

# Basel III A: Regulatory History<sup>1</sup>

Christian M. McNamara<sup>2</sup>  
Thomas Piontek<sup>3</sup>  
Andrew Metrick<sup>4</sup>

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## Abstract

From the earliest efforts to mandate the amount of capital banks must maintain, regulators have grappled with how best to accomplish this task. Until the 1980s, regulation had been based largely on discretion and judgment. In the wake of two bank failures, the central bank governors of the G10 countries established the Basel Committee on Banking Supervision (BCBS) and in 1988, the BCBS introduced a capital measurement system, Basel I. The system represented a triumph of the fixed numerical approach, however, critics worried that it was too blunt an instrument. In 1999, the BCBS issued Basel II, a proposal to add supervisory review and disclosure components to the minimum capital requirement methodology of Basel I. Basel II represented a synthesis of the dueling approaches to capital regulation, however some argued that the new standards led to an explosion in the complexity of financial regulation. This case explores the history of the efforts to regulate bank capital that led to Basel II and set the stage for Basel III.

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<sup>1</sup> This module is one of seven produced by the Yale Program on Financial Stability (YPFS) examining issues related to Basel III. The other modules in this series are:

- *Basel III B: Basel III Overview*
- *Basel III C: Internal Risk Models*
- *Basel III D: The Swiss Finish to Basel III*
- *Basel III E: Synthetic Financing by Prime Brokers*
- *Basel III F: Callable Commercial Paper*
- *Basel III G: Shadow Banking and Project Finance*

Cases are available from the Journal of Financial Crises.

<sup>2</sup> Director, New Bagehot Project and Senior Editor, Yale Program on Financial Stability (YPFS), Yale School of Management.

<sup>3</sup> Economist, Office of Financial Research. **Views and opinions expressed are those of the author and do not necessarily represent OFR or Treasury positions or policy.**

<sup>4</sup> Janet L. Yellen Professor of Finance and Management, and YPFS Program Director, Yale School of Management.

## 1. Introduction

From the earliest efforts to regulate the amount of capital banks must maintain, regulators have grappled with how best to accomplish this task—by giving banks and supervisors discretion to determine adequate capital based on the unique circumstances faced by each individual bank, or by establishing specific minimum capital requirements applicable to all banks.

In the United States, the National Banking Act of 1864 created for the first time a system of national banks in hopes of replacing the system of state banks with state-issued charters that then existed. In so doing, the Act established fixed minimum capital requirements applicable to all federally chartered banks, a departure from the diversity of approaches characterizing a banking system in which each state defined the capital requirements applicable to a bank (if any) in the bank's charter. Notwithstanding this early example of imposing minimum capital requirements, until relatively recently regulation has been based on discretion and judgment. This is perhaps owing to a combination of regulatory competition (in which jurisdictions establishing minimum capital standards saw banks go to jurisdictions with no minimums for charters), the existence of relatively high capital ratios during the early years of bank capital regulation and fear that specific minimum capital levels fail to take into account the actual situations of different banks.

In 1974, two events occurred that would take bank regulation in a different direction. First, Bankhaus Herstatt, a small German bank with a central role in processing foreign exchange transactions, collapsed under the weight of large foreign exchange losses, leaving counterparties that had unsettled transactions with the bank with heavy losses as well. Second, the Franklin National Bank of New York went under amid allegations of mismanagement and fraud in what was the largest bank failure in United States history at that time. In the wake of these incidents, in early 1975 the central bank governors of the Group of Ten (G10) countries established the Basel Committee on Banking Supervision (BCBS) to provide a forum for cooperation on banking supervisory matters. By the early 1980s, the BCBS was devoting much of its attention to the deteriorating capital ratios of the main international banks. In 1988, the BCBS introduced a capital measurement system intended to combat this deterioration, with a minimum capital-to-risk-weighted-assets ratio of eight percent. This system, set forth in a document known as the "1988 Accord" or "Basel I," had been adopted by each of the G10 countries by 1993 in a triumph of the fixed numerical approach to regulation.

Despite the success of Basel I in significantly improving bank capital ratios, the eight percent approach had limitations that became more pronounced as the banking industry grew increasingly complex throughout the 1990s. Echoing the concerns about a numerical approach that have existed since the beginning of bank regulation, critics worried that Basel I was becoming too blunt an instrument to adequately address the risks banks were facing. These worries became particularly acute with the Asian financial crisis of 1997, the Russian financial crisis of 1998, and the collapse of Long-Term Capital Management. As a result, in 1999, the BCBS issued a proposal for a new capital adequacy framework to replace Basel I. Released in 2006 and generally referred to as "The New Capital Framework" or "Basel II," this new framework consisted of three pillars: minimum capital requirements, supervisory review, and effective use of disclosure. By adding supervisory review and disclosure components to the minimum capital requirement methodology of Basel I, Basel II represented a synthesis of the dueling approaches to capital regulation that have existed from the outset.

