

Bank Capital, Capital Requirements, Monetary Policy Tools, and the Likelihood of a Coming Crash



Donald L. Buresh, Ph.D., Esq.

Morgan State University

ABSTRACT: The purpose of this article is to discuss bank capital, the current capital requirements under the Basel Accords, Dodd-Frank, and various regulatory bodies. Tier 1, Tier 2, and the defunct Tier 3 capital requirements are explained. Other capital requirements categories are analyzed, along with the effects of capital requirements. The research then segues into the monetary policy of the Federal Reserve, examining the reserve requirements ratio, the rediscount rate, and open market operations. With open market operations, the four phases of quantitative easing are considered, followed by a review of the effects of quantitative easing. The article observed that the current reserve requirements ratio is 0.0 percent. The point of a financial institution possessing liquid or cash reserves is to act as a buffer in case of a bank run, where hordes of depositors demand their money. Given the trillions of dollars of potentially toxic securities held by the Federal Reserve, the apparent bubble in the stock market, and inflation, the threat of a financial crash is exacerbated, where banks may simply be unable to provide their depositors with the cash that they demand. The issue is that capital requirements are a relatively long-term measure of solvency, whereas when a bank run occurs, a financial institution's solvency is dramatically stressed. With reserve requirements at 0.0 percent, if a market crash occurs, the value of an institution's capital requirements may substantially decline, whereby a solvent entity is driven into insolvency by the fear and panic of its depositors without the ability to meet their immediate demands for cash.

KEYWORDS: Capital Requirements, Monetary Policy, Open Market Operations, Quantitative Easing, Rediscount Rate, Reserve Requirements

INTRODUCTION

This essay aims to show that in spite of financial safeguards instituted by the Basel Accords, in the United States, banks suffer from a fatal flaw that stems from the easy money policies of the Federal Reserve. Under the 15-year policies of the central bank, member banks need not hold any cash reserves, even though the Basel Accords require capital requirements of at least 8 percent. It should be remembered that the purpose of capital requirements is to soften losses, while cash reserve requirements specified by the Federal Reserve are designed to ensure that banks can pay depositors on demand, thereby preventing bank runs. Although capital requirements seem to put banks on a solid footing and are vigorously supported by the Bank of International Settlements (BIS), they have a gaping flaw. Capital requirements are not cash! Under the Basel Accords, holding cash is not a capital requirement. In finance, cash is king. There is nothing more liquid than cash!

Also, since March 26, 2020, the Federal Reserve has set the reserve requirements ratio at zero percent. This means that if the economy crashes and banks experience bank runs, banks may have no cash to immediately pay depositors. A bank is solvent if and only if its assets (cash reserves and loans) exceed its liabilities (customer deposits). When a bank's cash reserves equal zero, then a bank is solvent only when its paying loans exceed customer deposits. If customers default on their loans, then the bank must move the loan from the asset side of its balance sheet to the liability side. When an economy systematically crashes, this action may dramatically reduce a bank's capital requirements ratios, putting them out of compliance.

The difference between capital requirements and cash reserve requirements is the difference between a long run and a short run perspective. According to Lord John Maynard Keynes' insightful statement, in the long run, we will all be dead. In other words, it is the short run that matters, not necessarily the long run. Over the past 15 years, quantitative easing has injected about \$7.8 trillion into the economy. More than a few economic pundits are suggesting that the current stock market bubble will likely burst in 2024.

This essay is attempting to answer whether federal government should get involved in imposing minimum capital requirements for financial institutions to improve the safety and soundness of the United States banking system. Based on the information herein, this article concludes that there is likely nothing that the federal government can do to prevent the coming crash. It should be remembered that by law, the Federal Reserve has complete and absolute discretion when setting the reserve requirements

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ratio, specifying the rediscount rate, and conducting open market operations. The banking lobby in the United States would probably strenuously resist changing the charter of the Federal Reserve. The central bank has woven a cocoon of inaction around itself and the banking industry. Thus, it appears that a market crash not seen since the Great Depression of 1929 is inevitable.

The paper first discusses bank capital, followed by capital requirements, and the three monetary policy tools. In particular, the four phases of quantitative easing are discussed. The paper concludes with the assessment that likely little to nothing can be done without experiencing dramatic economic consequences. It is a sad state of affairs, to say the least.

BANK CAPITAL

By definition, bank capital is a bank's assets minus its liabilities, or the net worth of a bank.¹ In non-bank organizations, net worth is a snapshot of a firm's current financial position, and is known as the organization's book value or shareholder's equity.² The assets of a bank include cash, government securities, and interest-bearing loans such as mortgages, letters of credit, and inter-bank loans.³ A bank's liabilities are made up of loan-loss reserves plus any debt the bank has incurred.⁴ Bank capital can be considered the margin in which creditors are covered if a bank were to liquidate its assets.⁵ Bank capital is essentially the value of a bank's equity instruments that can absorb losses if the bank were to liquidate by declaring Chapter 7 bankruptcy.⁶ Even so, regulators typically possess a different definition of bank capital.⁷ Chapter 7 bankruptcy permits the bankruptcy trustee that is appointed by the bankruptcy court to collect and sell a debtor's nonexempt assets, employing the proceeds to pay creditors consistent with the Bankruptcy Code.⁸ In a bankruptcy proceeding, an exempt asset is an asset that a debtor gets to keep, whereas a nonexempt asset is an asset that a debtor must sell to satisfy their creditors.⁹

Due to banks having a critical role in the economy by gathering savings and then directing them to productive uses, the banking industry and bank capital are highly regulated. While each country has its own regulations, the international regulatory banking agency is the Basel Committee on Banking Supervision (BCBS) through the Bank of International Settlements (BIS) in Basel, Switzerland.¹⁰ The BIS is a central bank and is known in the banking industry as the central bank of central banks. The international banking regulatory accords are Basel I, Basel II, Basel III, and Basel IV (commonly known as Basel 3.1), which were implemented on January 1, 2023, and will become fully adopted in 2025.¹¹ The Basel international banking agreements will be discussed later in the essay.

CAPITAL REQUIREMENTS

Capital requirements are regulations for banks and other depository institutions that establish how easily sold securities must be held relative to the level of assets. Capital requirements, also known as regulatory capital, are determined by international regulatory agencies, such as the Bank for International Settlements (BIS), the Federal Reserve, and the Federal Deposit Insurance Corporation (FDIC). It should be remembered that capital requirements are not cash reserves that can be accessed almost immediately and lose their value via through inflation.

