure that adjusts asset values based on their perceived riskiness. Under this system, banks' assets were sorted into four risk categories: (1) sovereign debt issued by industrialized countries (assigned a 0 percent risk weight); (2) claims on banks of industrialized countries (20 percent weight); (3) residential mortgages (50 percent weight); and (4) consumer and corporate loans (100 percent weight).

Banks calculated their required capital by multiplying each asset's value by its risk weight. For example, because residential mortgages had a risk weight of 50 percent, a bank holding a \$100,000 mortgage would require (8 percent $\times$ 50 percent $\times$ \$100,000) = \$4,000 of equity funding, and the remainder of its financing for the loan (\$96,000) could come from a combination of deposits and long-term debt. A bank holding 100 percent of its assets in sovereign debt would not need to have any capital at all.

The 1988 agreement had serious practical limitations. We highlight two of the most significant. First, it treated all sovereign bonds issued by governments of OECD countries equally, regardless of issuer or maturity. That is, it assigned a ten-year US Treasury bond, a three-month US Treasury bill, and a five-year Turkish government bond the same risk weight: zero. Second, a corporate bond received a 100 percent risk weight, regardless of whether it was a highly-rated (low-yield) AAA bond or a lowly-rated (high-yield) "junk" bond (BB+ or below). The same problem arose in using a single risk weight for all commercial loans. These shortcomings facilitated regulatory arbitrage: banks could shift their investments toward assets with inappropriately low risk weights, allowing them to own riskier assets (with higher yields) without increasing their required level of capital funding.

Starting in 1998 the Basel Committee began negotiating a revised framework. In 2004, the Committee published the Basel II standards. The new standards did not address the failings associated with sovereign debt in the initial Accord. However, they made substantial changes in the method used to compute banks' risk-weighted assets. Banks could use an updated "standardized approach" where the risk weights would be sensitive to borrowers' external credit ratings. In addition, under Basel II, large banks were given the option of using their own internal model estimates of default to calculate risk weights for their assets.[4]

[4] Haubrich (2020) provides a brief history of capital requirements in the United States.

In addition to specifying capital requirements for *credit risk*—the risk that a borrower might not repay a loan—the Basel II framework also captured another type of risk that was not in the original Basel I standards. Specifically, Basel II established capital requirements for *operational risk*—the risk of loss arising from (1) inadequate or failed internal processes, people, and systems, or (2) external events. However, Basel II also allowed banks to include as capital various liabilities that would be less effective than common equity for absorbing losses in a crisis (Cecchetti and Schoenholtz 2014).

In November 2007, the US banking agencies adopted a rule implementing Basel II that was to be introduced gradually starting in April 2008. That is, implementation of Basel II in the United States started between the failure of Bear Stearns in March 2008 and the failure of Lehman Brothers six months later. Thus, when the global financial crisis hit, Basel II was not yet in place in the United States. This US timing was not unusual: when the crisis hit, Basel II implementation was still underway in much of the world (Yetis 2008).

The global financial crisis in 2008–2009 exposed fundamental weaknesses in bank regulation that would have persisted even if Basel II had been fully implemented. Most importantly, many large banks lacked sufficient equity capital to absorb the losses they incurred on their risky assets. As capital cushions eroded, depositors and creditors lost confidence, triggering runs on the most vulnerable institutions, widespread insolvencies, and government bailouts. (This pattern did not stop with banks, as governments around the world also bailed out numerous large nonbank financial institutions that failed or were severely weakened.)

To address many of the shortcomings exposed by the global financial crisis, in 2010 the Basel Committee issued the initial Basel III agreement. The new agreement emphasized a specific type of capital called "common equity tier 1," composed primarily of retained earnings and funds raised by issuing common equity. This stricter definition of capital excluded liabilities that would be less able than common equity to absorb losses in a crisis. In addition, Basel III raised the risk weights applied to certain asset classes.

This initial Basel III agreement also established new minimum capital requirements that require recapitalization when a bank's capital levels fall below certain thresholds. In effect, the common equity tier 1 requirement for internationally active banks under Basel III is 7 percent of risk-weighted assets. When a bank's capital level falls below this level, the standards state that the bank must limit dividend payments, stock buybacks, and management bonuses until its capital is rebuilt. Additional risk-based capital buffers in excess of the 7 percent minimum are applied to banks deemed systemically important.