Yet some would argue that the cost of this continued evolution of the Basel framework has been an explosion in the complexity of financial regulation. Basel I was 30 pages. Basel II is almost 350 pages. With this growing complexity have come questions about whether financial regulation has become too complex to function effectively.

The remainder of the case is organized as follows: Section 2 provides an overview of the history of bank capital regulation before Basel. Section 3 discusses the development of Basel I in response to bank failures that occurred in the mid-1970s. Section 4 discusses the continuing evolution of the Basel framework with the introduction of Basel II. Section 5 then provides a brief introduction to Basel III, which is discussed in greater detail in another module.

## Questions

1. What lessons can be learned from different approaches to bank capital regulation that have been utilized at different times throughout history?
2. What is the appropriate role for human judgment in bank capital regulation, and is the Basel framework evolving to strike the correct balance between regulatory discretion and minimum capital standards?
3. Does growing complexity present challenges to the effective functioning of financial regulation?

## 2. Regulation before Basel

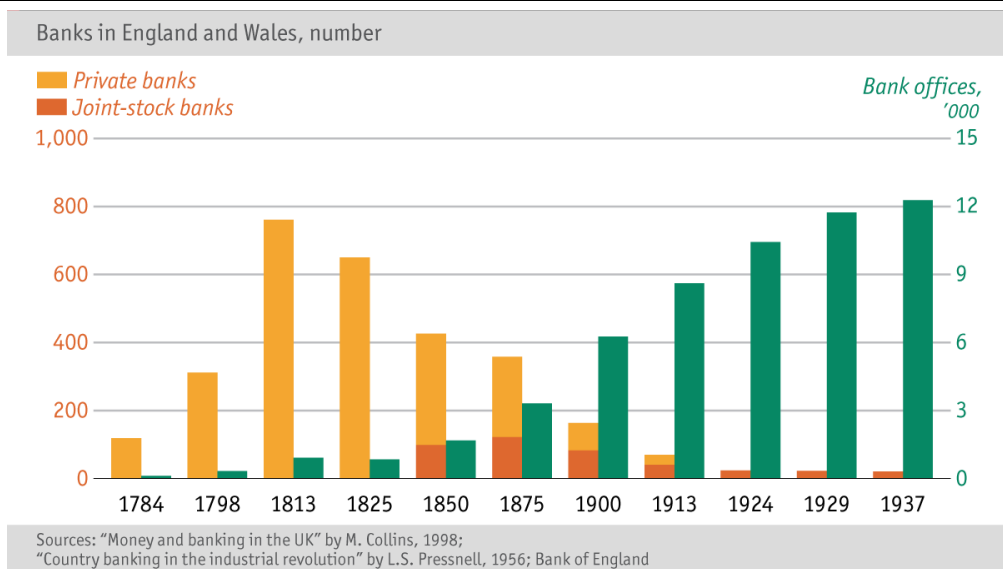
The early history of bank capital regulation was marked by the absence of anything approaching a global framework, and as a result, to the extent that bank capital was even being regulated, different approaches existed in different jurisdictions. In Britain, a key feature of early banking laws involved a cap on the number of partners who could provide equity for a bank. This ensured that the British banking system at the time consisted of numerous small banks. A financial crisis in 1825-26, stemming from soured investments in Central and South American bonds, caused more than 10% of the banks in England and Wales to fail, a fact that the British government blamed on banks being too small to weather the storm. Thus in 1826, Parliament authorized “joint stock” lenders to have as many partners as desired. Not surprisingly, a period of considerable consolidation ensued (The Economist 2014).

Despite this development, a second financial crisis in Britain almost exactly three decades later occurred largely as a result of inadequate bank capital. Discount houses, a new type of lender that emerged in the midst of consolidation in the British banking sector, attempted to compete in part by reducing the size of non-interest-paying capital buffers to almost zero. When declines in the price of U.S. railroad stocks in 1857 triggered a global downturn, British discount houses began failing in large numbers (The Economist 2014).

In the United States, the First Bank of the United States (1791-1811) and the Second Bank of the United States (1816-36) were disbanded due to political opposition rooted in suspicion of a powerful federal institution seen as lacking constitutional legitimacy. Therefore, by the mid-1800s, the chartering and regulation of banks was left to the individual states, resulting in great variation across jurisdictions (Barth et. al. 2009). With banks in many states only minimally regulated and given the absence of standards for capital requirements across

jurisdictions, this “Free Banking Era” from the 1830s to the 1860s was characterized by widespread bank failures and an epidemic of counterfeiting.

