Procyclical versus Countercyclical Policy Effects on Financial Services

Study prepared for the Anthony T. Cluff Fund

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THE FINANCIAL SERVICES ROUNDTABLE
Financing America's Economy

Procyclical versus Countercyclical Policy Effects on Financial Markets[1]

William A. Longbrake and Clifford V. Rossi[2]

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Foreword

Alex J. Pollock

To address bubbles and financial crises, one of the most important projects is to develop countercyclical factors to offset, at least in part, the excesses induced by the procyclical ones.

Cycles in economics and finance are inevitable. The dream that they could be prevented by macroeconomic "fine tuning" by governments, guided by the wise advice of learned economists, was given up long ago. How quaint now seems the title of a 1960s book, *Is the Business Cycle Obsolete?*—although not more quaint than the celebrated 21st century assertion that economics and central banking had achieved "The Great Moderation."

Many factors are procyclical. (That is why we have cycles.) These include the crowd psychology of confidence vs. fear, of optimistic leveraging in the boom vs. the panicked scramble for cash in the bust. The ability of great numbers of people to make a lot of money from asset bubbles while they last, which may be for many years, is key to understanding their historical recurrence.

In the housing bubble of which we are still living in the wake, for example, the ever-rising asset prices seemed to be confirmed by success on all sides. As long as house prices were rising, everybody—borrowers and lenders, brokers and investors, speculators and house flippers, home builders and home buyers, bond rating agencies and bond salesmen, realtors and municipalities, politicians promoting increased home ownership and regulators announcing there were no bank failures—all seemed to be winning.

"All people are most credulous when they are most happy," wrote the great banking thinker Walter Bagehot 138 years ago. "When much money has just been made, when some people are really making it, when most people think they are making it…almost everything will be believed." There's a challenge for countercyclical strategies!

When things cease to be believed, the reaction of great numbers of people to losing vast amounts of money with great rapidity is procyclical. "Fair value" accounting is procyclical. The policies governing loan loss reserves are procyclical. Stock buybacks are procyclical. Political retribution is procyclical.

Of the procyclical forces, one of the most important is financial regulation—a problem well known to theoreticians of banking and regulation. This is true in the up cycle, marked by cognitive herding concerning, for example, a great moderation, a global liquidity glut, the power of financial models, the theories imbedded in "Basel II" capital requirements, and the "strong capital ratios" created by the profits of the bubble.

But it is even more true in the down cycle and the bust. Reflecting the losses and recriminations of the bust, regulators are afraid of being criticized themselves, afraid of making further mistakes, and trying to rebuild their deposit insurance fund which has shrunk to negative net worth. Reacting to the painful mistakes already made, they clamp down forcefully. This contracts credit further than the crisis already has. As one leading banking lawyer and former regulator summarized it, "Regulators are now, as usual, tightening the noose." In addition, we now have the Dodd-Frank Act, best characterized as the "faith in bureaucracy act," which looks to be strengthening the procyclical forces.

In short, procyclical regulation can help exaggerate both the ups and the downs. Can countercyclical regulatory factors be introduced to help instead moderate the cycles?

Fortunately, Bill Longbrake and Cliff Rossi show that the answer is Yes. In this instructive monograph, they take up in detail the procyclical problems and potential countercyclical improvements in the key regulatory areas of capital requirements, government deposit insurance, accounting, loan loss reserve policy and practice, and liquidity rules.

To make financial markets less vulnerable to their inevitable cycles, it is an essential responsibility of both private financial actors and government officials to study, develop and implement countercyclical approaches. This will, if achieved, limit the excesses of the next boom, and moderate the pain of the next bust.

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Executive Summary

Many rules, policies and mechanisms that govern financial markets, financial institutions and their activity unintentionally contributed to worsening and deepening the financial crisis of 2007-2009. This study examines five policies, rules and governance mechanisms that have been identified as particularly important contributors to procyclicality and that have been subject to considerable and often contentious debate. These are:

- Loan loss reserving accounting rules and supervisory implementation of regulatory policy,
- Regulatory capital requirements,
- Liquidity requirements,
- Deposit insurance premiums, and
- Fair value accounting rules.

This study advances the understanding of the impacts of procyclical policies and practices in two important ways; first, it presents a comprehensive overview of the extent to which established rules, policies and practices foster procyclical outcomes in each of these five areas; and second, it describes how the interaction of established rules, policies and practices in these five areas can combine to magnify procyclical outcomes.

After examining each of the five topics the study offers the following policy recommendations:

1. **Coordination.** *Regulatory and rule-setting bodies should develop coordinated and comprehensive strategies that address and mitigate procyclical impacts among these five policies and practices.*

2. **Accountability.** *Regulatory and rule setting bodies should be accountable for developing rules, policies and governance mechanisms and taking actions designed and intended to mitigate the potential for procyclical impacts to occur and exacerbate financial crises.*

3. **Loan Loss Accounting Rules.** *The Financial Accounting Standards Board should continue to work with the International Accounting Standards Board to develop loss reserving rules based on expected loss methodology with the intent of mitigating procyclical impacts of current loss reserving rules.*

4. **Supervisory Implementation of Loss Provisioning Regulatory Policy**.

   Regulatory agencies and accounting standards setting bodies should coordinate loss reserving accounting rules and regulatory guidance.

   Regulatory agencies should implement countercyclical examination and supervisory procedures.

5. **Regulatory Capital Requirements.**

   Regulators should study the potential consequences of the proposed Basel III capital requirements for lending and economic growth during the phased implementation period.

   The Basel Committee on Banking Supervision and U.S. regulators should not impose a countercyclical capital buffer as part of the Basel III guidelines until a concrete methodology is developed for determining the appropriate size and the conditions that should trigger implementation and phase-in of a capital buffer. Also, further analysis should be conducted on the benefits and consequences of implementing such a requirement to determine whether it would likely have a countercyclical impact or whether it would have other unintended consequences.

   Explore the efficacy of developing forms of contingent equity capital or "bail-in" debt if a predetermined triggering event occurred.

6. **Liquidity Requirements.** *The Basel Committee on Banking Supervision and U.S. regulators should evaluate potential significant unintended consequences of the two proposed required liquidity ratios and should either revise the ratios to mitigate such consequences or should eliminate explicit requirements and replace them with supervisory guidelines and rely on central bank liquidity facilities in times of extreme illiquidity.*

7. **Deposit Insurance Premiums.** *The FDIC should use the discretion provided by the Dodd-Frank Act to propose and then implement a countercyclical deposit insurance pricing mechanism that stabilizes premiums charged over the entirety of the cycle.*

8. **Fair Value Accounting Rules.**

   The U.S. Financial Accounting Standards Board (FASB) and the International Accounting Standards Board (IASB) should continue to work toward harmonizing US and international fair value accounting (FVA) principles and in doing so should be attentive to mitigating potential procyclical impacts.

   Fair value accounting (FVA) principles should be revised to avoid contributing to amplification of financial crises.

   FASB should consider whether revised accounting rules for determining other than temporary impairment for held for investment financial instruments (FAS 115) should be incorporated into FAS 157 for available for sale financial instruments.

   In times of acute financial markets distress, FASB, Financial Stability Oversight Council and regulators of financial services companies should consider implementing actions that could lessen or decouple the link between FVA losses and margin calls and risk management practices that trigger forced asset sales based on FVA results.

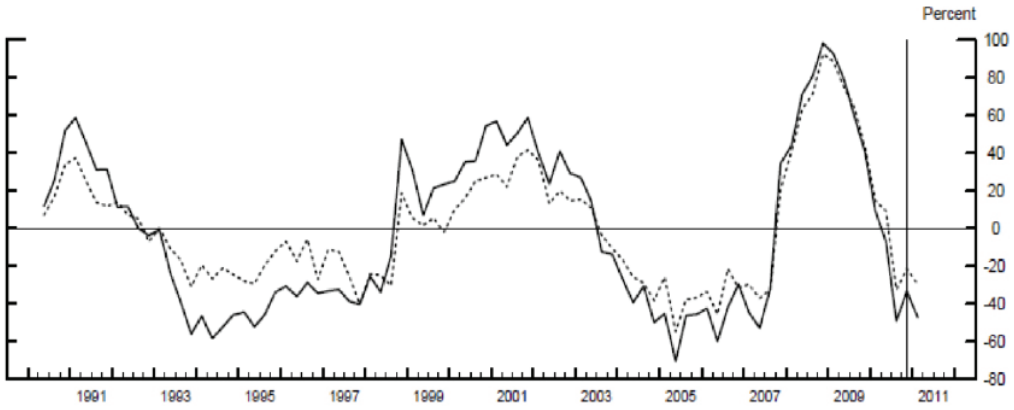
The recent financial crisis underscores the complex nature of regulation and accounting practices. Understanding how these policies and practices individually and collectively contributed to the crisis is important as a first step toward creating improved countercyclical policies and practices. Policymakers are cognizant of many of the procyclical impacts of rules, policies and governance mechanisms that prevailed prior to the financial crisis and contributed to its severity and have either adopted reforms or are considering adjustments. However, policymakers in their zeal to prevent a crisis of similar magnitude from occurring again are also in the process of adopting reforms (or already have adopted reforms) that could create new procyclical consequences. Moreover, there is a significant possibility that measures to limit and control risk taking will have unintended and negative consequences for innovation and economic growth.

INTRODUCTION

Many rules, policies and mechanisms that govern financial markets, financial institutions and their activity unintentionally contributed to worsening and deepening the financial crisis of 2007-2009. Although many of these shortcomings were recognized at the time, policymakers and regulators had little to no flexibility to alter the "rules of the game", but instead were required to apply and enforce the existing rules, even when they understood that in doing so outcomes would be worsened.

The confluence of events surrounding liquidity, capital losses, and deposit insurance deeply affected financial markets during the period 2007-2009. In the broadest sense, the cumulative impact on lending can be observed to some degree by looking at spreads on key lending activity during the period. Figure 1 illustrates that spreads on loans over funding costs soared between 2007 and 2009 for commercial loans.

Figure 1. Commercial Loans: Net Respondents Reporting Higher Spreads in Loan Rates Over Funding Costs



Source: Federal Reserve Underwriting Survey, 2011.

Many of the rules, policies and governance mechanisms enabled risky practices to build unchecked during the expansion part of the cycle. However, when excesses were exposed during the crisis, established rules and policies forced immediate corrective action, which frequently fostered contagion, which in turn deepened the financial crisis. Thus, financial governance had significant procyclical effects in both the expansion and contraction phases of the cycle. Ideally, governance should dampen, not amplify, cycles. In other words, policies, regulations and market governance mechanisms ideally should be designed to be countercyclical rather than procyclical.

Since the onset of the 2007-2009 financial crisis, regulators, academicians and industry experts have debated the degree to which various policies, regulations and market governance mechanisms contributed to artificially higher performance of financial services firms during favorable economic periods but magnified deteriorating performance when economic conditions worsened. At a Federal Reserve Bank of Chicago Conference in May 2009, Chairman of the Board of Governors of the

Federal Reserve System, Ben Bernanke, signaled his support for policies and regulations that mitigate the procyclical aspects of capital requirements and other related regulations.[1]

Many regulatory agencies and rule-setting bodies, including Congress, studied events that preceded the onset of the crisis as well as the evolution of events during the crisis to ascertain causes and identify potential reforms. One response was passage of the Dodd-Frank Act (DFA), which was signed into law by President Obama on July 21, 2010. In addition, organizations responsible for setting accounting standards, regulatory policies, and rules that govern the financial system, have adopted or are considering reforms intended to manage risk taking more effectively and to be less procyclical, even countercyclical, in their impacts on the economy and financial markets.

This study examines five policies, rules and governance mechanisms that have been identified as particularly important contributors to procyclicality and which have been subject to considerable and often contentious debate. These include:

- loan loss reserving accounting rules and supervisory implementation of regulatory policy,
- regulatory capital requirements,
- liquidity requirements,
- deposit insurance premiums, and
- fair value accounting rules.

This study advances the understanding of the impacts of procyclical policies and practices in two important ways; first, it presents a comprehensive overview of the extent to which established rules, policies and governance mechanisms foster procyclical outcomes in each of these five areas; and second, it describes how the interaction of established rules, policies and governance mechanisms in these five areas can combine to magnify procyclical outcomes.

1 Ben Bernanke, Speech at the Federal Reserve Bank of Chicago Conference of Bank Structure and Competition, May 7, 2009.

PROCYCLICALITY and COUNTERCYCLICALITY

Cycles in economic activity are normal phenomena in market-based economies. Cycles occur because imbalances in components of economic activity typically develop during expansions. These imbalances generally are corrected during contractions. For example, consider the housing cycle. Typically, it takes two to three years to develop land and construct a new housing unit. However, rising household income during an expansion stimulates growth in new housing demand faster than new homes can be built. This imbalance is resolved in the short run through rising prices. But rising prices lead to wider builder and investor profit margins and stimulate additional construction. As the cycle matures, rising home prices dampen demand for new homes. However, because of the long building time lag, new supply becomes available just as demand slackens. What was a demand-supply imbalance turns into a supply-demand imbalance and the cycle moves from expansion to contraction.

Rules, policies and governing mechanisms are established with the intent to assure that markets operate efficiently and fairly. But, they are often also designed to limit risk taking and to dampen cycle amplitude. For example, a minimum capital ratio requirement for financial services firms is intended to limit risk taking by limiting the amount of debt financing and asset growth potential.

Rules, policies and governing mechanisms become procyclical when they contribute to growth in the magnitude of imbalances during the expansion phase of the cycle and when they exacerbate a decline in economic activity during the contraction phase of the cycle. Ill-designed and/or ineffectively implemented rules, policies and governing mechanisms can have procyclical impacts in either or both the expansion and contraction phases of the cycle. Countercyclical rules, policies and governing mechanisms reduce the buildup in economic imbalances and are intended to reduce cycle amplitude.