Capital requirements are expressed as ratios based on the amount of assets held by a financial institution. In the United States, and according to the FDIC, banks that are adequately capitalized possess a Tier 1 capital-to-risk-weighted assets ratio of least 4.5 percent, where a bank is undercapitalized if the Tier 1 ratio is under 4.5 percent. Tier 1 capital consists of common stock, disclosed ratios, retained earnings, and some types of preferred stock.

¹ Adam Hayes, Bank Capital: Meaning and Classifications, *Investopedia* (Mar. 29, 2022), available at <https://www.investopedia.com/terms/b/bank-capital.asp#:~:text=Bank%20capital%20is%20the%20difference,and%20inter-bank%20loans>).

² Akhilesh Ganti, Net Worth: What It Is and How to Calculate It, *Investopedia* (Mar. 9, 2023), available at <https://www.investopedia.com/terms/n/networth.asp>.

³ Adam, Hayes, *supra*, note 1.

⁴ *Id.*

⁵ *Id.*

⁶ *Id.*

⁷ *Id.*

⁸ Chapter 7 - Bankruptcy Basics, *United States Courts* (n.d.), available at <https://www.uscourts.gov/services-forms/bankruptcy/bankruptcy-basics/chapter-7-bankruptcy-basics#:~:text=Background,provisions%20of%20the%20Bankruptcy%20Code>.

⁹ FindLaw Staff, Exempt vs. Non-exempt Property Under Chapter 7, *FindLaw* (Apr. 7, 2021), available at <https://www.findlaw.com/bankruptcy/chapter-7/exempt-vs-non-exempt-property-under-chapter-7.html>.

¹⁰ Adam, Hayes, *supra*, note 1.

¹¹ Greg Daugherty, What Basel IV Means for U.S. Banks, *Investopedia* (Mar. 17, 2023), available at <https://www.investopedia.com/basel-iv-5218598>.

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THE ECONOMY AND CAPITAL REQUIREMENTS

Capital requirements are typically tightened after an economic recession, stock market crash, or other financial crisis. The idea behind capital requirements is to ensure that the investments of depository institutions are not dominated by investments that increase the default risk while ensuring that these entities have sufficient capital to sustain operating losses while being able to honor withdrawals. In the United States, capital requirements are primarily focused on the weighted risk of default for each kind of asset held by a bank. These capital requirements are then employed in generating capital ratios that are used in evaluating the relative financial strength and safety of a lending institution.

The purpose of capital requirements is to ensure that banks remain solvent and the overall financial system is secure. It should be remembered in this age of international finance, no bank is an island onto itself. In particular, a shock to one large bank can affect other large banks and many smaller lending institutions. The reverberating of economic instability is the main reason why stringent capital requirements standards should be applied consistently, particularly when evaluating the soundness of different institutions. Critics of capital requirements maintain that high capital requirements inhibit bank risk-taking and competition because capital requirements regulations are more expensive for small financial institutions because they prevent small institutions from making money, increasing costs, and extending credit to customers.

Ensure banks stay solvent, avoiding default	Raise costs for banks and, eventually, consumers
Ensure depositors have access to funds	Inhibit the ability of banks to invest
Set industry standards	Reduce the availability of credit and loans
Provide a way to compare and evaluate institutions	

Basel Accords, Dodd-Frank, and Capital Requirements

Global capital requirements have fluctuated in the past forty years. They increase after a financial crisis or economic recession.¹³ Prior to the 1980s, banks had no capital requirements. Capital was just one of many factors used in evaluating the capitalization of banks.¹⁴ In 1982, when Mexico stated that it could no longer pay its interest payments on its national debt, this event precipitated the passage of the International Lending Supervision Act (ILSA) of 1983.¹⁵ In 1988, the BCBS under Basel I announced that commercial banks that operated internationally would maintain capital requirements at 8 percent of total assets, where the previous percentage was 5.5 percent of total assets.¹⁶ In 2004, the Basel II Accord created different types of credit risk in calculating capital requirement ratios.¹⁷ For internationally active commercial banks, adequate capital requirements were raised from 5.5% to 8% of total assets. An initial Basel II framework in 2004 incorporated different types of credit risk in calculating the ratios.¹⁸ On July 4, 2006, the BIS issued a comprehensive version of the Basel II framework.¹⁹ The Basel II framework stated guidelines for calculating minimum capital requirements ratios that were posited to be at least 8 percent of their risk-weighted assets.²⁰ Tier 1 is the essential capital of a bank and consists of common stock, disclosed reserves, and other specific assets. A bank must hold at least 4 percent Tier 1 asset reserves.²¹ Tier 2 is made up of supplementary capital, consisting in revaluation reserves, hybrid instruments, and medium- and long-term subordinated loans.²² Finally, Tier 3 comprises low quality unsecured, subordinated debt.²³ Basel II also improved the definition of risk-weighted assets, which were intended to dissuade banks from incurring too much risk by considering the credit rating of assets in deciding risk weights.²⁴

¹³ *Id.*

¹⁴ Joseph G. Haubrich, A Brief History of Bank Capital Requirements in the United States, *Federal Reserve Bank of Cleveland* (Feb. 28, 2020), available at <https://www.clevelandfed.org/publications/economic-commentary/2020/ec-202005-evolution-bank-capital-requirements>.

¹⁵ Jennifer J. Johnson, International Banking Operations; International Lending Supervision, *Federal Register* (Jan. 9, 2003), available at <https://www.federalregister.gov/documents/2003/01/09/03-385/international-banking-operations-international-lending-supervision>.

¹⁶ James Chen, What Is Basel I? Definition, History, Benefits, and Criticism, *Investopedia* (Jun. 30, 2023), available at https://www.investopedia.com/terms/b/basel_i.asp.

¹⁷ *Id.*

¹⁸ BIS Staff, Basel II: Revised International Capital Framework, *Bank of International Settlements* (n.d.), available at <https://www.bis.org/publ/bcbsca.htm>.

¹⁹ *Id.*

²⁰ James Chen, Basel II: Definition, Purpose, Regulatory Reforms, *Investopedia* (Aug. 2, 2023), available at <https://www.investopedia.com/terms/b/baselii.asp>.

²¹ Moody's Staff, Regulation Guide: An Introduction, *Moody's Analytics* (2011), available at <https://www.moodyanalytics.com/-/media/whitepaper/2011/11-01-03-Regulation-Guide-Introduction.pdf>.

²² James Chen, *supra*, note 29.