Figure 1: The Rise of the Megabanks



Source: *The Economist* 2014.

Figure 2: Capital Level Requirements in the U.S.—1864

Population of Location	Minimum Capital
< 6,000	\$50,000
6,000- 49,999	\$100,000
>50,000	\$200,000

Source: *Champ* 2007.

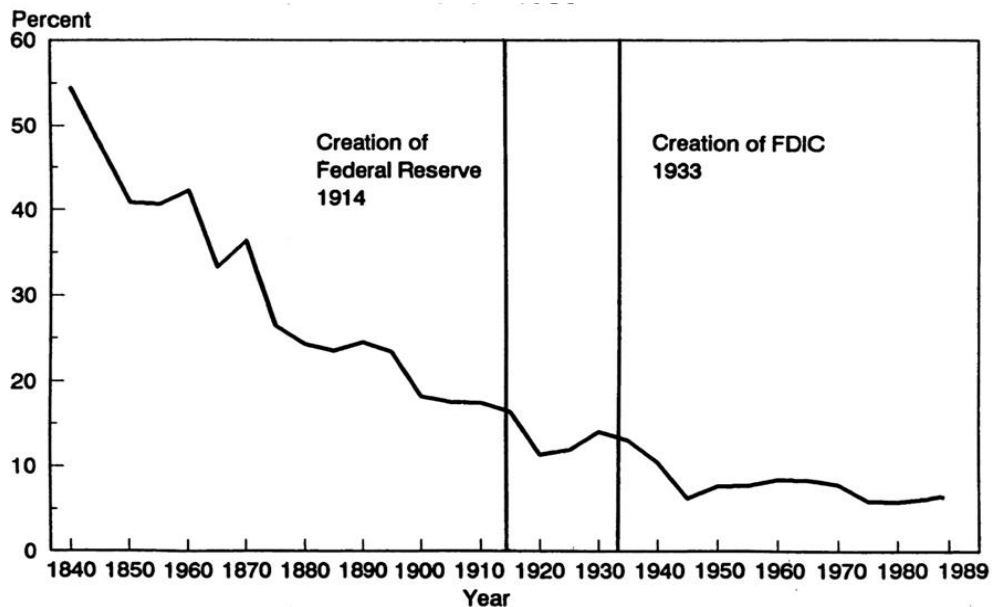
Much as the First Bank of the United States had been the product of financial demands on the new United States government stemming from the Revolutionary War, and the Second Bank of the United States had been a product of similar demands stemming from the War of 1812, the outbreak of the American Civil War in 1861 ultimately resulted in renewed calls for federal involvement in banking in the United States. The National Banking Act of 1864 created the Office of the Comptroller of the Currency (OCC) and established a new system of federal chartering and supervision. This new system was accompanied by a tax on bank notes issued by state-chartered banks, a move seen as an attempt to push state banks to become federally chartered and as a way of addressing the practice of some state banks fraudulently flooding the marketplace with bank notes not backed by adequate collateral in a process known as “wildcatting.”

Significantly, the Act provided that any “national banking association” established under the Act would be subject to minimum capital requirements based on the population of the location in which the bank operated. (See Figure 2.)

The Act also required banks to provide quarterly reports to the newly established OCC. By comparison, the U.K. did not introduce regulatory reporting until 1974 (Haldane 2012).

While the Act represented a prominent early attempt at establishing specific, numerical capital minimums, this approach was the exception. Most state banks in existence at the time were subject to regulations that did not include such rules; as only about a half-dozen state banking codes mandated capital requirements. Indeed, some have pointed to the existence of such requirements at the federal but not the state level as driving a resurgence of state banks in the late 1800s despite the Act’s attempt to push banks toward federal chartering. Perhaps as a result in 1900, the Gold Standard Act reduced the amount of capital necessary for federally chartered banks (Grossman 2010).

Figure 3: Equity as a Percent of Assets for All Insured Commercial Banks, 1840–1989\*



\* Ratio of aggregate dollar value of bank book equity to aggregate dollar value of bank book assets. For 1840-96, data are for commercial and savings banks. Since 1971, data are for commercial banks.

Source: US Treasury Department 1991 in Tarullo 2008.

The ascendancy of the discretion-based approach to bank capital regulation during this period may also be explained in part by the tendency for banks to have high capital ratios. As indicated in Figure 3, as late as the 1930s bank capital ratios in the United States were nearly twice as high as they are today. Prior to the turn of the 20<sup>th</sup> century, such ratios were even higher, as much as seven times higher than ratios for modern banks. Historical data from the U.K. and Australia demonstrate a similar trend (Davis 2010). With capital ratios

significantly higher than they are today even in the absence of minimum capital requirements, there may have been no perceived need for such minimums despite the occurrence of bank failures throughout this period.

