

12-1-2013

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Recommended Citation

Barrow, J. and Smalt, S. (2013). A Case for Banking Oversight Reform in Crisis Mitigation. *Economics, Management, and Financial Markets Journal*, 8(4), 2013.

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A CASE FOR BANKING OVERSIGHT REFORM IN CRISIS MITIGATION

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ABSTRACT. This paper reviews the key weaknesses in the banking system related to the 2007 global financial crisis and finds supervisory oversight and accountability underrepresented or missing in recommended solutions although they are a critical contributor to the problem. The paper purports: (1) focusing on the fundamental factors that attribute to the vulnerability of the banking system is a key component of a model for the mitigation of a financial crisis and; (2) the factors are interrelated; therefore, the model should be holistic. The analysis results in an integrative blueprint and includes a simple case study application. The findings of the application support the concept of “regulatory capture”, since regulators could and should have been able to identify problem institutions before the crisis and yet did not intervene. The application also showed how government bailout, as a strategy, could be successful in restoring a failing institution. The missing link in being able to mitigate a crisis is having effective oversight. Fortunately, the environment is more conducive for such reform, in the wake of crises.

JEL Codes: G01, G28

Keywords: financial crisis, systematic risk, mitigation, accountability, reform

1. Introduction

A review of the literature on factors that led to the 2007 Global Financial Crisis (2008 in the USA) reveals that those factors were known to academics and regulators, have existed for some time, and continue to exist despite regulatory efforts to the contrary (Lal, 2010; Poole, 2010a; Poole, 2010b; Scott 2010; Leondis, 2010; Ennis and Keister, 2010). Broadly, the types of crises have been classified as either (1) a micro crisis caused by poor bank-

ing practices, or (2) a macro crisis caused by sources external to the banking system (Klomp 2010). However, identifying the type of crisis seems to be the easy part, the more difficult challenge, going forward, is to correctly answer the question: What regulation is required to prevent either type of crisis from reoccurring?

The Basel Committee on Banking Supervision created by the central bank governors of the Group of Ten nations, other regulatory bodies, academics, and practitioners, are all fervently attempting to answer that question. Henry Kauffman, a renowned economist, and others, believe there are no quick fixes. However, he has identified, fragmentation of accountability, conflict of interest in supervision, and outsourcing of due diligence, as key missing elements in current discussions. These elements relate to ethical failures in the regulation and supervision of the banking system and not so much in the failure of institutions to meet regulatory requirements (Murphy, 2010; Kane, 2009; Singer, 2009; Sanjeev, 2007; McCormick, 2011, Haan and Osterloo, 2006).

This paper attempts to build a blueprint for the mitigation of future financial crises, by first identifying the key fundamental weaknesses in the banking system to include inadequate accountability and supervisory oversight as well as operating and systematic risks. Systematic risk is the risk that losses are not confined to a single institution, but can be transmitted or is capable of being transmitted to the financial system as a whole. This is significant because the effects of the failure of the banking system on the structure of markets are unpredictable and potentially catastrophic globally. The next section, which develops the blueprint, first analyzes the veracity of current recommended solutions, and then builds the recommended process by addressing and incorporating each weakness. The goal there is to identify a method to mitigate future crises using an inclusive, holistic approach. The next section provides a simple case study application of the blueprint, which proved quite instructive in confirming the validity of the process but also identifies a remaining concern. The final section contains the conclusions and thoughts for future research.

2. Key Weaknesses in the Banking System

The accountability and supervision variable is underrepresented in the literature with the current primary focus being on banking regulation related to managing operating and systematic risks. Upon reviewing the literature, and including both aspects of the need for regulatory reform, the fundamental weaknesses in the banking system can be classified into five broad categories: (1) suboptimal risk-taking incentives; (2) pro-cyclicality; (3) inter-

connectedness; (4) unmanaged systematic risk; and (5) inadequate accountability and supervisory oversight.

