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The Uneasy Case for Deferring Banker Pay

Eric D. Chason

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The Uneasy Case for Deferring Banker Pay

*Eric D. Chason**

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* Associate Professor of Law, William & Mary Law School.

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I. INTRODUCTION

Popular outrage against “greedy bankers” and the “bonus culture” on Wall Street has energized a new movement to regulate banker pay. Yet, concern about banker pay extends beyond Occupy Wall Street and newspaper editorials, as academics, policymakers, and even bankers themselves believe that pay practices contributed to the financial crisis of 2007–2009.¹ Bankers receive much of their

1. The Institute for International Finance commissioned an industry survey in which “98% of survey respondents believe that compensation structures were a factor underlying the crisis.” INST. OF INT’L FIN., COMPENSATION IN FINANCIAL

ample compensation in bonuses, which are determined by annual performance. The standard critique argues that poorly designed bonus plans encouraged bankers to pursue risks that were inconsistent with long-term shareholder value and the stability of financial markets.² Aligning the incentives of bankers with the interests of their shareholders and society now commands significant attention from policymakers and academics.³ Some proposals offer a soft, “principles-based” approach that is unlikely to do much harm (or good).⁴ Others, however, would regulate the form in which bankers are paid.

The basic forms implicated are fairly conventional: current salaries and bonuses (i.e., paychecks), equity compensation, and deferred compensation. Equity compensation is usually a grant of the employer’s stock (e.g., shares worth \$1 million) or an option to buy such stock. Deferred compensation is essentially debt. Rather than paying cash today, the employer promises to pay the employee

SERVICES: INDUSTRY PROGRESS & THE AGENDA FOR CHANGE 2 (2009). *See also* FIN. STABILITY FORUM, FSF PRINCIPLES FOR SOUND COMPENSATION PRACTICES 4 (2009) [hereinafter FSF PRINCIPLES], available at http://www.financialstabilityboard.org/publications/r_0904b.pdf (“Multiple surveys find that over 80 percent of market participants believe that compensation practices played a role in promoting the accumulation of risks that led to the current crisis.”).

2. *See* FSF PRINCIPLES, *supra* note 1, at 7–8; U.S. DEP’T OF THE TREASURY, FINANCIAL REGULATORY REFORM—A NEW FOUNDATION: REBUILDING FINANCIAL SUPERVISION AND REGULATION 29 (2010), http://www.treasury.gov/initiatives/Documents/FinalReport_web.pdf (“Among the many significant causes of the financial crisis were compensation practices. In particular, incentives for short-term gains overwhelmed the checks and balances meant to mitigate against the risk of excess leverage. We will seek to better align compensation practices with the interests of shareholders and the stability of firms and the financial system”).

3. *See generally* Frederick Tung, *Pay for Banker Performance: Structuring Executive Compensation for Risk Regulation*, 105 NW. U. L. REV. 1205 (2011); Claire Hill & Richard Painter, *Berle’s Vision Beyond Shareholder Interests: Why Investment Bankers Should Have (Some) Personal Liability*, 33 SEATTLE U. L. REV. 1173 (2010); Guido Ferrarini & Maria Cristina Ungureanu, *Economics, Politics, and the International Principles for Sound Compensation Practices: An Analysis of Executive Pay at European Banks*, 64 VAND. L. REV. 431 (2011); Karl S. Okamoto & Douglas Edwards, *Risk-Taking*, 32 CARDOZO L. REV. 159 (2010); Lucian A. Bebchuk & Holger Spamann, *Regulating Bankers’ Pay*, 98 GEO. L.J. 247 (2010); Lucian A. Bebchuk, Alma Cohen & Holger Spamann, *The Wages of Failure: Executive Compensation at Bear Stearns and Lehman 2000–2008*, 27 YALE J. ON REG. 257 (2010); Sanjai Bhagat & Roberta Romano, *Reforming Executive Compensation: Focusing and Committing to the Long-Term*, 26 YALE J. ON REG. 359 (2009).

4. *See* FSF PRINCIPLES, *supra* note 1. *See also generally* FIN. STABILITY BD., CHARTER OF THE FINANCIAL STABILITY BOARD (2012), available at http://www.financialstabilityboard.org/publications/r_120809.pdf.

some presumably greater amount in the future. Across all industries, U.S. firms regularly pay equity or deferred compensation without overt compulsion.⁵

Until recently, nothing required firms to avoid cash compensation, but regulators are currently dropping their laissez-faire approach to financial-sector pay. U.S. and E.U. regulators are set to require banks to defer significant portions of banker bonuses. Prominent academics concur, arguing that bankers should receive much of their pay in the form of corporate bonds or debentures rather than cash or corporate stock. These regulations and proposals⁶ would require banks to pay what I call “debt-based compensation.”

Mandating debt-based compensation has a seemingly straightforward justification. Cash bonuses based on annual performance encourage risk. A banker who generates big profits enjoys a big bonus. A banker who generates big losses does not personally suffer a big loss. The asymmetry between the high rewards for success and the low punishment of failure encourages excessive risk-taking. Because shareholders enjoy limited liability but potentially unlimited growth, equity compensation only exacerbates the problem. Debt-based compensation, according to reformers, encourages caution. If a boom-year bonus is deferred, then the banker faces a risk of nonpayment if the employer becomes insolvent. Even without insolvency, employers may have the power to reduce previously deferred bonuses if long-term performance disappoints. Financial products sold through 2006 generated huge bonuses based on successful short-term performance. By 2008, however, the long-term performance of bankers proved to be disastrous. Had those 2006 bonuses been deferred, the bankers might have been forced to forfeit them in 2008.

The history of regulating compensation, however, is littered with simple justifications and unintended consequences. The standard concern has been minimizing “agency costs” which arise when managers pursue agendas at odds with their shareholders. Public disclosures of compensation were supposed to allow shareholders to check excesses but may have led to a perverse competition in which firms actually pay more in an attempt to signal their managerial

5. Firms may have tax or regulatory incentives for doing so. For example, U.S. law limits the tax deductions for the expense of certain executive salaries, but these limits do not apply to properly structured equity or deferred compensation. See I.R.C. § 162(m) (2006 & Supp. V 2011).

6. See FIN. STABILITY BD., *FSB PRINCIPLES FOR SOUND COMPENSATION PRACTICES: IMPLEMENTATION STANDARDS* (2009) [hereinafter *FSB IMPLEMENTATION STANDARDS*], available at http://www.financialstabilityboard.org/publications/r_090925c.pdf; Bebchuk & Spamann, *supra* note 3; Tung, *supra* note 3.

superiority. In 1993, Congress tinkered with the tax code to encourage public companies to pay their executives with stock options rather than salary. These executive stock options were supposed to give executives “pay for performance”—managers win when shareholders win. But stock options may have simply given managers a more powerful way to extract value from shareholders.

The stakes in regulating banker pay go far beyond agency costs. Failures and distress in the financial sector threaten not only a narrow class of shareholders but the financial and economic stability of the world. While no one expects banker-pay regulation to restore the U.S. to 5% unemployment or a AAA credit rating, reformers hope that their proposals will encourage future bankers to be more prudent. Yet, just as the stakes are now higher, so are the risks of unintended consequences.

It is true that debt-based pay exposes bankers to additional loss if their employers fail. Yet, the added risk of loss may be too remote to change behaviors, especially when governments routinely bail out financial firms. More seriously, debt-based compensation may lead to even more risk and financial instability. Debt typically offers a low rate of return. In order to counter the conservative nature of debt-based compensation, bankers might actually take on even greater risks.⁷ Additionally, punishing bankers for failure may complicate the government’s response to crisis. Debt-based compensation would be completely wiped out at any firm that is thrown into the new Dodd–Frank system for resolving troubled financial firms. Debt-based compensation thus increases the incentives of bankers to seek bailouts rather than to cooperate with regulators in resolving troubled firms.⁸

This Article analyzes banker-pay regulation in the context of overall financial regulation. According to Part II, the primary goal of financial regulation is to reduce systemic risk, defined here as the extraordinary and external costs of distress at banks and financial firms. In 2008, widespread insolvency and distress in the financial sector threatened the entire global economy, not just financial firms and their stakeholders. In other words, regulators are justified in forcing financial firms to reduce risk-taking because systemic risk is an externality.

Part III reviews the legislative and regulatory details of the new movement to regulate banker pay. Pay regulation seeks to accomplish various goals in various ways. For example, regulators seem concerned not only with systemic risk but also shareholder losses. Also, much of the regulatory approach is based on principles

7. See *infra* Part V.C.

8. See *infra* Part V.B.

and best practices. For example, regulated firms would need to establish good procedures to coordinate compensation practices with risk management. The most interesting element of the pay regulation, however, would require firms to defer banker pay.

Part IV considers how banker pay might control systemic risk. Governments not only regulate banks but also support them with bailouts in times of crisis. Because of this support, banks can pursue additional risk without fear of failure. This is the classic “moral hazard” criticism of bailouts. Reformers argue that debt-based compensation reinserts fear of failure in the minds of bankers.

Yet, as Part V shows, debt-based compensation cannot impose a fear of loss if governments continue to bail out troubled firms. Even if governments could somehow impose losses on bankers while supporting troubled banks, the threat of these losses is a very weak incentive when compared to the incentive to earn greater bonuses by taking on greater risk. And, as discussed previously, the incentives may actually work against financial stability by complicating government activities during a time of crisis. For these reasons, Part VI concludes with the recommendation that regulators not focus on compensation when regulating financial firms.

II. SYSTEMIC RISK AND THE GOAL OF FINANCIAL REGULATION

The new movement to regulate banker pay may simply be the instinctive response of policymakers to the financial crisis. The movement not only allows policymakers to “do something,” but it targets the extravagantly paid bankers thought to be responsible. Several commentators, however, have justified pay regulation as accomplishing the general goal of bank regulation: allowing banks to perform their valuable services while minimizing the risks to the rest of the economy.⁹ Thus, we need some understanding of the social costs of banking before we can evaluate the need to regulate banker pay. This Part will try to compress the basic concepts in a few paragraphs.

A. Financial Intermediation

Your bank may call you a “customer” (or, if you are rich enough, a “client”), but you and your deposits are really a source of financing for the bank’s investments. The classic use of bank funds is to make loans to homebuyers and businesses. Readers might remember George Bailey standing down his panicked and homespun depositors in *It’s a Wonderful Life*: “You’re thinking of

9. See *supra* note 3.

this place all wrong. As if I had the money back in a safe. The money's not here. Your money's in Joe's house; that's right next to yours. And in the Kennedy house, and Mrs. Macklin's house, and a hundred others."¹⁰

Of course, businesses and individuals throughout the economy borrow to finance their investments. What makes banks unique, however, is that they typically lend long-term, illiquid investments but finance with short-term, liquid liabilities.¹¹ The bank may invest in Mrs. Macklin's and Joe's mortgages, but the bank cannot demand immediate repayment, nor can it easily sell those mortgages in a market. In contrast, the bank receives its funds from depositors who may demand repayment on a moment's notice. The assets (mortgage claims against borrowers) and liabilities (deposits held for depositors) are mismatched.

The important service that Bailey and other banks provide is financial intermediation.¹² Mrs. Macklin wants a 30-year mortgage. Her neighbors want a safe but accessible place to put their money. Bailey takes in short-term deposits and channels the funds to long-term borrowers. Doing so lets the depositors diversify across lots of mortgages and business loans (not just Mrs. Macklin's). Bailey's problem was that his depositors all showed up at once demanding to be paid.¹³

Modern banks still lend Mrs. Macklin money. But rather than holding her mortgage indefinitely, they likely "originate to distribute."¹⁴ A bank pools thousands of mortgages into a single portfolio, which is then sliced (tranche) into marketable securities for resale to investors. Different tranches have different priorities of repayment, with the senior tranche being repaid first, the equity tranche last, and the mezzanine tranche in between.¹⁵ The allure of tranching comes from the ability to place a high (e.g., AAA) credit rating on the senior tranche, making it marketable to conservative and regulated investors. Mezzanine tranches carry a lower, less marketable credit rating (e.g., BBB), while equity tranches are not

10. *IT'S A WONDERFUL LIFE* (Liberty Films 1946), available at http://www.script-o-rama.com/movie_scripts/i/its-a-wonderful-life-script.html (script).

11. See RICHARD SCOTT CARNELL, JONATHAN R. MACEY & GEOFFREY P. MILLER, *THE LAW OF BANKING & FINANCIAL INSTITUTIONS* 37 (4th ed. 2009).

12. See Daniel A. Fischel et al., *The Regulation of Banks and Bank Holding Companies*, 73 VA. L. REV. 301, 306–07 (1987).