Yet, these extraordinarily high ratios (by modern standards) were falling steadily throughout the early 20<sup>th</sup> century. Despite these declines, no immediate consensus around minimum capital requirements emerged. Nonetheless the period surrounding the Great Depression and World War II did witness the introduction of new approaches to regulating banks. In 1914, the OCC adopted a minimum capital-to-deposit ratio of 10%. By the 1930s, the newly created Federal Deposit Insurance Corporation (FDIC) had established minimum capital-to-asset ratios. But minimum capital requirements were not uniformly embraced, certainly not at the level of a global standard.

As late as 1972, an OCC official dismissed “capital-to-risk-assets and capital-to-total-deposit ratios” because “such arbitrary formulas do not always take into account important factors” (Burhouse et. al. 2003). These remarks echo criticism that has been consistently leveled against minimum capital requirements since their introduction—that they are too blunt an instrument for gauging or guaranteeing the financial health of individual banking institutions. Only two years later, however, events would transpire that would ultimately result in a widespread shift toward capital adequacy standards based on minimum capital requirements.

### **3. Basel I**

Perhaps the most significant shift in the history of bank capital regulation occurred as a result of two significant bank failures.

On June 26, 1974, German banking regulators revoked the license of a Cologne-based Bankhaus Herstatt after large foreign exchange losses left it insolvent. While Bankhaus Herstatt was one of West Germany’s largest private banks with 31 branches and approximately \$800 million in assets, the bank was relatively small from a global standpoint, and its demise likely would not have attracted much attention beyond Germany but for the prominent role the bank played in the foreign exchange market. Much as it did every day, on the morning of the 26<sup>th</sup>, Bankhaus Herstatt received millions of dollars of foreign currencies for which it was to have paid U.S. dollars in New York later that day. Yet when Bankhaus Herstatt was shut down at 4:00 p.m. local time in Germany it was only 10:00 a.m. in New York, and the U.S. dollar payments had not yet been made. The collapse of the bank left its counterparties unable to collect the money they were owed on these foreign exchange transactions, with total losses to counterparties estimated at about \$600 million. The incident became so infamous that “Herstatt risk” is a term still used to describe the cross-currency settlement risk resulting from trading across time zones. Bankhaus Herstatt also highlighted the fact that even as regulation remained situated at national levels, financial markets increasingly were becoming global.

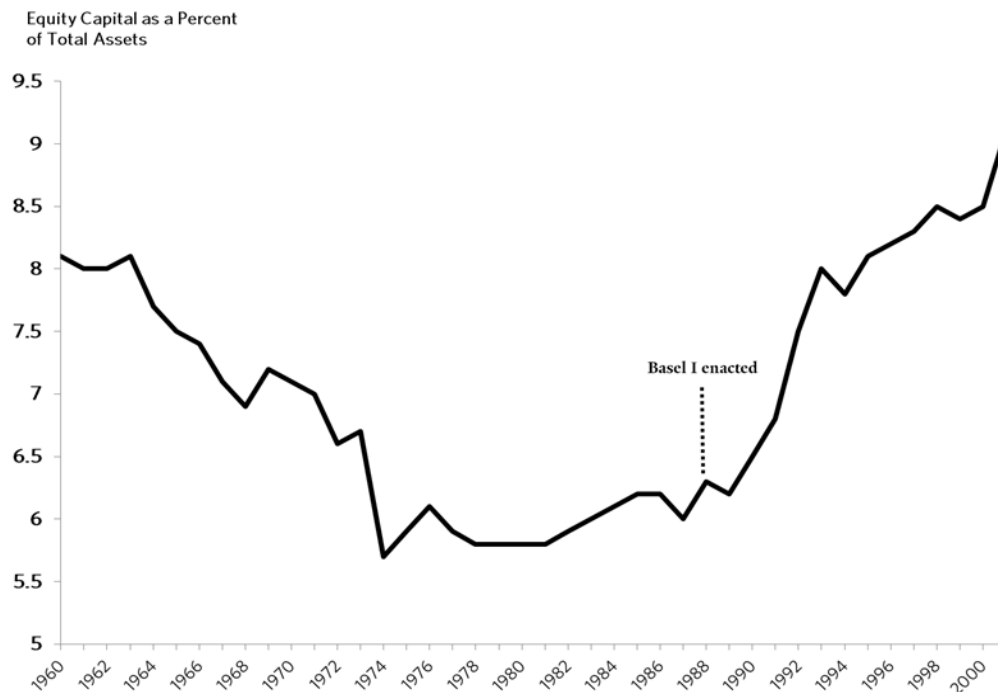
The article in *The New York Times* reporting on Bankhaus Herstatt’s collapse includes a brief postscript that would prove prescient (Farnsworth 1974). After describing Bankhaus Herstatt’s foreign exchange losses, the article noted that “[i]n a somewhat similar situation, the Franklin National Bank in New York had foreign exchange losses of \$45.8 million in the first five months of 1974.” Less than four months later on October 8, 1974, regulators declared Franklin National Bank insolvent. With approximately \$4.5 billion in assets, the bank was the 20<sup>th</sup> largest in the United States and the largest failed bank in American history at that time. As alluded to by *The New York Times*, Franklin National Bank was also a victim

of foreign exchange losses, exacerbated by what regulators characterized as mismanagement of the firm and possible fraud.