Ideally, rules, policies and governing mechanisms should be designed to encourage innovation but discourage development of speculative bubbles during economic expansions. They should also be designed to avoid unnecessarily creating knock-on contagion effects that lead to and worsen financial panics and exacerbate a contraction in economic activity. In summary, well-designed and implemented financial regulation should encourage innovation and economic growth but limit cycle amplitude.

FOSTERING LONG-TERM SUSTAINABLE GROWTH WHILE SIMULTANEOUSLY MANAGING RISK TAKING

Risk taking is fundamental to nurturing innovation which is the lifeblood of a vibrant, growing economy. However, if risk taking is too great, destabilizing imbalances can build up over time that eventually result in economic setbacks or cataclysms as the imbalances become unsustainable and violently correct. Conversely, if risk taking is limited to too great an extent by industry structure, rules and regulations, and supervisory policy, economic growth will be stunted. The challenge of policymakers and regulators is to structure policies, rules and governance mechanisms that balance between the extremes of too much and too little risk taking.

As we look back on the severity of the 2007-2009 global financial crisis it is apparent that too much unmanaged risk taking occurred prior to the onset of the crisis. There is broad agreement that policies, rules and governance mechanisms be put in place that will result in more effective risk management and diminish the likelihood of future financial crises and, more importantly, the severity of consequences when crises do occur. However, in the immediate aftermath of the 2007-2009 financial crisis, with its painful consequences still deeply etched in the public's and policymakers' minds, there is substantial risk that remedial measures will err in the direction of limiting risk taking to an extent that stunts innovation and economic growth.

Return on Investor Capital

In a market-based economy, return on investor capital drives the allocation of capital to various enterprises. Enterprises that can achieve higher returns on investor capital will be favored by easier access to it. This motivates owners to limit use of equity capital and increase debt capital as a means of financing investment. However, because the probability of insolvency rises as debt financing is substituted for equity financing, the market exercises discipline over leveraging by increasing the required return on investor capital as the use of debt leverage increases. The nature of the enterprise's business activity also incorporates a level of risk over the business cycle that varies systematically from firm to firm. In an ideal market-based economy, investors would establish the appropriate level of equity capital, given the risk profile of the firm's business activity, for each firm. The existence of the business cycle and failure of individual firms is evidence that the ideal is not fully met, which is to say that investor judgments are imperfect.

Regulation of Financial Services Firms and Failure Resolution

Failure of financial services firms is particularly troublesome because in their role as financial intermediaries they facilitate all economic productive activity. Their failure can have severe disruptive consequences, as was painfully evident in the aftermath of the Lehman Brothers bankruptcy, for the entire economy. For this reason, it has been long standing policy that financial institutions must be regulated. This is accomplished in three ways.

First, rule setting bodies prescribe accounting rules and financial statement requirements to assure that investors have access to sufficient information, consistently prepared and reported across all firms, which enables investors to make reasoned judgments about prospects and the risk profile of a company.

Second, government agencies promulgate regulations and engage in supervision of individual financial firms to assure prudential stewardship of the firm's business. This is accomplished in a variety of ways, but focuses especially on adequacy of liquidity, loan loss reserves and capital.

Third, when necessary, regulatory intervention involves prompt and surgical resolution of a failure so that contagion effects are substantially limited or eliminated altogether. The Federal Deposit Insurance Corporation (FDIC) administers the failure resolution mechanism, although at times the Federal Reserve and Treasury Department have assisted in specific ways. Prior to the financial crisis, the FDIC's authority was limited to insured depository institutions. The DFA extended the FDIC's resolution authority to systemically important financial firms. In the case of depository institutions, the FDIC administers a deposit insurance fund that is financed by deposit insurance premiums paid by covered institutions. The way in which the FDIC structures deposit insurance premiums can impact both the type and amount of risk raking at individual banks. But, it can also have an adverse and procyclical systemic impact if the size of the fund is inadequate during a crisis and additional funds have to be raised immediately from covered firms.

Loan Loss Reserves and Capital Requirements

Regulators can guide bank risk taking by establishing loan loss reserves and capital requirements. In recent years, capital requirements have been fine-tuned by applying risk weights to different classes of assets. The notion of linking economic capital with regulatory capital was embodied in the Basel II capital principles and has been refined in the Basel III capital principles. The basic principle is that capital is composed of a portion for normal expected losses and a portion for unexpected losses. While loan loss reserves are distinguished from capital for regulatory purposes, they should be considered to be part of the expected loss component of capital. Because losses never occur evenly over the economic cycle, but rather tend to bunch at times of economic recession, the unexpected loss component of capital is important. Under Basel II principles, the amount of capital held for unexpected losses was intended to be sufficient to cover losses in most all possible scenarios. A generally accepted rule of thumb was a level of capital sufficient to reduce the probability of insolvency to less than 1%.

Unfortunately, in spite of the elegance of the theory of economic capital, the capital guidelines drawn from it in implementing Basel II failed for several reasons. First, the guidelines were based on an individual firm's risk profile and did not recognize the possibility that systemic risks could rise to a level that greatly amplified the individual firm's stand alone risk of loss. Second, the guidelines did not anticipate a failure of both market discipline and supervision to limit risk taking. Third, insufficient weight was given to the importance of liquidity, the collapse of financial asset values and procyclical effects of fair value accounting that took hold during the height of the financial crisis.

Predictably, the response to the failure of the Basel II capital requirements has been that they were simply too low. Thus, revised capital requirements, which will be phased in over several years, have been raised to significantly higher levels. It is entirely possible that the pendulum has now swung too far and that the revised requirements will curtail risk taking to an extent that harms economic growth and innovation. When capital requirements are raised to levels that depress returns to equity investment below alternatives, capital will flow out of regulated financial institutions. Regulated financial institutions will attempt to compensate by raising prices or by raising underwriting standards thus limiting access to credit, and limiting balance sheet growth. All these actions will limit access to credit and raise its cost and will make it more difficult to finance economic growth, particularly higher risk, cutting-edge initiatives. And, it will encourage money to move to less- or un-regulated firms.

It may well be that much of the so-called inadequacy of capital could be dispensed through more effective countercyclical management of loan loss reserves and capital requirements rather than applying the blunt policy approach of raising required levels without regard to cyclical considerations.

Liquidity

Similarly, raising liquidity requirements without regard to cyclical considerations will adversely impact the rate of return on equity capital and thus will have the same kind of consequences that requiring too much capital will have. Financial institutions earn a premium for providing financial intermediation for less liquid initiatives. This potential consequence will increase in line with the extent to which the proportion of liquid assets is raised at the expense of less liquid assets.

During favorable parts of the cycle, expensive standby liquidity is rarely needed. The need arises during financial crises and that is exactly when many typical standby sources of liquidity simply evaporate. To require more liquidity to be held throughout the cycle is likely to contribute to greater procyclicality. Focusing on liquidity requirements independently of other means of limiting risk, such as through risk-weighted capital requirements or financial instrument diversification policies, increases the likelihood of procyclical consequences.

In addition, no amount of liquidity for an individual firm may be sufficient when a crisis is triggered by systemic phenomena such as the system-wide subprime frenzy and runaway housing prices that occurred in the run-up to the 2007-2009 financial meltdown. When such systemic events occur, assuming other regulatory interventions have been unsuccessful in preventing them, it is the role of the lender of last resort, namely the Federal Reserve in the U.S., to provide liquidity. This is a proper role for the central bank and not one that should be forced on individual financial services firms through excessively conservative liquidity requirements.

Valuation

There are two fundamental measures of value which under a wide variety of circumstances are substantially similar but under certain circumstances can diverge and sometimes by very substantial amounts. The first measure is economic value (sometimes referred to as intrinsic value), which is simply the discounted present value of all relevant and expected cash flows. There are two challenges in calculating this value. The first is that most cash flows occur in the future and are uncertain. The second is that different discount rates will alter the present value considerably. The challenge is to choose the "most appropriate" discount rate. The second measure of value is what a buyer is willing to pay in a market where neither the buyer nor seller possesses pricing power – usually a highly liquid auction market like a stock exchange. Economists focus on discounted cash flows while accountants focus on market prices as an appropriate indicator of fair value.

While market prices might seem more certain than discounted cash flows because they reflect a price agreed to by a willing buyer and seller that are observable, there are circumstances when that will not be case. For example, prices will be depressed if supply greatly exceeds demand. Exactly that occurred during the height of the financial crisis as margin calls and investor redemption demands forced liquidation of high quality securities at fire sale prices. Market prices fell below economic value for a period of time. However, because accounting values are based on market, not economic value, those who were not forced to sell nonetheless had to write down values of similar financial instruments and suffer capital impairments. This had highly procyclical consequences because depleted capital levels, as measured by accounting rules, often resulted in additional margin calls. During the height of the crisis this ignited a vicious circle in which declining prices led to margin calls, which in turn caused forced selling into illiquid markets, which depressed prices further. Thus, accounting rules

amplified the crisis. Had the temporary market dysfunction due to extreme illiquid conditions been taken into account by adjusting the application of accounting rules the severity of the crisis might well have been diminished.

Supervision

It is human nature to relax when the economy is performing well and top line indicators are robust. Unfortunately, it is also human nature to overreact when bad things begin to happen. Because bank examiners and supervisors are concerned that they will be criticized and blamed for failures of financial institutions they naturally have a propensity to come down hard on all regulated institutions during difficult times. This behavior is highly procyclical and deepens downturns and delays recoveries. At the other extreme, when times are good, supervisory reluctance to intrude into "management decision-making" can inadvertently let what eventually turns into unhealthy risk taking take hold. Most managers try to act responsibly, but to stay in business, they must also respond to competitive pressures. During economic expansions and good times it is natural for greater risk taking to emerge. This is a gradual process and it is a process that supervisors can hold in check. But when supervisors pull back because they believe it is not their role to intrude into management decision-making or because they embrace the doctrine that the market will serve as an effective regulator, then the slow evolutionary process of ever increasing risk taking proceeds unimpeded.

SHORT DESCRIPTION OF THE FIVE PROCYCLICAL POLICIES, RULES and GOVERNANCE MECHANISMS

Loan Loss Reserving Accounting Rules and Supervisory Implementation of Regulatory Policy

Loan loss reserving is guided by accounting standards as prescribed under Generally Accepted Accounting Practices (GAAP), as formulated by the Financial Accounting Standards Board (FASB). The predominant accounting standard for loss reserving, embodied in Financial Accounting Standard (FAS) 5, has been based on the concept of "losses inherent", which has been measured using recent incurred loss history. Application of this standard has resulted in the past in either declining loss reserves in good economic times when few losses are experienced or slow growth based on increases in covered assets. Then in bad economic times when credit quality deteriorates and losses mount, as occurred during the crisis, loss reserves are ramped up sharply. Application of this accounting standard in the past has had an unambiguous procyclical impact.

Proposals to require banks to apply an expected loss approach to estimating reserves could lead to higher reserve levels when losses are low so that in times of credit stress, reserves would not have to be accelerated, or at least to a lesser extent. FAS 114, which established expected loss reserving for specific assets, and recent modifications in accounting rules pertaining to "other than temporary impairment", FAS 115, have been helpful in reducing the procyclical impacts of the FAS 5 incurred loss approach. Also, ongoing work by the FASB and the International Accounting Standards Board to converge accounting rules for publicly traded companies is expected to diminish procyclicality in accounting standards.

Regulatory Capital Requirements

In addition to the procyclical impact of inadequate loss reserves, financial services firms during the financial crisis were required to build a significant amount of additional capital based on the results from stress tests on their portfolios. For example, the Supervisory Capital Assessment Program (SCAP) applied a stress test scenario to a number of large financial institutions targeting their Tier 1 common capital levels in the U.S. to determine whether additional capital would be warranted. According to the final results of the exercise, an additional $185 billion in capital was required by the end of 2010 to respond to the adverse stress scenario results.[2]

Raising such a significant amount of capital at a time when the economy was already under stress poses a question of whether such measures exacerbated credit contraction and retarded economic growth. At the time, however, policymakers believed that stress tests and the additional capital that the tests indicated was required were absolutely necessary to restore confidence in the financial system. For all they knew, if confidence was not restored, the financial system might have collapsed, and the consequences for credit contraction and economic growth would have been far worse. One needs to recall that at the time the stress tests were announced an active, but short-lived, debate of the need to nationalize the largest financial institutions took place.

2 Federal Reserve Board, The Supervisory Capital Assessment Program: Overview of Results, May 7, 2009. The$185B additional capital was associated with 10 of the 19 banks examined under SCAP.

Looking back, global policymakers agree that capital levels were too low and the minimum requirement needs to be raised. In addition, and in response to a potential repeat of extreme financial distress globally, policymakers have proposed revisions to the Basel capital requirements that involve phasing in a countercyclical capital buffer. The buffer is designed to build up capital during periods when the economy is strong and losses are low, and when capital presumably is easier to obtain and cheaper, than would be available at a later time when the economy worsens and the financial institution's performance deteriorates. Further review and assessment of the merits of higher minimum capital and this new countercyclical capital buffer requirement is provided as part of this study.

Liquidity Requirements

Several financial services firms during the crisis experienced extraordinary circumstances with regard to their liquidity. Lack of access to capital markets and funding sources brought several firms to the brink of insolvency or closure by federal regulators. Liquidity access difficulties quickly spread across the industry destabilizing markets at a moment of significant weakness. The Basel capital standards have carved out a new set of liquidity ratios designed to allow firms to weather a liquidity crisis over different time horizons. After a phase-in period financial services firms will now be required to maintain higher levels of assets that can be readily converted to cash when needed during a crisis. While it is unclear whether requiring higher liquidity throughout the economic cycle would avert liquidity challenges in times of financial distress or panic, it is clearer that requiring a permanently higher level of liquidity would reduce lending capacity. The study explores this issue and considers alternative solutions.