13. Parts II.B and II.C describe how bank runs can destabilize the economy and how governments try to control them.

14. See FIN. CRISIS INQUIRY COMM'N, *THE FINANCIAL CRISIS INQUIRY REPORT* 447 (2011), available at <http://www.gpo.gov/fdsys/pkg/GPO-FCIC/pdf/GPO-FCIC.pdf>.

15. See *id.* at 43.

rated at all. Creating “high quality” tranches is so alluring that banks reiterated the process, pooling the mezzanine tranches themselves into a new portfolio, which is itself then tranced into collateralized debt obligations (CDOs) of senior, mezzanine, and equity tranches.¹⁶

Despite this process of securitization, much of the risks remained within the banking system, as banks were some of the largest buyers of CDOs and similar products.¹⁷ When real estate prices fell and borrowers began to default, banks could not divest these risks because no one else wanted to buy CDOs. Even senior tranches looked like toxic waste, not conservative investments. Banks discovered at that time that they had not successfully converted Mrs. Macklin’s long-term, illiquid mortgage into a liquid security.

Much as modern banking has shifted from Mrs. Macklin’s mortgage to CDOs, it has also turned to new sources of financing. Modern banks still finance with traditional deposits, but they also raise funds through so-called shadow banking. For example, repurchase agreements or *repo* allow banks to raise funds cheaply and quickly without the bother of obtaining a bank loan, issuing securities, or taking in deposits.¹⁸ Repo is secured lending: the lender buys an asset from the borrower on the condition that the borrower buy it back at a slightly higher price in the future. The term is very short, and the buyback date is often the very next day.¹⁹ Repo lenders might be other financial institutions and, indirectly, retail investors. Money-market funds take in contributions from a wide array of investors (including individuals of modest means) and invest them in short-term, liquid debt instruments like repo. Money-market funds and deposits are regulated differently but function similarly, both giving short-term investors an accessible place to park their money while giving borrowers a source of financing.

Banks and other financial firms came to rely heavily on repo borrowing to finance their investments in the years leading up to the crisis. Because they are not insured by the FDIC, however, repo lenders have far more incentive to react to bank distress than depositors. Ordinarily, banks can rely on repo lenders to roll over their expiring loans or find new ones on the market. During times of distress, however, repo lenders can walk away with their money at

16. *See id.* at 71–72.

17. *See* JOHN C. HULL, *OPTIONS, FUTURES, & OTHER DERIVATIVES* 189 (8th ed. 2011).

18. Commercial paper is another form of short-term borrowing included in the shadow-banking system. *See generally id.* at 29–34.

19. *Id.* at 76.

any time, which has the same effect as withdrawing a bank deposit. One prominent account of the financial crisis calls it a “run on repo,”²⁰ in which losses in the subprime market caused repo lenders to demand greater or higher quality collateral or simply to exit the market altogether. Just as in a bank run, the bank does not have enough liquidity on hand to pay the borrowers.²¹ At the height of the financial crisis, the Treasury Department took the extraordinary step of guaranteeing money-market funds, much like the FDIC guarantees deposits.²²

B. The Fire-Sale Externality and Systemic Risk

The prevailing view is that excessive risk taking at financial institutions substantially contributed to the recent crisis.²³ We need, however, some idea of what makes some risk-taking “excessive” and why self-serving firms would subject themselves to it.²⁴ Poorly run businesses fail all the time, and this “creative destruction” is a central part of free-market economies.²⁵ Moreover, a bank run causes illiquidity not insolvency. The fact that George Bailey’s depositors all want their money does not directly make Mrs. Macklin’s loan worth less. Similarly, the fact that repo lenders withdraw from the market en masse does not make illiquid CDOs²⁶ worth less.

20. See Gary B. Gorton & Andrew Metrick, *Securitized Banking and the Run on Repo 1* (Yale Int’l Ctr. for Fin., Working Paper No. 09-14, 2010), available at <http://ssrn.com/abstract=1440752>.

21. The lenders may themselves be retail investors who have bought shares of money-market mutual funds. The funds act as conduits, taking in “deposits” from investors and using them to buy repo or other short-term assets from borrowers. See FIN. CRISIS INQUIRY COMM’N, *supra* note 14, at 30.

22. See Press Release, Treasury Announces Temporary Guarantee Program for Money Market Funds (Sept. 29, 2008), available at <http://www.treasury.gov/press-center/press-releases/Pages/hp1161.aspx>.

23. See, e.g., FIN. CRISIS INQUIRY COMM’N, *supra* note 14, at xix (“We conclude a combination of excessive borrowing, risky investments, and lack of transparency put the financial system on a collision course with crisis.”).

24. Cf. Kevin J. Murphy, *Compensation Structure and Systemic Risk 1* (Univ. of S. Cal., Marshall Sch. of Bus., Marshall Research Paper Series, Working Paper No. FBE 34-09, 2009), available at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1461944 (“Political pressures to reform pay have escalated in spite of limited evidence that compensation structures have, in fact, been responsible for excessive risk taking in the financial services industry. Indeed, the pressures have emerged even without a definition of ‘excessive risk taking’ or how we might distinguish excessive risk from the normal risks . . .”).

25. See JOSEPH A. SCHUMPETER, *CAPITALISM, SOCIALISM, AND DEMOCRACY* 83 (1942) (“This process of Creative Destruction is the essential fact about capitalism.”).

26. Cf. *supra* note 16 and accompanying text (discussing CDOs).

To meet the repayment obligations when facing a run, however, the bank needs cash. If the bank does not have enough and cannot raise more through new deposits, repo, or the like, it will need to sell its stake in Mrs. Macklin's mortgage or the CDOs. During a panic, however, several banks are looking to sell and few are looking to buy. Banks thus need to accept a lower value for the asset. But doing so forces the bank to revalue all similar assets it holds, even if it is not selling. The distressed sale affects the bank's entire balance sheet.²⁷

Suppose that a bank has assets valued at \$100 billion, derived from repo lending of \$90 billion and equity of \$10 billion. All of the assets are invested in CDOs. Now, suppose that 10% of the bank's repo lenders (holding \$9 billion of claims) fear losses on the bank's investments in CDOs and refuse to roll over their repo. No one else is willing to supply new funds. The bank needs \$9 billion of cash to repay these lenders. This is no problem if it can simply sell CDOs at book value.²⁸ But, recall that the market is concerned about the bank, so the bank might need to accept a lower price. Perhaps the bank needs to sell 10% of its portfolio—previously thought to have been worth \$10 billion but sellable for only \$9 billion. Initially, this discount might not look so bad if the bank is merely taking a \$1 billion loss, which can be absorbed by its \$10 billion of equity. After the sale, it has CDOs of \$90 billion and cash of \$9 billion, right?

Perhaps not, because the discount sale may affect the entire balance sheet. The bank is selling *some* of its CDOs at a 10% discount, suggesting a need to discount *all* of its holdings that much. Arguably, it now has CDOs discounted to \$81 billion and cash worth of \$9 billion. Because it still has liabilities of \$90 billion, its entire equity is wiped out, putting it on the edge of insolvency. News of the bank's distress panics its remaining lenders, who decline to roll over their repo. The second wave crushes the bank if it needs to accept further discounts on its CDOs. This vicious cycle is the "run on repo" mentioned above.²⁹

27. The analysis that follows relies heavily on Markus K. Brunnermeier, *Deciphering the Liquidity and Credit Crunch 2007–2008*, 23 J. ECON. PERSP., no. 1, 2009, at 77. The Article enjoyed fame of which few academics dream when Federal Reserve Chairman Ben Bernanke recommended it (along with two other articles and one book) for those trying to understand the financial crisis. See Michael Corkery, *Ben Bernanke's Labor Day Reading List*, WSJ DEAL JOURNAL (Sept. 2, 2010, 4:18 PM), <http://blogs.wsj.com/deals/2010/09/02/ben-bernankes-labor-day-reading-list/>.

28. The bank's balance sheet would have \$91 billion of assets, \$81 billion of deposits–repo, and \$10 billion of equity.

29. See *supra* note 20 and accompanying text.

The cycle likewise endangers other banks, which may be holding similar CDOs financed by similarly panicked depositors and repo lenders. Because the discount selling affects other banks, it has been termed the *fire-sale externality*.³⁰ We usually expect lower prices to attract bargain hunters, driving up demand and stabilizing prices. But depositors, repo lenders, and other banks are all looking to get out of the market. Without buyers, a “liquidity spiral” takes hold, making banking structures less stable and self-correcting than most economic activities.³¹

The liquidity spiral does not directly affect bank borrowers like Mrs. Macklin. She is unlikely to know or care if her mortgage has been sliced up and sold several times over. Yet, her 25-year-old daughter, Miranda, might not be able to find a loan for her new house. Or, her law-firm employer might need to lay her off as tighter credit conditions drive down economic activity and the demand for legal services. Instability, distress, and failure in banking can spread, inflicting costs upon society at large, not just the shareholders, depositors, and other stakeholders of a firm.³² This characteristic, known as systemic risk,³³ explains how perhaps \$1 trillion of subprime mortgage losses translated into an \$8 trillion decline in the U.S. stock market and the worst economic crisis since the Great Depression.

In light of these costs, this Article will treat systemic risk as an externality that justifies regulation. Professor Jeffrey Gordon argues that systemic risk arises not from an externality but from a collective-action problem of shareholders.³⁴ Gordon acknowledges

30. See Brunnermeier, *supra* note 27, *passim*.

31. See *id.*

32. See Steven L. Schwarz, *Systemic Risk*, 97 GEO. L.J. 193, 206 (2008) (describing systemic risk as an externality).

33. Steven Schwarz defines systemic risk as

[T]he risk that (i) an economic shock such as market or institutional failure triggers (through a panic or otherwise) either (X) the failure of a chain of markets or institutions or (Y) a chain of significant losses to financial institutions, (ii) resulting in increases in the cost of capital or decreases in its availability, often evidenced by substantial financial-market price volatility.

Steven L. Schwarz, *Systemic Risk*, 97 GEO. L.J. 193, 204 (2008). Similarly, Hal Scott contends the following:

Systemic risk has two distinct meanings. First, it refers to a financial shock that has simultaneous impact on a number of financial institutions. Second, it refers to the chain reaction problem, the possibility that the failure of one bank will affect other banks. To some extent, these two versions are interrelated: a major shock can trigger a chain reaction.

HAL S. SCOTT, *INTERNATIONAL FINANCE* 173 (16th ed. 2009).

34. See Jeffrey N. Gordon, *Executive Compensation and Corporate Governance in Financial Firms: The Case for Convertible Equity-Based Pay*

that insiders (directors, managers, and large-block shareholders) do not fully internalize the costs of systemic risk, which run throughout the entire economy rather than just the particular firm. Consider Goldman Sachs as an example and assume (for the sake of argument) that it continues to expose the economy to systemic risk in mid-2011. In Gordon's view, the costs of systemic risk generated by Goldman Sachs are reflected in every component of a diversified portfolio *other than* Goldman Sachs securities. Lloyd Blankfein (Goldman's CEO) has insufficient exposure to these non-Goldman investments to reduce systemic risk. Its large-block shareholders, like Berkshire Hathaway, are concentrated in Goldman and face diminished incentives as well.³⁵ In contrast, a diversified shareholder (like a mutual fund) does bear the full costs of systemic risk in Gordon's view but lacks the power and organization to change the systemic-risk taker's management or policies. The shareholder cannot vote with its feet by selling shares because systemic risk plagues not the risk taker but the portfolio as a whole.

Gordon's argument turns, implicitly, on classifying diversified shareholders as the relevant economic actors. Diversified shareholders care about their overall portfolio, but directors (along with executives and large-block shareholders) care about the particular firm's performance. Viewing directors and other insiders as the relevant actors probably reflects the economic and legal realities of publicly traded companies³⁶ and leads to the conclusion that systemic risk is a classic externality.³⁷ Economic actors (directors, etc., rather than diversified shareholders) impose costs on society because they do not bear the full costs of their actions (systemic risk).

(Columbia Law & Econ., Working Paper No. 373, 2010), *available at* <http://ssrn.com/abstract=1633906>.

35. *Cf.* THE GOLDMAN SACHS GRP., PROXY STATEMENT FOR 2011 ANNUAL MEETING OF SHAREHOLDERS 56–58 (2011), *available at* <http://www.goldmansachs.com/investor-relations/financials/archived/proxy-statements/docs/2011-proxy-statement.pdf> (detailing beneficial ownership of executives and large shareholders).

36. *See, e.g.*, Stephen M. Bainbridge, *Director Primacy: The Means and Ends of Corporate Governance*, 97 NW. U. L. REV. 547 (2003).

37. *Cf., e.g.*, ANDREU MAS-COLELL ET AL., MICROECONOMIC THEORY 352 (1995) (“An *externality* is present whenever the well-being of a consumer or the production possibilities of a firm are directly affected by the actions of another agent in the economy.”); DOUGLAS G. BAIRD, ROBERT H. GERTNER & RANDAL C. PICKER, GAME THEORY AND THE LAW 307 (1998) (“An externality exists whenever a person does not enjoy all the benefits or incur all the costs that result from the actions that person undertakes.”).