2.1 Suboptimal Risk-taking Incentives

Barrow and Horvitz (1993) describe how government plays a key role in the exacerbation of moral hazard problems within the banking system by:

- providing deposit insurance;
- acting as lender of last resort;
- bailing out institutions considered “*too big to fail*”; and
- failing to act upon known problems (forbearance) or by failing to observe/monitor adverse behavior

Moral hazard occurs when there is an absence of accountability for risky or incompetent behavior. Boyd (1999) argues that universal banking, where banks are permitted to make equity investments, extends the distortion of incentives caused by the moral hazards of agency theory to other sectors of the economy, and significantly amplifies the problem.

Current evidence of how the problem persists is explored by Ratnovski (2010) whose analysis finds that banks make suboptimal liquidity choices due to distortions created by government bailouts that are unavoidable in a systemic crisis. Another example, of the problem which still currently exists, is seen in Nier and Bauman (2006) who show how the lack of market discipline created by government intervention (or forbearance), results in excessive risk taking, and potential conflict of interest between the bank and its depositors, and subsequently resulting in the government providing deposit insurance and or bailouts.

2.2 Pro-cyclicality

Berger and Udell (2004) in assessing the pro-cyclicality of bank lending behavior found that lending often increases significantly during business cycle expansions, and then falls considerably during subsequent downturns, sometimes dramatically enough to be labeled a “credit crunch.” These changes in lending are generally more than proportional to the changes in economic activity, suggesting that they are changes in bank loan supply that tend to accentuate the business cycle. They also found that banks may take significantly more risks during the expansion, but these risks are revealed only later because it takes time for loan performance problems to appear. They buttressed their arguments further by quoting Federal Reserve Chairman Alan Greenspan as saying, “the worst loans are made at the top of the business cycle”, May 10, 2001. Chang and Chang’s (2013) research confirmed that

CEO's do indeed push for higher profits and of course higher bonuses during periods of growth and prosperity as expected relative to the moral hazards of agency theory. Allen and Saunders (2004) further find that the literature relating to pro-cyclical tendencies of banking shows how banking capital requirements along with monetary policy actually result in the amplification of exogenous shocks.

2.3 Interconnectedness

Mistrulli (2011) shows that, although interbank markets allow banks to cope with specific liquidity shocks, at the same time, they may represent a channel for contagion as a bank default may spread to other banks through interbank linkages. Interconnectedness exacerbates systematic risk whereby the failure of one significant institution, can cause or contribute to the failure of other significant institutions; and the possibility that one exogenous shock may cause or contribute to the failure of multiple significant financial institutions (Scott, 2010). Further, in evaluating global interconnectedness, Devereux and Sutherland (2011) found that while global financial integration in both bond and equity markets improved welfare, it generates high positive co-movement across countries, which magnifies the crisis.

2.4 Unmanaged Systematic Risk

Financial institutions play an integral role in the functioning of the economy, and are expected to be given proactive priority. However, historically, bank regulations tend to be passed in response to various crises rather than to prevent them from occurring (Barth et al. 2010; Holowecky et al. 2010). Despite the tremendous advances in financial risk measurement, experts and analysts alike, failed to predict the recent global financial crisis (Poole, 2010b).

A more concerning issue may not be the systems' inability to predict a financial crisis but its inability to prevent a financial crisis, even if it is predicted. Kane (2009) has outline a scenario whereby, in trying to meet regulatory capital requirements, institutions turn to private sources of capital, he calls *shadow entities*. These large investors can trigger a *silent run* and completely undermine the stability of a financial institution. These events fall under the radar of investors leaving regulators with little option but to bailout the affected institution(s) if deemed *too big to fail*. Unfortunately, as Ennis and Keister (2010) conclude, financial crises have a self-fulfilling component since banks' operating structure makes them susceptible to runs, and are therefore innately fragile.

2.5 Inadequate Accountability and Supervisory Oversight

Kane (2009) attributes the 2007 global crisis to the breakdown in incentives of regulators, supervisors, managers and investors to perform adequate due diligence over security investments. He also identifies, as a culprit, incentive conflicts that undermine the effectiveness of government supervision. In his view, undeterred, institutions would engineer assets, liabilities and hedging instruments, and ruthlessly exploit weaknesses in various jurisdictions. In short, the 2007 global crisis was a product of regulatory environment induced innovation that pushed business into unregulated areas. Regulators also, incorrectly outsourced the task of risk-assessment to credit agencies that did not have the appropriate incentives.