Deposit Insurance Premiums

Deposit insurance premiums are charged to banks by the FDIC to cover losses to the deposit insurance fund. As with other procyclical regulations in the past, deposit insurance premiums have been low during good economic times only to have to be increased substantially in times of stress when the insurance fund is depleted by a surge in failures and losses to the fund. Raising deposit insurance premiums in times of stress poses additional costs to insured financial services companies at the same time they often are struggling to address credit losses and raise capital. At such times, increases in fees could stifle credit availability for consumers and businesses and create a drag on economic growth. As is the case for other procyclical practices, an alternative could be to raise deposit insurance premiums in good times thus reducing or eliminating the need to raise premiums substantially when failures surge and the insurance fund incurs heavy losses.

Deposit insurance reforms enacted in DFA address the procyclicality of deposit insurance premiums by increasing the FDIC's discretion to set deposit insurance premiums and dividends. Thus, it is left to the FDIC to determine an appropriate countercyclical deposit insurance premiums methodology. However, because the insurance fund is currently insolvent on an accounting basis, it will be many years before the FDIC will be able to implement such a scheme.

Fair Value Accounting Rules

Considerable attention has been given to the impact that fair value accounting had in the financial crisis. Fair value accounting provides transparency to regulators and investors regarding the fair market value of financial instruments and thus the financial condition of an institution. In normal markets for financial instruments with good price discovery, fair value accounting can serve as an early warning when conditions may be changing. Assets available for sale, in trading portfolios and derivatives, are subject to a three-tier system for valuation, with the most difficult to value assets

typically the most complex with nonstandard features such that obtaining market-based inputs for valuation is nearly impossible.

As the subprime crisis emerged, financial instruments, such as credit default swaps and collateralized debt obligations, took heavy write downs at financial institutions as a result of fair value accounting. Unfortunately, however, declining values triggered forced asset sales to satisfy margin calls and internal risk management policy requirements. These forced sales created an excess of supply in increasingly illiquid markets, leading to further negative adjustments to fair value. For a period of time this process led to a downward reinforcing spiral of declining values, which greatly exacerbated the severity of the financial crisis. This procyclical result led many to question the merits of fair value accounting.

LOAN LOSS RESERVE RULES AND PRACTICES

The allowance for loan and lease loss reserves (ALLL) is an accounting entry that reflects credit losses anticipated to be incurred but not yet realized. This account is an offset to loans held by a financial services firm. Financial services companies may rely on a combination of quantitative models and qualitative assessments to determine the level of reserves in a given period. The amount of this periodic set aside is referred to as the provision for losses.

Accounting Rules

The relevant accounting provisions for establishing a loan loss reserve are contained in financial accounting statement (FAS) FAS 5 and FAS 114.[3] Under FAS 5, a financial services firm establishes a reserve for accrual of losses on a general basis with a charge against net income. A financial services firm has to be able to demonstrate that such losses can be reasonably estimated and that there is some likelihood that inherent losses are embedded in a group of loans or that a specific loan has become impaired. In estimating losses under FAS 5, a financial services firm can apply statistical models to a pool of homogeneous assets to determine loss over a specified period of time (known as the loss confirmation period) and augment that estimate using qualitative factors on drivers of loss such as changes in underwriting standards, macroeconomic conditions and market conditions, among others. Under FAS 114, a financial services firm assesses the loss potential of individual loans using present value of cash flows analysis. FAS 5 permits use of historical data to project losses that are probable and estimable. An important distinction between the FAS 5 incurred loss standard and the expected loss approach to estimating reserves in FAS 114 is that the incurred loss method precludes using information regarding future possible outcomes. By contrast, an expected loss methodology builds in likely future scenarios that could affect loan performance, such as forecast house price changes and mortgage default rates.

Impact of Accounting Rules on the Level of Loss Reserves

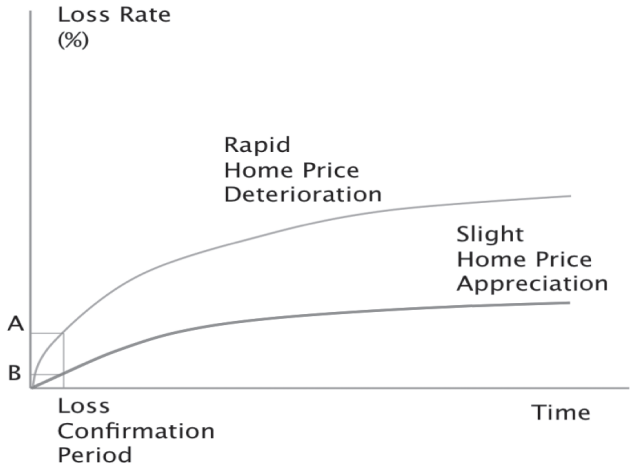
To provide insight into how the incurred loss and expected loss approaches could affect the level of reserves, consider an option ARM mortgage loan newly originated in California in 2005. The financial services firm would rely on historical data, prior to 2005, to determine its loss provision. Specifically, in this example, the firm might use 3-5 years worth of historical experience on the performance of other option ARMs in its portfolio to develop its estimate. Home prices are a key driver of mortgage default. During the period 2000-2005, home prices were rising and default rates and actual losses were low. Applying the incurred loss methodology, the financial services firm would rely on estimates of loss that would be reflective of relatively good recent experience but which might not represent possible losses should economic conditions deteriorate.

Figure 2 illustrates this point graphically. If home prices have been rising slightly during in the incurred loss estimation period, the loss profile for the option ARM mortgage portfolio would follow the lower curve over time. However, if home prices deteriorate over the next few years, assuming a more pessimistic view of the future, losses would follow the higher curve. Under these two scenarios, the incurred loss model would yield a provision to ALLL equal to B, while an expected loss approach,

3 Financial Accounting Standards Board, Summary of Statement No. 114: Accounting by Creditors for Impairment of a Loan, September 2003 and Financial Accounting Standards Board, Summary of Statement No. 5: Accounting for Contingencies, March 1975.

building in the forecast of declining home prices, would generate a provision of A. Compounding the effect is that the default models used to estimate losses would have reflected the favorable period of strong home prices and hence relatively low credit losses, further underestimating realized losses only a few years later. As a result, the incurred loss method greatly distorts estimates of credit losses and their timing, resulting in building lower reserve amounts in good times and accelerating accumulation of loss reserves in bad periods. A further consequence of this methodology is that management may become overly confident about low credit risk during benign economic conditions and be tempted to expand the risk envelope as a way to grow the business and profits.[4]

Figure 2. Loss Estimates Derived Using Incurred and Expected Loss Methods

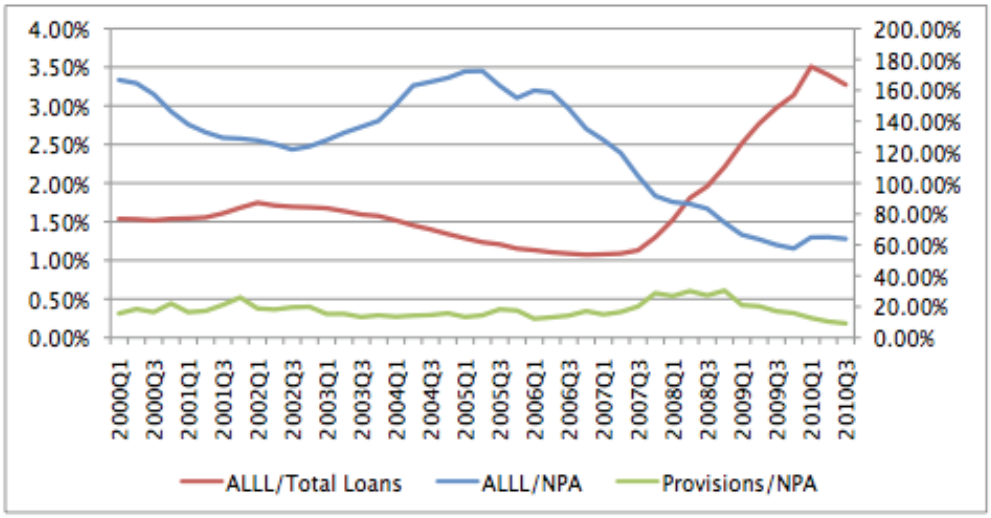


Procyclicality of Loss Reserves – The Historical Record

To gain a better sense of the timing and variability of the reserving process over different periods of time, consider Figure 3. This chart shows the ratio of the ALLL for FDIC-insured banks to nonperforming loans (i.e., 90+ days past due or worse) – ALLL/NPA. This ratio reached a low point around the 3rd quarter of 2002 at 120%, just after the end of the 2001 recession, and then rose to 173% during the 2nd quarter of 2005. Since that time, the ratio sharply declined to about 64% in the 3rd quarter of 2010. At first blush, if one were to look only at the ALLL/NPA ratio over time, the ratio appears to follow a countercyclical pattern. This is only partially true, however. A truly countercyclical loss reserving methodology would involve a high ratio of Provisions/NPA during good times when NPAs are at a cyclical low point and a low ratio of Provisions/NPA during bad times when NPAs are rising rapidly. The Provisions/NPA line in Figure 3 shows exactly the opposite – with the loss provisioning rate peaking during the recessions of 2001 and 2008-2009, at the same time that NPAs are skyrocketing and bottoming out during good economic times between the two recessions.

4 Clifford Rossi, Anatomy of Risk Management Practices in the Mortgage Industry: Lessons for the Future, Research Institute for Housing America, May 2010.

Figure 3. ALLL and Provision Trends 2000-2010

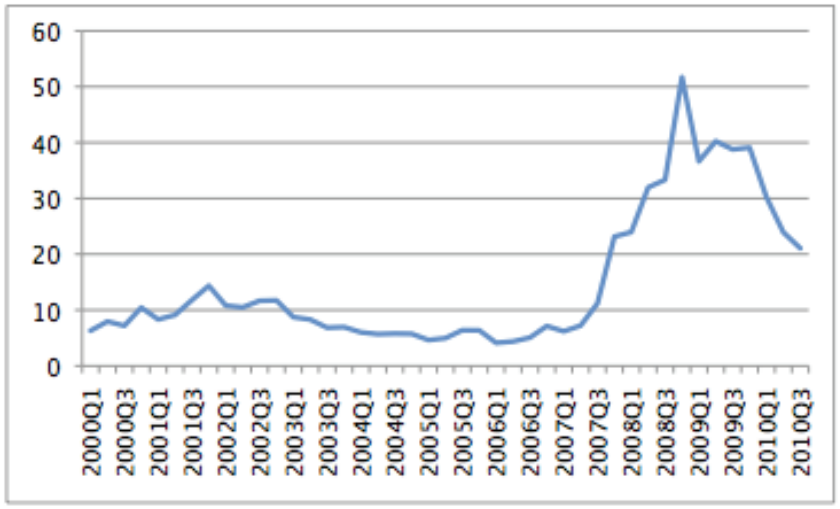


Source: FDIC Call Report Data. Note: Left hand scale references ALLL/Total Loans; right hand scale references ALLL/NPA and Provisions/NPA

During the time period between the 2001 and 2008-2009 recession when credit delinquencies were low, reserve levels as a percentage of loans (ALLL/Total Loans) hovered around 1-1.5% but in 2008 and afterward ALLL/Total Loans rose to more than 3.5% of total loans as FDIC-insured banks were now forced to ramp up reserves due to rising loss rates and inadequate reserving during good times.

Another way to see the procyclicality of loss reserving methodology is to observe the impact of loss provisions on total income, which is shown in Figure 4. The buildup of reserves during and following the financial crisis of 2007-2009 accounted for a much greater percentage of income. A more countercyclical reserving methodology would result in a much flatter line in Figure 4 over time.

Figure 4. Provisions/Total Income 2000-2010 (%)



Source: FDIC Call Report Data.

Differing Regulatory Perspectives

From a regulatory perspective there have been some differences in views between bank regulators and the Securities and Exchange Commission (SEC). One of the more well-known loss reserve cases was that of SunTrust Bank in 1998 where the SEC forced the bank to restate its financial statements from previous years because the SEC found that SunTrust was using the loss reserve to manage earnings. This action, coupled with the Sarbanes-Oxley Act, reinforced the accounting-based incurred loss approach to reserving during the period leading up to the financial crisis. By contrast, bank regulators, such as the Office of the Comptroller of the Currency (OCC), have favored an approach that would allow banks to maintain reserve levels equal to certain coverage levels. For example, the OCC Handbook on ALLL states:

> ***Many banks consider coverage of one year's losses an appropriate benchmark of an adequate reserve for most pools of loans. Except in the situations discussed below, OCC examiners should generally view this level of coverage as appropriate.***[5]

Notably, the OCC guidance does not mention that "one year's losses" should be based on recent experience. The OCC also permits the use of qualitative factors as part of the reserve level determination process. For example, as underwriting practices, market conditions and other factors critical to credit performance change over time, the OCC recommends that banks develop adjustments to the reserves to reflect these important shifts. In recent years, the OCC guidance has enabled reserves to be raised above the level implied by the direct application of an incurred loss methodology.

The financial impacts of loss reserving methods have stirred considerable discussion in academic and regulatory circles since the financial crisis. Some, such as former Comptroller of the Currency John Dugan, argue that loss reserving practices, which placed emphasis on the incurred-loss methodology, contributed to the credit crunch in lending in the U.S.[6] The incurred loss reserving model promotes the rapid buildup of reserves at the beginning of a financial crisis and for a period of time afterward.