Even if diversified shareholders were the relevant actors, they do not bear all the costs of systemic risk, such as losses to human capital. From July 2007 to July 2011, the unemployment rate has nearly doubled, going from 4.7% to 9.1%.³⁸ The human capital of those graduating from college and law school has been seriously impaired during the same time with the scarcity of entry-level professional jobs. While the stock market has fallen over the same period,³⁹ financial markets do not reflect the impact on current and future career opportunities⁴⁰ and only imperfectly the effects on less liquid markets, such as housing.

C. Regulation and Support of Systemically Important Institutions

The prior Section suggests that systemic risk is a type of externality for firms. Firms certainly suffer from financial distress, but banking is unique in that distress not only spreads but amplifies through the rest of the economy. Thus, it is possible that banks would take risks that are privately optimal (even if they turn out badly for the banks) but socially destructive. To control these risks, governments not only regulate banks but also support them in times of distress.

1. Bank Activities

Governments have long regulated the types of activities that banks can undertake. The Depression-era Glass–Steagall Act⁴¹ divorced commercial banking (i.e., taking customer deposits) from investment banking (i.e., acting as broker, dealer, or underwriter for securities) but had been repealed by the end of the 20th century.⁴²

38. See Bureau of Labor Statistics, U.S. Dep't of Labor, *Labor Force Statistics from the Current Population Survey*, <http://data.bls.gov/timeseries/LNS14000000> (last visited Mar. 25, 2013).

39. The S&P 500 Index has fallen by about 11% over this four-year period, going from 1519.43 on July 2, 2007 to 1339.67 on July 1, 2011. See *^GSPC Historical Prices*, YAHOO! FINANCE, <http://finance.yahoo.com/q/hp?s=%5EGSPC+Historical+Prices> (last visited Mar. 25, 2013).

40. *But cf.* Gordon, *supra* note 34, at 4. (“Even though shareholders may not internalize all of the costs of systemic distress (because there are losses beyond portfolio losses, for example the human costs of higher unemployment and costs that ramify internationally), their internalized losses are sufficient to justify appropriate measures to control financial firm risk-taking.”).

41. Pub. L. No. 73-66, 48 Stat. 162 (1933).

42. The Glass–Steagall provisions were sections 16, 20, 21, and 32 of the Banking Act of 1933. See Jonathan R. Macey, *Special Interest Groups Legislation and the Judicial Function: The Dilemma of Glass–Steagall*, 33 EMORY L.J. 1, 1 n.1 (1984). Sections 16 and 21 remain in force, preventing the same corporate

Glass–Steagall had several rationales, one of which was to protect the banking system from the risks inherent the stock market.⁴³

The Dodd–Frank Act attempts a similar divide between regulated banks and securities dealing with its “Volcker rule,”⁴⁴ prohibiting banks from engaging in proprietary trading on their own account (rather than for clients).⁴⁵ The Volcker rule is a high-profile slice of Dodd–Frank, which dramatically expands the authority of financial regulators, especially over the large bank holding companies that now dominate American finance.⁴⁶ Like Glass–Steagall, the Volcker rule regulates the asset side of the bank’s balance sheet. Because volatile assets are more likely to send a bank into insolvency than placid ones, governments try to direct banks into less investment.

2. Capital Adequacy

Firm assets, regulated as discussed above, determine the amount of losses a firm might face. Firm capital structure, however, determines the amount of losses a firm can absorb before becoming distressed or insolvent.⁴⁷ A firm funded 100% with common equity could not become insolvent; whereas, a firm funded 100% with debt

entity from acting as both investment and commercial bank. *See* 12 U.S.C. § 24 (2006 & Supp. V 2011) (codifying section 16, as amended); 12 U.S.C. § 378 (2006) (codifying section 21, as amended). Sections 20 and 32 prevented investment and commercial banks from coming under common control (either by corporate structure or by interlocking directors, officers, or employees). These provisions were formally repealed by the Gramm–Leach–Bliley of 1999, Pub. L. No. 106-102, § 101, 113 Stat 1338, 1341 (1999), although prior regulatory and judicial interpretations had largely eviscerated them. *See* Jonathan R. Macey, *The Business of Banking: Before and After Gramm–Leach–Bliley*, 25 J. CORP. L. 691, 691–92 (2000).

43. *See* *Inv. Co. Inst. v. Camp*, 401 U.S. 617, 630–31 (1971).

44. The Volcker rule is named after former Federal Reserve Chairman Paul Volcker who advocated for the rule. *See* FIN. STABILITY OVERSIGHT COUNCIL, STUDY & RECOMMENDATIONS ON PROHIBITIONS ON PROPRIETARY TRADING & CERTAIN RELATIONSHIPS WITH HEDGE FUNDS & PRIVATE EQUITY FUNDS 1–2 (2010), available at <http://www.treasury.gov/initiatives/documents/volcker%20sec%20%20619%20study%20final%201%2018%2011%20org.pdf>.

45. *See* Dodd–Frank Wall Street Reform and Consumer Protection Act, Pub. L. No. 111-203, § 619(a)(1), 124 Stat. 1376, 1620 (2010); *see also id.* § 619(h)(4), 124 Stat. at 1630 (defining proprietary trading). The prohibition applies to a “banking entity,” which includes a depository institution, its parent company, and affiliates. *See id.* § 619(h)(1), 124 Stat. at 1629.

46. *See, e.g., id.* § 114(a)(1), 124 Stat. at 1403 (authorizing additional regulation for “large, interconnected bank holding companies”).

47. *Cf. infra* Part VI.B.1 (contrasting the investing and financing decisions).

becomes insolvent with the slightest loss. As financial intermediaries, banks naturally hold debt in their capital structure in the form of demand deposits.

To reduce the risk of distress or insolvency, regulators require banks to hold a certain level of common equity and other “capital” on their balance sheets. The actual rules for bank capital are incredibly complex⁴⁸ but present fairly straightforward issues. Regulators must define what qualifies as capital and specify the amount a bank must carry. Common equity clearly qualifies, and senior secured debt does not. Firms also finance with instruments having characteristics of both debt and equity, like preferred stock and unsecured debentures. This Article discusses hybrid instruments that issue as debt but convert to equity if the firm becomes financially distressed.⁴⁹

3. Deposit Insurance

Federal deposit insurance not only protects depositors but also removes their incentive to panic and make a run on their banks. Before the financial crisis, the FDIC protected account values up to \$100,000.⁵⁰ To calm depositors and prevent bank runs, the government increased this protection to \$250,000.⁵¹ The Treasury department even temporarily guaranteed money market mutual funds,⁵² the supposedly uninsured mutual funds that invest in repo and other short-term corporate obligations.⁵³ As discussed below, however, deposit insurance is a key contributor to moral hazard at banks. Depositors have little or no incentive to monitor the financial stability of their banks, leaving banks free (or at least freer) to pursue overly risky projects.⁵⁴

48. See generally BASEL COMMITTEE ON BANKING SUPERVISION, BASEL III: A GLOBAL REGULATORY FRAMEWORK FOR MORE RESILIENT BANKS AND BANKING SYSTEMS (2011), available at <http://www.bis.org/publ/bcbs189.pdf>. See also BASEL COMMITTEE ON BANKING SUPERVISION, INTERNATIONAL CONVERGENCE OF CAPITAL MEASUREMENT AND CAPITAL STANDARDS: A REVISED FRAMEWORK COMPREHENSIVE VERSION (2006), available at <http://www.bis.org/publ/bcbs128.pdf>.

49. See *infra* notes 220–26 and accompanying text.

50. Cf. Dodd–Frank Act § 335(a), 124 Stat. at 1540 (replacing \$100,000 limit with \$250,000).

51. See 12 U.S.C. § 1821(a)(1)(E) (Supp. V 2011). The FDIC fully insures noninterest-bearing accounts through December 31, 2012. See 12 U.S.C. § 1821(a)(1)(B)(ii); Dodd–Frank Act § 343(a), 124 Stat. at 1544–45.

52. See Press Release, Frequently Asked Questions About Treasury’s Temporary Guarantee Program for Money Market Funds (Sept. 29, 2008), available at <http://www.treasury.gov/press-center/press-releases/Pages/hp1163.aspx>.

53. Cf. *supra* note 20 and accompanying text (discussing the “run on repo”).

54. See *infra* Part VI.C.

4. Discount Window and Other Lending Facilities

Banks face the risk of illiquidity because they borrow short-term funds (e.g., deposits, repo) and invest in long-term projects (e.g., Mrs. Macklin's mortgage, structured finance projects). Thus, a perfectly solvent bank may not have enough liquid funds to discharge its liabilities. Through its discount window, the Federal Reserve System (the Fed) acts as lender-of-last-resort and makes short-term loans to banks facing liquidity strains.⁵⁵

During the crisis, many banks feared they would be stigmatized by borrowing from the discount window, perversely making the discount window a destabilizing force.⁵⁶ In December 2007, the Fed responded to this concern by creating the Term Auction Facility (TAF), which came to dwarf the discount window during the crisis.⁵⁷ Because TAF used a competitive bidding process, banks perceived it as carrying less stigma than the discount window.⁵⁸

TAF was open only to depository institutions.⁵⁹ To supply liquidity to other financial institutions, the Fed created a wide array of extraordinary lending facilities and guarantee programs.⁶⁰ In December 2010, the Fed revealed the details of many of these

55. See THE FEDERAL RESERVE SYSTEM: PURPOSES AND FUNCTIONS 45–46 (9th ed. 2005), available at http://www.federalreserve.gov/pf/pdf/pf_complete.pdf.

56. Before Dodd–Frank, the Federal Reserve did not publish the identity of discount-window borrowers, although it did publish the volume of borrowing. Nevertheless, banks feared that others could detect their discount-window borrowing by analyzing private borrowing patterns and the published volume of borrowing. See Renee Courtois Haltom, *Stigma and the Discount Window*, REGION FOCUS, First Quarter 2011, at 6, 6, available at http://www.richmondfed.org/publications/research/region_focus/2011/q1/pdf/federal_reserve.pdf.

57. See *id.* at 8.

58. Indeed, banks paid higher rates using TAF than they could at the discount window. See *id.*; see also Olivier Armantier, Sandra Krieger & James McAndrews, *The Federal Reserve's Term Auction Facility*, 14 FED. RES. BANK N.Y. CURRENT ISSUES ECON. & FIN., no. 5, 2008, at 1, 6, available at http://www.newyorkfed.org/research/current_issues/ci14-5.pdf (describing the decreased stigma from auction borrowing).

59. See Extensions of Credit by Federal Reserve Banks, 72 Fed. Reg. 71,202, 71,202 (Dec. 17, 2007) (“The final rule provides that advances under a TAF will be made only to depository institutions that are in generally sound financial condition, are expected to remain in that condition during the term of the advance and are eligible to receive advances under section 10B of the Federal Reserve Act.”).

60. The legal authorization for these facilities comes from section 13(3) of the Federal Reserve Act. See BAIRD WEBEL & MARC LABONTE, GOVERNMENT INTERVENTIONS IN RESPONSE TO FINANCIAL TURMOIL 16 (2010), available at <http://www.fas.org/sgp/crs/misc/R41073.pdf>. Cf. 12 U.S.C. § 343 (2006 & Supp. V 2011) (codifying section 13(3) of the Federal Reserve Act).

transactions, identifying participants ranging from Goldman Sachs to Harley–Davidson.⁶¹

5. Bank Creditor Bailouts

Afraid that default would further destabilize the financial system, the U.S. government deployed massive funds to keep bank creditors whole while letting shareholders suffer to curtail moral hazard. When the New York Fed brokered a deal for JPMorgan to buy Bear Stearns, it actually insisted on a lower price than JPMorgan was willing to pay.⁶² And, when it put Fannie Mae and Freddie Mac in government conservatorship, it largely squeezed out the interests of their shareholders (including Ralph Nader, who has taken his grievances to the readership of the *The Wall Street Journal*).⁶³

Early on, the government's assistance was *ad hoc*, as with the Bear Stearns deal. As the financial crisis intensified, it became clear that many firms would fold without direct assistance. The government started an array of ambitious programs to prop up failing banks, the most famous of which is the Troubled Asset Relief Program (TARP), created by Congress in October 2008.⁶⁴ The Treasury Department used its TARP funding and authority to buy roughly \$200 billion of preferred stock in banks and other companies, most of which has now been repaid.⁶⁵

Even though bailouts largely protected bank creditors, not all remained intact. In another government-brokered acquisition, JPMorgan bought the assets of failed thrift Washington Mutual subject to the claims of its depositors and general creditors. It did not, however, assume any obligations to Washington Mutual's equity and subordinated debt holders, who were wiped out in the deal.⁶⁶ Similarly, creditors of Lehman Brothers were left to fend for

61. See David Reilly & Rolfe Winkler, *Moral Hazard, Thy Price Is \$3.3 Trillion*, WALL ST. J. (Dec. 2, 2010), <http://online.wsj.com/article/SB10001424052748704594804575649070454645244.html>.