Raffer, from as early as 2004, found that the success of market economies is based on linking decisions to risks. Additionally, Kane (2009) shows that not only does the current financial system have defective monitoring, it also fails to make anyone directly accountable for reporting or controlling in a conscientious and timely manner. Even the accounting system does not report the value of the regulatory benefits, a key factor in being able to hold regulators accountable. Both the Financial Accounting Standards Board (FASB) and the International Accounting Standards Board (IASB) have since added issues related to the crisis to their agendas (FASB and IFRS, 2013)

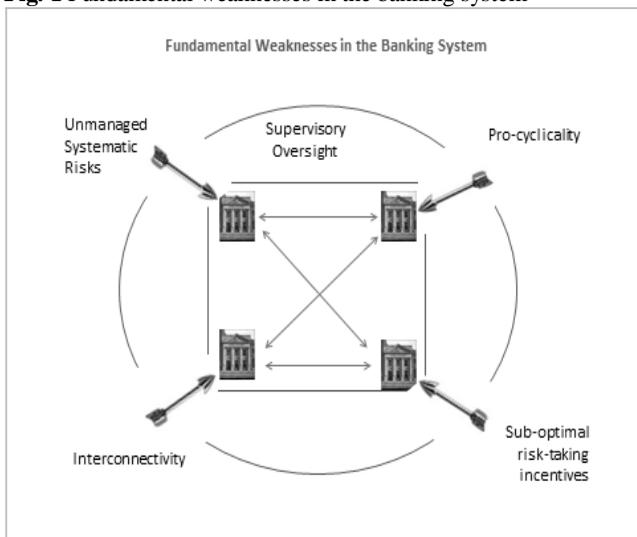
Dickson (2010) claims that Canada's financial system held up well during the economic crisis and attributes that to the fact that day-to-day oversight is given equal significance to regulatory rules. Dickson further states that the financial sector, with strong regulatory rules and sound risk management practices but with weak supervisory oversight, is not safe. The Basel Committee has issued three white papers addressing various strategic factors. Their focus has been more on rules than on approaches to supervision. In fact, the Basel Core Principles for Effective Supervision simply states "The Core Principles are neutral with regards to different approaches to supervision, so long as the overriding goals are achieved."

2.6 Weakness Implications

When taken together, the five weaknesses identified resulted in losses that caused key financial institutions to fail, which spread to other interdependent institutions, not just locally but nationally and internationally. The interrelationship between the factors is shown in Figure 1 and summarized in Table 1. As depicted in the figure, it is the failure of supervisory oversight that allowed the other weaknesses to successfully undermine the financial system.

Teply (2010) noticed that Basel II addressed only credit, market and operational risks. Missing in coverage were risks such as market, off-balance sheet, systematic, contagion and unknown events. One lesson learned is that each of those risks supports the need for better oversight and accountability by regulators, risk managers, management, investors and the government. Table 1 summarizes the weaknesses and the causes. All the factors can be related to inadequate supervisory oversight and accountability.

Fig. 1 Fundamental weaknesses in the banking system



This Figure 1 demonstrates that breaches in supervisory oversight and accountability leave the financial system vulnerable

Table 1 Summary of the fundamental weaknesses in the banking system and the causes

<i>Weakness</i>	<i>Causes</i>
Suboptimal risk taking incentives	Moral hazard Deposit Insurance Forbearance Faulty monitoring
Pro-cyclicality	Lack of market discipline
Interconnectedness	Conflict of interest Universal Banking

<p>Un-managed systematic risk</p> <p>Inadequate Accountability and Supervisory oversight</p>	<p>Counter-cyclical business operations</p> <p>Interbank markets Vulnerability to liquidity shocks Contagion across linked institutions</p> <p>Inability to predict and prevent a crisis Use of large/significant shadow entities</p> <p>Breakdown in incentives of regulators Exploitation of weaknesses in jurisdiction Lack of day-to-day oversight</p>
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This Table 1 identifies the summarizes the causes of the fundamental weakness to the banking