5 Office of the Comptroller of the Currency, Comptroller's Handbook, Allowance for Loan and Lease Losses, 1998, p. 13
6 John Dugan, "Loan Loss Provisioning and Procyclicality," Remarks before the Institute of International Bankers, March 2, 2009.

This depletes earnings and weakens capital adequacy, which, in turn, retards a financial services firm's ability and willingness to expand lending.

Several studies of the relationship between loss reserving methodology and lending activity have been conducted over the years with varying results. Most recently, a study by Beatty and Liao found a statistically significant relationship between changes in reserving and lending supporting the pro-cyclicality theory.[7]

Spanish Model of Dynamic Loan Loss Reserving

Beyond empirical models of loan loss reserving, the Spanish model of dynamic loan loss reserving has received much attention as a practical approach to addressing the inherent procyclicality of the incurred loss method. In 2000, the Bank of Spain introduced countercyclical reserving to banks under its authority that was intended to ensure that in boom periods reserves would be maintained at levels above those under an incurred loss method, which tends to underestimate losses during those periods. In this way, financial services firms would have sufficient reserves to weather a downturn without having to escalate reserve buildups during periods of economic distress. The Bank of Spain created a statistical method for determining loss reserves based on historical experience of Spanish banks over an economic cycle. The Bank of Spain permits institutions to use one of two methods, but the most commonly used approach is the standard method as shown below:

$$GP_t = \sum_{i=1}^{6} \alpha_i \Delta C_{it} + \sum_{i=1}^{6} \left(\beta_i - \frac{SP_{it}}{C_{it}} \right) C_{it}$$

Where GP represents the general loss provision in time *t*, C is the level of asset *i* in time *t*, SP is the bank's specific loss provision, and α and β are estimated parameters. The α term represents each asset's credit impairment in an average period and β is the historical long-term average specific provision for each asset type. The key driver of the statistical model is the relationship in brackets. That is, if the specific provision in a given period is less than the average historical specific provision, then the general provision is increased by that difference. In this way, there is a natural mean reversion-like component to the statistical model that mutes the fluctuation in the reserve over different parts of the economic cycle.

Balla and McKenna found that in 2006, a period just prior to the emergence of the financial crisis, Spanish banks had ratios of ALLL to nonperforming loans well above those of U.S. banks during the same period – 255% vs. 176%.[8] In other words, Spanish banks in general maintained higher levels of reserves heading into the crisis than did their U.S. counterparts. While some portion of this difference between banks must be attributable to factors specific to Spanish banking at that time, the significantly higher coverage ratios of Spanish banks using dynamic provisioning suggests that such methods do moderate to some extent the procyclicality of the incurred-loss reserving methodology.

As a further test of the effect of dynamic provisioning on banks, Balla and McKenna conducted a simulation, based upon the Spanish statistical provisioning model shown above, using representative parameters for U.S. banks. The model was tested for the period 1993-2008. It shows that reserves would have begun building starting in 1993. They found that applying the statistical provisioning model in the 5-year buildup phase, banks would have had a ratio of reserves to total

7 Anne Beatty and Scott Liao, Regulatory Capital Ratios, Loan Loss Provisioning and Pro-cyclicality, white paper, October 15, 2009.

8 Eliana Balla and Andrew McKenna, "Dynamic Provisioning: A Countercyclical Tool for Loan Loss Reserves, Economic Quarterly, Richmond Fed, Vol. 95, No. 4, Fall 2009, pp. 403-404.

loans that was more than double their actual ratio for the same period. Another result from this work was that during the recessions of 2001 and 2008-2009, the use of statistical provisioning would have resulted in declines in provisions, which is exactly opposite to what actually occurred during these years. Since the statistical provision is a negative adjustment to the income statement, during recessionary periods, profits of financial services firms wind up being higher than they would be applying the incurred loss method. One inference from this result is that banks which rely on such a statistical provisioning methodology could conceivably be in a better position to maintain lending during difficult times and moderate their lending during boom periods.

Developments Subsequent to the Financial Crisis of 2007-2009

In the aftermath of the financial crisis, reductions in loan-loss reserves accounted for a substantial portion of reported earnings for many financial services companies during 2010, confirming the procyclical pattern of loss provisioning. According to Harry Terris, "Jamie Dimon, JPMorgan Chase's chief executive, asserted skepticism during his company's earnings call about swings in reserve positions as credit deteriorates and recovers, as he did the previous quarter. 'It's a silly post-cyclical thing we go through, putting them all up and take them all down', he said."[9]

During the financial crisis, many financial institutions began to implement the expected loss reserving model, even though in so doing it conflicted with the incurred loss methodology prescribed by FAS 5. These changes brought reserving practices into closer alignment with the loss estimation methodology embedded in the Basel II capital requirements framework. Bank regulators were supportive of these changes and the SEC has neither endorsed nor objected.

More recently, FASB and the International Accounting Standards Board (IASB) drafted a proposal that would permit the expected loss concept to be applied to loss reserving. Details of how the expected loss concept should be applied have yet to be worked out.

Thus, there has been some progress in adopting practices that should reduce the procyclicality of loss reserving in the future, but until accounting rules are explicitly revised, uncertainty will remain.

9 Harry Terris, "Channel From Loss Reserves to Bottom Line," American Banker, November 10, 2010.

PROCYCLICALITY OF REGULATORY CAPITAL REQUIREMENTS

Financial services firms targeted for stress testing under Supervisory Capital Assessment Program (SCAP) conducted in early 2009 needed to raise an additional $185 billion in capital. The deficiency in capital at these institutions pointed to the inherent procyclicality of bank capital requirements under the Basel II capital framework.

Basel II Capital Framework

Basel II operates in the U.S. under a set of required ratios for financial institutions including a leverage ratio, a Tier 1 risk-based capital, and total risk-based capital ratio. The leverage ratio is defined as the bank's core capital; common stock, some forms of preferred stock and other interests in subsidiaries divided by total assets. The other two capital ratios feature a risk-weighting scheme on assets that may introduce procyclical effects into the economy. Specifically, during an economic expansion, credit losses are low and hence the level of risk in the balance sheets of financial services firms is low. As a result, risk-based capital ratios, which are dependent on the probability of default, loss severity, and exposure at default, tend to be lower during such periods. Further, these results are likely to be compounded by reliance on point-in-time (PIT) 1-year default rates rather than on through-the-cycle (TTC) default rates. Once the economy declines and credit losses increase, capital ratios decline with regulators requiring financial services firms to raise their ratios.

Research Studies

Due to higher agency costs and asymmetric information during an economic downturn, weaker financial services firms find that external financing becomes more costly, thus inhibiting their ability to raise capital to address capital ratio shortfalls. This forces such firms either to raise additional capital at unfavorable prices or reduce their asset base and along with it their deposit/funding bases, all of which contribute to a credit crunch. A number of studies have found empirical evidence to support this phenomenon such as Bernanke and Lown.[10] Other studies, such as by Repullo, Saurino and Trucharte, demonstrate the procyclicality effect of bank capital standards on Spanish banks and the economy from 1987-2007 where Basel II capital ratios and GDP moved inversely.[11] In the U.S., Gordy and Howells conducted some simulation tests on bank capital and found that the Basel II capital standards could affect lending patterns of banks over time but were dependent on the relationship of lending and macroeconomic conditions.[12]

Capital Requirements Reforms – Basel III

Various suggestions to address capital procyclicality include relying on TTC-based estimates of credit performance or imposing an on-top adjustment to the PIT-based capital ratios.

10 B.S. Bernanke and C.S. Lown, "The Credit Crunch", Brookings Paper. Econ. Act. Vol. 2, 1991, pp. 205–248.
11 Rafael Rapullo, Jesus Suarino and Carlos Trucharte, "Mitigating the Procyclicality of Basel II, CEPR Discussion Paper 7382, 2009.
12 Michael B. Gordy and Bradley Howells, "Procyclicality in Basel II: Can We Treat the Disease Without Killing the Patient?" Journal of Financial Intermediation, 2006, 15, pp. 395-417.

The Basel Committee released its proposal (Basel III) in 2010 on revamping capital requirements in a phased-in approach to address a host of issues including adding a new countercyclical capital buffer in addition to the existing set of capital requirements.[13] Basel III reforms include several components. First, the definition of the types of financial instruments that constitute qualifying capital has been narrowed. Second, minimum capital requirements have been raised. Third, asset risk weights have been revamped with the overall impact being that aggregated risk-weighted assets will increase. Fourth, a countercyclical capital buffer ("Capital Conservation Buffer") is introduced, which is intended as an additional capital requirement to cover times of financial distress and would range between 0 and 2.5% of risk-weighted assets of a regulated financial services firm and rely on common equity or other fully absorbing capital to support this requirement. Fifth, the Group of Governors and Heads of Supervision of the Basel Committee on Banking Supervision has announced that a capital premium between 1% and 2.5% will be required for large financial institutions considered to be "systemically important financial institutions" (SIFI); however, also indicated that an even higher surcharge, perhaps as much as an additional 1%, might be required, if banks increase materially their global systemic importance. Table 1 below describes these capital standards and the timing of phase-in in more detail.

Table 1. New Basel Capital Standards as of September 2010

	2011	2012	2013	2014	2015	2016	2017	2018	As of 1 January 2019
Leverage Ratio	Supervisory monitoring		Parallel run 1 Jan 2013 – 1 Jan 2017 Disclosure starts 1 Jan 2015					Migration to Pillar 1	
Minimum Common Equity Capital Ratio			3.5%	4.0%	4.5%	4.5%	4.5%	4.5%	4.5%
Capital Conservation Buffer						0.625%	1.25%	1.875%	2.50%
Minimum common equity plus capital conservation buffer			3.5%	4.0%	4.5%	5.125%	5.75%	6.375%	7.0%
Phase-in of deductions from CET1 (including amounts exceeding the limit for DTAs, MSRs and financials)				20%	40%	60%	80%	100%	100%
Minimum Tier 1 Capital			4.5%	5.5%	6.0%	6.0%	6.0%	6.0%	6.0%
Minimum Total Capital			8.0%	8.0%	8.0%	8.0%	8.0%	8.0%	8.0%
Minimum Total Capital plus conservation buffer			8.0%	8.0%	8.0%	8.625%	9.25%	9.875%	10.5%
Capital instruments that no longer qualify as non-core Tier 1 capital or Tier 2 capital			Phased out over 10 year horizon beginning 2013						
Liquidity coverage ratio	Observation period begins				Introduce minimum standard				
Net stable funding ratio		Observation period begins						Introduce minimum standard	

Source: BIS Press Release on Basel III, May 2009.

13 Bank for International Settlements, Group of Governors and Heads of Supervision announces higher global minimum capital standards, Press Release, September 2010

Higher Minimum Capital Ratios, More Stringent Risk Weights and Limitations on Qualified Capital Instruments

Higher minimum capital ratio requirements applicable over the entirety of the economic cycle, more stringent risk weights and limitations on qualifying capital instruments will collectively result in reduced credit extension simply because financial institutions will be unable to leverage the size of their balance sheets to the same extent as in the past. Most covered financial services firms expect to reduce the size of their balance sheets through sale of assets, particularly sales of those with significant increases in risk weights.

If securitization markets were healthy, negative impacts on credit extension might be limited through the sale of assets to other investors not similarly restricted by higher capital requirements; however, new risk retention requirements could well offset this potential benefit. While reduced credit creation could slow economic growth, this negative outcome would be offset (perhaps more than offset) by a lower propensity for speculative asset bubbles to develop during the expansion phase of the cycle and a diminished probability of insolvency of individual financial institutions during the contraction phase of the cycle. Clearly, higher minimum capital requirements will diminish the amplitude of cycles, both during the expansion and contraction phases. What is less clear is whether the result will be neutral to potential economic growth over the entirety of the cycle or whether the higher requirements will stunt innovation, risk taking and growth. If the latter turns out to be the case, then the countercyclical policy of requiring higher capital ratios will result in diminished economic welfare.

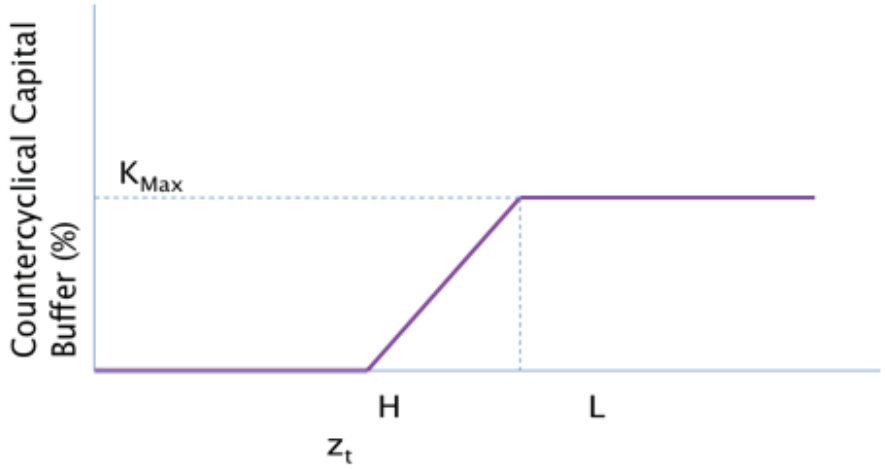
There is another risk if capital requirements are set too high and that is one of potential leakage of lending activity to less regulated or unregulated credit providers. Leakage contributed to the explosion of subprime debt and to the magnitude of the housing bubble. While the Dodd-Frank Act provisions have closed many of the legal and regulatory loopholes that permitted leakage, the history of dynamic financial markets in a market economy is that there is always ample incentive to find ways to minimize required capital and increase leveraged returns. Capital requirements that are too high will simply increase the incentives to find such avoidance alternatives while at the same time weakening the competiveness of regulated financial institutions.