In the wake of these incidents, the central bank governors of the Group of Ten (G10) countries established a Committee on Banking Regulations and Supervisory Practices, later renamed the Basel Committee on Banking Supervision (BCBS), housed within the Bank for International Settlements (BIS). Founded in 1930, the BIS describes itself as “the world’s oldest international financial organization” and serves as the bank to the world’s central banks. In its role of helping central banks pursue monetary and financial stability, the BIS supported the BCBS to provide a forum for cooperation on banking supervisory matters.

Meeting for the first time in February 1975, the BCBS began work on what would become its first policy document, *Report on the supervision of banks’ foreign establishments*, or simply the “Concordat.” The purpose of the report was to “set out certain guidelines for co-operation between national authorities in the supervision of banks’ foreign establishments, and to suggest ways of improving its efficacy” (Committee on Banking Regulations and Supervisory Practices 1975, 1). In it, the BCBS agreed that “the basic aim of international regulation in this field should be to ensure that no foreign banking establishment escapes supervision” and that “this supervision is adequate, judged by the standards of both host [country in which the bank is operating] and parent [country in which the bank is based] authorities” (Ibid., 1-2). As part of this effort, the Concordat offered guidelines for the implementation of “solvency controls” with some sharing of responsibility for supervision between host and parent authorities. The use of terms such as “guidelines” and “to suggest” is significant here, because notably the BCBS did not issue binding regulation. Rather, its pronouncements were meant to promote the development of standards to be adopted by participating governments.

Figure 4: Bank Capital Levels at FDIC-Insured Banks, 1960-2001



Source: FDIC.

While the BCBS's early focus was on ensuring that banks operating foreign establishments would not escape supervision and that such supervision was adequate and consistent, by the early 1980s capital adequacy had become the BCBS's main concern. In the context of the economic malaise characterizing much of the 1970s, bank capital ratios declined significantly during the decade. As Figure 4 illustrates with respect to banks in the United States, equity capital as a percentage of total assets fell from approximately 8% in 1960 to below 6% by 1975.

Regulators saw bank capital levels as problematic for two related reasons. First, inadequate capital could jeopardize the global financial system. Second, low capital requirements in some jurisdictions could create an uneven playing field for banks. Indeed, Federal Reserve Governor Daniel Tarullo has described the work of the BCBS during this period as being “motivated by two interacting concerns—the risk posed to the stability of the global financial system by low capital levels of internationally active banks and the competitive advantages accruing to banks subject to lower capital requirements” (Tarullo 2008).

In December 1987, the BCBS issued a consultative paper and recommendations reflecting several years of work aimed at “achiev[ing] a strengthening in the capital resources of international banks in order to help strengthen the stability of the international banking system” (Bank for International Settlements 1987, 1). Based on feedback to this paper in July 1988, the BCBS adopted a framework, which came to be known as “the 1988 Accord” or “Basel I” that established for the first time a specific minimum level of capital to be maintained by the “internationally active” banks of the G10 nations. In addition to helping to safeguard the stability of the global financial system, this minimum level of capital was intended to ensure a level playing field by requiring banks from different countries competing for the same assets to set aside the same amount of capital for those assets.

Under Basel I, international banks in G10 nations were required to maintain a minimum level of capital based on the amount of their assets as adjusted for the credit risk associated with those assets (an adjustment process known as “risk weighting”). (As discussed below, market risk wouldn't become part of the Basel framework until 1996 and operational risk not until 2006). Specifically, upon full implementation at the end of 1992, banks had to meet a minimum capital to risk weighted assets ratio of at least 8% (of which core capital consisting of equity capital and disclosed reserves must be at least 4%, with the balance provided by supplementary capital such as hybrid debt capital instruments and subordinated term debt). The BCBS explained the use of a risk-weighted approach to capital adequacy by citing the following advantages of such an approach over a non-risk-based approach:

- It provides a fairer basis for making international comparisons between banking systems whose structures may differ;
- It allows off-balance-sheet exposures to be incorporated more easily into the measure;
- It does not deter banks from holding liquid or other assets which carry low risk (Bank for International Settlements 1988, 8).