As a backstop and complement to the risk-based capital ratios that are prone to gaming, Basel III introduced a "leverage" capital requirement: a minimum ratio of capital divided by total assets. (As a technical matter, total assets in this calculation include off-balance-sheet exposures such as measures associated with derivatives exposures.) The leverage ratio looks at total assets, without risk-weighting, and thus does not depend on the limited ability of banks and regulators to anticipate asset

risk (Klein 2016). The leverage ratio also is less likely to be distorted by regulatory arbitrage. As a result, it is useful to assess the evolving riskiness of the banking system as a whole.

Policymakers never intended the initial 2010 version of Basel III to be the final word. Instead, to facilitate a quick initial agreement and a timely response to the global financial crisis, authorities postponed consideration of numerous issues. This approach led to an iterative process consistent with the Basel Committee's long-standing approach. First, standards are agreed and implemented. Then, as financial systems evolve and the effects of the standards are assessed, revisions are proposed, and the process starts again.

In December 2017, the Basel Committee issued nearly comprehensive Basel III capital standards, followed by a January 2019 enhancement focusing on market risk (the risk associated with banks' trading activities). These reforms were intended to "restore credibility in the calculation of risk-weighted assets . . . and improve the international comparability of banks' capital ratios."[5] The most important refinements limit the use of internal models in the calculation of large banks' capital ratios and improve the methodologies for assessing credit risk, operational risk, and market risk.

Partial Implementation of Basel III in the United States

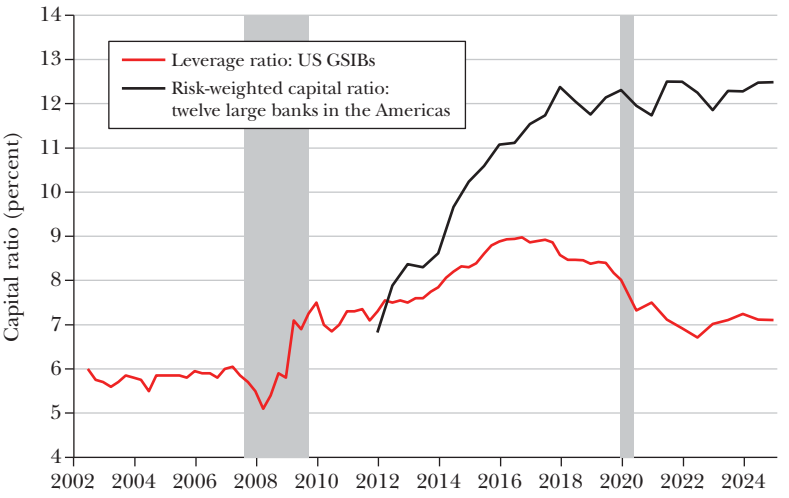
US bank regulators implemented the initial Basel III reforms in 2013. In some cases, the US banking agencies "gold-plated" the international standards, requiring capital buffers that exceeded the Basel Committee minima. With memories of the global financial crisis still fresh, these policy changes were relatively noncontroversial.

As the United States phased in the initial Basel III reforms over the ensuing years, capital levels rose steadily. Figure 2 illustrates capital ratios for two samples of large banks. The black line shows the common equity tier 1 risk-weighted capital ratio for the twelve large banks in the Americas that are part of the Basel Committee's annual implementation monitoring. The red line shows the leverage ratio for the eight largest US banks—designated as "global systemically important banks." The shaded areas denote the recessions associated with the global financial crisis and the Covid-19 pandemic.

From 2011 to 2017—which includes the initial Basel III period of implementation—the risk-weighted common equity tier 1 capital ratio rose from 7 to 12 percent. The leverage ratio for US banks rose from roughly 6 percent in 2008 to 9 percent in 2016. But this upward trend did not persist. By 2021, the leverage ratio at the global systemically important banks had sunk back to post-crisis lows, resulting in a wide gap between the risk-weighted and leverage measures. This growing gap may partly reflect the fact that as banks' total assets rose, they increased holdings of reserves

[5] A fuller description is available at the Bank of International Settlements website at https://www.bis.org/fsi/fsisummaries/rcrf.htm.