Capital Conservation Buffer

The Bank for International Settlements (BIS) has issued a consultative document that discusses several options for specifying the countercyclical capital buffer.[14] The leading approach to establishing a countercyclical capital buffer features a variable requirement dependent upon a conditioning variable to determine the speed at which the buffer would be built or released as economic conditions change. A credit-to-GDP (CtGDP) factor has been identified as a leading candidate for such a capital requirement. It is defined as real aggregate credit growth divided by GDP and is intended to reflect the fact that credit demand and supply are usually positively related with economic growth. The BIS asserts that historically higher ratios are associated with subsequent financial crises. The BIS further adjusts the ratio by its long-term historical trend and uses this CtGDP gap as the basis for establishing the ramp up in the countercyclical capital target. The specific recommendation for the buffer is as follows and is graphically shown in Figure 5:

14 Bank for International Settlements, Countercyclical Capital Buffers: Exploring Options, BIS Working Papers 317, July 2010.

Figure 5. Countercyclical Capital Buffer Proposal



$K_{Max} = 0$ if $z_t < L$

$$K_{Max} = \frac{z_t - L}{H - L} 2\% \text{ if } L <= z_t <= H$$

$K_{Max} = 2\%$ if $H < z_t$

Where $z_t = (CtGDP_t - \overline{CtGDP})$, $\overline{CtGDP}$ is the long-term average level of CtGDP, H equals 10%, and L equals 2%

It is unclear whether a set of variables could be constructed to be sufficiently accurate leading indicators of future economic and banking activity. Moreover, the authors of the study admit that the conditioning variables could introduce a wide amount of variation in capital buffer outcomes across institutions. The study is inconclusive regarding the feasibility of creating a robust set of factors to dynamically adjust a capital buffer of this kind. Repullo, for example, refutes the claim by the BIS that the credit-to-GDP factor accurately predicts banking downturns.[15] In sum, the proposal, which in theory provides an approach to addressing procyclicality in capital requirements, leaves open many more questions regarding potential unintended consequences on banks and the economy over time. Underlying relationships of financial institution and system-wide factors are likely to change over time with the potential to amplify capital requirements during stress periods or undershoot capital needs during economic expansion. This could dampen economic activity in good times and mute the beneficial aspects of a countercyclical buffer during downturns.

In addition, experience with the Basel II capital framework suggests that the lack of precision in defining the capital buffer concept could result in inconsistent implementation by various countries.

In the absence of strong empirical analysis to support a stable and reliable countercyclical buffer, the BIS might well be better off doing nothing for the time being until it can be determined that such a proposal would not adversely impact banks and the economy.

15 Rafael Repullo, Countercyclical Capital Buffers: A Critical Assessment of the Basel Proposal, CEPR Conference on the Future of Regulatory Reform, London, 4 October 2010

PROCYCLICAL EFFECTS OF LIQUIDITY REQUIREMENTS

A severe liquidity crisis accompanied the recent financial meltdown, leading to the demise of many financial institutions. For depository institutions, such as Washington Mutual and Indy Mac Bank, a period of sustained deposit runs ultimately contributed to their takeover by the FDIC and subsequent disposition. For other financial services firms, traditional funding sources evaporated literally overnight as uncertainty and turmoil surrounding the subprime mortgage crisis spread quickly across financial markets. From 2000-2006, the 3-month LIBOR – Treasury Bill spread averaged approximately 20bps. Between 2007 and 2008, this spread averaged 148bps, reaching a peak in October 2008 at the height of the crisis of 463bps.[16] As the crisis progressed, financial institutions sharply curtailed their lending activities as they worked to strengthen their balance sheet positions. Some also had to respond to margin calls and others simply no longer had access to funding.

Role of Liquidity in Financial Intermediation

In facilitating the role of financial intermediaries to provide credit, liquidity serves to transform liabilities of various types into earning assets. The mechanism for this lies in part with the ability to access liquid funding markets on a regular basis to support ongoing lending activity. When access to such markets, either for deposits or debt capital, dries up or becomes prohibitively expensive, as it did during the financial crisis, it jeopardizes those institutions with less of a liquidity buffer. As occurred during the 2007-2009 financial meltdown, the difficulties of individual firms can lead to a contagion which causes the loss of liquidity across markets. A forced response for many to the liquidity crunch was that financial firms had to attempt to sell illiquid assets into a market racked with uncertainty and hence at fire sale prices. Other responses included tightening lending standards and in the case of mortgage loans and some other assets, bringing them onto the balance sheet rather than selling into the secondary market at depressed prices.

Loss of Liquidity and Central Bank Responses During the 2007-2009 Financial Markets Crisis

A number of studies, such as Allen and Carletti, have described in detail the sequence of events that occurred during the financial markets crisis of 2007-2009.[17] The major events are as follows. In mid-2007, subprime mortgage defaults started rising and this began to place significant funding pressures on firms specializing in mortgage banking. This was quickly followed by rating downgrades of mortgage-backed securities, as evidenced by extreme spread widening among various tranches of MBS. The turmoil in MBS markets was quickly followed by distress and widening spreads in other financial markets, such as asset-backed commercial paper and collateralized loan obligations. Allen and Carletti note that the interbank lending market seized up about the same time, with banks hoarding liquidity rather than lending to other banks for more than a few days.[18]

16 This TED spread is often used as a measure of market liquidity. Spread data from Bloomberg as reported by Barth, Li, and Phumiwasana, "The U.S. Financial Crisis: Credit Crunch and Yield Spreads," White Paper, Auburn University, 2009.

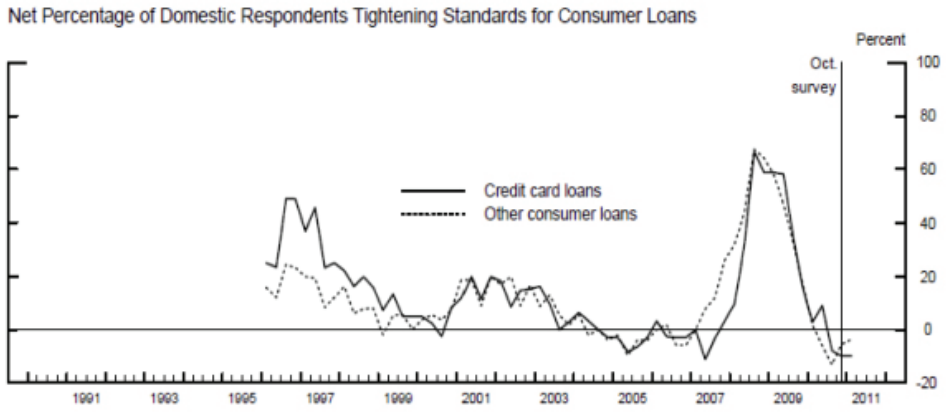
17 Franklin Allen and Elena Carletti, "The Role of Liquidity in Financial Crises," Prepared for the 2008 Jackson Hole Symposium, August 21-23, 2008 on Maintaining Stability in a Changing Financial System.

18 Allen and Carletti, 2008, p. 4.

Central banks and governments worldwide soon began aggressive programs of injecting liquidity into the financial system as exemplified by the Federal Reserve's Term Auction Facility and Term Securities Lending Facility as well as temporary access to liquidity for Fannie Mae and Freddie Mac prior to their entering conservatorship.

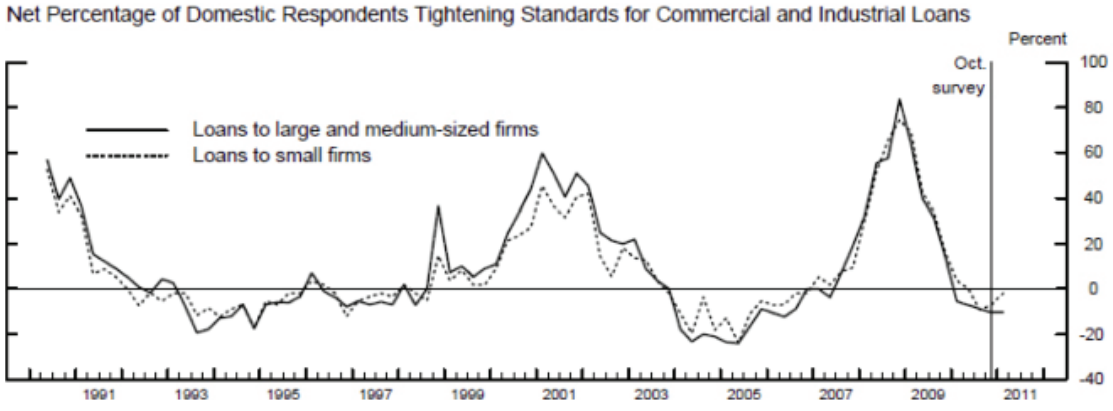
Although statistical evidence about the impact of the liquidity crisis on lending activity of financial services firms remains elusive at this point in the academic literature, some insights are available from the Federal Reserve's Senior Loan Officer's survey on underwriting conditions over the period of the crisis. Figures 6 and 7 show that beginning in 2007 and continuing through 2009, banks significantly tightened credit standards to consumer and commercial borrowers.

Figure 6. Bank Underwriting Trends – Consumer Loans



Source: Federal Reserve 2011 Underwriting Survey.

Figure 7. Bank Underwriting Trends – Commercial Loans



Source: Federal Reserve 2011 Underwriting Survey.

Proposed Changes to Liquidity Requirements to Reduce Individual Firm Loss of Liquidity and Market Contagion During Times of Financial Crisis

In the response to the recent crisis, efforts to preempt a future liquidity crisis have emerged in such proposals as the introduction of two liquidity ratios as part of the proposed Basel III capital rules. The Liquidity Coverage Ratio is designed to ensure adequate short-term (30-days) liquidity for banks. Specifically, the ratio is defined as the "stock of high quality liquid assets" divided by "net cash outflows over a 30-day time period." The ratio cannot fall below 100%. Included in the determination of cash outflows during a liquidity stress scenario are multiple rating downgrades of the firm, a significant run-off in retail deposits, loss of unsecured wholesale funding sources and increases in market volatilities of assets such that they trigger posting of additional collateral and or haircuts, among other actions. This liquidity ratio requirement is proposed to become effective starting in January 2015.

The second ratio, "Net Stable Funding" is designed to ensure ample liquidity over an extended period of time (i.e., over 1 year). The numerator of the ratio is computed using bank capital, preferred stock with a maturity greater than 1 year, and liabilities over 1 year multiplied against certain weights for the stability of the funding (referred to as ASF factors). The denominator is defined to be the sum of assets held by the bank including off-balance sheet equivalent items multiplied by specific factors designating the quality of stable required funding (RSF factors). As in the Liquidity Coverage ratio, the Net Stable Funding ratio cannot be less than 100%. This liquidity ratio requirement is proposed to become effective starting in January 2018.

Research Studies

Various theories describing the provision of liquidity for financial institutions exist. Allen and Carletti present a model where customers provide a measure of liquidity to banks via deposits and that banks must carefully manage two kinds of liquidity risk; 1) a firm-specific risk associated with the withdrawal profile of depositors for the institution, and; 2) an aggregate liquidity exposure reflecting the systemic impacts to banks generally as market conditions amplify or reduce the demand for liquidity. Due to market imperfections, liquidity risks cannot be easily hedged away and hence inefficiencies in the provision of liquidity occur, which give rise to such conditions as "cash-in-the-market-pricing." This phenomenon can greatly affect even high quality assets at times when liquidity is constrained causing the prices of these assets to fall well below their intrinsic values. This can lead to other major negative effects on markets such as "financial fragility" where small shocks amplify declines in asset prices as well as contagion effects as was evident during the crisis.

Allen and Carletti examine the evidence for why markets for interbank lending during the 2007-2009 period contracted so much. Their research reveals that rather than banks being unwilling to lend to other banks, banks engaged in liquidity hoarding. Based on this finding, Allen and Carletti believe that the role of the interbank markets is to provide a mechanism to address bank-specific liquidity risks and that, if under conditions that prevailed in 2007-2009, banks become concerned about the aggregate liquidity risk exposure in markets generally, they will increase their liquidity levels and hence address their firm-specific risk so that contractions in interbank markets impose little overall risk to their financial stability.

Berger and Bouwman provide additional insight into the role of liquidity on financial markets over a number of financial crises.[19] In this study the authors examined bank data over a period

19 Allen Berger and Christa Bouwman, "Financial Crises and Bank Liquidity Creation," white paper, October 2008.

from 1984-2008, developing a measure of liquidity creation for banks. Using this measure, they analyzed the changes in aggregate liquidity during financial crises. They found that financial crises are typically preceded by increases in aggregate liquidity, which during the 2007-2009 crisis may have been fed by a relaxation in credit standards. This finding, they suggest, might reverse the direction of causality between liquidity creation and financial fragility. Typically, it is theorized that financial fragility would require banks to raise liquidity levels, but in the case of the findings above the authors believe that abnormally high levels of liquidity, such as preceded the recent financial crisis, may have been a precursor to financial fragility. They also found that while the levels of liquidity declined somewhat during the crisis they remained at levels abnormally high relative to historical levels.

Implications of Research for Proposed Changes in Liquidity Requirements

What do the findings of these studies mean for reforms such as the Basel liquidity ratios? Requiring high minimum levels of short- and longer-term liquidity may introduce unnecessary constraints on the efficient allocation of bank resources in normal times and may be of little help in times of stress. Berger and Bouwman's findings suggest that bank liquidity has some procyclical-like features to it -- building up to abnormally high levels preceding a banking crisis, not as a precautionary measure but in direct response to behaviors that are feeding the development of systemic stress, and then declining during the crisis as lending activity plummets. These empirical findings suggest that liquidity can amplify lending activity during the growth part of a business cycle and contribute to contractions in lending as the boom turns to bust.