62. See DAVID SKEEL, *THE NEW FINANCIAL DEAL: UNDERSTANDING THE DODD–FRANK ACT AND ITS (UNINTENDED) CONSEQUENCES* 146 (2011).

63. See Ralph Nader, *The Great Fannie and Freddie Rip-Off*, WALL ST. J. (Jan. 26, 2011), <http://online.wsj.com/article/SB10001424052748703555804576102423446952218.html>.

64. See Emergency Economic Stabilization Act of 2008, Pub. L. 110-343, tit. I, 122 Stat. 3765, 3767–3800.

65. See WEBEL & LABONTE, *supra* note 60.

66. See Richard M. Hynes & Steven D. Walt, *Why Banks Are Not Allowed in Bankruptcy*, 67 WASH. & LEE L. REV. 985, 1034 (2010).

themselves in bankruptcy.⁶⁷ Nevertheless, most creditors of failed banks survived unimpaired thanks to government bailouts. As Professor David Skeel notes, “The bailouts of 2008 were creditor bailouts.”⁶⁸

III. POST-TARP MOVEMENT TO REGULATE BANKER PAY

A. Introduction

After the financial crisis, outrage over bailouts and bonuses made some form of banker-pay regulation inevitable. What made pay regulation seem natural, however, was the long history of federal regulation.⁶⁹ Before the financial crisis, however, these attempts were largely indirect and implemented through the tax and securities laws. The Internal Revenue Code favored some arrangements (e.g., stock options) while disfavoring others (e.g., large fixed salaries) under the theory that the favored arrangements would encourage higher levels of executive performance. Using its regulatory power, the Securities and Exchange Commission (SEC) required disclosure of executive pay packages. The SEC remained facially neutral about different types of arrangements but was clearly motivated by the idea that public disclosure would curtail executive pay.⁷⁰

Financial firms were singled out during the crisis and ensuing bailouts. TARP limited the amount of compensation that TARP recipients could pay and subjected their pay practices to regulatory oversight by a new “pay czar,” Kenneth Feinberg.⁷¹ The TARP limits ceased to apply once firms repaid their assistance, which most recipient firms have now done.⁷² Because of the outrage over the

67. See Jeffrey N. Gordon & Christopher Muller, *Confronting Financial Crisis: Dodd-Frank’s Dangers and the Case for a Systemic Emergency Insurance Fund*, 28 YALE J. ON REG. 151, 200–01 (2011).

68. See SKEEL, *supra* note 62, at 147.

69. See Kathryn J. Kennedy, *Excessive Executive Compensation: Prior Federal Attempts to Curb Perceived Abuses*, 10 HOUS. BUS. & TAX L.J. 196, 198 (2010).

70. *Id.* at 235–41.

71. See Michael S. Melbinger, *Executive Compensation & Risk: TARP Rules for Financial Institutions Trigger Broader Risk Assessment of Compensation Policies*, 14 N.C. BANKING INST. 59 (2010); John W. Lee, *Tax TARP Needed for Year One and Year Two Returns of Executive Bonus to TARP Recipient: A Case Study of Year One Rescission/Exclusion From Income and Year Two Deduction Under Section 1341*, 1 WM. & MARY BUS. L. REV. 323 (2010).

72. See OFFICE OF FIN. STABILITY, U.S. DEP’T OF THE TREASURY, TROUBLED ASSET RELIEF PROGRAM: TWO YEAR RETROSPECTIVE (2010), available at

crisis and the extravagance of financial-sector compensation, it was inevitable that policymakers would seek more permanent regulation of banker pay.

B. Dodd–Frank’s Unfocused Compensation Reforms

Just as the collapse of Enron gave birth to Sarbanes–Oxley, the financial crisis spawned its own signature legislation, Dodd–Frank.⁷³ The Act is enormous in scope and size, running nearly 850 pages in the *Statutes at Large*⁷⁴ and reforming financial regulation of gargantuan bank holding companies⁷⁵ down to pawnshops and payday lenders.⁷⁶

1. Compensation Reforms of General Application

Given the widely held view (even inside the industry) that compensation practices played some role in the crisis, one would have expected Congress to devote considerable attention to compensation in drafting the Act. Dodd–Frank, however, devotes a mere eight pages to compensation practices.⁷⁷ Most of them apply to *all* public companies, not just those in the financial sector. The following Dodd–Frank reforms have such universal application:

- Periodic but nonbinding shareholder advisory votes on executive compensation (i.e., *say on pay*),⁷⁸
- Independence of compensation committees,⁷⁹
- Disclosures relating executive pay versus performance,⁸⁰
- Recovery of erroneously awarded executive compensation following a restatement of earnings (i.e., *clawbacks*),⁸¹ and

http://www.treasury.gov/press-center/news/Documents/TARP%20Two%20Year%20Retrospective_10%2005%2010_transmittal%20letter.pdf

73. Dodd–Frank Wall Street Reform and Consumer Protection Act, Pub. L. No. 111-203, 124 Stat. 1376 (2010). The boom-bust-legislation pattern predates Sarbanes–Oxley and Dodd–Frank. See Larry E. Ribstein, *Bubble Laws*, 40 HOUS. L. REV. 77 (2003).

74. Dodd–Frank Act §§ 1–1601, 124 Stat. at 1376–2223.

75. See, e.g., *id.* §§ 161–176, 124 Stat. at 1420–42.

76. See SKEEL, *supra* note 62, at 107.

77. Dodd–Frank spans from 124 Stat. at 1376 to 124 Stat. at 2223.

78. Dodd–Frank Act § 951, 124 Stat. at 1899–1900.

79. *Id.* § 952, 124 Stat. at 1900–03.

80. *Id.* § 953, 124 Stat. at 1903–04.

81. *Id.* § 954, 124 Stat. at 1904. Cf. Sarbanes–Oxley Act of 2002, Pub. L. No. 107-204, § 304(a), 116 Stat. 745, 778 (imposing clawbacks on CEOs and CFOs).

- Disclosure of company policies on whether executives can hedge against declines in equity compensation (stock or options).⁸²

Though some claim ulterior motives,⁸³ the public-spirited justification is that federal regulation is necessary to align the divergent interests of management and shareholders.⁸⁴ A Senate committee report justified the provisions as enhancing shareholder value.⁸⁵ Regarding clawbacks, the report said, “The Committee believes it is unfair to shareholders for corporations to allow executives to retain compensation that they were awarded erroneously.”⁸⁶ Similarly, according to the committee, disclosures about hedging policies “will allow shareholders to know if executives are allowed to purchase financial instruments to effectively avoid compensation restrictions that they hold stock long-term, so that they will receive their compensation even in the case that their firm does not perform.”⁸⁷

In the financial sector, however, enhancing shareholder value does not necessarily enhance societal welfare. As discussed below, shareholders may have the incentive to pursue excessive risks because they do not bear the costs of systemic risk.⁸⁸ Moreover, the government socializes much of the risk of banking by providing a safety net of deposit insurance, emergency lending, and bailouts.⁸⁹

2. FDIC Clawback Authority

Dodd–Frank gives regulators a powerful new tool to put large, failing financial firms into receivership.⁹⁰ This new resolution

82. Dodd–Frank Act § 955, 124 Stat. at 1904–05.

83. Critics of compensation reform often claim that reformers have motives other than shareholder value. Indeed, some reformers openly pursue other goals. Professor Stephen Bainbridge, an early and critical commentator on the Dodd–Frank compensation provisions, contends that “Dodd–Frank’s corporate governance provisions were included in the legislation because key policy entrepreneurs were able to hijack the legislative process to advance a long-standing political agenda.” Stephen M. Bainbridge, *Dodd–Frank: Quack Federal Corporate Governance Round II*, 95 MINN. L. REV. 1779, 1816 (2011). Round I was Sarbanes–Oxley. See Roberta Romano, *The Sarbanes–Oxley Act and the Making of Quack Corporate Governance*, 114 YALE L.J. 1521 (2005).

84. See generally LUCIAN BEBCHUK & JESSE FRIED, *PAY WITHOUT PERFORMANCE* (2004).

85. S. REP. NO. 111-176, at 133–36 (2010).

86. *Id.* at 136.

87. *Id.*

88. See *supra* Part II.B.

89. See *supra* Part II.C.3–5.

90. See Dodd–Frank Wall Street Reform and Consumer Protection Act, Pub. L. No. 111-203, §§ 201–217, 124 Stat. 1376, 1442–1520.

authority was enacted primarily to avoid a future Lehman Brothers—an enormous financial firm going through bankruptcy proceedings considered by many ill-equipped to deal with such size and complexity.⁹¹ Congress clearly views the new resolution authority as supplanting bankruptcy and perhaps future bailouts as well.⁹² Many, though, question whether the Federal Reserve and Treasury Department will swear off bailouts should they consider them appropriate in the future.⁹³

As for the mechanics of the new authority, the Treasury, Federal Reserve, and FDIC must jointly decide to place a systemically important financial firm into resolution, based primarily on the determination that the firm is in default or in danger of default.⁹⁴ The FDIC conducts the resolution process and has broad powers in deciding which creditors should be paid and in what amounts.⁹⁵ Equity compensation should be automatically wiped out during resolution.⁹⁶ Previously earned but unpaid bonuses—i.e., deferred compensation—would surely be scrutinized and likely repudiated by the FDIC.⁹⁷

Indeed, the resolution authority targets compensation paid before the start of resolution. Dodd–Frank authorizes the FDIC to recover all payments made to senior executives two years prior to the start of the resolution process.⁹⁸ Both the statute and proposed regulations allow the “clawback” only when the senior executive is “substantially responsible” for the firm’s failure.⁹⁹ CEOs and CFOs are presumed substantially responsible but may rebut the

91. *But cf.* SKEEL, *supra* note 62, at 31 (“Given the tumultuous environment in which Lehman filed its original bankruptcy petition, the assumption that bankruptcy must have been a disaster is perhaps understandable. But in fact, bankruptcy worked quite well.”).

92. *Cf.* Dodd–Frank Act § 1, 124 Stat. at 1376 (describing the purposes of the Act as “improving accountability and transparency in the financial system, to end ‘too big to fail’, [and] to protect the American taxpayer by ending bailouts”).

93. *See* OFFICE OF THE SPECIAL INSPECTOR GEN. FOR THE TROUBLED ASSET RELIEF PROGRAM, QUARTERLY REPORT TO CONGRESS 7–10 (Jan. 26, 2011), available at http://www.sigtar.gov/Quarterly%20Reports/January2011_Quarterly_Report_to_Congress.pdf.

94. *See* Dodd–Frank Act § 203(b), 124 Stat. at 1451; SKEEL, *supra* note 62, at 121.

95. *See* SKEEL, *supra* note 62, at 148.

96. *See* Dodd–Frank Act § 204(a), 124 Stat. at 1454–55; *id.* § 210, at 1514.

97. The FDIC has proposed giving such obligations a lower priority than subordinated debt. *See* 76 Fed. Reg. 16,324, 16,340 (Mar. 23, 2011).

98. Dodd–Frank Act § 210(s), 124 Stat. at 1514. *Cf.* 12 C.F.R. § 380.1 (2013) (defining *senior executive*).

99. *See* Dodd–Frank Act § 210(s)(1), 124 Stat. at 1514; Orderly Liquidation Authority, 76 Fed. Reg. 16,324, 16,338 (proposed Mar. 23, 2011).

presumption by showing they “performed [their] duties with the requisite degree of skill and care required.”¹⁰⁰

3. Compensation at Covered Financial Institutions

Even before the financial crisis, U.S. bank regulators prohibited “excessive compensation” as an “unsafe and unsound practice.”¹⁰¹ In contrast to the usual concern over excessive compensation, the goal of these regulations is to protect depositors and the banking system, not bank shareholders. Indeed, from a regulatory perspective, excessive compensation is no more or less harmful than excessive dividends, as both deplete bank capital.¹⁰² In June 2010 (just before Dodd–Frank passed), federal banking regulators finalized rules on compensation at banks and their holding companies,¹⁰³ reflecting international agreements discussed in the next Section.