²³ *Id.*

²⁴ *Id.*

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Under Basel III, the total capital requirements ratio has to be 8 percent or higher.²⁵ Under Basel III, traditional commercial loans have as weight of 1 (100 percent), meaning that for every dollar of commercial loans on a bank's balance sheet, a bank is required to hold eight cents of capital.²⁶ Residential mortgages have a weight of 0.5 (50 percent), mortgage-backed securities issued by Fannie Mae or

Freddie Mac have a weight of 0.2 (20 percent), and short-term government securities have a weight of 0 (0 percent).²⁷ ²⁸ Finally, under Basel III, the minimum Tier 1 capital requirements ratio was increased to 6 percent, with the remaining assets in Tier 2.²⁹

In 2008, the global financial crisis precipitated the passage of the Dodd-Frank Wall Street Reform and Consumer Protection Act (Dodd-Frank) of 2010.³⁰ The purpose of Dodd-Frank was to "prevent the excessive risk-taking that led to the financial crisis. The law also provides common-sense protections for American families, creating new consumer watchdog to prevent mortgage companies and pay-day lenders from exploiting consumers."³¹ The idea behind Dodd-Frank was to ensure the United States banks held sufficient capital to endure systematic banking shocks. The Collins Amendment of Dodd-Frank established the Tier 1 risk-based capital requirements ratio at 4.5 percent, slightly over half the capital requirements percentage inaugurated by Basel III.³²

Basel IV is the informal name of a series of proposed international banking reforms that started on January 1, 2023.³³ It is expected to take five years to implement these reforms.³⁴ According to the BCBS, the main goal of Basel IV is to "restore the credibility calculating risk-weighted assets (RWAs) by improving the ability to compare capital requirements ratios."³⁵ The changes to Basel III include:³⁶

- Stating new standardized risk ratings for different types of assets, including bonds and real estate;
- Limiting internal model approaches that are employed by some banks to calculate their capital requirements, thereby reducing risk; and
- Initiating a leverage ratio buffer to constrain further the leverage of global banks whose failure could jeopardize the world financial system by requiring these mammoth banks at the beginning of 2027 to hold capital at least equal to 72.5 percent of the capital requirements amount suggested by the standardized model.

Given the history of Basel I through III, it is likely that Basel IV's deadline and provisions will change.

Types of Capital Requirements

In this subsection, the various capital requirements tiers are examined in some detail, thereby fleshing out the information on capital requirements previously described in this essay and advocated by the Basel accords.

Tier 1 Capital Requirements

The Tier 1 capital requirements ratio refers to the ratio of a bank's core capital.³⁷ According to Basel III, Tier 1 capital is divided into two components: Common Equity Tier 1 (CET1) and Additional Equity Tier 1 (AE1).³⁸ CET1 is the highest quality of capital

²⁵ Andrew Bloomenthal, Basel III: What It Is, Capital Requirements, and Implementation, *Investopedia* (Jul. 17, 2022), available at <https://www.investopedia.com/terms/b/basel-iii.asp>.

²⁶ NCUA Staff, Risk Weights at a Glance with Comparison to FDIC, *National Credit Union Administration* (n.d.), available at <https://ncua.gov/regulation-supervision/regulatory-compliance-resources/risk-based-capital-rule-resources/risk-weights-glance-comparison-fdic>.

²⁷ *Id.*

²⁸ GAO Staff, Mortgage-Related Assets: Capital Requirements Vary Depending on Type of Asset, *United States Government Accounting Office* (Dec. 2016), available at <https://www.gao.gov/assets/gao-17-93.pdf>.

²⁹ BIS Staff, Risk-Based Capital Requirements: Calculation of Minimum Risk-Based Capital Requirements, *Bank of International Settlements* (Nov. 26, 2020), available at https://www.bis.org/basel_framework/chapter/RBC/20.htm.

³⁰ James Chen, *supra*, note 12.

³¹ Barack Obama, Wall Street Reform: The Dodd-Frank Act, *The White House* (2010), available at <https://obamawhitehouse.archives.gov/economy/middle-class/dodd-frank-wall-street-reform#:~:text=The%20most%20far%20reaching%20Wall,day%20lenders%20from%20exploiting%20consumers>.

³² James Chen, *supra*, note 12.

³³ Greg Daugherty, What Basel IV Means for U.S. Banks, *Investopedia* (Mar. 17, 2023), available at <https://www.investopedia.com/basel-iv-5218598>.

³⁴ *Id.*

³⁵ BIS Staff, High-Level Summary of Basel III Reforms, *Bank of International Settlements* (Dec. 2017), available at https://www.bis.org/bcbs/publ/d424_hlsummary.pdf.

³⁶ *Id.*

³⁶ *Id.*

³⁷ Mitchell Grant, Tier 1 Capital: Definition, Components, Ratio, and How It's Used, *Investopedia* (Mar. 13, 2023), available at <https://www.investopedia.com/terms/t/tier1capital.asp>.

³⁸ *Id.*

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and can be employed to absorb losses as they happen.³⁹ CET1 includes common shares, retained earnings, accumulated and comprehensive income, qualifying minority interest, and less specific regulatory adjustments.⁴⁰ AE1 consists of noncumulative, nonredeemable preferred stock and related surplus, and qualifying minority interest.⁴¹ AE1 can also absorb losses even though they do not qualify as CET1. The Tier 1 capital requirements ratio is calculated by dividing a bank's equity capital by its total risk-weighted assets.

The Tier 1 capital requirements ratio is different from the Tier 1 common capital ratio.⁴² The Tier 1 common capital ratio excludes preferred stock and non-controlling interests.⁴³ However, Tier 1 common capital includes a firm's common stock, retained earnings, and other comprehensive income. The Tier 1 common capital ratio equals its Tier 1 capital minus preferred stock and non-controlling interests, all divided by the total risk-controlling assets.⁴⁴

The Tier 1 leverage ratio is the "relationship between a banking organization's core capital and its total assets."⁴⁵ The Tier 1 leverage ratio is calculated by dividing a bank's Tier 1 capital by its average total consolidated assets and specific off-balance sheet exposures.⁴⁶ Central banks, such as the Federal Reserve, employ the Tier 1 leverage ratio to measure the capital adequacy of a bank. It should be remembered that the denominator of the Tier 1 leverage ratio is not a bank's risk-weighted assets. Basel III specified a minimum leverage ratio of at least 3 percent of total assets.⁴⁷ The Basel III requirements are higher for global banks that are too big to fail.

Tier 2 Capital Requirements

Tier 2 capital is the second or supplementary layer of the capital held by a bank and consists of revaluation reserves, hybrid instruments, and subordinated term debt.⁴⁸ The four types of Tier 2 capital include:⁴⁹

- Revaluation reserves – Created by the revaluation of an asset;
- General provisions – Losses that a bank may possess of an undetermined amount, particularly from loans. The permitted total general provision amount is 1.25 percent of a bank's risk-weighted assets;
- Hybrid capital instruments – A mixture of debt and equity instruments, such as preferred stock;
- Subordinated debt – Debt subordinated to ordinary bank depositors and other loans and securities that constitute higher-ranking senior debt, where the minimum original term of this debt is over five years.