Although requiring higher minimum liquidity levels throughout the entirety of the economic cycle may reduce the consequences of crisis-induced hoarding, such a benefit is far from clear or proven. Moreover, the constraint that high liquidity requirements impose on economic growth during much of the cycle may more than offset any potential benefit during times of stress. It would seem that better policy would be to use supervisory intervention more effectively to dampen or control behaviors that foster financial stress and, failing that, for the lender of last resort (Federal Reserve) to intervene rapidly and to massively defuse contagion when crisis erupts. This is what the Federal Reserve did during 2007-2009 and with the benefit of time most give the Federal Reserve high marks for doing so effectively.

Reaction of Financial Services Firms to Basel III Liquidity Proposal

The American Banker has reported that Joe Bonocore, corporate treasurer of JPMorgan Chase, believes that if the Liquidity Coverage Ratio is not revised "… there will be lower extensions of credit, less diversified investment portfolios, significantly lower net interest margin and much higher long-term debt. All of that will hurt consumers and the economy."[20]

20 Donna Borak, "New Fight Brewing Over Basel III, This Time Over Liquidity Requirements", American Banker, June 2, 2011.

DEPOSIT INSURANCE PREMIUMS

The financial crisis led to a surge in the number of problem banks and failed institutions since 2008 as shown in Table 2. In turn, the FDIC Bank Insurance Fund (BIF) came under enormous pressure as its reserves from deposit premiums of member depository institutions were depleted in resolving failing banks. The FDIC is required by law to charge deposit insurance premiums based upon risk and to achieve a target reserve level of the BIF within certain time parameters. Based on amendments incorporated in the Dodd-Frank Act (DFA), the target level of reserves is set at "not less than" 1.35% of insured bank deposits with a date of September 30, 2020 to achieve that target level. The FDIC, through a rule, may set a higher target ratio (DFA repealed the 1.50% cap). When the target level of the BIF is met or exceeded, the FDIC is still required to charge insurance premiums according to risk, but may also remit dividends to insured institutions. DFA also authorized the FDIC to suspend or limit the payment of dividends if it determines that by so doing it will be able to reduce the potential procyclicality of deposit insurance assessments. In addition, DFA changed the deposit insurance assessment base from total deposits to total assets less tangible equity. The change in the assessment base had the effect of shifting the overall burden of deposit insurance assessment to larger financial institutions, which tend to be funded to a greater extent with non-deposit liabilities.

Table 2. Failed and Problem Banks – 2005-2010

Failed Banks	2010	2009	2008	2007	2006	2005
Number of Firms	127	235	25	3	0	0
Total Assets	$ 83,282	$ 104,665	$ 169,709	$ 371,945	$ -	$ -
Problem Banks						
Number of Firms	860	1254	252	76	50	52
Total Assets	$ 379,230	$ 748,713	$ 159,405	$ 22,189	$ 8,265	$ 6,607

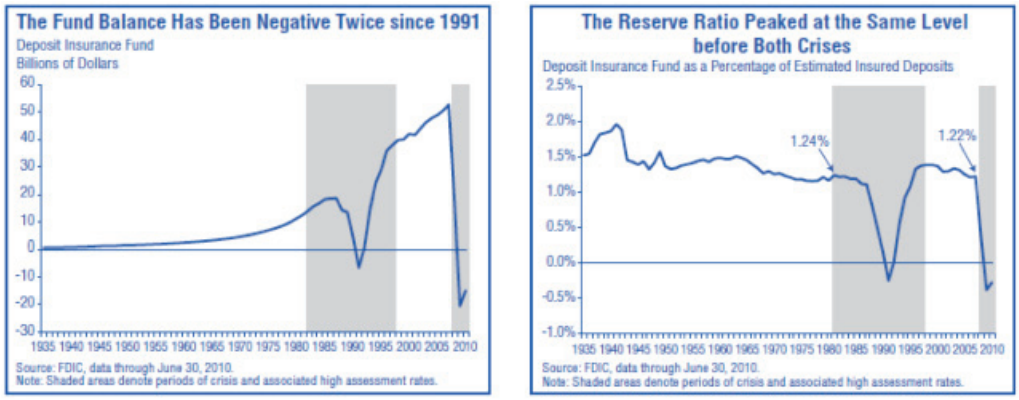
Source: FDIC Quarterly, Vol. 4, No. 4, 2010

Procyclicality of Deposit Insurance Assessments

Prior to the DFA amendments, deposit insurance premiums were procyclical, falling during good economic times when few bank failures occurred and rising abruptly during times of crisis. This is evident from Figures 8 and 9. During the financial crisis of 2007-2009 and the thrift crisis of the late 1980's and early 1990's, the BIF reserve dropped precipitously. Note that during and following the recent financial crisis, while the BIF had ample liquidity, the accounting value of the reserve was negative and dipped to its lowest point since its creation in 1935. Also note that the reserve ratio appeared to be stable at a high level right before each of those two crises.

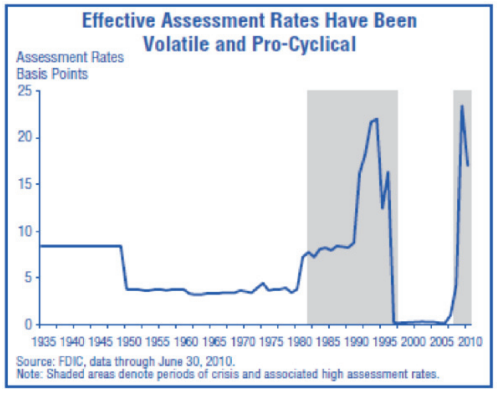
Finally, to make the point regarding procyclicality, Figure 9 shows the trend in deposit insurance premiums for banks over time with premiums being very low prior to the crises and then spiking during and after both crises. Increases in deposit insurance premiums have occurred at the same time as increases in loan loss provisions, which has placed additional pressure on insured banks by reducing earnings, weakening capital and siphoning off funds that otherwise could have been deployed to lending activity.

Figure 8. Bank Insurance Fund Reserve Balance and Ratio: 1935-2010



Source: FDIC Quarterly, 2011

Figure 9. Deposit Premium Trends: 1935-2010



Source: FDIC Quarterly, 2011.

Positive Correlation Among Procyclical Rules, Policies and Governing Mechanisms Amplifies Their Combined Adverse Effects

Thus far, this study has examined a number of procyclical policies and practices in isolation from each other; however, because most of these policies and practices are positively correlated their combined effect would simply amplify the degree of procyclicality in the economy. Pennacchi realized this in studying the effects of capital regulation and deposit insurance from the standpoint of their inherent procyclicality.21 Pennacchi was interested in understanding whether other factors such as deposit insurance exacerbate the tendency for procyclicality of capital standards. Specifically, he argued that a system of risk-based deposit insurance premiums that reflects the long-term average of contracts would improve the impact of combined bank regulations by reducing distortions in regulation from subsidies to banks. In an earlier study of deposit insurance, Pennacchi also found that during an economic downturn, banks reduced deposit levels in response to higher premiums which constrains a bank's ability to lend.22 The change in the assessment base from total deposits to total assets less tangible equity may amplify this impact in the future because non-deposit funding, which was not impacted in the past by changes in insurance rates, will now be impacted in the same way that deposit funding is.

Proposals to Reduce the Procyclicality of Deposit Insurance Premiums

A number of proposals to address the issue of deposit insurance procyclicality have appeared over time including one by Pennacchi where premiums would be based off of a long-term moving average of an estimate of future FDIC bank failure losses (Note that none of the proposals were incorporated in the DFA amendments; however, the FDIC, within the context of its discretion to manage dividends, could adopt or modify one of the proposals). With overlapping premium contracts repriced on a regular basis, volatility in premium assessments is reduced. Critical to this approach is the estimation of an insured bank's risk-neutral default rate. In Pennacchi's analysis this is based off of each bank's market value of assets-to-liabilities ratio as well as the standard deviations of the asset-liability ratio. In a statistical analysis of a sample of banks over the 1987-1996 period, Pennacchi found that the long-term moving average method smoothed out the premium fluctuations for banks but at higher premium levels in general over time to compensate the FDIC for systemic risk. Implementing such an approach, Pennacchi argues, would mitigate the procyclical effects of capital requirements.

More recently, work by Jarrow, Madan and Unal provides an alternative countercyclical approach to pricing deposit insurance contracts.23 Their approach features a risk-based pricing scheme based off of a simulated bank loss distribution used to generate a value-at-risk measure for pricing purposes. The authors demonstrate that this approach reduces premium volatility over time but at higher premium levels, as found by Pennacchi.

Dodd-Frank Act Amendments and FDIC Discretion

Over time the FDIC has introduced a form of risk-based pricing into deposit premium assessments. DFA changes the assessment base for deposit insurance to be defined by consolidated average total assets less average tangible equity instead of total deposits as the assessment base had been defined. This change increases the assessment base from what it was. Table 3 shows the revised insurance

21 George G. Pennacchi, "Risk-Based Capital Standards, Deposit Insurance and Procyclicality," Journal of Financial Intermediation, Vol. 14, 2005, pp. 432-465.

22 George G. Pennacchi, "The Effects of Setting Deposit Insurance Premiums to Target Insurance Fund Reserves," Journal Financial Services Research. Vol. 16 (2/3), 1999, pp. 153–180.

23 Robert Jarrow, Dilap Madan, and Haluk Unal, "Designing Countercyclical and Risk Based Aggregate Deposit Insurance Premia," White paper, Kakamura Corporation, 2006.

pricing matrix. Premiums are a function of the risk rating of the bank (bank supervisory CAMELs rating system) with adjustments for unsecured debt and brokered deposits.

The FDIC has studied the procyclicality issue in some detail with the objective of developing a strategy that would reduce procyclicality, maintain a positive fund level during bank crises and maintain steady premiums over time. The analysis simulated the effects on the fund over the last 60 years under different combinations of assessments and dividends that would achieve the above policy objectives.24 In order to meet the objective that the fund be nonnegative during crises, the reserve ratio over time would have to rise to more than 2%. A positive outcome from the financial crisis is the attention given to FDIC assessments and the need to design a new structure that is risk-based and reduces the procyclicality of the existing deposit insurance scheme.

It is much too early to speculate whether, and to what extent, the DFA deposit insurance amendments will moderate the historical procyclicality of deposit insurance assessments. Deposit insurance assessments will remain extremely high for many years until the minimum target ratio of 1.35%, or potentially higher than that in the FDIC's discretion – e.g., 2.0% as indicated by the FDIC's study--is achieved. The FDIC has not yet articulated how it might structure dividend payments, once the target ratio is reached, to mitigate deposit insurance premium procyclicality. As the FDIC's study suggests, one method to achieve cyclical neutrality for insurance assessments would be to let the target ratio climb to a level far above the statutory target of 1.35% during times of limited failures of insured institutions. Whether this will be politically feasible remains to be seen. Alternatively, the FDIC could pursue a pricing methodology that permits the target ratio to be moderately negative at the cycle low point. In any event, it seems probable that the average target ratio over time will drift up from the level it has averaged in the past, and to the extent that this occurs, it will limit resources available to extend credit and foster economic growth.

Empirical studies support the use of long-term actuarially fair premiums that do not distort market signals regarding bank performance and lending activity during boom and bust periods. Implementation of such arrangements would improve the assessment structure going forward; however, developing an accurate prospective view of losses to the BIF is likely to pose challenges to setting stable and fair deposit premiums.

Table 3. Total Initial and Base Assessment Rates

	Risk Category I	Risk Category II	Risk Category III	Risk Category IV	Large and Highly Complex Institutions
Initial base assessment rate	5–9	14	23	35	5–35
Unsecured debt adjustment**	-4.5–0	-5–0	-5–0	-5–0	-5–0
Brokered deposit adjustment	—	0–10	0–10	0–10	0–10
Total base assessment rate	2.5–9	9-24	18-33	30-45	2.5–45

* Total base assessment rates do not include the proposed depository institution debt adjustment. As under current rules, the FDIC would be able to adjust rates uniformly by up to 3 basis points above or below the base assessment rates without seeking public notice and comment.
** The unsecured debt adjustment could not exceed the lesser of 5 basis points or 50 percent of an institution's initial base assessment rate (IBAR); thus for example, an institution with an IBAR of 5 basis points would have a maximum unsecured debt adjustment 2.5 basis points and could not have a total base assessment rate lower than 2.5 basis points.

Source: FDIC Quarterly, 2011

24 Lee K. Davidson and Ashley M. Carreon, "Toward a Long-term Strategy for Deposit Insurance Fund Management, feature article, FDIC Quarterly, Vol. 4, Issue 4, 2010, pp. 29-37.

FAIR VALUE ACCOUNTING RULES – PROCYCLICALITY IMPACTS AND POTENTIAL REMEDIES

Considerable debate occurred during and following the financial crisis as to the role fair value accounting standards (FVA) played in accentuating the downturn. Over the course of the crisis, financial services firms experienced significant fluctuations in the valuations of portions of their balance sheets which, to varying degrees, took their toll on the accounting valuation of equity capital. For example, Shaffer estimated that the change in Tier 1 capital for 14 of the largest banks, as a result of fair value realized and unrealized losses or gains in 2008, ranged between +9.1% to -21.8% with 10 of the 14 firms experiencing losses.[25]

Fair Value Diverges from Probable Long-Term Realizable Value in Illiquid Distressed Markets

Of interest to researchers is the degree to which FVA introduced procyclical effects and amplified cyclical fluctuations in the economy. Specifically, accounting standards requiring highly complex financial instruments, such as collateralized debt obligations and credit default swaps among others, be valued using market prices derived from transactions in illiquid markets could further weaken already paralyzed financial markets. The reason is that when markets become illiquid, market prices for a period of time tend to be less, and potentially significantly less, than intrinsic value (the discounted present value which a solvent investor could reasonably expect to receive by holding a financial instrument to maturity), which would prevail in a normal market in which buyers and sellers are not influenced by liquidity or other extraneous factors.