Congress gave its express approval to banker-pay regulation in Dodd–Frank Act section 956. The Act covers compensation structures at “covered financial institutions,” a term that includes important banks, among others.¹⁰⁴ Federal financial regulators have the authority to promulgate rules that prohibit any types of incentive-based payment arrangement, or any feature of any such arrangement, that the regulators determine encourages inappropriate risks by covered financial institutions (1) by providing an executive officer, employee, director, or principal shareholder of the covered financial institution with excessive compensation, fees, or benefits; or (2) that could lead to material financial loss to the covered financial institution.¹⁰⁵

Section 956 suggests that compensation can harm financial institutions in ways other than depleting capital. It can “encourage[]

100. 76 Fed. Reg. at 16,338.

101. See 12 C.F.R. pt. 30 app. A (“Excessive compensation is prohibited as an unsafe and unsound practice.”); 12 C.F.R. pt. 208 app. D-1 (same); 12 C.F.R. pt. 364 app. A (same); 12 C.F.R. pt. 570 app. A (same).

102. Cf. COMPTROLLER OF THE CURRENCY, COMPTROLLER’S HANDBOOK: CAPITAL ACCOUNTS AND DIVIDENDS (SECTION 303) 8 (1991), available at <http://www.occ.gov/publications/publications-by-type/comptrollers-handbook/capital1.pdf> (“Excessive dividends can weaken a bank’s capital position.”).

103. See Guidance on Sound Incentive Compensation Policies, 75 Fed. Reg. 36,395 (June 25, 2010).

104. Dodd–Frank Act § 956, 124 Stat. at 1905–06. Covered financial institutions include depository institutions and their holding companies, broker dealers, investment advisors, credit unions, Freddie Mac, and Fannie Mae. Institutions with under \$1 billion in assets are exempt. *Id.* § 956(e)(2), (f), 124 Stat. at 1906.

105. *Id.* at § 956, 124 Stat. at 1905.

inappropriate risks,”¹⁰⁶ presumably by encouraging individual bankers to pursue projects that are personally lucrative but organizationally or socially damaging. These concerns¹⁰⁷ echo those of the Financial Stability Board, discussed in the next Section.

C. The Financial Stability Board (FSB)

To date, international agreements between financial regulators have largely driven the movement to regulate banker pay. In particular, most of what U.S. and E.U. regulators have done is implement agreements reached by the Financial Stability Board, composed of central bankers and regulators from the wealthier nations and charged with developing policy responses to the financial crisis.¹⁰⁸

International regulatory consensus has long driven banking regulation. Because capital is mobile, bankers and nations seek to level the playing field between different jurisdictions. The Basel Committee on Banking Supervision¹⁰⁹ aims to regulate bank capital¹¹⁰ under a cooperative vision of international law:

106. Dodd–Frank Act, § 956(b), 124 Stat. at 1905.

107. In April 2011, U.S. financial regulators proposed rules implementing section 956. Incentive-Based Compensation Arrangements, 76 Fed. Reg. 21,170 (proposed Apr. 14, 2011). These regulations largely follow June 2010 regulations but, following Dodd–Frank, do expand the scope of firms whose compensation is regulated. The June 2010 guidance applies to the most important class of financial firms: banks and bank holding companies. *See* 75 Fed. Reg. at 36,398. Dodd–Frank section 956 extends the regulatory reach to broker dealers, investment advisors, credit unions, Freddie Mac, and Fannie Mae, while exempting institutions with under \$1 billion in assets. *See* Dodd–Frank Act § 956(e)(2), (f), 124 Stat. at 1906.

108. *See History*, FIN. STABILITY BD., <http://www.financialstabilityboard.org/about/history.htm> (last visited Mar. 14, 2013).

109. The Basel Committee is composed of central bankers from the G-20 and a few other rich countries. The European Union has its own seat at the G-20 but not at Basel. The remaining 19 nations all participate in Basel, as do Belgium, Hong Kong, Luxembourg, the Netherlands, Singapore, Spain, Sweden, and Switzerland. *See generally History of the Basel Committee and Its Membership*, BANK FOR INT’L SETTLEMENTS, <http://www.bis.org/bcbs/history.htm> (last visited Mar. 14, 2013).

110. The Basel capital requirements limit bank leverage. Unlike traditional measures of leverage deployed in financial analysis, bank capital requirements reflect the riskiness of assets. *Compare, e.g.*, THOMAS R. ROBINSON ET AL., INTERNATIONAL FINANCIAL STATEMENT ANALYSIS 259, 288–91 (2009) (describing measures of solvency and leverage used in financial analysis), *with* Douglas J. Elliott, *The Importance of Capital*, BROOKINGS INST. (Jan. 28, 2010), <http://www.brookings.edu/research/papers/2010/01/29-capital-elliott> (describing bank capital).

The Committee does not possess any formal supranational supervisory authority, and its conclusions do not, and were never intended to, have legal force. Rather, it formulates broad supervisory standards and guidelines and recommends statements of best practice in the expectation that individual authorities will take steps to implement them through detailed arrangements—statutory or otherwise—which are best suited to their own national systems. In this way, the Committee encourages convergence towards common approaches and common standards without attempting detailed harmonisation of member countries' supervisory techniques.¹¹¹

The actual Basel standards of capital regulation clearly fell short during the financial crisis, prompting newer and tougher standards.¹¹² Basel has been fairly successful, however, at achieving harmonization, with most nations adopting some form of the Basel accords.¹¹³

This success inspired the G-20 nations to task a similar body, the Financial Stability Board, with responding to the financial crisis. Mostly the same countries comprise the FSB and the Basel Committee, although the FSB includes financial regulators (like the SEC) and some nongovernmental organizations (like the IMF) in addition to the central bankers who meet on Basel.¹¹⁴ With this background, we turn now to the substance of the FSB's work.

D. FSB Principles for Sound Compensation Practices

1. The Risk-Management Criticism of Incentive Compensation

Consider the following exaggerated example on risk-seeking incentives. Suppose you could make a bet—with your employer's money—that the stock market will go up next month. If you are right, your employer makes \$1 billion, and you get a nice bonus of \$10 million. If you are wrong, your employer loses \$1 billion, and you get fired but could probably land a job at a slightly lesser firm.

111. See *History of the Basel Committee and Its Membership*, *supra* note 109.

112. Cf. *supra* Part II.C.2 (discussing capital adequacy rules in context of banking regulation).

113. See Chris Brummer, *Why Soft Law Dominates International Finance—and Not Trade*, 13 J. INT'L ECON. L. 623 (2010).

114. Compare FIN. STABILITY BD., *supra* note 4 (listing regulators and nations represented on FSB), with *About the Basel Committee*, BANK FOR INT'L SETTLEMENTS, <http://www.bis.org/bcbs/> (last visited Mar. 13, 2013) (listing central banks represented on Basel Committee).

Even without the prospect of new employment, many (probably most) people would risk their jobs on a bet that could deliver a few million dollars. Bankers (greedy and otherwise) are different only because they have the opportunity.

Bank executives have long understood that bonus-seeking employees could take on too much risk and “blow up,” seriously damage, or bankrupt the company. In 1995, rogue trader Nick Leeson bankrupted Barings, one of England’s oldest and most storied banks.¹¹⁵ The 2008 counterpart occurred at the Financial Products Group of AIG. AIG is primarily a traditional insurer, but Financial Products sold credit-default swap (CDS) contracts, essentially an insurance policy against the default of some other financial instrument like a bond. AIG, of course, collected premiums for writing the CDS contracts. Until 2008, default on the underling bonds was a remote and contingent event, making the transactions appear very profitable.

These profits enriched the Financial Products employees with average compensation of over \$1 million per year, giving them every reason to sell more and more CDS contracts. The employees, however, are not on the hook for any losses should the covered bonds default. Because Financial Products was a small corner of AIG—employing a few hundred of AIG’s 100,000 employees—top executives were ill-equipped to control the risks presented by the CDS contracts. Once the financial crisis struck, only a federal bailout of \$85 billion saved AIG from bankruptcy.¹¹⁶ Thus, incentive compensation gave Financial Products employees an incentive to pursue risk. Success gave the employees large bonuses, while failure dispersed economic hardship through society. According to many, incentive compensation significantly contributed to the financial crisis.¹¹⁷

2. *Alignment of Incentive Compensation with Risk Management*

Reforming incentive compensation has become the primary work of the Financial Stability Board. The most influential work on regulating banker pay is the FSB’s *Principles for Sound Compensation Practices*¹¹⁸ (the *Principles*). In the view of the FSB, incentive compensation contributed to the financial crisis because it

115. See HULL, *supra* note 17, at 782.

116. See Gretchen Morgenson, *Behind Insurer’s Crisis, Blind Eye to a Web of Risk*, N.Y. TIMES (Sept. 27, 2008), http://www.nytimes.com/2008/09/28/business/28melt.html?pagewanted=all&_r=1&.

117. See *supra* Part I.

118. FSF PRINCIPLES, *supra* note 1.

was not coordinated with risk management.¹¹⁹ The following example illustrates this failure:

Imagine two employees whose activity generates the same short-run profit for the firm. One is a trader who ends each day with no positions and thus who exposes the firm to losses only during the trading day. Another is an originator of long-term, on-balance-sheet assets that provide substantial fees at origination but that expose the firm to substantial risk of loss over the life of the asset. Many compensation systems would tend to reward the two employees similarly, other things being equal, because there would be no “risk charge” applied to the short-term profits generated by the second employee.¹²⁰

Risk-management systems did constrain employees before the crisis by disallowing some trades and projects.¹²¹ Risk management was about the scope of permissible activities and limited the array of transactions that employees could take on behalf of their firms. Within the set of approved transactions, however, employee compensation was measured by profit. Returning to the FSB example, assume that an employee receives permission to transact as either a short-term trader or a long-term originator. All other things being equal, the employee would pursue transactions as an originator because illiquid, long-term, risky transactions tend to produce higher profits. The *Principles* aim to correct this employee-level bias by requiring firms to make incentive compensation sensitive to risk.

In the view of the *Principles*, the true failure at AIG and elsewhere was that incentive compensation was not adjusted to reflect the risk taken on by employees.¹²² The trick, however, is devising an effective way to do so. Quantitative models (like “value at risk” and its variants) exist for many transactions, allowing firms to impose upfront risk charges. These models do not perform well in times of distress, the only time they really matter.¹²³ Human judgment seems little better at predicting crisis. We need only recall the choir of prominent voices that, before September 2008,

119. *See id.* at 1.

120. *See id.* at 8.

121. *See generally* Karl S. Okamoto, *After the Bailout: Regulating Systemic Moral Hazard*, 57 UCLA L. REV. 183, 208–09 (2009) (discussing internal controls and their failure to prevent the financial crisis).

122. *See id.* at 8.

123. *See generally* NASSIM NICHOLAS TALEB, *THE BLACK SWAN: THE IMPACT OF THE HIGHLY IMPROBABLE* (1st ed. 2007).

downplayed the impact of subprime mortgages, the housing collapse, and the credit crunch on the overall economy.¹²⁴

The soft, standards-based approach of the FSB's *Principles* would seem to reflect these difficulties. They are flexible and sensible in the abstract. No one could seriously argue against the propositions that

[c]ompensation systems should link the size of the bonus pool to the overall performance of the firm. Employees' incentive payments should be linked to the contribution of the individual and business to such performance. Bonuses should diminish or disappear in the event of poor firm, divisional or business unit performance.¹²⁵

Where reliable quantitative methods can measure risk-taking, bonuses can be adjusted *ex ante*.

Whether reliable quantitative methods actually exist depends on the context. Some risks are easier to evaluate *ex ante* than others. If firms cannot evaluate risks *ex ante*, they must adjust bonuses *ex post* after risks materialize. Firms might defer bonuses, subjecting them to reduction or *malus* (as opposed to *bonus*) if the risks taken by the employee sour.¹²⁶ Alternatively, firms could pay bonuses in firm equity so that ultimate payoff reflects overall firm performance. The *Principles* recognize the limits of these methods, especially with the use of firm equity. Employees may just want to get their equity awards and may realize that their individual risk-taking will have little effect on overall firm performance. Indeed, equity (especially options on employer stock) offers asymmetric returns that could even encourage risk-taking.¹²⁷

Given the flexibility of the *Principles*, we should ask whether compensation is even a necessary subject of regulation. After all, the goal is not to regulate compensation per se, but rather to regulate the risk of financial distress. If firms can regulate risk in alternative ways—for example, by holding more capital or by hedging—can

124. Cf., e.g., Austan Goolsbee, 'Irresponsible' Mortgages Have Opened Doors to Many of the Excluded, N.Y. TIMES (Mar. 29, 2007) <http://www.nytimes.com/2007/03/29/business/29scene.html> (arguing that, with subprime lending, "the mortgage market has become more perfect, not more irresponsible").

125. FSF PRINCIPLES, *supra* note 1, at 3.

126. According to the new language of compensation reform, a *malus* is a forfeiture of amounts that were previously earned but as of yet unpaid. A *clawback*, in contrast, is the return of amounts that were previously paid. See BASEL COMM. ON BANKING SUPERVISION, RANGE OF METHODOLOGIES FOR RISK AND PERFORMANCE ALIGNMENT OF REMUNERATION 38 (2011), available at <http://www.bis.org/publ/bcbs194.pdf>.