Figure 2
Capital Ratios for Large Banks (Quarterly or Semi-annually), June 2002–December 2024



Source: The source for the Leverage Ratio is Pellerin (2025, Chart 1). The source for the Risk-weighted capital ratio is Graph 17 in the Basel III Monitoring Report (Basel Committee on Banking Supervision 2024a). Banks' risk-weighted capital ratios are not available prior to 2012 because banks were not required to calculate their capital under Basel III standards before then. This sample of twelve banks likely includes a few banks from Canada and Brazil. However, it is the only consistent measure of risk-weighted capital ratios available over this full period.
Note: "Leverage Ratio: US GSIBs" is the Tier 1 leverage ratio for the eight US banks designated as global systemically important banks. The "Risk-weighted capital ratio: twelve large banks in the Americas" is the common equity tier 1 ratio for the consistent sample of twelve Category 1 banks in the Americas. Category 1 banks include, but are not limited to, the global systemically important banks. Shaded areas denote NBER-dated recessions. The fact that the two lines cross is a consequence of differences in the samples of banks.

and other zero-risk-weight assets. Nevertheless, a portion of this reversal and of the divergence between the two measures should be attributed to banks' efforts to offset the impact of the initial Basel III reforms through regulatory arbitrage and the willingness of US bank supervisors after 2016 to accept this behavior.

The Basel Endgame Proposal: Deviations from the Basel III Framework

In early 2023, the extraordinary failures of Silicon Valley Bank, Signature Bank, and First Republic Bank in the United States, as well as Credit Suisse in Switzerland, necessitated emergency government interventions and refocused policymakers' attention on financial reform (Metrick 2024). Against this backdrop, the US banking agencies—the Federal Reserve, the Federal Deposit Insurance Corporation, and

the Office of the Comptroller of the Currency— proposed the "Basel Endgame" in July 2023.

The Basel Endgame proposal mostly tracked the 2017 updated Basel III standards, including restrictions on banks' use of internal models to calculate their capital ratios and improvements to standardized risk-assessment methods. However, the US proposal diverged from international standards in several important ways. We highlight three significant differences.

First, the Basel Endgame would have applied enhanced capital requirements to more US banks than prior iterations of Basel standards. By their terms, Basel standards target "internationally active banks."[6] Before 2023, the United States applied many of the key provisions of the initial Basel III rules only to the eight US global systemically important banks: namely, Bank of America, Bank of New York Mellon, Citigroup, Goldman Sachs, JP Morgan Chase, Morgan Stanley, State Street, and Wells Fargo, as well as to one bank that serves as a secure holder (custodian) of securities (Northern Trust). The Basel Endgame proposal would have expanded the application of certain Basel III provisions to all US banks with more than $100 billion in assets—a total of 37 firms. This proposed expansion would have subjected regional banks similar in scale to Silicon Valley Bank and First Republic Bank to some of the same capital standards as the very largest US banks like JP Morgan Chase and Bank of America.

In a second major difference, the Basel Endgame proposal sought material increases in capital requirements for US banks. When the Basel Committee published its final 2017 standards, it asserted that the revisions would *not* "significantly increase overall capital requirements" (Basel Committee on Banking Supervision 2017, p. 1). However, according to estimates by the US regulatory agencies, Basel Endgame would have raised the common equity tier 1 capital requirements for covered banking organizations by an average of 16 percent (Office of the Comptroller of the Currency et al. 2023, page 64169).[7] By contrast, the European Banking Authority (2023) originally projected that its finalization of Basel III would raise capital requirements on its banks by 9 percent, while the Bank of England (2023) anticipated just a 3 percent increase.

Much of the proposed capital increase in the Basel Endgame was attributable to a third major divergence from the Basel III standard: the calculation of capital required to provide a buffer against losses associated with operational risk (as defined earlier). Before the final Basel III reforms, both the Basel Committee and US policymakers allowed banks to determine what is in effect an addition to risk-weighted assets using their own estimates of future operational risk losses. In

[6] For the list of all 29 global systemically important banks, see Financial Stability Board (2024).

[7] With the median capital requirement for large banks running about 8 percent of risk-weighted assets, this would have meant an increase of roughly 1.25 percentage points. This is the median of the common equity tier 1 capital ratio requirement for the 32 largest US banks in 2024 (Board of Governors of the Federal Reserve 2024, p. 4).

practice, this methodology proved complex and generated highly variable estimates across similar banks.