Forced sales in distressed markets can lead to a spiraling-down effect in market prices. Declining prices can trigger additional downward pressure on market prices by precipitating margin calls and risk management policy forced sale requirements, as collateral values and risk grades fall.[26] Moreover, as Allen and Carletti observe, falling asset values stemming from FVA erode capital and may force asset sales to reduce balance sheet size and maintain acceptable regulatory capital ratios. However, some researchers, such as Shaffer, believe the link between FVA and capital erosion to be weak.

Impacts of Fair Value Accounting in Benign Economic Times

Although the negative consequences of FVA in exacerbating the 2007-2009 financial crisis are clear, this does not mean that FVA necessarily leads to adverse policy effects in more benign economic times when markets are behaving normally. Research, such as that by Allen and Carletti, suggests that FVA, had it been in effect, might have mitigated the impact of the thrift crisis in the late 1980's and early 1990's because FVA would have provided early warning indicators of deteriorating values.

However, FVA can have procyclical impacts in nurturing the expansion of asset bubbles. When investors are engaged in chasing yield, as they always are during the expansion phase of bubbles, credit spreads tighten and the market values of higher risk assets will expand relative to those of lower risk assets. To the extent that such gains in value flow through into the value of equity, they can have the effect of increasing the leveraging capacity of a financial institution. Leveraging, in turn, creates

25 Sanders Shaffer, "Fair Value Accounting: Villain or Innocent Victim: Exploring the Links Between Fair Value Accounting, Bank Regulatory Capital and the Financial Crisis," Federal Reserve Bank of Boston, Working Paper No. QAU10-01, January 31, 2010, p. 14.

26 Alicia Novoa, Jody Scarlata and Jose Sole, Procyclicality and Fair Value Accounting, IMF Working Paper, WP/09/39, March 2009, p. 3.

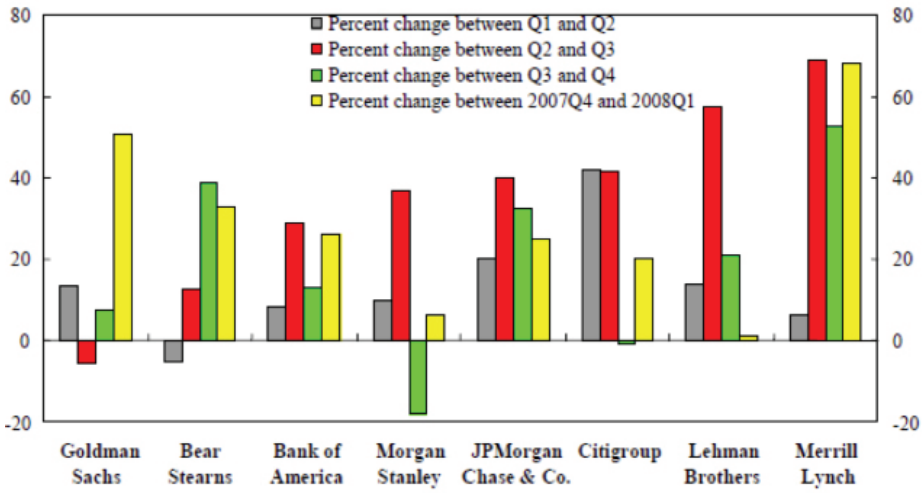
additional demand for risk assets and can lead to a further narrowing in credit spreads. This spiral is the reverse of the one that occurs in distressed markets, but has a similar impact of amplifying the cycle.

FASB Fair Value Accounting Rules – FAS 157 and Levels 1, 2 and 3

FASB applies different accounting valuation treatment for bank assets and liabilities depending on whether they are held-for-investment (HFI), available-for-sale (AFS), held for trading purposes, or are derivative instruments. These designations are a function of management's intended investment horizon and strategy for the asset or liability in question. In the case of HFI investments, which are intended to be held to maturity, they are valued at their amortized cost. However, HFI investments can be subject to fair value adjustments through the mechanism of other-than-temporary-impairment (OTTI) write-down adjustments required by FAS 115 when the fair value of such assets is likely to remain below their recorded cost. Some degree of subjectivity in determining this outcome exists in accounting practice, making assessments somewhat murky and hence imposing additional uncertainty into the valuation process.

In the case of AFS assets and liabilities, generally accepted accounting principles, and FAS 157 more specifically, define fair value to be the price at which a transaction for the instrument in question could be exchanged among parties. Fair value assessment rules then follow a tiered system comprising three levels depending on the level of information about the instrument and market liquidity. Instruments valued under Level 1 methods are those where market price information is readily available. Level 2 instruments are valued using market prices from closely associated instruments or using valuation models with observable inputs. Level 3 instruments are valued using a mark-to-model methodology with unobservable inputs. In the case of structured credit products, such as credit default swaps (CDS) and collateralized debt obligations (CDOs), where their nonstandard features result in little price discovery through active markets, Level 3 FVA treatment is typically applied. To gain a better sense of the impacts on financial services firms from Level 1, 2 and 3 FVA, Novoa et al. provide the following comparisons in Figures 10-12.

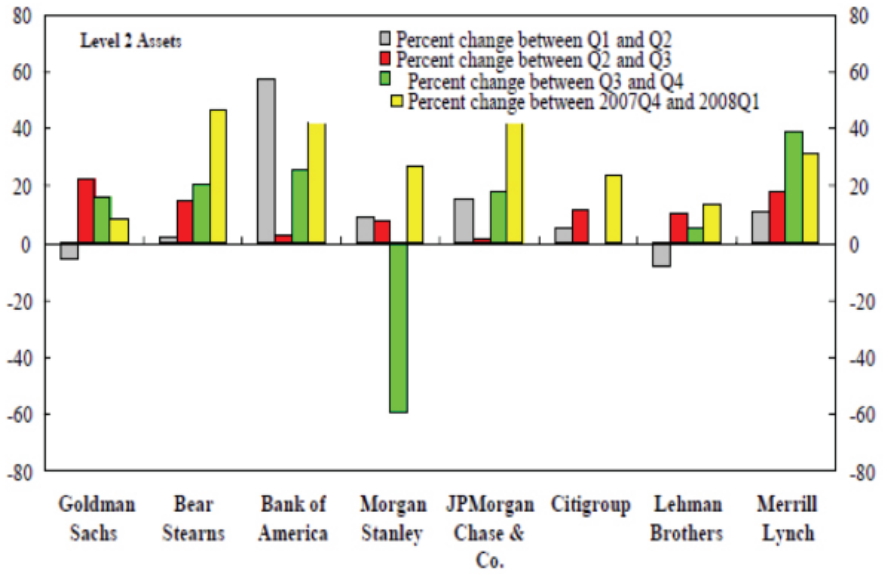
Figure 10. Change in Level 1 Assets: Q1/2007-Q1/2008



Source: Novoa et al.

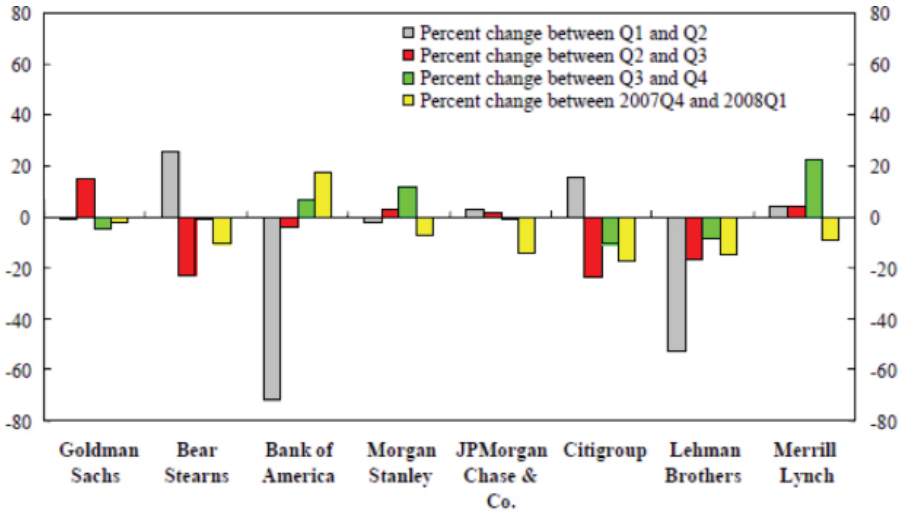
During the financial crisis period of 2007-2009, both Level 1 and Level 2 assets for the most part experienced positive quarter over quarter changes with the notable exception of Morgan Stanley. By contrast, over the same timeframe Level 3 assets experienced significant declines in value. Bank of America and Lehman posted massive 1st quarter 2007 declines of approximately 70% and 50%, respectively. Not surprisingly, as Novoa et al. note, (shown in Figure 13) most bank balance sheets are concentrated in Level 2 both for the flexibility offered in Level 2 valuation as well as to avoid the more difficult to value Level 3 instruments.

Figure 11. Change in Level 2 Assets: Q1/2007-Q1/2008



Source: Novoa et al.

Figure 12. Change in Level 3 Assets: Q1/2007-Q1/2008

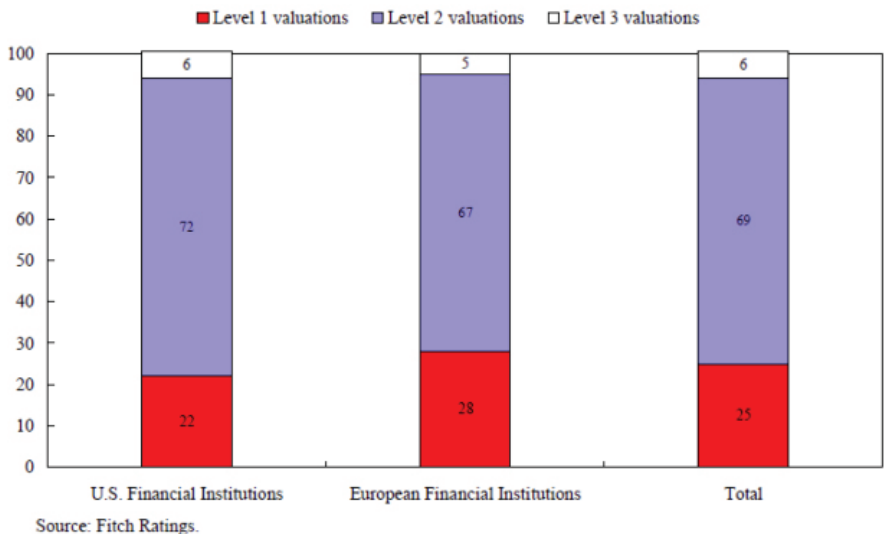


Source: Novoa et al.

Proposals to Moderate Procyclical Effects of Fair Value Accounting

A number of alternatives to addressing concerns over FVA procyclicality have been proposed. These include reclassification between AFS and HFI investments, elimination of the bifurcated valuation treatment of AFS and HFI investments by applying FVA to all instruments, reliance on consensus pricing services, smoothing techniques on asset prices, and circuit breakers, among others. Reclassification of trading assets to an HFI designation would reduce potential volatility in valuations during a crisis but could work against a financial services firm once the economic climate improves and markets stabilize.[27] Also, an instrument reclassified to HFI may still wind up subject to OTTI treatment. Consensus pricing has been used in other applications where price discovery is vague such as mortgage servicing rights. Such an approach could then apply to Level 2 valuation methods for FVA. An issue with this approach is that in markets with no real price information, a wide divergence in pricing opinions could emerge, rendering the exercise of limited value should the composite price not be deemed a reasonable reflection of market price.

Figure 13. Level 1, 2 and 3 Allocations of US and Foreign Banks (Percent)



Source: Novoa et al.

Another alternative approach to mitigating FVA balance sheet valuation volatility would be to adjust asset prices under FVA using a long-term average price assumption or to apply a circuit breaker that limits the fall in value associated with the FVA assessment. A problem with either of these approaches is that they may diminish the information regarding the financial health of the institution by artificially keeping capital above FVA-implied levels.

27 Novoa et al., p. 13.

Research Studies

Some simulations of FVA impacts on bank balance sheets and capital were conducted by Novoa et al. The exercise tested FVA over a variety of economic conditions; a boom and bust cycle in equities, housing, debt securities and a widening of funding spreads. The simulation supported three general results: strong capital levels help banks ride out downturns in the economy; applying FVA to a broader set of liabilities, as well as to assets, helped moderate the procyclical effects of FVA; and FVA amplified bank capital volatility during a liquidity crunch. This latter finding highlights our earlier points that aggregate procyclicality effects are compounded by the interaction between individual policies and practices that, on their own result, are inherently procyclical. Further, the Novoa et al. showed that consistent with most views, FVA applied during normal market conditions has a far more muted impact on balance sheet volatility than during the boom or bust part of the cycle. Finally, their simulations of FVA alternatives, such as smoothing and circuit breakers, had the intended effect of lessening the volatility of balance sheets and hence reduced the potential to trigger forced asset sales during distress periods. However, they also showed that such approaches greatly decrease the transparency of the financial condition of the firm to regulators and investors.