Tier 2 capital is also broken up into upper and lower levels. Upper-level Tier 2 capital has no maturity date, whereas lower-level Tier 2 capital is made up of subordinated debt that is typically inexpensive for a bank to issue.⁵⁰

Tier 3 Capital Requirements

Tier 3 capital was made up of low-quality, unsecured debt that were issued before the Great Recession.⁵¹ Banks held Tier 3 capital to protect their market, commodities, and foreign currency risks. In other words, banks employed loans from other financial institutions to cover losses while they traded in various markets. If the markets collapsed, banks would use shareholder's equity, retained capital, or supplementary capital to remain solvent. Under Basel III, Tier 3 capital was obliged to begin phasing out beginning on January 1, 2013, and removed completely by January 1, 2022.⁵²

³⁹ *Id.*

⁴⁰ BIS Staff, Definition of Capital in Basel III, *Bank of International Settlements* (Jun. 27, 2019), available at https://www.bis.org/fsi/fsisummaries/defcap_b3.htm.

⁴¹ *Id.*

⁴² Adam Hayes, Tier 1 Capital Ratio: Definition and Formula for Calculation, *Investopedia* (Nov. 21, 2023), available at <https://www.investopedia.com/terms/t/tier-1-capital-ratio.asp>.

⁴³ *Id.*

⁴⁴ *Id.*

⁴⁵ *Id.*

⁴⁶ *Id.*

⁴⁷ *Id.*

⁴⁸ Julia Kagan, Tier 2 Capital: Definition, 4 Components, and What They Include, *Investopedia* (Oct. 11, 2020), available at <https://www.investopedia.com/terms/t/tier2capital.asp>.

⁴⁹ *Id.*

⁵⁰ Basel Committee on Banking Supervision, International Convergence of Capital Measurement and Capital Standards, *Bank of International Settlements* (Jul. 1988), available at <https://www.investopedia.com/terms/t/tier2capital.asp>.

⁵¹ Julia Kagan, Tier 3 Capital: Definition, Examples, vs. Tier 1 and Tier 2, *Investopedia* (Jun. 22, 2023), available at <https://www.investopedia.com/terms/t/tier3capital.asp>.

⁵² *Id.*

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Other Capital Requirements Categories

The capital categories are organized into well-capitalized, adequately capitalized, undercapitalized, significantly undercapitalized, and critically undercapitalized. A financial institution is well-capitalized if its total risk-based capital ratio is equal to or greater than 10.0 percent, and its Tier 1 risk-based capital ratio is equal to or greater than 6.0 percent, and its Tier 1 leverage capital ratio is equal to or greater than 5.0 percent.⁵³ A financial institution is adequately capitalized if it is not well-capitalized, but its total risk-based capital ratio is equal to or greater than 8 percent, its Tier 1 risk-based capital ratio is equal to or greater than 4.0 percent, and its Tier 1 leverage capital ratio is equal to or greater than 4.0 percent.⁵⁴

A financial institution is undercapitalized if its risk-based capital ratio is less than 8.0 percent, its Tier 1 risk-based capital ratio is less than 6.0 percent, it has a common equity Tier 1 capital ratio is less than 4.5 percent, or it has a leverage ratio that is less than 4.0 percent. Beginning January 1, 2018, an advanced approaches or Category III FDIC-supervised institution said to be undercapitalized if its supplementary leverage ratio of less than 3.0 percent, given that the calculation of the leverage ratio is in accordance with § 324.10.⁵⁵ A financial institution is significantly undercapitalized if its total risk-based capital ratio is less than 6.0 percent, its risk-based capital ratio is less than 4.0 percent, its common equity Tier 1 capital ratio that is less than 3.0 percent, or its leverage ratio that is less than 3.0 percent.⁵⁶ A financial institution is critically undercapitalized if it is FDIC-insured and possesses a ratio of tangible equity to total assets that is equal to or less than 2.0 percent.⁵⁷

Capitalization Requirements Effects

When discussing the effects of capitalization, one must consider the Basel Accords. Under Basel III, the total capital requirements ratio has to be 8.0 percent or higher.⁵⁸ Under Basel III, traditional commercial loans have as weight of 1.0 (100 percent), meaning that for every dollar of commercial loans on a bank's balance sheet, a bank is required to hold eight cents of capital.⁵⁹ Residential mortgages have a weight of 0.5 (50 percent), mortgage-backed securities issued by Fannie Mae or Freddie Mac have a weight of 0.2 (20 percent), and short-term government securities have a weight of 0.0 (0.0 percent).^{60 61} Under Basel III, the minimum Tier 1 capital requirements ratio was increased to 6.0 percent, with the remaining assets in Tier 2.⁶² Thus, when considering well-capitalized and adequately capitalized financial organizations, these organizations are Basel III compliant and can engage in international transactions with other Basel III banks.

In general, undercapitalization happens when an entity possesses insufficient capital to conduct normal business operations and pay its creditors.⁶³ Undercapitalization usually occurs when an organization is not creating sufficient cash flow, or cannot access various forms of financing such as debt or equity.⁶⁴ For financial institutions, when a firm is undercapitalized, regulatory bodies, such as the FDIC, require that the institutions generate a prompt correction plan to increase the organization's capital requirements ratio to an acceptable level.⁶⁵

For undercapitalized financial institutions, the appropriate regulatory body must thoroughly supervise the entity's state, requiring that the organization submit a capital restoration plan, limit its growth, and limit its access to the Federal Reserve discount window. The regulator must approve acquisitions, branches or participation in a new line of business.⁶⁶ For a significantly undercapitalized institution, a regulating body must:⁶⁷

- Prohibit executive bonuses or raises without regulatory approval;
- Disallow the payment of subordinated debt
- Require the bank to commence one or more of the following actions:
 - Sale of securities;

⁵³ Federal Register Staff, § 324.403 Capital Measures and Capital Category Definitions, *Code of Federal Regulations* (Nov. 30, 2023), available at <https://www.ecfr.gov/current/title-12/chapter-III/subchapter-B/part-324/subpart-H/section-324.403>.

⁵⁴ *Id.*

⁵⁵ *Id.*

⁵⁶ *Id.*

⁵⁷ *Id.*

⁵⁸ Andrew Bloomenthal, *supra*, note 34..