The final Basel III reforms offered a standardized formula in which a bank's operational risk is a function of (1) the bank's revenues from different business lines, and (2) an "internal loss multiplier" based on the bank's operational risk losses over the previous ten years. Under this framework, a bank's internal loss multiplier could range from less than one (for banks with low historical operational losses) to greater than one (for banks with high historical operational losses). By contrast, the Basel Endgame would have set a floor of one on the internal loss multiplier and thereby effectively applied the standard for high historical losses to all banks. According to a report from the Bank Policy Institute (a trade association representing the largest US banks), "the new operational risk charge accounts for nearly 90 percent of the increase in banks' capital requirements" under the Basel Endgame proposal (Covas 2023).

The Basel Endgame Proposal: Key Issues

The Basel Endgame proposal provoked intense public debate. Supporters and opponents clashed over a host of issues: the appropriate risk weights for various asset classes, the calibration of market-risk formulas, the proposed approach to operational risk capital, and others. At its core, however, the controversy centered on the optimal level of bank capital requirements, the effects of bank capital requirements on lending and market-making (that is, the perceived social costs of bank capital), and the structure of the global financial system. In this section, we summarize the biggest points of contention.

First, numerous commenters objected to the Basel Endgame's proposed risk weights. The agencies' treatment of residential mortgage loans generated especially vociferous pushback. Under the US implementation of the initial Basel III rules, all residential mortgage loans that meet prudent underwriting criteria receive a 50 percent risk weight. The final 2017 Basel III reforms introduced differentiated risk weights ranging from 20 percent to 70 percent, depending on a mortgage's loan-to-value ratio. The Basel Endgame proposal would have incorporated differentiated risk-weights for residential mortgage loans that were 20 percentage points *higher* than the Basel framework for each loan-to-value category.

US financial regulators stated that the rationale for the proposed increase over the Basel standard was that, without it, larger US banks would benefit from lower risk weights than smaller community banks not subject to the same capital rules. Large banks and their allies vigorously opposed the rule, arguing that it would make mortgage lending uneconomical, cede market share to nonbank mortgage lenders, and reduce access to affordable housing.

Second, under the US implementation of the initial Basel III standards, large banks calculated their market-risk requirements using a "value-at-risk" methodology, which measures the worst possible loss over a specific time horizon for a given

probability. (Recall that the market-risk framework refers to the risk of losses associated with banks' trading activity.) Consistent with the final Basel III agreement, the Basel Endgame proposal would have shifted from value-at-risk methodologies to an "expected shortfall" approach that reflects a bank's expected or average loss during an extreme downturn. Regulators reasoned that the expected shortfall approach would better reflect banks' risks in the worst possible circumstances. The regulatory agencies estimated that shifting from value-at-risk to the expected shortfall methodology, along with other market-risk changes, would increase required capital ratios by 67 basis points for affected banks (Office of the Comptroller of the Currency et al. 2023, p. 64170).

Banks raised two main objections to these changes in the treatment of market risk. First, they argued that the new requirements would duplicate standards already built into in the Federal Reserve's annual "stress tests." Second, the industry asserted that simply adding up risks across individual trading desks would ignore the risk-reducing benefit of diversification. However, while diversification provides some protection during normal market conditions, this benefit can disappear during financial crises when prices of risky assets tend to fall in unison.

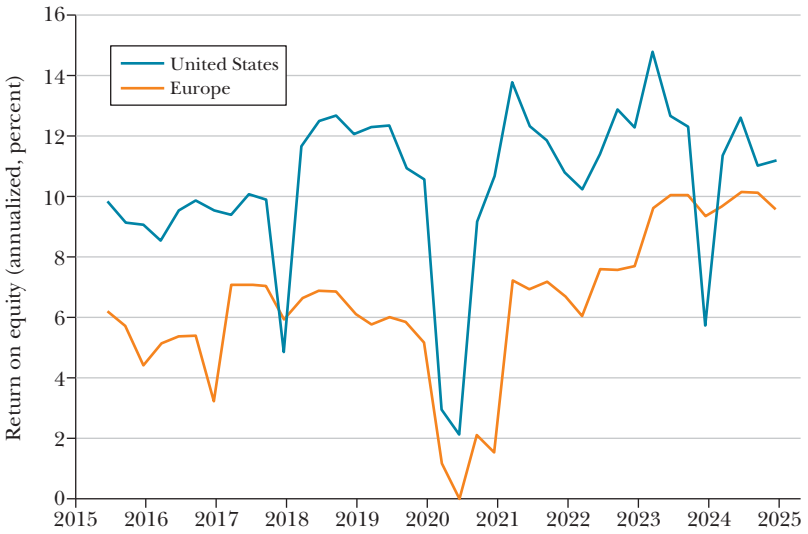
These important details clearly matter, but the Basel Endgame debate also focused on more fundamental questions about the optimal levels of bank capital and its effect on the macroeconomy. Critics maintained that US capital requirements are already high, so raising them even modestly would constrain the supply of credit and restrain economic growth (for example, Bank Policy Institute Staff 2023). Critics further argued that the costs of increased capital requirements would be borne primarily by households and businesses that would have less access to—and would have to pay more for—loans and other banking services. Finally, banks contended that raising capital requirements is unnecessary because capital levels are already within the range that correctly balances trade-offs between promoting economic growth, on the one hand, and making banks safer, on the other (Covas and Nelson 2023).