Prospective oversight ethics dictate that oversight institutions should be designed to, effectively, prevent wrongs. Unfortunately, overseers face a significant moral hazard problem to not engage in vigilant oversight. This problem is further exacerbated by the possibility of “regulation capture” which states that regulatory vigilance decreases in the absence of a crisis. Inspectors become too close to the inspected and the capacity for independent judgment is undermined or lost. (Swartz, 2008)

3. A Blueprint for the Mitigation of a Financial Crisis

This paper purports that: (1) focusing on the five fundamental factors that attribute to the vulnerability of the banking system is a key component of a model for the mitigation of a financial crisis and; (2) the factors are inter-related; therefore, the model should be holistic and inclusive of supervisory oversight and accountability. We begin by looking at the veracity of the solutions already proposed. We will then provide a process to prevent or mitigate future financial crises by focusing on the fundamental weaknesses presented in the previous section. This involves managing systematic risk; identifying factors that can signal trouble and trigger intervention; and providing for regulatory accountability and oversight.

3.1 The Veracity of Proposed Solutions

Scott (2010) summarizes solutions provided by academics and regulators include recommendations to:

- alter capital requirements;
- change clearing houses usage requirements;

- alter the way insolvent institutions are resolved;
- continue emergency lending by the Fed, and
- restructure the regulatory system.

All such solutions have been argued to be burdensome and ineffective to prevent a systematic risk based crisis. Evidence of the ineffectiveness of these proposed solutions is seen in the failure of Basel II, passed in 2004, which did not prevent the crisis. The Basel III documents, submitted in 2009, attempted to improve the regulation of the financial system but still leaves significant systematic risk exposure which is one of the main factors that helped cause the crisis in the first place (Boerner, 2010; Holbrook, 2010; Weber, 2010; Triana, 2010).

For example, Berger et al. (2008) show that Bank Holding Companies (BHC) had been actively managing their capital ratios, had set targets substantially above regulatory minima and made rapid adjustments towards those targets. Even the new regulatory requirements under Basel III would not have been adequate to prevent the crisis. Triana (2010) further shows that Basel III: permits higher leverage (higher risk); has flawed risk measures; and restricts opportunities for higher potential returns – increases risks and lowers returns. Elimination of bailing-out failing banks is also not at option because as Ennis and Keister (2010) conclude, financial crises have a self-fulfilling component and that the banks' operating structure makes them susceptible to runs and so they are innately fragile. Additionally, Mistrulli (2011) found, after doing simulations, that by allowing conglomerates to recapitalize their affiliates which otherwise would fail, the resilience to financial contagion of the banking system tends to improve.

Prospective oversight ethics dictate that overseers prevent wrongs and retrospective oversight ethics entails the conduct of investigations into the failure of existing institutions in preventing wrong with an aim to improvement. Both processes failed. Unfortunately, policy makers are susceptible to economic, political, cultural and bureaucratic pressures, and although recommendations for an international oversight body has merit, its application would face, possibly insurmountable, blockades.

3.2. An Integrative Blueprint for Crisis Mitigation

Given that the banking system is fundamentally frail (Ennis and Keister, 2010) and that recapitalization, such as bailouts, improve the resilience to financial contagion (Mistrulli, 2011), it is, therefore, recommended that these agency theory issues not be addressed by removing the governmental safeguards that contribute to the agency problem. Additionally, according to Allen and Saunders (2004) U.S. banking regulators have contended that

15–20 major banks and 5–10 major securities firms dominate critical financial markets, therefore as global financial markets consolidate and harmonize the possibility of contagion risk increases. However, this smaller list of key players could provide a more narrowly focused intervention/mitigation strategy.

In terms of pro-cyclicality, Franz (2010) has shown that the stock market has been highly consistent in predicting economic expansions and contractions. Allen and Saunders (2004) found that, whereas a fundamentally strong institution can often recover from market and credit risk, it might be impossible for it to recover from certain operational risk events. Therefore, the main concerns are the low frequency/high severity risk events, which occur quite infrequently, consistent with the conditions precedent. These factors as well as the regulators' inability to monitor all financial institutions, reinforces the recommendation to focus on the smaller list of key players.