⁵⁹ NCUA Staff, *supra*, note 35.

⁶⁰ *Id.*

⁶¹ GAO Staff, *supra*, note 37.

⁶² BIS Staff, *supra*, note 38.

⁶³ Will Kenton, Undercapitalization: Definition, Causes, and Examples, *Investopedia* (Dec. 13, 2022), available at <https://www.investopedia.com/terms/u/undercapitalization.asp>.

⁶⁴ *Id.*

⁶⁵ Peter G. Weinstock, Prompt Corrective Action, *Hunton & Williams LLP* (2009), available at <https://www.huntonak.com/en/insights/prompt-corrective-action.html>.

⁶⁶ *Id.*

⁶⁷ *Id.*

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- Securities to be sold by voting stock;
- Eliminate the sister bank exemption to Section 23A;
- Restrict transactions with affiliates;
- Limit interest rates paid,
- Limit or terminate excessively risky activities;
- Require a new board to be elected;
- Dismiss any director or executive officer serving at least 180 days, or require the bank to hire new executive officers;
- No deposits from correspondent banks;
- Divest any subsidiaries or non-depository affiliate; or
- Any other appropriate actions.

A bank that has been determined to be critically undercapitalized must be placed in conservatorship or receivership within 90 days unless the FDIC and other regulators decide that other actions are needed to protect the funds of the depositors. The actions by the FDIC and other regulating bodies must be reviewed every 90 days until undercapitalization no longer exists.⁶⁸

MONETARY POLICY TOOLS

In this section, monetary policy is discussed. The three monetary policy tools include the reserve requirements ratio, the rediscount rate, and open market operations. The Federal Reserve uses these monetary policy tools to maintain the solvency and viability of the United States banking system. In addition, quantitative easing, a special type of open market operation, is explained. In the past 15 years, the Federal Reserve conducted four phases of quantitative easing, known as QE1 through QE4. Each phase has had positive and negative effects on the United States economy and is examined in turn.

Reserve Requirements Ratio

The reserve requirement ratio is one of the three monetary policy tools that the Federal Reserve employs to manage the economy of the United States. The purpose of the reserve requirements ratio is to specify the percentage of liquid assets a bank must hold.⁶⁹ The reserve requirement ratio is the percentage of “reservable liabilities that commercial banks must hold onto, rather than lend out or invest.”⁷⁰ The ratio is determined by the Federal Reserve and determines the minimum percentage of reserves that a bank must hold. The reserve requirement ratio is controlled by Regulation D, where the percentage is specified for all member banks of the Federal Reserve System.⁷¹ The reserve requirements ratio is also known as the cash reserve ratio.

Reserve requirements are calculated multiplying a bank’s total deposits by the reserve requirements ratio specified by the Federal Reserve. For example, if the reserve requirements ratio is 10 percent and the amount of deposits is \$1 billion, then the reserve requirements is \$100 million (= 10 percent * \$1 billion). The Board of Governors of the Federal Reserve System (BOG-FRS) is the only authority to legally make changes to the reserve requirements ratio.⁷² As March 26, 2020, the reserve requirements ratio was established at zero percent (0%).⁷³ The Board eliminated the reserve requirement due to the global financial crisis caused by the Covid-19 pandemic.⁷⁴ A zero percent reserve requirements ratio means is that banks are not required to keep any deposits at the Federal Reserve or in their vaults. If desired, banks can now loan out all their deposits.⁷⁵

Before the Covid-19 pandemic, the Federal Reserve updated its reserve requirements in January 2019.⁷⁶ At that time, banks with more than \$124.2 million in net transactions maintained ten percent (10%) reserves of deposits; banks with net transactions between \$16.3 million and \$124.2 million were required to at least three percent (3%) required reserves; whereas banks with net transaction accounts up to \$16.3 million were not required to maintain reserve requirements (0%).⁷⁷ The vast majority of the banks in the United States were in the first category, while smaller banks were in the second and third categories.

⁶⁸ *Id.*

⁶⁹ DAVID SHAPIRO, DANIEL MACDONALD, & STEVEN A. GREENLAW (CONTRIB. EDS.), *PRINCIPLES OF ECONOMICS* (OpenStax 3ed. 2022).

⁷⁰ Will Kenton, What Is the Reserve Ratio, and How Is It Calculated?, *Investopedia* (Jan. 17, 2022), available at <https://www.investopedia.com/terms/r/reserveratio.asp#:~:text=The%20reserve%20ratio%20is%20the,as%20the%20cash%20reseve%20ratio.>

⁷¹ *Id.*

⁷² *Id.*

⁷³ FRS Staff, Policy Tools: Reserve Requirements, *Board of Governors of the Federal Reserve System* (Jan. 4. 2022), available at <https://www.federalreserve.gov/monetarypolicy/reservereq.htm>.

⁷⁴ Gary Smith, Federal Reserve Eliminates Reserve Requirements, *Eide Bailly* (Dec. 7, 2020), available at <https://www.eidebailly.com/insights/articles/2020/4/federal-reserve-eliminates-reserve-requirements.>

⁷⁵ *Id.*

⁷⁶ Will Kenton, *supra*, note 68.

⁷⁷ *Id.*

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The effects of a zero percent reserve requirements ratio cannot be understated. The reserve requirements that historically existed to protect families, businesses, and financial institutions is now gone.⁷⁸ The purpose of reserve requirements is to stand as a barrier, safeguarding customers against bank runs, where mobs of people rush to their bank to take out their money all at the same time.⁷⁹

The most graphic example of a bank run occurred in the 1946 movie entitled *It's a Wonderful Life*, directed by Frank Capra.⁸⁰ On Christmas Eve in 1945, George Bailey (Jimmy Stewart) decided to commit suicide because his uncle Billy (James Mitchell) went to deposit \$8,000 at Henry Potter's (Lionel Barrymore) bank but lost the money. Billy taunted Potter with a newspaper headline, forgetting to deposit the money that was folded in the newspaper. Potter found the money in the newspaper, and kept it. George was distraught, but his family prayed and a guardian angel, second-class, Clarence Odbody (Henry Travers) showed George his life and the people that he helped. Clarence was assigned to help George so that he could earn his wings. At the end of the film, George's friends contributed more than enough money to cover the \$8,000 loss.⁸¹

Earlier in the film, George planned to tour the world before going to college. He married Mary Hatch (Donna Reed), who was essentially George's childhood sweetheart. When George's father suddenly died, George postponed his travel arrangements, and took on the management of the Bailey Brothers Building and Loan (a savings institution that predates Savings and Loans). In 1929, in the height of the Great Depression, the Building and Loan experienced a bank run. Needless to say, the Building and Loan survived.⁸² Since the Great Depression happened nearly a hundred years ago, most people living have no idea what a bank run looks like. Thus, the movie provides a visual example of what happens and how people behave during a bank run.