To implement the risk-based approach, the BCBS developed a weighting system comprised of five weights—0, 10, 20, 50, and 100%. The amount of an asset included in the risk-weighted asset total would be equal to the asset's value multiplied by the risk weight applicable to that type of asset. The weights spanned from 0% for assets seen as low risk such as cash and certain types of government debt to 100% for corporate debt, real estate and certain other assets perceived as being riskier in nature. Thus, the riskier a bank's assets,



the more capital it would be required to maintain under Basel I. (For a complete discussion of the requirements of Basel I, see Bank for International Settlements 1988.)

## 4. Basel II

The approach taken in Basel I was not without criticism. Some saw the five-category risk weighting system as too simplistic, based on arbitrary classifications rather than the actual risk associated with the specific assets held by a given bank. Furthermore, Basel I concentrated primarily on credit risk as opposed to other types of risk a bank might face. Thus, even as it was introducing Basel I, the BCBS recognized that further development of the framework would be necessary in order to effectively address the full spectrum of risks facing banks.

As the BCBS noted in the document outlining Basel I, “[Basel I] is mainly directed towards assessing capital in relation to credit risk (the risk of counterparty failure) but other risks, notably interest-rate risk and the investment risk on securities, need to be taken into account by supervisors in assessing overall capital adequacy” (Bank for International Settlements 1988, 2). Thus, by design, Basel I continued to evolve over time through a series of amendments adopted by the BCBS in subsequent years. Perhaps most significantly, in 1996 the BCBS issued the *Market Risk Amendment to the Capital Accord* to require banks to “measure and apply capital charges in respect of their market risks in addition to their credit risks” (Bank for International Settlements 1996 rev. 2005, 1). The BCBS defined such market risks to include interest rate, equity position, foreign exchange, and commodities risk.

Notably, in measuring their market risks, banks could (subject to certain conditions) choose between two alternative methodologies. The first was a standardized approach using specific risk capital charges applied by the BCBS to different categories of assets much like the treatment of credit risks under the Basel I framework. The second was a new approach using the banks’ own internal risk management models to determine risk charges. In describing the reasoning behind this latter innovation, the BCBS noted that it “is conscious of the need to ensure that regulatory requirements do not impede the development of sound risk management by creating perverse incentives” (Bank for International Settlements 1995, 1-2). And indeed, the Basel framework has widely been seen as incentivizing banks to use internal risk models by making the capital requirements attainable using the internal risk model approach lower than the capital charges associated with standardized approaches. There has also emerged the practice of capital arbitrage, pursuant to which banks use securitization and other techniques to reclassify high quality loans into lower regulatory risk categories.

In the summer of 1997, Thailand’s unpegging of its currency to the U.S. dollar resulted in the devaluing of currencies across Asia. The ensuing financial crisis had global repercussions, sending the Dow Jones Industrial Average, for instance, down 7.2% in one trading session on October 27, 1997. Against this backdrop of turmoil, the BCBS identified a need for a more dramatic overhaul of the regulatory framework established by Basel I. Writing in 1999, the BCBS noted:

The world financial system has witnessed considerable economic turbulence over the last two years and, while these conditions have generally not been focused on G-10 countries directly, the risks that internationally active banks from G-10 countries have had to deal with have become more complex and challenging. This review of [Basel I] is designed to improve the way regulatory capital requirements reflect underlying risks. It is also designed to better address the financial innovation that has

occurred in recent years, as shown, for example, by asset securitisation structures. As a result of this innovation, [Basel I] has been less effective in ensuring that capital requirements match a bank's true risk profile. The review is also aimed at recognising the improvements in risk measurement and control that have occurred (Bank for International Settlements 1999, 4).

The BCBS adopted the new framework that emerged from this review in June 2006. Known as "The New Capital Framework" or "Basel II," the revised framework updated the minimum capital requirements of Basel I with the addition of operational risk alongside credit risk and market risk and introduced two new elements: supervisory review and market discipline. Together with minimum capital requirements, these two new elements formed the "three pillars" of Basel II.

As described by the BCBS, the purpose of supervisory review is "not only to ensure that banks have adequate capital to support all the risks in their business, but also to encourage banks to develop and use better risk management techniques in monitoring and managing their risks" (Bank for International Settlement 2006, 204). Specifically, the BCBS conceived of the supervisory review process as addressing three types of risk: "risks considered under Pillar 1 that are not fully captured by the Pillar 1 process (e.g. credit concentration risk); those factors not taken into account by the Pillar 1 process (e.g. interest rate risk in the banking book, business and strategic risk); and factors external to the bank (e.g. business cycle effects)" (Ibid.).