By contrast, Basel Endgame supporters asserted that the increase in bank capital requirements was relatively modest and would enhance bank safety in a manner that was unlikely to constrain bank lending or market-making significantly. Indeed, banks had already adapted to much larger capital increases over the past decade without major disruptions to credit availability. However, the limited nature of the changes cuts both ways. A moderate increase in capital requirements could produce only moderate improvements in banking system safety—not the transformational change that some advocates might wish.

Admittedly, there is no theoretical consensus on *optimal* bank capital levels, and studies on the economic effects of higher capital requirements are sensitive to assumptions and modeling techniques. However, the weight of the evidence suggests that setting large-bank capital requirements in the range contemplated by the Basel Endgame proposals would have little if any impact on the supply of credit over the long-term (for discussion of credit, see Gambacorta and Shin 2018; for assessment of the optimal capital range, see Birn et al. 2020). Better-capitalized banks tend to

Figure 3

United States and Europe: Large Banks' Annualized Return on Equity, June 2015–December 2024 (Quarterly Data)



Source: FDIC Quarterly Banking Profile, European Central Bank, and authors' calculations.
Note: US banks include those 158 institutions with assets exceeding $10 billion. The European sample includes the 114 euro-area institutions supervised by the Single Supervisory Mechanism of the European Central Bank. In both cases, the banks in the sample hold more than 80 percent of banking assets in their jurisdiction. The only two quarters when US banks underperformed reflected temporary US government-driven distortions: a tax change in 2017 and an FDIC fee in 2023 to restore its crisis-depleted insurance fund.

(1) act countercyclically, lending more during economic and financial stress when other sources of financing dry up (Basel Committee on Banking Supervision 2019, p. 10), and (2) lend to healthier borrowers, favoring more efficient economywide use of resources (Caballero, Hoshi, and Kashyap 2008).

Even more broadly, the Basel Endgame debate concerned the role of US banks in the global financial system. Opponents argued that if the United States were to implement stronger capital requirements than other jurisdictions, financial activity would migrate abroad (Kroszner 2024). In response, supporters countered that higher capital requirements can be a competitive advantage, because robust capitalization makes the domestic financial system strong and resilient.

The latter view is supported by the fact that *after* the United States "gold-plated" the initial 2010 Basel III standards, the relatively well-capitalized US banks outperformed their European competitors (Simoens and Vander Vennet 2021). As Figure 3 highlights, large US banks' return on equity has significantly and persistently exceeded that of large European banks since 2015 (the period for which pan-European data are available).

The Basel Endgame debate also exposed diverging views about the provision of financial services by banks vis-à-vis nonbank financial institutions. Critics alleged that increasing large-bank capital requirements would shift financial activity (including market making) to nonbanks such as broker-dealers, hedge funds, private credit funds, and nonbank mortgage lenders. In their view, migration of financial activity away from the banking sector weakens the financial system because nonbanks are subject to less stringent (if any) prudential regulation (Kroszner 2024).

On the other hand, Basel Endgame supporters highlighted evidence that counters the predicted shift to nonbanks: as the United States implemented the large initial Basel III increase in capital requirements, from 2011 to 2016 banks *increased* their share of credit provision to the nonbank sector (Cecchetti and Schoenholtz 2020). They also argued that well-capitalized intermediaries buttress financial market resilience, and vice versa (Cecchetti and Schoenholtz 2015). Furthermore, supporters insisted that even if higher capital requirements did push some activity toward nonbanks, this shift could be desirable if risks shift from global systemically important banks to nonbanks that are not as systemically important. Finally, if nonbank risks did increase as a result, the appropriate policy response would be better oversight of nonbanks, not weakening bank capital standards.