Recent Developments

One of the criticisms of FVA, particularly pertinent for financial institutions, was that some assets, such as loans retained on the balance sheet, and some liabilities, such as deposits, are accounted for on the basis of amortized cost and not fair value resulting in procyclical amplifications in the value of equity because the amount of FVA assets generally greatly exceeds the amount of FVA liabilities on a typical balance sheet. In response, FASB proposed extending FVA rules to all financial assets and liabilities. But following a deluge of criticism about the difficulties of valuing such assets and liabilities on a consistent and reliable basis, similar to the difficulties inherent in valuing Level 3 assets pursuant to FAS 157, FASB withdrew the proposal.

However, a significant change was made in the application of FAS 115 stipulating OTTI valuation rules. In a modification adopted in April 2009, FASB recognized that for certain HFI instruments whose overall credit rating had deteriorated, changes in valuation stemming from changes in credit quality were to be determined based on estimates of default probability combined with estimates of loss given default over the remaining life of the financial instrument. Losses estimated from applying this credit-based methodology were to be recorded as realized and thus were subtracted from revenues and reduced retained equity. The remaining difference between book and market value was to be recognized as a negative adjustment to comprehensive income. This revision, in effect, recognized that in times of distress, market values may not be reasonable approximations of ultimate realizable value for HFI financial instruments. Because much of the adjustment in value is limited to an adjustment in comprehensive income, a financial institution's book equity capital is not depleted to as great an extent during times of financial distress and thus it is less likely to be forced to sell assets into illiquid markets. The change in OTTI accounting will reduce to some extent the procyclical consequences of FVA going forward

Policy Implications

FVA contributed to the current financial crisis by magnifying the volatility of valuations. These effects were amplified by margin calls triggered by declines in the fair value of financial instruments; by risk management requirements which forced sales and even by short-term compensation structures tied to the vagaries of fair value estimates. Abandoning FVA entirely is not an appropriate policy prescription in light of FVA's ability to provide early detection and hence strong signals to regulators and the market regarding firm performance. A more plausible approach would be to revisit margin, risk management and compensation arrangements with the objective of moderating the actions taken in response to FVA assessment during periods of acute financial distress. Further, FVA should strengthen disclosure and reporting of assumptions and analytical methods in an effort to ensure timely and more transparent information which could in turn lessen market uncertainty during crises.

CONCLUSIONS AND POLICY RECOMMENDATIONS

This paper focused on describing and understanding the procyclical impacts of five major rules, policies and mechanisms that govern financial markets, financial institutions and the conduct of financial activity. The financial crisis of 2007-2009 led to a major contraction of credit that has yet to return to normal. The study focused on credit loss reserving rules and supervisory implementation of regulatory policy, regulatory capital requirements, liquidity requirements, deposit insurance premiums, and fair value accounting treatment of assets and liabilities.

The paper then reviewed a number of theoretical and empirical studies on each of these policies and practices corroborating that each has inherently procyclical impacts. Moreover, these policies and practices collectively contributed to amplifying the severity of the financial crisis. It follows that if these policies and practices were designed and administered to incorporate countercyclical properties, the severity of the financial crisis might well have been diminished, and perhaps quite substantially.

Policymakers are cognizant of many of the procyclical impacts of rules, policies and governance mechanisms that prevailed prior to the financial crisis and contributed to its severity and have either adopted reforms or are considering adjustments. However, policymakers, in their zeal to prevent a crisis of similar magnitude from occurring again in the future, are also in the process of adopting reforms, or have already adopted reforms, that contain the potential to create new procyclical consequences, which could have unintended and negative consequences for innovation and economic growth. Accordingly, we offer the following recommendations for policymakers to consider to reduce the historical procyclicality of rules, policies and governance mechanisms and to avoid creating new and adverse procyclical impacts, as they continue to develop reforms in response to the 2007-2009 financial crisis.

Policy Recommendations

Coordination. ***Regulatory and rule-setting bodies should develop coordinated and comprehensive strategies that address and mitigate procyclical impacts among these five policies and practices.*** From the analysis, issues relating to one policy or practice can affect others as is the case with fair value accounting and bank capital requirements. Another example of interconnectedness is deposit insurance premiums and capital requirements. The study demonstrates that a countercyclical deposit insurance strategy would tend to dampen the procyclical effects of oscillations in bank regulatory capital. The Dodd-Frank Act (DFA) created the Financial Stability Oversight Council (FSOC), which is responsible for coordinating regulatory policies and practices involving systemic risk. It is the appropriate body to assume responsibility for encouraging and driving development of countercyclical policies and practices, for coordinating actions to mitigate the development and expansion of significant imbalances, and for coordinating development and implementation of resolution mechanisms during times of crisis.

Accountability. ***Regulatory and rule setting bodies should be accountable for developing rules, policies and governance mechanisms and taking actions designed and intended to mitigate the potential for procyclical impacts to occur and exacerbate financial crises.*** Regulatory and rule setting bodies tend to approach executing their charter mandates in a narrow fashion with limited regard to the potential broader economic and financial markets impacts. The FSOC should provide a forum for identifying and examining the potential consequences of market developments and emerging risks and individual regulatory and rule setting bodies, based on such information, should develop timely responses and

coordinate their responses with other bodies. FSOC could serve a role in assuring such coordination occurs.

Loan Loss Accounting Rules. ***The Financial Accounting Standards Board should continue to work with the International Accounting Standards Board to develop loss reserving rules based an expected loss methodology with the objective of mitigating procyclical impacts of current loss reserving rules.*** This will require dealing with the FAS 5, which is based on an incurred loss methodology and which has contributed significantly to the procyclicality of loss reserving. The objective should be to develop a reasonable set of principles that guides loss reserving in a way that dampens the current tendency of reserves to fall during times of good credit performance and rise during times of poor performance. These principles should include recognition that loss reserving should be based upon expected rather than incurred losses, elimination of the probable loss requirement and incorporation of a loss forecast methodology which is reasonably predictable. In essence, the principles need to promote more forward looks at credit conditions so that future conditions, both improving and deteriorating, are considered in determining appropriate levels of loss reserving.

Supervisory Implementation of Loss Provisioning Regulatory Policy.

Regulatory agencies and accounting standards setting bodies should coordinate loss reserving accounting rules and regulatory guidance. Accounting standards setting bodies should draw on the experience of regulatory agencies in developing practical accounting rules for loss reserving that mitigate the potential for procyclical consequences.

Regulatory agencies should implement countercyclical examination and supervisory procedures. While regulators of financial services firms will be happier if revised accounting principles permit higher levels of loan loss reserves to be set aside during the favorable part of the cycle, they need to do their part in facilitating an effective countercyclical policy by establishing procedures to avoid the historical tendency to require institutions to over reserve during challenging economic times. The Government Accountability Office, when it conducts audits of failed institutions, needs to take into consideration the reasonableness of supervisory judgments in the context of implementing an overarching countercyclical loan loss reserving policy.

Regulatory Capital Requirements.

Regulators should study the potential consequences of the proposed Basel III capital requirements for lending and economic growth during the phased implementation period. Basel II contributed to the 2007-2009 financial crisis. First, its complexity resulted in both financial institutions and regulators focusing on a myriad of minute details and losing sight of potential overall considerations in a dynamic economy. Second, as the crisis made painfully clear, the notion of economic capital determined on an individual institution basis resulted in the appearance of sufficient capital which turned out to be woefully insufficient in an economy fraught with significant and widespread systemic risks. One lesson is that more capital should be required and the Basel III proposals do so. Another lesson is that complexity is not necessarily a virtue. Finite risk determinations may or may not turn out to be reasonable, but once in place will without question influence behavior. This same risk remains in the Basel III proposal. In addition, it is possible, that the new requirements might tip the balance from requiring too little capital to requiring too much. Because Basel III provides for an extended phase-in period, potential severe negative consequences for lending and economic growth stemming from requiring too much capital will not be evident for years. Such potential consequences need to be evaluated and the results of such evaluations should guide potential revision of both the capital requirements and the phase-in period.

The evaluation should be conducted not just in terms of "quantitative impact studies" for individual institutions, but also in terms of system-wide impacts.

The Basel Committee on Banking Supervision and US regulators should not impose a countercyclical capital buffer as part of the Basel III guidelines until a concrete methodology is developed for determining the appropriate size and the conditions that should trigger implementation and phase-in of a capital buffer; also, further analysis should be conducted on the benefits and consequences of implementing such a requirement to determine whether it would likely have a countercyclical impact or whether it would have other unintended consequences. At this point in time, the proposed countercyclical capital buffer has not been sufficiently tested to ensure that it would operate as intended in all parts of the economic cycle.

Explore the efficacy of developing forms of contingent equity capital or "bail-in" debt which would automatically convert into common equity if a pre-determined triggering event occurred. The conversion trigger on "bail-in" debt would probably occur in very stressful circumstances while conversion of contingent equity capital could occur if the common equity share price fell below a pre-determined price.[28] Requiring high capital ratios to mitigate risks of low probability, high impact events can constrain lending and economic growth. Both the countercyclical capital buffer and supplemental equity capital requirements for systemically important financial institutions (SIFI) would likely result in such an outcome. Forms of contingent capital, which can be automatically converted to equity capital in times of severe financial market and economic distress, would dampen the negative consequences of high capital ratios during normal times. Furthermore, while financial institutions are concerned about the high cost of various forms of continent capital and "bail-in" debt, that cost might be less than being required to carry higher equity capital levels throughout the cycle. U.S. regulators are studying the possible use of various forms of contingent equity capital and "bail-in" debt.

Liquidity Requirements. ***The Basel Committee on Banking Supervision and U.S. regulators should evaluate potential significant unintended consequences of the two proposed required liquidity ratios and should either revise the ratios to mitigate such consequences or should eliminate explicit requirements and replace them with supervisory guidelines and rely on central bank liquidity facilities in times of extreme illiquidity.*** While an adequate level of liquidity and ready access to liquidity is a best practice to enable financial services companies to operate successfully over a variety of economic and financial market conditions, requiring sufficient liquidity to weather an extreme event of systemic financial markets distress could unreasonably limit lending and economic growth. An analysis of the potential impacts of both liquidity ratios should be conducted during the "observation period" and prior to the phase-in of the requirements. The Basel Committee on Banking Supervision has announced a willingness to consider evidence and analysis and to consider revising the proposed liquidity requirements based on that evidence and analysis. Simultaneously, alternatives to requiring compliance with explicitly defined liquidity, such as supervisory guidelines, should be considered. Authorities should not structure liquidity ratio requirements with the intent to have them replace the historic role of central banks as lenders of last resort during a financial markets liquidity crisis.

Deposit Insurance Premiums. ***The FDIC should utilize the discretion provided by the Dodd-Frank Act to propose and then implement a countercyclical deposit insurance pricing mechanism that stabilizes premiums charged over the entirety of the cycle.*** A countercyclical pricing

28 Editor at Large, "Think the Basel III Rules Are Sewn Up? Think Again, American Banker, February 3, 2011.

mechanism needs to price for risks inherent in a covered financial institution's assets, liabilities and management strategies while pricing premiums collectively for all covered institutions in a way that stabilizes the aggregate impact over the cycle. Some variation of Pennacchi's actuarial model using a moving long-term average pricing scheme may prove to be most tractable.

Fair Value Accounting Rules.

The U.S. Financial Accounting Standards Board (FASB) and the International Accounting Standards Board (IASB) should continue to work toward harmonizing US and international fair value accounting (FVA) principles and in doing so should be attentive to mitigating potential procyclical impacts.

Fair value accounting (FVA) principles should be revised to avoid contributing to amplification of financial crises. The fundamental FVA principle is that a financial instrument should be valued at the price that a willing buyer and seller agree upon. FVA rules have evolved over time to incorporate valuation methodologies that reflect the liquidity of markets and the adequacy of price discovery. Financial Accounting Standard 157 established three levels and specifies pricing approaches for each level. Level 1 pertains to highly liquid markets with ample trading in which no buyer or seller individually has the power to determine price. However, during the recent financial crisis, forced distressed selling of Level 1 financial instruments depressed the values of many such assets below their long-term intrinsic recoverable value. Unfortunately, the arbitrariness of the FVA accounting rule forced financial instruments to be marked to market and the resulting decline in value precipitated additional forced sales and further downward pressure on prices. FVA accounting principles need to be revised to avoid prompting a negative chain reaction of declines in value leading to distressed sales which further depress prices below long-term intrinsic recoverable values. Application of revised principles could be reserved for periods of extreme financial market distress. Since such a determination would be judgmental, consideration should be given to empowering the Financial Stability Oversight Council (FSOC) and the Financial Accounting Standards Board (FASB) to make such a determination jointly.

FASB should consider whether revised accounting rules for determining other than temporary impairment (OTTI) for held for investment financial instruments (FAS 115) should be incorporated into FAS 157 for available for sale financial instruments.

In times of acute financial markets distress, FASB, FSOC and regulators of financial services companies should consider implementing actions that could lessen or decouple the link between FVA losses and margin calls and risk management practices that trigger forced asset sales based on FVA results. Perhaps, OTTI accounting rules could be invoked for financial instruments held for sale or trading and for derivatives when the FSOC and FASB agree that a financial crisis is likely or is in progress.

The recent financial crisis underscores the complex nature of rules, policies and financial governance mechanisms. Understanding how these policies and practices individually and collectively contributed to the crisis is important as a first step toward creating improved countercyclical policies and practices. Policymakers are cognizant of many of the procyclical impacts of rules, policies and governance mechanisms that prevailed prior to the financial crisis and contributed to its severity and have either adopted reforms or are considering adjustments. However, policymakers in their zeal to prevent a crisis of similar magnitude from occurring again in the future are also in the process of adopting reforms, or have already adopted reforms, that contain the potential to create new procyclical consequences. Moreover, there is a significant possibility that measures to limit and control risk-taking will have unintended and negative consequences for innovation and economic growth.

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