To do this, the supervisory review process set four principles:

**Principle 1:** Banks should have a process for assessing their overall capital adequacy in relation to their risk profile and a strategy for maintaining their capital levels.

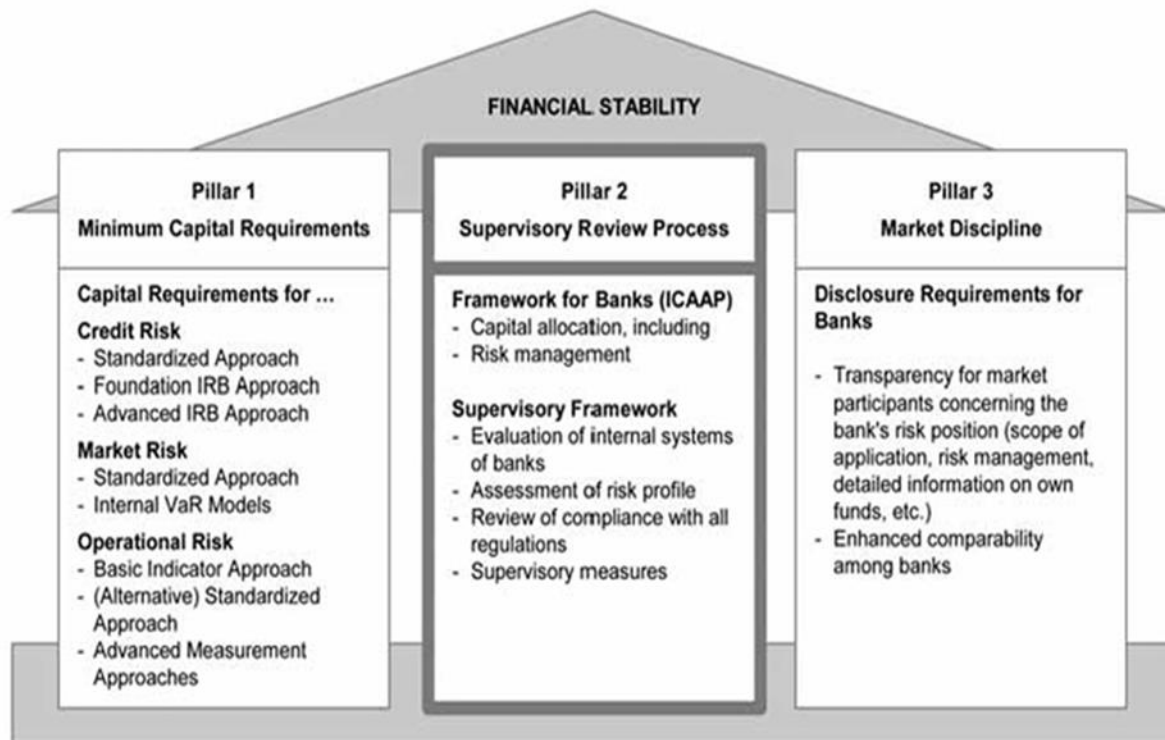
**Principle 2:** Supervisors should review and evaluate banks' internal capital adequacy assessments and strategies, as well as their ability to monitor and ensure their compliance with regulatory capital ratios. Supervisors should take appropriate supervisory action if they are not satisfied with the result of this process.

**Principle 3:** Supervisors should expect banks to operate above the minimum regulatory capital ratios and should have the ability to require banks to hold capital in excess of the minimum.

**Principle 4:** Supervisors should seek to intervene at an early stage to prevent capital from falling below the minimum levels required to support the risk characteristics of a particular bank and should require rapid remedial action if capital is not maintained or restored (Bank for International Settlements 2006, 205-212).

The BCBS described the purpose of Pillar 3 as being "to encourage market discipline by developing a set of disclosure requirements which will allow market participants to assess key pieces of information on the scope of application, capital, risk exposures, risk assessment processes, and hence the capital adequacy of the institution" (Ibid., 226). The general principle underlying Pillar 3 is that "[b]anks should have a formal disclosure policy approved by the board of directors that addresses the bank's approach for determining what disclosures it will make and the internal controls over the disclosure process. In addition, banks should implement a process for assessing the appropriateness of their disclosures, including validation and frequency of them" (Ibid., 228-229). Pillar 3 implements this principle by outlining specific disclosure requirements related to the corporate structure of the bank, its capital structure, its capital adequacy determinations, and its risk profile.

Figure 5: The Three Pillars of Basel II



Source: Asymptotix.