The Path Forward

The 2023 Basel Endgame proposal faced an uphill battle from the outset as it elicited rare dissenting votes from members of the Federal Reserve and boards of directors of the Federal Deposit Insurance Corporation boards of directors (Bowman 2023; Waller 2023; Hill 2023; McKernan 2023). Even regulators who formally supported issuing the proposal for public comment, including Federal Reserve Chairman Jerome Powell (2023), expressed misgivings that foreshadowed a rocky path ahead. As the public comment period progressed, the tenor of the criticism made it clear that the proposal would not survive as originally conceived.

By mid-2024, Federal Reserve Chair Powell (2024) and Vice Chair Barr (2024) promised Congress that the agencies would make "broad and material changes," essentially starting over and re-proposing the Basel Endgame rules before finalization. The likely revisions would include three major concessions: (1) exempting banks with less than $250 billion in assets from most Basel Endgame reforms; (2) reducing proposed risk weights for residential mortgage loans and other asset classes; and (3) lowering operational risk capital requirements for banks with low prior operational losses. According to Barr, these changes would cut the proposed capital increases by more than half compared to the original 2023 proposal.[8]

[8] The agencies' originally estimated that the July 2023 Basel Endgame proposal would increase capital requirements for Category 1 and 2 banks, which include global systemically important banks and other banks with more than $700 billion in assets or international activity of more than $75 billion, by 19 percent (Office of the Comptroller of the Currency et al. 2023, p. 64169).

But at this writing in mid-2025, the US bank regulatory agencies have not yet issued a revised Basel Endgame proposal, leaving US banking rules out of compliance with international Basel III standards. Policymakers now face two decisions: Should the United States adopt capital rules that comply with Basel III? And should regulators raise capital requirements on large banks? While the case for an affirmative answer to both questions is strong, the issues are logically separable. If implementing Basel III standards would increase US capital requirements, regulators could make offsetting adjustments elsewhere in the capital framework to maintain current levels—achieving international compliance without raising overall capital requirements.

The Case for US Compliance with the Final Basel III Standards

A capital-neutral implementation of the Basel Endgame proposal would allow the United States to comply with international standards while minimizing costs to banks and preserving the benefits of global regulatory cooperation. The advantages of implementing the final Basel III standards in this way almost certainly outweigh the costs.

Although the agreed-upon Basel standards lack a formal enforcement mechanism, policymakers can employ a "name and shame" process to pressure noncompliant jurisdictions. In addition, individual jurisdictions can take punitive actions against internationally active banks from countries that do not comply with Basel standards. Indeed, the Basel framework contemplates that jurisdictions could opt to impose higher risk weights on exposures to banks whose home regulators are not Basel III–compliant.[9] Some European lawmakers have already suggested that the European Union should take steps to punish American banks if the United States does not implement the 2017 Basel reforms (Wilkes 2025). Such punitive treatment could significantly impair the ability of US banks to compete abroad. Finally, a failure by the United States to implement the 2017 Basel reforms could jeopardize the United States' ability to influence global standards in the future.

If US authorities ultimately choose not to comply with the Basel framework, then foreign jurisdictions will have far less incentive to achieve or maintain compliance. To be sure, several jurisdictions—including Canada, Hong Kong, Japan, Singapore, and Switzerland—have already achieved full compliance with the Basel III capital standards. And China meets Basel capital requirements with the exception of certain margin rules.[10] However, others are now wavering. The United Kingdom

[9] Under the final Basel III standards, exposures to healthy banks generally receive risk weights between 20 and 50 percent. However, to qualify for this favorable treatment, internationally active banks must be subject to "appropriate prudential standards (e.g. capital and liquidity requirements) and level of supervision . . . *in accordance with the Basel framework*" (Basel Committee on Banking Supervision 2017, p. 7; authors' emphasis).