Measures of interconnectivity relate to size and so, once again, identification of those major banks and securities firms, that dominate the market, is critical. Also related to size and interconnectedness is measured by the composition of the banks' asset portfolio (Drumond, 2009).

All the factors are inter-related and therefore attribute to the systematic risk problem. Since macroeconomic factors are affected by government actions, macroeconomic and firm specific factors must be dealt with separately (Tsai and Chang, 2010). Their model establishes financial factors, market variables and macroeconomic variables to successfully predict financial distress. Therefore, it is recommended that the holistic interception model incorporates a financial distress prediction model, to identify firm specific risks such a discrete-time hazard model like the multi-period logit model, which has been used successfully to estimate the significant parameters in predicting financial distress (Tsai and Chang, 2010, Shunway 2001; Barrow, 1993). In its application, it is assumed that there is some linear combination of the independent variables that is positively related to financial distress. The parameters in the logit model can then be used to identify problem financial institutions in conjunction with a predetermined distress cut-off point.

Given that, regulators and academics have known of the weaknesses and challenges for some time, key missing elements are supervisory oversight and accountability. According to Schwartz (2008) there are three critical elements to oversight duties. They are (1) set standards, (2) provide resources that enable overseers to gather information about the extent to which standards are being met, and (3) the provide tools for modifying the behavior of non-compliance. This third element is where accountability becomes even more important.

Research shows that most crises were caused by failures in supervisory oversight and accountability. Coffee (2011) finds that regulatory supervision

is likely to follow a “sine curve” which means that there is usually stricter regulation after a crash followed by gradual relaxation. However, research also found that crises that had more long-term and widespread significance were more likely to have more sustainable regulatory changes. (Schwartz, 2008). Given the large scale and scope of the recent global financial crisis, and the greater visibility, there is also a greater chance for more sustainable changes in regulatory processes, supervisory oversight and accountability.

Summarized the blueprint recommends using a holistic approach. Specifically:

1. Maintain the governmental safeguards despite the related moral hazard problems, given the fragility of the banking system.
2. Identify a small list of key players to provide a more narrowly-focused intervention/mitigation strategy.
3. Utilize a financial distress prediction model, such a discrete-time hazard model like the multi-period logit model, to identify firm specific risks and systematic risks.
4. Maintain strong regulatory rules that provide for oversight and accountability with cause-effect related enforced consequences.

4. A Simple Application of the Process

A simple analysis was done to illustrate the importance of closely monitoring those flagged for intervention and using the stock market as a proxy for economic activity. The stock market was chosen since it has been shown that the S&P 500 is highly consistent in anticipating contractions and expansions in economic activity, and it is assumed that the stock market is consistent in anticipating economic cycles (Franz, 2010). Fundamental company data was provided by Capital IQ, a business owned by the Standard and Poor’s Company and accessible from Wharton Research Data Services (WRDS). Capital IQ provides market data across all major quoted markets including: equity, mutual funds, fixed income, indices, commodities, currencies, and rates. Equity pricing data includes close, open, bid, ask, mid, low, best, high price values along with volume, splits, dividends, ticker, exchange information, short interest data, and VWAP for select markets.

There were two key sources of banking data used to identify banks “too big to fail” and those that would have the most significant impact related to pro-cyclicality and interconnectedness. The first is from WRDS, a web-based business data research service from The Wharton School at the University of Pennsylvania. Their Bank Regulatory Database contains five databases for regulated depository financial institutions. These databases provide accounting data for bank holding companies, commercial banks, savings banks, and savings and loans institutions. Their data comes from the required

regulatory forms filed for supervising purposes. The second source of data is from the National Information Center (NIC), a central repository of data about banks and other institutions for which the Federal Reserve has a supervisory, regulatory and/or research interest, including both domestic and foreign banking organizations operating in the United States. Their web site provides access to NIC data, allowing the public to search for detailed information about banking organizations.