Rediscount Rate

The other two monetary policy tools of the Federal Reserve are the rediscount rate and open market operations. The rediscount rate is the rate of interest the Federal Reserve charges member banks and other financial institutions for short-term loans.⁸³ The lending facility of the Federal Reserve is known as the discount window.⁸⁴ In a loan that uses the Federal Reserve's rediscount rate as the interest rate, the parties are the Federal Reserve and a private financial institution. In contrast to the rediscount rate, the federal funds rate is a market interest rate where commercial banks borrow and lend money from their excess reserves for overnight transactions,⁸⁵ where excess reserves are "capital reserves held by a bank or financial institution above amounts required by regulators, creditors, or internal controls."⁸⁶ In other words, excess liquid reserves that are held over and above required reserves. The Federal Reserve does not set the federal funds rate because it is a market rate. Rather, the Federal Reserve targets the federal funds rate by establishing the rediscount rate.⁸⁷ In general, the federal funds rate is greater than or equal to the rediscount rate.⁸⁸

In 1980, at the end of former Pres. James Carter's administration and just before the beginning of former Pres. Ronald Reagan's administration, the federal funds rate was at 20 percent due to the Federal Reserve's efforts to counteract inflation in the late 1970s.⁸⁹ In response to the global financial crisis or Great Recession that lasted from December 2007 to June 2009, in December 2008, the rediscount and the federal funds rates ranged from zero percent to 0.25 percent.⁹⁰ The rediscount rate and the federal funds rate remained at zero percent to 0.25 percent until December 2015, or seven years.⁹¹ From December 2016, to December 2018, the federal funds rate gradually rose from 2.25 percent to 2.50 percent, but then declined from zero percent to 0.25 percent in March 2020. The rediscount and federal funds rates remained steady until March 2022.⁹² Since May 2022, the rediscount rate and the federal funds rate increased until its recent value in July 2023 from 5.25 percent to 5.50 percent.⁹³

⁷⁸ Gary Smith, *supra*, note 72.

⁷⁹ Adam Hayes, What Is a Bank Run? Definition, Examples, and How It Works, *Investopedia* (Jul. 29, 2023), available at <https://www.investopedia.com/terms/b/bankrun.asp>.

⁸⁰ IT'S A WONDERFUL LIFE (Liberty Films 1946).

⁸¹ *Id.*

⁸² *Id.*

⁸³ Adam Hayes, Discount Rate Defined: How It's Used by the Fed and in Cash-Flow Analysis, *Investopedia* (Sep. 29, 2023), available at <https://www.investopedia.com/terms/d/discountrate.asp>.

⁸⁴ *Id.*

⁸⁵ Benjamin Curry, Understanding the Federal Funds Rate, *Forbes Advisor* (Nov. 1, 2023), available at <https://www.forbes.com/advisor/investing/federal-funds-rate/#:~:text=How%20Does%20the%20Federal%20Funds,currentlly%205.25%25%20to%205.50%25>.

⁸⁶ Scott Nevil, Excess Reserves: Bank Deposits Beyond What Is Required, *Investopedia* (Jun. 23, 2023), available at https://www.investopedia.com/terms/e/excess_reserves.asp.

⁸⁷ Benjamin Curry, *supra*, note 77.

⁸⁸ See generally, David Shapiro, Daniel Macdonald, & Steven A. Greenlaw, *supra*, note 62.

⁸⁹ Benjamin Curry, *supra*, note 83.

⁹⁰ Taylor Tepper, Federal Funds Rate History 1990 to 2023, *Forbes Advisor* (Oct/ 17, 2023), available at <https://www.forbes.com/advisor/investing/fed-funds-rate-history/>.

⁹¹ *Id.*

⁹² *Id.*

⁹³ *Id.*

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Open Market Operations

An open market operation (OMO) refers to the “purchase and sale of securities in the open market by the Federal Reserve.”⁹⁴ An open market operation aims to increase the money supply (i.e., expand the economy) by buying securities from the financial markets or decrease the money supply (i.e., contract the economy) by selling securities to the financial markets.⁹⁵ Through open market operations, the Federal Reserve can influence the federal funds rate percentage along with other short-term rates, long-term rates, and foreign exchange rates.⁹⁶ Open market operations can alter the supply of money and the credit available in the economy, thereby changing the unemployment rate, real Gross Domestic Product (GDP), which measures an economy’s output of final goods and services, as well as the prices of those final goods and services.⁹⁷

Quantitative Easing

Quantitative easing is a particular type of open market operation, where interest rates are near zero and the economy is stagnating.⁹⁸ With quantitative easing, the Federal Reserve purchases government securities and other securities to massively inject liquidity into an economy.⁹⁹ The risk associated with quantitative easing is that it may increase inflation.¹⁰⁰ However, if quantitative easing does not encourage growth, it can promote stagflation, where the inflation rate and unemployment rate are high.¹⁰¹ Because quantitative easing increases the money supply and devalues the currency, quantitative easing cannot force individuals and business to borrow and invest in production, particularly in an uncertain economy. It may cause a credit crunch where companies hoard cash in banks or purchase back their outstanding stock held by shareholders to increase the value of the stock without any change in production.¹⁰²

Quantitative Easing (QE1)

In the United States, quantitative easing has been accomplished in phases. The first quantitative easing round (QE1) began in November 2008 during the Great Recession, where the Federal Reserve initially purchased \$100 billion in government-sponsored enterprises (GSEs) and \$500 billion in mortgage-backed securities that were backed by Fannie Mae, Freddie Mac, and Ginnie Mae.¹⁰³ By March 2009, the Federal Reserve held \$1.75 trillion in bank debt, mortgage-back securities, and Treasury notes, which rose to \$2.1 trillion in June 2010. After a three-month halt in purchases, the holdings fell to a project level of \$1.7 trillion in 2012 as the debt matured. The Federal Reserve resumed QE1 in August 2010, by purchasing approximately \$30 billion in two- to ten-year Treasury notes to maintain their holdings at about \$2.054 trillion.¹⁰⁴

Quantitative Easing (QE2)

In November 2010, the Federal Reserve announced QE2, stating that it would be purchasing \$600 billion of Treasury securities by the end of the second quarter of 2011.¹⁰⁵ The purchase rate was \$75 billion a month and ended in June 2011.¹⁰⁶

Quantitative Easing (QE3)

The Federal Reserve announced QE3 on September 13, 2012, by introducing a new \$40 billion a month open-ended buying program of mortgage-backed securities from federal agencies. At the same time the Federal Open Market Committee (FOMC) stated that it

⁹⁴ Adam Hayes, What Are Open Market Operations (OMOs), and How Do They Work?, *Investopedia* (Sep. 9, 2022), available at [https://www.investopedia.com/terms/o/openmarketoperations.asp#:~:text=Open%20market%20operation%20\(OMO\)%20is,on%20reserve%20in%20U.S.%20banks](https://www.investopedia.com/terms/o/openmarketoperations.asp#:~:text=Open%20market%20operation%20(OMO)%20is,on%20reserve%20in%20U.S.%20banks).