If Basel I marked the triumph of the specified minimum capital approach to bank capital regulation after a long period of approaches characterized by bank and supervisory discretion, the addition of the supervisory review and market discipline pillars of Basel II to Basel I's minimum capital requirements represented a synthesis of these two types of approaches. Pillar 1 establishes a minimum level of capital required of all covered banks, while Pillars 2 and 3 provide banks and supervisors the discretion to establish complementary review and disclosure processes appropriate for the specific banks in question. (For a complete discussion of Basel II, see Bank for International Settlements, 2006.)

But the evolution of the Basel framework as represented by Basel II and later by Basel III (discussed below) has also brought what some see as an explosion of complexity. Using the length of documentation as a basic indicator of this complexity, Andrew Haldane has noted that Basel I weighs in at 30 pages and Basel II at 347 pages (Haldane 2012). A significant portion of this added length stems from a shift away from the simple risk weight categories of Basel I toward the increased granularity of the internal risk model approach first introduced with the *Market Risk Amendment* and later expanded by Basel II.

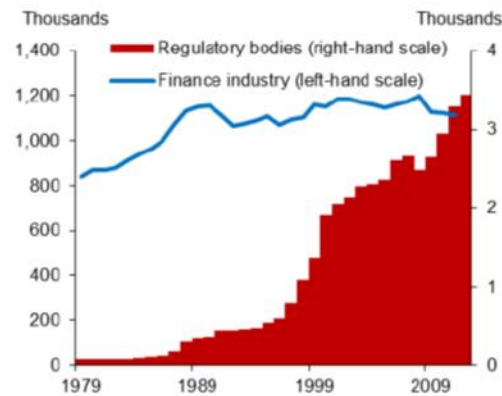
Growing complexity can also be seen in the size of regulatory agency staffs, which have increased dramatically both in their own right and relative to both the number of individuals employed in the financial sector and the number of financial institutions regulated. As the below charts indicate, in both the U.S. and U.K. there has been substantial growth in regulatory agency staffs during the evolution of the Basel framework. The U.K. in particular

went from just 30 employees devoted to bank supervision as late as the late-1970s to several thousand today.

With this complexity have come fears about the ability of financial regulators to provide effective oversight. The use of banks' own internal risk models in determining capital requirements and the variability and potential for manipulation that can result from the complexity of these models has been a particular area of concern. (For a more detailed discussion of the use of internal risk models and the potential for manipulation, see YPFS Case Study on Internal Risk Models, McNamara, et al, 2014C and the "Swiss Finish," McNamara, et al, 2014D.)

Figure 6: Regulators Employed in the U.S. and U.K.

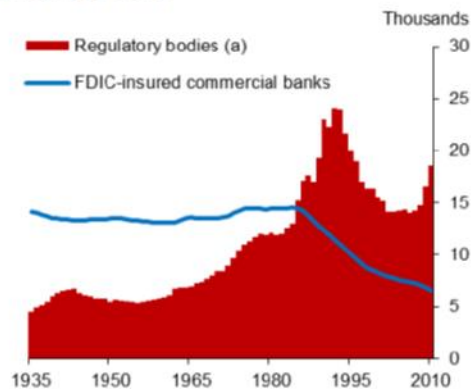
**Chart 1: Number of employees in UK regulatory bodies and the finance industry, 1979–2012<sup>(a)</sup>**



Source: Bank of England, Securities and Investment Board, Financial Services Authority annual reports, Capie (2010), Office for National Statistics and Bank calculations.

(a) Prior to 1997, data cover staff employed in banking supervision at the Bank of England and staff employed at the Securities and Investment Board. Thereafter, data cover staff employed at the Financial Services Authority. Where data are not available, they are interpolated.

**Chart 2: Number of employees in US Federal regulatory bodies and number of commercial banks, 1935–2010<sup>(a)</sup>**



Source: Federal Deposit Insurance Corporation (FDIC), Board of Governors of the Federal Reserve, Office of the Comptroller of the Currency (OCC), Securities and Exchange Commission (SEC) annual reports, FDIC (1984), Budget of the US government and Bank calculations.

(a) Covers staff employed at the FDIC, the OCC, the SEC and the Federal Reserve System (bank supervision and regulation area only). Where data are unavailable, they are interpolated. For the Federal Reserve System, there is no information on the number of employees in the area of bank supervision regulation prior to 1984. It is assumed that the proportion of staff employed in that area remained constant at its average level between 1984 and 2010.

Source: Haldane 2012.

## 5. Basel III

As Basel II was a reaction to the Asian financial crisis of 1997, the global financial crisis of 2007-08 set the stage for the next major overhaul of the Basel framework. The BCBS, having diagnosed the 2007-08 crisis as having stemmed from three main factors (capital of inadequate quantity and quality, insufficient liquidity, and the financial system's interconnectedness) introduced Basel III in 2010 to address these issues. (For a more detailed discussion of Basel III, see YPFS Case Study McNamara, et al, 2014B.)

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