The NIC has a Bank Holding Company Peer Groups report that contains a summary of peer group financial data and a listing of Bank Holding Companies (BHCs) in each Peer Group. BHCs with assets over \$500 million are classified into one of nine tiers. Tier 1 consists of BHCs with consolidated assets of \$10 Billion and over. Given that only the top 20 or so financial institutions dominate the financial markets, the top tier 1 banks with consolidated assets of \$100 billion were selected for review. There were 22 institutions that met the criteria. These are the main institutions to monitor in addressing the interconnectedness and pro-cyclicality systematic risks considerations and therefore, the key financial institutions that should play a major role in the financial crisis intervention or mitigation process. Note, however, that the number is not static. Upon retrieving the data it was discovered that due to various reasons, such as reorganizations (TD Bank Holding Company, U.S. Bankcorp, Ally Financial Inc. and Citizens Financial Group) or being privately held (Taunu Corporations), there were only 17 BHCs with complete market price data for analysis.

Figure 2 shows the correlation between the 17 remaining top BHCs and the S&P 500, A clear outlier was institution number 11, Capital One Financial Corporation (COF). This would form a basis for further investigation. Figure 3 show COF's correlation trend for the 10 year period which includes fives before the signal and the four years since, including the crises period. This confirms that, indeed, 2006 was a significant year for COF when compared to other BHCs, but it was also significant for COF over that the ten-year period of 2001–2010. Capital One Financial was the recipient of \$3.56 billion of the Emergency Economic Stabilization Act Federal bailout in the form of a preferred stock purchase. (WRDS, 2010). However, according to ProPublica (retrieved 7/21/2011) COF returned its bailout funds on June 9, 2009 with an additional \$253 million dollars profit to the government.

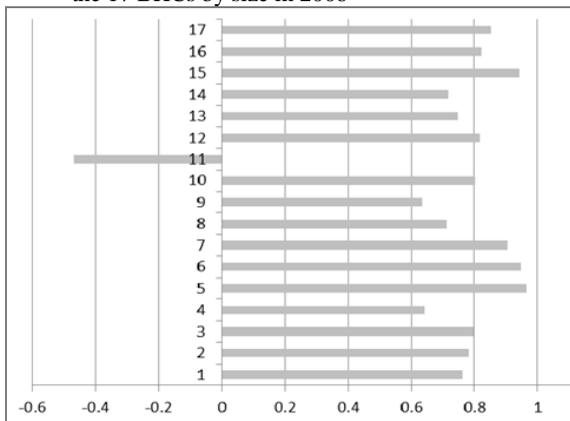
4.1. Application of Findings

This case study application is quite instructive. It showed that early identification of the COF's financial problems, as early as 2006, prior to the crisis, was possible and, indeed, probable. It also showed that government bailout as a strategy can be successful in preventing bankruptcy, and that it does not

have to be at a net loss to taxpayers. However, the possibility that regulators/supervisors knew of the problem prior to 2008 yet did nothing, is real and of concern. This supports Coffee (2010) in his claim that even if a failure is predicted there will be intense and well financed push back from the institution and behaviors consistent with “regulatory capture.” Regulatory capture occurs when bureaucrats, regulators, and politicians cease to serve the collective public interest and begin to systematically favor specific vested interests, usually the very interests they were supposed to regulate and restrain (Baker, 2010).