[10] Geopolitical concerns may also be relevant for US policymakers. Despite its extensive capital controls, it is conceivable that—if the United States were to renege on its commitment to implement the final Basel III standards—China could seek to supplant the United States as the leader in international financial standard setting.

has yet to implement its final rules on credit, market, and operational risk, while the European Central Bank and the Bank of England have delayed their Basel III implementation, citing US inaction (Bank of England 2025; Jones 2024; Canepa, Strupczewski, and Fonte 2025). The potential unraveling of Basel standards could generate a regulatory race-to-the-bottom, increasing the risk of future financial crises. As Zaring (2019) argues, the resulting failure of multilateral standard-setting could put global banking stability at risk.

The Case for Higher US Capital Requirements for Large Banks

Implementing the final Basel III standards in a capital-neutral way would ensure the continued US compliance with international norms, but it would sidestep another question: Are current US bank capital levels sufficient? The academic literature on the optimal level of bank capital requirements offers far too wide a range of answers to settle this issue: various studies have estimated the optimal capital ratio in the range of 6 percent to 25 percent of risk-weighted assets, and 5 percent to 19 percent of total assets.[11] Nevertheless, there are compelling reasons to believe that if US policymakers choose to fulfill the Basel III requirements in a capital-neutral way, capital levels in the largest banks would still be too low.[12] We list five.

First, the average leverage ratio of US global systemically important banks declined from a 2016 peak of 9 percent to about 7 percent in 2023 (see Figure 2). This is roughly in line with the level prevailing prior to the implementation of the more stringent regulations embodied in the Wall Street Reform and Consumer Protection Act of 2010, commonly known as the Dodd-Frank Act (Dugan and Nonaka 2017). To be sure, banks increased holdings of assets devoid of default risk when the Federal Reserve rapidly expanded reserves during the Covid-19 pandemic. However, much of the leverage ratio decline predated that episode. Against this background, increasing capital requirements would help reverse the backsliding in large banks' capital standards.

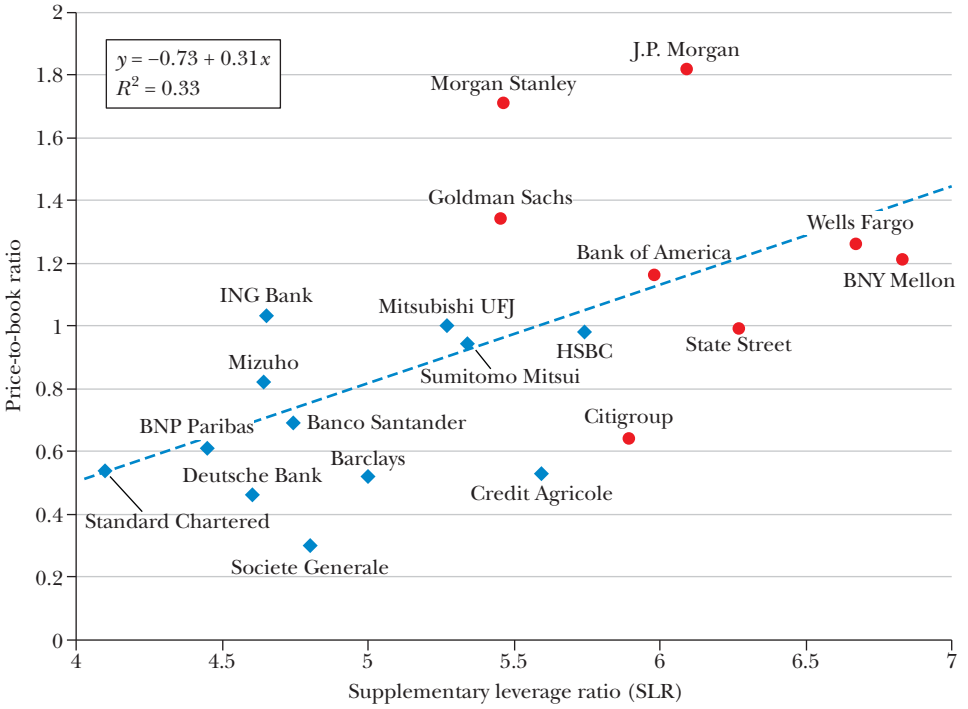
Second, as we noted earlier, there is little evidence that the rise of US global systemically important banks' capital ratios from 2009 to 2016 had a negative impact on bank credit supply, either overall or relative to nonbanks. Even after 2016, the fraction of US total credit to the private nonfinancial sector provided by banks was roughly stable at about one-third until the start of the pandemic (Cecchetti and

[11] Using a general equilibrium model, Elenev, Landvoigt, and Van Nieuwerburgh (2021) estimate that a risk-weighted capital requirement of 6 percent would maximize welfare, while Firestone, Lorenc, and Ranish (2017) estimate an optimal Tier 1 risk-weighted capital ratio as high as 26 percent. Using Swedish data, Almenberg et al. (2017) estimate the optimal leverage ratio as low as 5 percent, while Barth and Miller (2018) put the optimal leverage ratio for US banks at 19 percent.