⁹⁵ *Id.*

⁹⁶ *Id.*

⁹⁷ *Id.*

⁹⁸ The Investopedia Team, What Is Quantitative Easing (QE), and How Does It Work?, *Investopedia* (Sep. 18, 2023), available at [https://www.investopedia.com/terms/q/quantitative-easing.asp#:~:text=%25%2025%25%200%25-,What%20Is%20Quantitative%20Easing%20\(QE\)%3F,and%20increase%20the%20money%20supply](https://www.investopedia.com/terms/q/quantitative-easing.asp#:~:text=%25%2025%25%200%25-,What%20Is%20Quantitative%20Easing%20(QE)%3F,and%20increase%20the%20money%20supply).

⁹⁹ *Id.*

¹⁰⁰ Dian L. Chu, From Quantitative Easing To Stagflation?, *Business Insider* (Nov. 1, 2010), available at <https://www.businessinsider.com/from-quantitative-easing-to-stagflation-2011-1>.

¹⁰¹ David Shapiro, Daniel MacDonald, & Steven A. Greenlaw, *supra*, note 62.

¹⁰² Investopedia Team, *supra*, note 96.

¹⁰³ Federal Reserve Staff, Press Release: Federal Reserve announces it will initiate a program to purchase the direct obligations of housing-related government-sponsored enterprises and mortgage-backed securities backed by Fannie Mae, Freddie Mac, and Ginnie Mae, *Governors of the Federal Reserve System* (Nov. 25, 2008), available at <https://www.federalreserve.gov/newsevents/pressreleases/monetary20081125b.htm>.

¹⁰⁴ Abdulmalik Oricha Ali, Quantitative Monetary Easing: The History and Impacts on Financial Markets, *The Global University of Islamic Finance* (n.d.), available at https://www.academia.edu/6943181/Quantitative_Monetary_Easing_the_history_and_impacts_on_financial_markets?auto=download.

¹⁰⁵ Annalyn Censky, QE2: Fed pulls the trigger, *CNN Money* (Nov. 3, 2010), available at https://money.cnn.com/2010/11/03/news/economy/fed_decision/index.htm.

¹⁰⁶ ADMC Staff, History of Quantitative Easing in the U.S., *The American Deposit Management Company* (n.d.), available at <https://americandeposits.com/history-quantitative-easing-united-states/>.

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would maintain the rediscount rate and the federal funds rate at near zero through at least 2015.¹⁰⁷ On December 12, 2012, the FOMC announced that it would be increasing the amount of open-ended purchases from \$40 billion a month to \$85 billion a month.¹⁰⁸ In December 2013, the Federal Reserve stated that it would begin reducing its monthly purchases in January 2014.¹⁰⁹ QE3 ended on October 29, 2014, when the Federal Reserve purchased a total of \$4.5 trillion in assets.¹¹⁰

Quantitative Easing (QE4)

On March 15, 2020, the Federal Reserve revealed that it would begin QE4 by stating that it would purchase an additional \$700 billion in assets.¹¹¹ By Summer 2020, the Federal Reserve bought about \$2.0 trillion in additional assets.¹¹² As of April 11, 2022, the Federal Reserve purchased a grand total of \$8.97 trillion in assets, while as of November 27, 2023, that amount declined to \$7.8 trillion.¹¹³

The Effects of Quantitative Easing

From a macroeconomic perspective, quantitative easing lowered interest rates.¹¹⁴ With low-interest rates, the rates of return also declined, forcing investors to invest in riskier investments to achieve higher returns than money market accounts, certificates of deposit (CDs), Treasury bonds, and corporate bonds.¹¹⁵ To increase their profits, investors weighted their portfolios towards stocks, thereby pushing up stock market prices.¹¹⁶ Low interest rates also encourage to expand their businesses, typically by borrowing money from banks.¹¹⁷

Fundamental analysis holds that business expansion is a sign of a healthy operation and a positive outlook on future demand that inspires investors to buy stock, which causes stock prices to rise. According to Malliaris et al., QE1, QE2, and QE3 statistically significantly contributed to the decrease in Treasury bond yields, and, by inference, to an increase in equity prices.¹¹⁸ Given that the Dow Jones Industrial Average (DOW) average closing price was 33,886 in 2023 after quantitative easing, while the closing average price of the DOW was 11,244 in 2008 before quantitative easing, a case can be made that QE1 through QE4 had a significant effect on increasing the value of the DOW,¹¹⁹ and unless central banks, including the Federal Reserve, can wring liquidity out of the global economy, inflation, the enemy of the middle and low class, will continue to manifest itself.¹²⁰

CONCLUSION

A capital requirement states how much capital a bank should hold, whereas a reserve requirement specifies how much cash or liquid assets a bank must have.¹²¹ The purpose of capital requirements is to reduce losses, while reserve requirements are designed to ensure that banks can pay depositors, preventing a bank run.¹²² Although capital requirements seem to put a bank on a solid footing and are vigorously supported by the BIS, they have a gaping flaw. Capital requirements are not cash. It should never be forgotten that in finance and accounting, cash is king. In other words, there is nothing more liquid than cash.

¹⁰⁷ Joshua Zumbrun, Fed Undertakes QE3 With \$40 Billion Monthly MBS Purchases, *Bloomberg* (Sep. 12, 2012), available at <https://www.bloomberg.com/news/articles/2012-09-13/fed-plans-to-buy-40-billion-in-mortgage-securities-each-month>.

¹⁰⁸ FRS Staff, Press Release: Federal Reserve issues FOMC statement, *Board of Governors of the Federal Reserve System* (Dec. 12, 2012), available at <https://www.federalreserve.gov/newsevents/pressreleases/monetary20121212a.htm>.

¹⁰⁹ JeYeon Park, Fed to Taper Bond Buying by \$10 billion a Month, *CNBC* (Dec. 18, 2013), available at <https://www.cnb.com/2013/12/18/fed-begins-taper-program.html>.