127. *Id.* at 10–11.

they simply ignore compensation? The *Principles* answer no,¹²⁸ holding that compensation reform is necessary to prevent employees from manipulating the quantitative risk management. Yet, if employees can exploit traditional risk management, surely they can also exploit the flexible standards of the *Principles*. Perhaps the FSB believes that their *Principles* will actually change firms' cultures¹²⁹ by ensuring that risk management affects the most salient measure of banker performance—compensation.

3. Governance by Boards, Regulators, and Stakeholders

The *Principles* envision compensation structures being overseen by boards, financial regulators, and “stakeholders” (like shareholders). Implicitly, the FSB is responding to the concern that bankers are setting their own pay without oversight from those constituents who will bear the consequences. These governance standards regulate process, not results, much like the “procedural prudence” required by fiduciary law.¹³⁰ Boards of directors, not management, must have primary control over compensation, which they must review regularly.¹³¹ The breadth of board oversight extends beyond executive compensation and reaches all employees who could affect firm risk.¹³²

While boards must establish and regularly review incentive-compensation programs, they cannot actually administer them. Those who do must have the appropriate authority, independence, and expertise. One fear is that bonus-maximizing bankers will cow risk-managers into altering their judgments. In response, the *Principles* require that banks hire competent risk-control employees who are paid appropriately and allowed to act independently of front-office bankers.¹³³

Regulators, along with boards, must review compensation. The *Principles* say, “[W]hen the totality of a firm’s compensation practices are less than sound, supervisors should first exercise suasion on the affected firm, and in the absence of necessary improvement should consider escalation to firmer intervention,

128. *Id.* at 8.

129. For a popular examination of firm culture on Wall Street leading up to the financial crisis, see GILLIAN TETT, *FOOL’S GOLD: HOW THE BOLD DREAM OF A SMALL TRIBE AT J.P. MORGAN WAS CORRUPTED BY WALL STREET GREED AND UNLEASHED A CATASTROPHE* (2009).

130. *Cf.* PAMELA D. PERDUE, *QUALIFIED PENSION & PROFIT SHARING PLANS* ¶ 3.08[2][b] (2012) (describing ERISA procedural prudence).

131. FSF PRINCIPLES, *supra* note 1, at 2.

132. *Id.* at 6.

133. *Id.*

which may include increased capital requirements.”¹³⁴ Stakeholders—shareholders, counterparties, depositors, auditors and analysts—should receive disclosures about firm compensation according to the *Principles*, which also expect “engagement” with stakeholders without specifying details.¹³⁵

Like the risk-management *Principles*, the governance *Principles* are flexible, commonsensical, and unlikely to affect actors determined not to be affected. Were they effective, it is unclear what they would achieve because they fail to provide clear vision of whose interests are being safeguarded. They note that the financial crisis “revealed that many firms took actions that were inconsistent with their own goals and externally determined risk appetite.”¹³⁶ Similarly, the *Principles* argue for more “oversight and engagement” by “the firm’s stakeholders, particularly shareholders.”¹³⁷ Elsewhere, the *Principles* suggest that firms follow some objectively prudent level of risk, referring to the “excessive risk taking”¹³⁸ that contributed to the financial crisis.

E. FSB Implementation Standards

The *Principles* do not impose pay caps, nor do they require compensation to be paid in any particular form.¹³⁹ For the most part, they leave firms free to decide for themselves how to align risk management and incentive compensation, although the *Principles* do specify factors of particular concern. Six months after publishing the original *Principles*, however, the FSB took a more stringent stance with its *Implementation Standards*.¹⁴⁰

Most notably, the *Implementation Standards* require firms to defer between 40% and 60% of banker bonuses over at least three years. Firms may use a form of “graded vesting” to pay the deferred

134. *Id.* at 14.

135. *Id.*

136. *Id.* at 5.

137. *Id.* at 13.

138. *See id.* at 1 (“High short-term profits led to generous bonus payments to employees without adequate regard to the longer-term risks they imposed on their firms. These perverse incentives amplified the excessive risk-taking that severely threatened the global financial system”); *id.* (“The Principles are intended to reduce incentives towards excessive risk taking that may arise from the structure of compensation schemes.”); *id.* at 12 (“[T]he asymmetry of bonus practice encourages taking of excessive risk. It also reduces the incentive to draw attention to excessive risk taking by others, since the sensitivity of the employee’s compensation to losses caused by others is reduced.” (footnote omitted)).

139. *Id.* at 1 (stating that the *Principles* are “not intended to prescribe particular designs or levels of individual compensation. One size does not fit all . . .”).

140. FSB IMPLEMENTATION STANDARDS, *supra* note 6.

bonuses (i.e., 1/3 after one year, 1/2 of the remainder after two years, and the full remainder after three years). Moreover, firms must pay at least 50% of bonuses in the form of firm equity, subject to an appropriate retention policy.¹⁴¹

The *Implementation Standards* comprise five scant pages, only one of which is devoted to the deferral and firm-equity requirements. Based on the *Principles*, however, it is clear that the requirements are motivated by the idea of risk management and alignment. Deferred compensation is particularly well suited to *ex-ante* adjustments to reflect individual performance—*malus* as opposed to *bonus*¹⁴²—although such adjustments are not expressly required by the *Implementation Standards*. At least in the U.S., deferred compensation takes the form of an “unsecured promise to pay,” arguably giving senior management the incentive to avoid default. This Article criticizes the new emphasis on deferred and other debt-based compensation.¹⁴³

F. U.S. and E.U. Implementation of Compensation Reform

U.S. and E.U. regulators have largely adopted the FSB’s original *Principles*. Thus, incentive compensation must balance risk and reward, be compatible with risk management, and be supported by strong governance and oversight.¹⁴⁴ Acting pursuant to its authority under Dodd–Frank, U.S. regulators have proposed extending their regulation of incentive compensation to certain nonbank financial firms.¹⁴⁵

The U.S. and E.U. differ, however, on their adoption of the more binding *Implementation Standards* of the FSB. The E.U. has fully adopted them (and perhaps gone even further).¹⁴⁶ In contrast, U.S. regulators have watered down the *Implementation Standards*,¹⁴⁷

141. *Id.* at 3.

142. *See supra* note 126.

143. *See infra* Part V.

144. *See* Guidance on Sound Incentive Compensation Policies, 70 Fed. Reg. 36,395, 36,405 (June 25, 2010); COMM. OF EUROPEAN BANKING SUPERVISORS, GUIDELINES ON REMUNERATION POLICIES AND PRACTICE (2010), available at <http://www.eba.europa.eu/cebs/media/Publications/Standards%20and%20Guidelines/2010/Remuneration/Guidelines.pdf>.

145. *See* Dodd–Frank Act § 956, 124 Stat. at 1905–06; Incentive-Based Compensation Arrangements, 76 Fed. Reg. 21,170 (Apr. 14, 2011).

146. *See generally* Ferrarini & Ungureanu, *supra* note 3, at 476–79.

147. *See* Incentive-Based Compensation Arrangements, 76 Fed. Reg. at 21,170.

forcing only the top executives at large financial firms¹⁴⁸ to defer half of all of their incentive-based compensation and not requiring any equity compensation.¹⁴⁹ Deferral would need to be over at least three years, “with the release of deferred amounts to occur no faster than on a pro rata basis.”¹⁵⁰ For example, an initial deferral of \$150,000 could be repaid at \$50,000 per year. E.U. regulators have faulted their U.S. counterparts for failing to adopt the *Implementation Standards*.¹⁵¹

The U.S. proposal contains a vague requirement that the deferral be adjusted “to reflect actual losses or other measures or aspects of performance that are realized or become better known during the deferral period.”¹⁵² The regulators do not specify whose performance matters, although presumably it is the entire firm’s because deferral targets only senior executives. Thus, the requirement seems to support deferral in the form of firm equity, arguably increasing the risk-taking incentives that many believe plague banker pay in the first place.¹⁵³

IV. MORAL HAZARD AND COMPENSATION REFORM

A. Moral Hazard Versus Systemic Risk

This Article has previously noted the tension—even conflict—between the interests of bank investors and society.¹⁵⁴ Because of *systemic risk*, financial distress at banks imposes extraordinary costs on society at large that are not internalized by investors. To avoid systemic risk, governments not only regulate banks but also extend a safety net, providing liquidity, insuring depositors, and often bailing out creditors.¹⁵⁵ This safety net, however, creates its own problem. Because bank creditors (including depositors) receive public support, they are indifferent or at least not sensitive enough to the risk of failure. Shareholders reap the entire upside gain from success and thus will seek out projects with greater risk because they are left unchecked by creditors. Prior scholars argue that the cure for this

148. For this purpose, *large* means a bank having assets of at least \$50 billion, the same threshold that Dodd–Frank uses in applying the bulk of its important provisions. *See id.*

149. *See id.*

150. *Id.* at 21,194.

151. *See* Peter Spiegel, *EU Warns US to Speed Up Bank Reform*, FIN. TIMES, June 1, 2011.

152. Incentive-Based Compensation Arrangements, 76 Fed. Reg. 21,170 *passim* (Apr. 14, 2011)

153. *See infra* Part VI.D.

154. *See supra* Part II.B.

155. *See supra* Part II.C.

moral hazard is paying bankers with firm debt rather than firm equity.¹⁵⁶

Thus, moral hazard is a cost (perhaps the largest) of the government's efforts to combat systemic risk. It is not systemic risk itself. At first, the distinction may seem like fussing over nomenclature. Why should we care to distinguish systemic risk and moral hazard when our goal is financial stability, not an accurate dictionary? Later, this Article discusses why the difference is important to the regulation of compensation.¹⁵⁷ The rest of this Part, however, will more closely examine the problem of moral hazard and how it relates to past proposals to regulate banker pay.

B. Financial Background

1. Investing Versus Financing

In broad terms, firms (nonbanks included) make two important financial decisions: investing and financing. Consider a nonbank, Apple Inc., and its decision to make various computers and gadgets like the iPhone. These are all *investing decisions* of Apple. Likewise, individuals pursue investments (sometimes called projects) like a legal education or a home purchase in the hopes of bettering themselves.

Apple needed money to undertake the iPhone project, leading to the *financing decision*. Apple has been very profitable over the years and has ample retained earnings in its treasury to finance (or fund) even large projects like the iPhone.¹⁵⁸ If Apple did not have these riches on hand, it could have financed the iPhone project by selling stock or borrowing. Again, individuals finance their projects similarly. One might borrow to buy a legal education or house (debt financing) or one might pay for them outright right if able to do so (equity financing).

In theory, a firm approaches the investing and financing decisions independently. A firm is like a pie, the total value of which is defined by its assets. Wise investing and successful products make the pie bigger. Financing decisions simply divide the pie between different stakeholders (debt, equity, etc.). The goal of firm management is to maximize shareholder returns, and management does so by putting assets to good use, pursuing projects

156. See *infra* Part IV.D.

157. See *infra* Part V.A.2.

158. See APPLE INC., FORM 10-Q at 3 (Dec. 25, 2010) (reporting retained earnings of more than \$43 billion), available at <http://investor.apple.com/investor/Kit.cfm> (follow "Form 10-Q 12/25/10 – view online" hyperlink).

that offer returns superior to those found elsewhere in the capital market.¹⁵⁹

In the real world, however, financing decisions can make the pie bigger (or smaller). Public corporations in all industries have a tax incentive to finance with debt (which produces deductible interest) rather than equity (which can deduct interest from debt but not dividends). Balanced against this incentive are the possible economic losses that come from financial distress.

2. An Example Comparing Return on Assets and Return on Equity

Reformers and defenders of executive-compensation practices usually agree on the goal of maximizing shareholder value.¹⁶⁰ In theory and perhaps in practice, corporations seek to maximize shareholder welfare. Shareholder wealth, however, is merely a proxy for societal wealth. Corporations are “efficient” (or wealth maximizing) when they pursue optimal investments that produce the highest return (adjusted for risk) for all investors. From the perspective of society, then, corporations are doing a good job when they maximize the risk-adjusted return on assets.

Because of limited liability, shareholders have a well-known incentive to seek out risk.¹⁶¹ Consider a stylized firm that has a finite (say, one year) existence. To simplify matters, let us assume that the debt bears an expected return of zero and that the firm must choose between the following one-year projects, both of which require \$100 to pursue:

- *Project Surefire* grows to \$102 in one year. The expected return on assets equals 2% and is risk free.
- *Project Roulette* has a 50% chance of falling to \$80 and a 50% chance of growing to \$120 in one year. The expected return on assets equals 0% and is risky.¹⁶²

From the perspective of society, Project Surefire is patently superior. It has a higher expected return on assets and lower risk than Project Roulette. If the firm had no debt, it would pursue

159. See RICHARD A. BREALEY ET AL., *PRINCIPLES OF CORPORATE FINANCE* 15 (2006).

160. Cf. Randall S. Thomas & Harwell Wells, *Executive Compensation in the Courts: Board Capture, Optimal Contracting, and Officers' Fiduciary Duties*, 95 MINN. L. REV. 846, 847–48 (2011) (contrasting the defenders' theory of optimal contracting with the critics' theory of board capture).