[12] These arguments would be even more compelling if, as recently proposed, US regulators act to lower the leverage requirement on the largest banks (Office of the Comptroller of the Currency et al. 2025).

Figure 4

Global and Systemically Important Banks in Europe, Japan, and the United States: Supplementary Leverage Ratio versus Price-to-Book Ratio, June 30, 2024



Source: Pellerin (2025, Table 1).
Note: US banks are red circles; foreign banks are blue diamonds.

Schoenholtz 2020).[13] Similarly, there is no indication that higher capital requirements have a negative impact on the profitability of large US banks (as illustrated earlier in Figure 3).

Third, looking at a cross-section of global systemically important banks, the leverage ratio is *positively* correlated with the price-to-book-value ratio, as shown in Figure 4. Given that US banks generally have both higher leverage and higher price-to-book ratios, this correlation may partly reflect differences between US and non-US banks (as well as between US and non-US stock markets). However, it is reasonable to think of the leverage ratio as a choice variable for bank management. Analyzed in that way, the relationship in Figure 4 suggests that boosting

[13] To be sure, the ratio of private nonfinancial sector credit to GDP fell from its high above 170 percent in 2008 to 150 percent in 2015. However, the pre-crisis level circa 2008 was clearly unsustainable. The latest observation for the third quarter of 2024 is 145.2 percent. For this data, see the BIS Data Portal at https://data.bis.org/topics/TOTAL_CREDIT/BIS,WS_TC,2.0/Q.US.P.A.M.770.A).

equity capitalization—at least by retaining earnings—raises market capitalization more than one for one. If that is the case, it raises the question why banks do not voluntarily boost their capitalization in the absence of higher requirements. One reason may be that equity investors are prone to distrust bank managers who opt to retain earnings, even if the investors reward banks when higher capital requirements substitute for managerial choice.

Fourth, more broadly, when banks are short of capital, their clients tend to suffer. Banks with insufficient capital buffers may do some combination of three undesirable things: (1) they could withdraw from lending and market-making activities, increasing their capital ratio by shrinking their balance sheet rather than issuing more equity to investors; (2) they could extend the maturity of existing loans to low-quality borrowers ("zombie firms") to avoid recognizing losses on their capital-scarce balance sheets (for example, Acharya et al. 2022); and (3) they may "gamble for resurrection" by taking greater risks across a range of activities, hoping to boost returns and capital buffers in this way. Conversely, healthy banks have a greater capacity to lend and to make markets in recessions, as well as to acknowledge nonperforming loans in a timely way. In troubled times, the robust reputation of well-capitalized banks makes them especially attractive to clients. Their skin in the game also generates an incentive to lend to high-quality borrowers. Overall, banks with high levels of capital funding support economic stability, acting as a source of funds during downturns and episodes of financial turmoil.

Fifth, and closely related to the previous point, there is a link between capital shortfalls in the banking system and extended periods of economic stagnation. The classic example is Japan in the 1990s. It was not until the government of Japan moved to recapitalize banks in the early 2000s that economic growth began to recover (for discussion in this journal, see Hoshi and Kashyap 2004). Conversely, we know of no links between episodes of stable, robust bank capitalization and periods of economic stagnation.

Taken together, these considerations argue strongly for restoring US large bank capital ratios to at least the 2016 level. Policymakers wishing to generate momentum in that direction would be well-advised to conduct and publish a comprehensive quantitative cost-benefit analysis of raising capital requirements. Granted, it can be difficult to quantify the costs and benefits of financial regulations (for discussion, see Coates 2015; Gordon 2014), and there is no legal requirement to do so. However, a careful and independent quantitative impact study can illuminate the economic and financial trade-offs associated with changes in bank capital requirements. We expect that such a study would foster public discussion and serve as a guide (and a goal) for policy action.

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