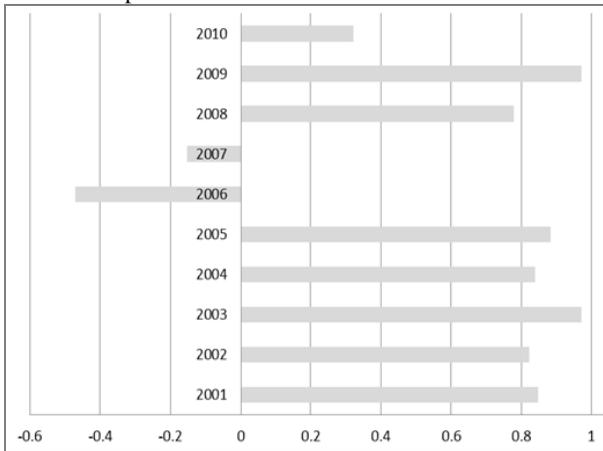
Coffee’s (2011) ‘sine curve’ theory shows that there is a higher probability for stricter regulatory supervision following a crisis but it is followed by a gradual relaxation. Baker (2010) further shows that regulatory capture has evolved over 20 years. Regulatory easing has facilitated innovation, incompletely regulated “shadow banking sector”, and with a boom, created serious disincentives for politicians to take corrective actions. When a crisis creates sufficient awareness and concern such that other countries become more involved in the process; the environment becomes conducive to making some meaningful changes regarding supervision and more accountability within the financial system. The assumption is that there will be gradual relaxation on the urgency as the economy recovers and so accountability reformers need to act quickly before reform losses support. To prevent the conflict of interests/moral hazard problem within regulatory agencies, the focus should include a greater social and intellectual heterogeneity, representing a broader range of constituents. (Baker, 2010)

Fig. 2 Plot of the correlation coefficients for the 17 BHCs by size in 2006



This figure 2 shows the correlation coefficient (r) between the monthly S&P 500 indices and the stock price of the top 17 BC for the year 2006. The outlier in 2006 was Capital One Financial Corporation.

Fig. 3 Plot of the correlation coefficients for Capital One for 2001–2010



This figure 3 shows the correlation coefficient (r) between the monthly S&P 500 indices and the stock price of Capital One Financial Corporation for the period 2001 to 2010.

5. Conclusion

This paper reviewed the literature on factors that led to the Global Financial Crisis and finds that those factors had been known and identified for several years prior to the crisis, yet that knowledge failed to assist in the interception of the crisis, and those same factors continue to exist despite regulatory efforts to the contrary. Also significant is the underrepresentation of accountability and supervisory oversight, in proposed solutions, although they are an integral part of the problem. Five fundamental weaknesses in the banking system were identified, broadly, as suboptimal risk-taking incentives, pro-cyclicality, interconnectedness, unmanaged systematic risk, and inadequate accountability and supervisory oversight.

The paper purports that: (1) focusing on the five fundamental factors that attribute to the vulnerability of the banking system is a key component to a model for interception of a financial crisis and; (2) the factors are inter-related; therefore, the model should be holistic in managing the systematic risks that could lead to a crisis. Summarized, the model makes four recommendations. First, maintain the governmental safeguards despite the related moral hazard problems, given the fragility of the banking system. Second, identify a small list of key players to provide a more narrowly focused intervention/mitigation strategy. Third, utilize a financial distress prediction

model, such a discrete-time hazard model like the multi-period logit model, to identify firm specific risks and systematic risks. Finally, maintain strong regulatory rules that provide for oversight and accountability with cause-effect related enforced consequences.

A simple application of the blueprint was done to illustrate the importance of closely monitoring those institutions that were flagged for intervention, using stock price and S&P 500 index data provided by Capital IQ, a business owned by the Standard and Poor's Company. Upon analyzing the data for 2006, a year or two before the crisis became widespread knowledge, a significant outlier was identified to be Capital One Financial Corporation (COF), which received approximately \$ 3.56 billion dollars in federal bailout, but was able to return the bailout funds, with interest, in 2009. The application has been very instructive in validating the bailout strategy as being feasible but it was also instructive in supporting the possibility of "regulatory capture" in that the regulators should have known of the problem but had done nothing. If this is the case, and other research does supports it, then regulatory supervision and accountability is the remaining missing link to the mitigation of future financial crisis and must be a central part of regulatory reform.

Evidence also substantiates the assumption that support for reform is highest immediately after a crisis, but then starts to wane as the economy recovers. Given the widespread and global impact of the recent financial crises, the environment is very conducive for support and, therefore, for change. This paper sets the scene for continuing research effort aimed at integrating accountability and supervision into the reform process. Further study and extensions of the findings of this paper could then provide for specific strategic and tactical recommendations for that integration as well as to present and test a quantitative, quantifiable model for crisis mitigation that incorporates accountability and supervisory oversight, beyond the simple application done here.

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