161. See Okamoto & Edwards, *supra* note 3, at 168 (citation omitted) (citing Bebchuk & Spamann, *supra* note 3, at 251–52).

162. This example will be used throughout this Article.

Project Surefire because shareholders bear the full risk of loss from Project Roulette.

By adding debt (also called leverage), equity holders still control the choice between the two projects but no longer bear the full risk of loss. Opportunistic shareholders might now prefer the inferior Project Roulette. Suppose that our firm is financed with \$90 of debt and \$10 of equity.

- Project Surefire offers a very handsome risk-free return on equity of 20%. The \$102 in future assets would be divided \$90 to debt and \$12 to equity.
- Project Roulette might be even better from the perspective of equity. If Project Roulette wins, the \$120 goes \$90 to debt and \$30 to equity, producing a return on equity of 200%. If Project Roulette loses, all \$80 goes to debt, producing a 100% loss on equity. Thus, expected return on equity is 50%.

We do not know for sure whether the equity would pursue Project Roulette. We would need to know something about the subjective risk preferences of the holders of equity and their ability to diversify. Nevertheless, we should be worried that Project Roulette is still in the running when pitted against the clearly superior Project Surefire.

Project Roulette is a potential winner for holders of equity only if they can impose uncompensated losses on debt. Creditors understand this incentive to risk-taking. Before lending, creditors will seek higher interest, shareholder guarantees, and bond covenants to ensure repayment. Informed and protected creditors will not allow themselves to bear uncompensated losses from Project Roulette.¹⁶³ In our example, creditors would either decline to fund the firm if it pursues Project Roulette or demand higher interest as compensation.¹⁶⁴

Either way, creditors suck all of the fun out of Project Roulette. Our firm will have to settle for boring but profitable Project Surefire when disciplined by financial markets. From a societal perspective,

163. See Charles K. Whitehead, *The Evolution of Debt: Covenants, The Credit Market, and Corporate Governance*, 34 J. CORP. L. 641, 641–42 (2009).

164. In order to maintain an expected return of zero, our creditors would need to demand interest of 11.11%. Recall that creditors invest \$90, and they need to expect repayment of \$90. If Project Roulette loses, they receive only \$80. If it wins, they receive \$90 plus interest of \$10 for a total of \$100. Because Project Roulette is a 50–50 bet, the expected amount they receive is \$90. As for equity, their expected return is driven to zero as well. Recall that they invest \$10 and lose it all if Project Roulette fails. If it succeeds, they now receive only \$20. Equity expects to receive \$10. Thus, equity will drop Project Roulette in favor of Project Surefire.

this decision is the right one because Project Surefire has a higher expected return with less risk.

C. Cause and Effects of Moral Hazard

1. Creditor Protections

Of course, not every creditor can adjust the terms of credit to reflect riskiness of a business. Tort victims, suppliers of goods, and services are prime examples of such creditors. At the margin, it is conceivable that firms might be able to pursue slightly riskier projects because they can stiff their pencil and paper vendor and other suppliers in the event of insolvency. But to do any real damage, they need to access cash from financial markets, which are in the very business of evaluating the likelihood of repayment from debtors. Financial markets are, of course, not perfect, but creditors work very hard to avoid the type of risk-taking exemplified by Project Roulette.

Banks and other financial institutions, however, can access vast sums from capital markets without the usual checks placed on debtors. As noted by federal banking regulators,

Because of the presence of the Federal safety net, (including the ability of insured depository institutions to raise insured deposits and access the Federal Reserve's discount window and payment services), shareholders of a banking organization in some cases may be willing to tolerate a degree of risk that is inconsistent with the organization's safety and soundness.¹⁶⁵

The lack of financial-market discipline is not limited to formal banks and their depositors. Nonbank financial institutions—like AIG and Bear Stearns—received massive aid from the bailouts. Bank holding companies, like Bank of America and Citigroup, were kept alive by bailouts, not deposit insurance.¹⁶⁶ Creditors can reasonably expect to be bailed out if the government determines that their debtor bank is “too big to fail” or “systemically important.”¹⁶⁷

165. Guidance on Sound Incentive Compensation Policies, 75 Fed. Reg. 36,395, 36,405 (June 25, 2010).

166. For an overview of the wide array of government programs deployed in the bailouts, see WEBEL & LABONTE, *supra* note 60.

167. See Christine Lagarde, *The Global Financial Sector—Transforming the Landscape*, INT'L MONETARY FUND (Mar. 19, 2013), <http://www.imf.org/external/np/speeches/2013/031913.htm>.

Indeed, the bailouts were targeted at saving creditors to stave off systemic risk.¹⁶⁸

2. *Incentive for Additional Risk*

Protected against loss, bank creditors no longer have the incentive to check the risk-taking incentives of their debtors. This phenomenon is moral hazard, the tendency of insurance to suppress the incentive to avoid loss.¹⁶⁹ Because those who extend credit to banks do not have the full incentive to guard against risk, moral hazard is one of the key problems of modern financial regulation.

Recalling the example from above,¹⁷⁰ suppose that our creditors are fully protected from loss by the federal government. They are now completely indifferent between equity's choice of Project Roulette and Surefire. With the right appetite for risk, our firm may well pursue Roulette, even though it is a societal loser. If it wins, equity keeps all the gains. If it loses, the government bears the brunt of losses. Not only does Roulette have a lower risk-adjusted return than Surefire—i.e., it is less “efficient”—but it also is more likely to throw the firm into insolvency. Thus, while the government safety net can calm a current crisis, it may worsen future ones by encouraging risk taking.

Taxes or other charges may be the ideal policy response,¹⁷¹ although practical difficulties get in the way. The value of the safety depends not only on firm leverage but also on the riskiness of the bank's investments. Bank regulators may find it difficult to measure such risk accurately. Alternatively, accurate risk measurement could harm politically popular or influential projects as commentators have suggested that political pressure to expand mortgage lending to low-income communities exacerbated or caused the financial crisis.¹⁷² Because of the practical and political difficulties in measuring risk, regulators must step in to ensure that banks pursue prudent projects and maintain sufficient equity (and other forms of “capital”) that can absorb losses.¹⁷³

168. See *supra* Part II.C.5.

169. See Tom Baker, *On the Genealogy of Moral Hazard*, 75 TEX. L. REV. 237 (1996).

170. See *supra* Part IV.C.2.

171. See generally Viral V. Acharya et al., *Taxing Systemic Risk*, in REGULATING WALL STREET: THE DODD-FRANK ACT AND THE NEW ARCHITECTURE OF GLOBAL FINANCE 121 (Viral V. Acharya et al. eds., 2011).

172. See generally RAGHURAM G. RAJAN, *FAULT LINES: HOW HIDDEN FRACTURES STILL THREATEN THE WORLD ECONOMY* 36–37 (2010).

173. See *supra* Part II.C.2.

3. *Incentive for Additional Debt Financing*

So far, we have examined only the incentive to pursue risky investments (e.g., Project Roulette) and have ignored how moral hazard affects financing. The equity investors of our hypothetical firm have every incentive to raise funds with government-protected debt rather than equity. To see why, let us suppose that they have committed to investing \$10 in Project Roulette and have obtained \$90 of debt funding elsewhere. As before, the government guarantees repayment of all debt.

Our equity investors have not yet eliminated the risk of loss from their investment. They stand to lose their \$10 if Project Roulette fails. Our investors might decide to take the government guarantee one step further and use it not only to raise outside funds but to protect themselves from loss. Splitting their \$10 between \$5 of government-backed debt and \$5 of equity would ensure repayment of \$5 if Project Roulette fails without reducing the return if it succeeds. Indeed, this scheme has no natural boundary. The investors could invest \$9.99 of debt and 1¢ of equity and almost fully protect themselves from risk of loss while retaining all the potential gain.¹⁷⁴

This example supposes that reliance on the public safety net is costless and limitless to the firm. Of course, governments directly limit leverage through capital adequacy requirements, which force banks to fund some portion of their operations with equity.¹⁷⁵ Looking out for their own interests, bank executives will not relish asking for help from the government, which may insist on removing the executives or limiting their pay.¹⁷⁶ Financial distress and insolvency is not costless to bank creditors, who may still charge risk premiums.¹⁷⁷ Deposit insurance is limited,¹⁷⁸ and not all bank creditors get bailed out.¹⁷⁹ The government safety net is not

174. Assuming that the equity investors convert a portion of their stake into debt highlights the incentives. It should make no difference if the actual equity investors reduce their investment to \$5 or 1¢ while causing the firm to seek additional debt financing from outsiders. The “law of one price” holds that financial instruments are worth the same regardless of who holds them. *See* ZVI BODIE ET AL., INVESTMENTS 349 (6th ed. 2005).

175. *See supra* Part II.C.2.

176. *See supra* Part III.B.2.

177. Lawyers and other professionals engaged in the Lehman bankruptcy have charged nearly \$1 billion, borne mainly by creditors. *See, e.g.*, Liz Moyer, *Lehman’s Bankruptcy: Tab Is Close to \$1 Billion*, WALL ST. J. (Oct. 18, 2010), available at <http://online.wsj.com/article/SB10001424052702303496104575560661993488100.html>.

178. *See supra* Part II.C.3.

179. *See supra* Part II.C.5.

complete but its coverage, even if imperfect, subsidizes and thus encourages debt financing.¹⁸⁰

D. Compensation-Reform Proposals

Historically, reformers of compensation have focused on reducing agency costs by aligning the interests of executives and shareholders,¹⁸¹ and most of the compensation reforms enacted by the Dodd–Frank Act purport to do just that.¹⁸² Yet, bank shareholders may have the wrong incentives. As we just saw, the federal safety net softens the discipline of creditors and allows shareholders to pursue more risk and more leverage than they would otherwise, thus increasing the likelihood of firm distress or default. U.S. regulators have noted the tension between the shareholder and the societal interests as part of their principles-based compensation regulations.¹⁸³

Professors Lucian Bebchuk and Holger Spamann attempt to ease this tension by injecting the interests of creditors into bank compensation. Specifically, they would mandate “compensation based on the value of a broader basket of securities representing a larger part of the corporate pie.”¹⁸⁴ Professor Frederick Tung offers a similar plan, focused on federally insured depository institutions that would have bankers paid, in part, with unsecured debt.¹⁸⁵

Professor Jeffrey Gordon offers another debt-based compensation scheme, although with some variations from those of Bebchuk, Spamann, and Tung. Rather than having bankers paid outright in debt, he would have them paid with firm equity that converts to debt upon some event of firm distress. The proposal is similar to those for banks to raise financing through “contingent capital”—debt instruments that convert into equity upon firm distress.¹⁸⁶ Contingent capital works like a self-executing reorganization or recapitalization of a firm, wiping out old shareholders and converting creditors into the new owners. Gordon’s proposal inverts the contingent-capital model,

180. Cf. Douglass Elliott, *Quantifying the Effects on Lending of Increased Capital Requirements* 4 (2009), available at http://www.brookings.edu/~media/Files/rc/papers/2009/0924_capital_elliott/0924_capital_elliott.pdf (“Thus, the relative insensitivity of bank debt costs to creditworthiness provides a major incentive for banks to hold more debt and less equity.”).

181. See generally BEBCHUK & FRIED, *supra* note 84.

182. See *supra* Part III.B.1.

183. Guidance on Sound Incentive Compensation Policies, 75 Fed. Reg. 36,395, 36,405 (June 25, 2010).

184. Bebchuk & Spamann, *supra* note 3, at 283.

185. See Tung, *supra* note 3.

186. Cf. *infra* Part V.B (discussing contingent capital).

however, by converting equity into debt (rather than debt into equity).