¹¹⁰ Justin Wolfers, The Fed Has Not Stopped Trying to Stimulate the Economy, *The New York Times* (Oct. 29, 2014), available at <https://www.nytimes.com/2014/10/30/upshot/the-fed-has-not-stopped-trying-to-stimulate-the-economy.html?ref=upshot&abt=0002&abg=1>.

¹¹¹ Steve Liesman, Federal Reserve Cuts Rates to Zero and Launches Massive \$700 Billion Quantitative Easing Program, *CNBC* (Mar. 16, 2020), available at <https://www.cnb.com/2020/03/15/federal-reserve-cuts-rates-to-zero-and-launches-massive-700-billion-quantitative-easing-program.html>.

¹¹² Federal Reserve Staff, Recent Balance Sheet Trends, *Board of Governors of the Federal Reserve System* (Dec. 1, 2023), available at https://www.federalreserve.gov/monetarypolicy/bst_recenttrends.htm.

¹¹³ *Id.*

¹¹⁴ See generally, David Shapiro, Daniel Macdonald, & Steven A. Greenlaw, *supra*, note 61.

¹¹⁵ Sean Ross, How Quantitative Easing (QE) Affects the Stock Market, *Investopedia* (Aug. 28, 2023), available at <https://www.investopedia.com/ask/answers/021015/how-does-quantitative-easing-us-affect-stock-market.asp>.

¹¹⁶ *Id.*

¹¹⁷ *Id.*

¹¹⁸ Anastasios G. Malliaris, Mary Malliaris, & Ramaprasad Bhar, Quantitative Easing and the U.S. Stock Market: A Decision Tree Analysis, *Loyola University: eCommons* (2015), available at https://ecommons.luc.edu/cgi/viewcontent.cgi?article=1099&context=business_facpubs.

¹¹⁹ Macro Trends Staff, Dow Jones - DJIA - 100 Year Historical Chart, *Macro Trends* (Dec. 1, 2023), available at <https://www.macrotrends.net/1319/dow-jones-100-year-historical-chart>.

¹²⁰ Julia Horowitz, What Happens When \$2 trillion Is Sucked Out of the Global Economy? It May Not Be Pretty, *CNN Business* (May 19, 2023), available at <https://www.cnn.com/2023/05/19/economy/quantitative-tightening-global-impact/index.html>.

¹²¹ James Chen, *supra*, note 12.

¹²² *Id.*

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This last statement is particularly significant because, since March 26, 2020, the Federal Reserve has set the reserve requirements ratio at zero percent. This means that if the economy crashes and banks experience bank runs, there may be no cash to pay depositors immediately. It should be remembered that a bank is solvent if and only if “its assets (cash reserves and loans) exceed its liabilities (customer deposits).”¹²³ When a bank’s cash reserves equal zero, a bank is solvent when its paying loans exceed customer deposits. If customers default on their loans, then the bank must move the loan from the asset side of its balance sheet to the liability side. This action means that when customers default on loans, the negative effect on a balance sheet is twice the value of the loan. When an economy systematically crashes, a bank’s capital requirements specified by the Basel accords may be insufficient to satisfy the depositors’ demand for cash.

The difference between capital requirements and reserve requirements is the difference between what happens in the long run versus the short run. One should recall Lord John Maynard Keynes’ insightful statement that in the long-run, we will all be dead. In other words, it is the short-run that matters, not necessarily the long-run. Given the tremendous amount of money injected into the economy by the Federal Reserve via quantitative easing (i.e., as of November 27, 2023, \$7.8 trillion), the stock market bubble that is currently being experienced will likely burst.^{124 125 126 127}

The question that this essay is attempting to answer is whether the federal government should get involved by imposing minimum capital requirements for financial institutions to improve the safety and soundness of the United States banking system. The answer to this question is that there is nothing that the federal government can do. First, the capital requirements imposed by Dodd-Frank are slightly over one-half of the capital requirements specified by the Basel Accords. If the federal government specifies by law maximum capital requirements that are less than the Basel Accords capital requirements, United States banks would be excluded by federal law from doing international banking business. This would be an untenable situation.

As for cash reserve requirements currently specified by the Federal Reserve, it should be remembered that by law the Federal Reserve has complete and absolute discretion when setting the reserve requirements ratio, the value of the rediscount rate, and open market operations transactions as stated in the Federal Reserve Act (FRA) of 1913.¹²⁸ If the federal government were to contemplate changing the charter of the Federal Reserve, the political fallout would be enormous. The bankers in the United States, probably the most powerful lobby in the country, would not tolerate it. No political candidate for political office would likely be able to limit the power of the banking lobby successfully.

Thus, unfortunately, there is likely nothing that the federal government can do. Regarding the banking industry, the federal government and banking agencies seems to have woven an impenetrable web around itself. Given current banking laws, any significant change that is not gradually implemented will likely result in a market crash not seen in nearly a hundred years. This is an unfortunate state of affairs, and there appears to be no way out.

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List of Abbreviations

Abbreviations	Description of Abbreviations
AE1	Additional Equity Tier 1
BCBS	Basel Committee on Banking Supervision
BIS	Bank of International Settlements
CET1	Common Equity Tier 1
FDIC	Federal Deposit Insurance Corporation
FRA	Federal Reserve Act of 1913

¹²³ Robinhood Staff, What Is Solvency?, *Robinhood* (Jul. 31, 2022), available at <https://learn.robinhood.com/articles/7fLcxXb3hmfww1K4Y528gj/what-is-solvency/>.

¹²⁴ Jennifer Sor, ‘Huge’ Market Crash Coming As Credit Bubble Set to Burst, *Business Insider* (Nov. 13, 2023), available at <https://markets.businessinsider.com/news/stocks/stock-market-crash-economy-debt-credit-bubble-interest-rates-2023-11>.

¹²⁵ Eleanor Pringle, Legendary Investor Jeremy Grantham Says the Stock Market Has a 70% Chance of Crashing—and It Could Be an Epic Burst Like the 1929 Crisis, *Fortune* (Jul. 5, 2023), available at <https://fortune.com/2023/07/05/jeremy-grantham-billionaire-investor-gmo-predicts-stock-crash/>.

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Dodd-Frank	Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010
DOW	Dow-Jones Industrial Average
FOMC	Federal Open Market Committee
GSE	Government Sponsored Enterprises
ILSA	International Lending Supervision Act
OMO	Open Market Operation
RWA	Risk-Weighted Assets
QE1	Quantitative Easing Round 1
QE2	Quantitative Easing Round 2
QE3	Quantitative Easing Round 3
QE4	Quantitative Easing Round 4

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