Not all commentators have argued for debt-based regulation of banker pay. Professor Kevin Okamoto and Mr. Douglas Edwards argue against compensation regulation and for better risk management.¹⁸⁷ Professors Guido Ferrarini and Maria Cristina Ungureanu similarly argue that reforms “should mainly be principles-based and flexible enough to allow for experimentation and innovation in pay structures.”¹⁸⁸ Professors Roberta Romano and Sanjai Bhagat argue for long-term stock awards as a way of focusing executives on long-term growth.¹⁸⁹

As noted before, regulators have begun to embrace debt-based compensation by requiring deferral of banker bonuses.¹⁹⁰ Under U.S. law, deferred compensation is “inside debt,” an unsecured promise to pay that exposes an employee to the same risk of firm default as an unsecured creditor would face.¹⁹¹ Moreover, deferred compensation allows employers to make *ex ante* adjustments to bonuses that have already been earned.¹⁹² A trader might have earned firm profits of \$100 million in 2005 only to see those trades sour in 2007. Deferring the 2005 bonus allows the employer to adjust it downward in 2007 to reflect long-term performance.¹⁹³ In effect, deferred compensation allows the employer to treat the employee like a miniature firm. Bad long-term performance is a “default” at the employee level and forces the employee to bear losses the way that a creditor would.

The promise of debt-based compensation is that employees will curtail risk if they face the risk of default. Ideally, debt-based compensation would cure the moral hazard described in Part 0, restraining from pursuing leverage and risk. The next Part, however,

187. See Okamoto & Edwards, *supra* note 3, at 220 (“Our preference, however, is to do so less by regulating compensation than to encourage the demand within the firm for risk management.”).

188. Ferrarini & Ungureanu, *supra* note 3, at 496. See also Jennifer Carpenter et al., *Reforming Compensation and Corporate Governance*, in REGULATING WALL STREET: THE DODD-FRANK ACT & THE NEW ARCHITECTURE OF GLOBAL FINANCE, *supra* note 171, at 493, 501–02 (arguing for “some degree of flexible, but consistent, regulatory oversight of compensation practices”).

189. See Bhagat & Romano, *supra* note 3.

190. See *supra* Part III.E–F.

191. See generally Eric D. Chason, *Executive Compensation and Tax Neutrality: Taxing the Investment Component of Deferred Compensation*, 31 CARDOZO L. REV. 1667 (2010); Ethan Yale & Gregg D. Polsky, *Reforming the Taxation of Deferred Compensation*, 85 N.C. L. REV. 571 (2007); Lucian A. Bebchuk & Robert J. Jackson, Jr., *Executive Pensions*, 30 J. CORP. L. 823 (2005).

192. See *supra* note 126 and accompanying text.

193. See *supra* Part III.D.1.

examines the incentives of debt-based compensation and concludes that they are at best weak and at worst contrary to the safety and soundness of the financial system.

V. DEBT-BASED COMPENSATION EXAMINED

A. Limits of Debt-Based Compensation

1. Control of Managers' Incentives to Pursue Uncompensated Investment Risk

This subsection describes the limited benefits that debt-based compensation might bring. Bank executives who are compensated with firm equity are encouraged to “act like shareholders.”¹⁹⁴ Unfortunately, the public safety net allows bank shareholders to pursue uncompensated risk. An example running throughout this Article compares two investment projects that a firm might consider:

- Project Surefire grows to \$102 in one year. The expected return on assets equals 2% and is risk free.
- Project Roulette has a 50% chance of falling to \$80 and a 50% chance of growing to \$120 in one year. The expected return on assets equals 0% and is risky.

Project Roulette has more risk than Project Surefire but a lower expected return. Ordinary investors would pursue Project Surefire, but a firm leveraged with government-guaranteed debt might pursue Project Roulette. Such a firm's equity investor enjoys the full upside of the risk, while the firm's creditors are protected from the downside.¹⁹⁵

Reformers claim that debt-based compensation would sway managers away from Project Roulette.¹⁹⁶ Compensation composed of a representative sample of debt and equity theoretically exposes managers to all of the risks of Project Roulette (both the upside and downside). In short, debt-based compensation would compensate managers with the return on assets rather than the return on equity. Because Project Roulette has no risk premium, managers compensated with the representative slice would choose Project Surefire.

194. See, e.g., Richard H. Koppes & Maureen L. Reilly, *An Ounce of Prevention: Meeting the Fiduciary Duty to Monitor an Index Fund Through Relationship Investing*, 20 J. CORP. L. 413, 442 (1995) (citation omitted) (internal quotation marks omitted).

195. See *supra* Part IV.B.2.

196. See *supra* Part IV.D.

Later sections of this Part probe these claims more deeply. For debt-based compensation to work, it must actually carry some risk of default. Yet, the whole problem of moral hazard arises precisely because the government protects firm creditors from default. Section B discusses whether default risk is a credible threat. Moreover, financial firms commonly carry implicit debt (or leverage) via derivatives contracts. As Section C discusses, the proposals would encourage firms to shift away from debt captured on balance sheets (like bonds) toward implicit debt that is not (like derivatives). Unless regulators can incorporate implicit debt into pay structures, the shift may result in even greater risk taking. Finally, Section D shows how the incentive to earn greater levels of compensation will almost inevitably swamp any incentive effects found in debt-based compensation.

The remainder of this Section, however, attempts to take the proposals on their own terms without much challenge to their underlying assumptions. As Subsection 2 shows, while the proposals may discourage managers from taking on uncompensated risk, they do control systemic risk and risk taking in general. Subsection 3 shows how the proposals do not even eliminate all the incentives to take uncompensated risk because outside shareholders still stand to gain from uncompensated risk (like Project Roulette) and may themselves encourage managers to pursue it.

2. Failure to Control Systemic Risk

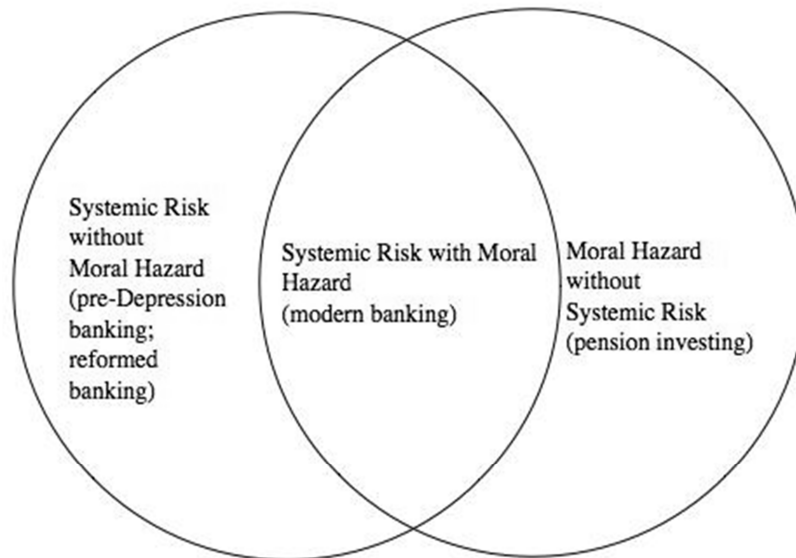
The problem of moral hazard is the freedom of equity interests to pursue uncompensated risk without facing resistance from creditors. So, our hypothetical firm is free to waste resources on Project Roulette rather than pursuing Project Surefire. In more realistic terms, perhaps banks objectively wasted their resources on exotica like collateral debt obligations and credit default swaps rather than mundane but socially useful loans.

Yet, it would be misleading to say that banks destabilized the economy by pursuing inefficient investments. They destabilized the economy by becoming insolvent and teetering on the verge of collapse before being rescued by taxpayers. In other words, systemic risk and moral hazard are different.¹⁹⁷ Systemic risk arises from the failure of a bank or other financial firm. To prevent such failures, governments resort to bailouts and other forms of public support, thus introducing moral hazard into the banking system. Systemic risk is the price of bank failures, and moral hazard is the price of thwarting bank failures.

197. See *supra* Part IV.A.

Thus, systemic risk is the original market failure. Depression-era banks failed and destabilized the economy without much of a government safety net and without moral hazard. Recognizing the special role of banking, even Adam Smith and Milton Friedman supported bank regulation.¹⁹⁸ By bailing out failing banks, the government controls systemic risk without eliminating it (as evidenced by the financial crisis). Thus, modern banking contains both systemic risk and moral hazard.

Moral hazard is not limited to banking and arises under a variety of insurance regimes. For example, the federal government insures pension plans, creating the prospect of moral hazard.¹⁹⁹ The following diagram illustrates these examples of moral hazard and systemic risk.



The proponents of compensation reform have the worthy goal of curtailing moral hazard. Yet, removing moral hazard does not remove the risk of failure from banks. Let us return to our hypothetical firm, funded with 10% equity. Our reformers have

198. See generally Hugh Rockoff, *Parallel Journeys: Adam Smith and Milton Friedman on the Regulation of Banking*, 4 J. CULTURAL ECONOMY 255 (2011).

199. See Eric D. Chason, *Outlawing Pension-Funding Shortfalls*, 26 VA. TAX REV. 519, 530–32 (2006). In this prior article, I argue that the moral hazard of pensions comes not so much from pension investing as from the ability to “borrow” from employees using government-backed pension debts. The subtle distinction is not pertinent to the present Article.

purged moral hazard from the banking system so that banks no longer pursue uncompensated risk. Our bank now chooses between two projects, the original Project Surefire and a new alternative, Project Black Swan:

- Project Surefire offers a risk-free (i.e., certain) return of 2% each year.
- Project Black Swan has a near-certain 99% chance of growing by 3% each year. However, it has a 1% chance of falling by 20%. The expected return on assets equals 2.77% but poses a small risk.

Under reformed compensation, the compensation of bank managers does not depend on leverage. They always reap the return on assets (2% or 2.77% above) rather than the return on equity (which increases with leverage). Based on risk-adjusted return, neither project is obviously superior to the other, although Black Swan offers a significantly higher return for a remote risk. Nothing about reformed compensation would dissuade managers from pursuing Black Swan. Unlike Project Roulette (the prior alternative), Black Swan's higher risk comes with a higher expected return, giving us no objective reason to question this decision on the basis of moral hazard. The risk–return trade-off is reasonable, and the firm might plausibly choose Project Black Swan even if its debt were not guaranteed.

Note, however, that the firm faces a 1% chance of default. If Project Black Swan fails, the firm has \$80 available to pay \$90 in debt. This might seem like a matter of private concern to firm investors until we recall systemic risk. If the firm is systemically important, its default could prove disastrous. A 1% risk of default might itself be excessive, especially if there are other firms like ours in the economy. Ten firms, each with independent returns, pose a 10% chance of systemic distress every year.²⁰⁰

Thus, the core problem is not the firm's choice of project. Black Swan offers a reasonable risk–return tradeoff. The problem, rather, is that distress or insolvency threatens the whole economy, and the firm's 10% equity cushion cannot absorb the possible losses.²⁰¹ The firm could pursue project Black Swan without risk of default by financing with 20% equity and 80% debt. Yet, under reformed compensation, our bankers are generally indifferent about the

200. Technically, we do not multiply the 1% risk for each bank by ten. Each firm has a 0.99 chance of surviving the year. Collectively, they have a 0.9910 (or 0.904) chance of surviving the year. Thus, the chance of one or more becoming distressed is 0.096 or 9.6%.

201. Cf. *supra* Part IV.B.1 (comparing investing and financing).

decision between debt and equity.²⁰² Because they receive representative slices of debt and equity, they have no particular reason to pursue leverage but no reason to avoid it either. Leverage does increase systemic risk by making default more likely, but these costs are borne by society and not by the firm itself.

Other considerations may sway our bankers away from Black Swan. To preserve their reputations, our bankers may seek to avoid insolvency. Similarly, the new Dodd–Frank resolution regime threatens senior executives with termination and recoupment (clawback) of past compensation.²⁰³ These considerations exist, however, wholly independent of compensation reform.

3. Failure to Control Incentives of Outside Shareholders

Compensation reform forces firm debt upon bankers, negating or weakening the *direct* incentive to pursue uncompensated risk. Yet, it cannot remove the *indirect* incentive of delivering value for shareholders. Recall that the moral-hazard critique views managers essentially as shareholders. In our original example comparing Projects Surefire and Roulette,²⁰⁴ the only compensation was a fixed portion of firm equity, which encouraged managers to pursue Project Roulette even though it carried uncompensated risk. Compensation reform would prevent managers from being paid solely in equity, arguably removing their direct incentive to pursue Roulette.

Compensation reform does nothing to affect the form of ownership of outside shareholders.²⁰⁵ Regardless of compensation, outside shareholders have precisely the same incentive to pursue risk as our managers did in the original example. Nothing about the analysis depended upon the fact that the decision makers were employees. In fact, it centered on only two factors: equity ownership and control.

202. The bankers will care to the extent that capital structure affects the return on assets. Debt has the advantage that its return—interest—is tax deductible whereas equity returns—dividends—are not. Debt has the disadvantage, though, that the firm may incur costs (such as bankruptcy lawyers) by going into default. *See generally* Franco Modigliani & Merton Miller, *The Cost of Capital, Corporation Finance and the Theory of Investment*, 48 AM. ECON. REV. 261 (1958). These costs are different from the costs of systemic risk, however, as the firm—not society at large—pays them.

203. *See supra* Part III.B.2.

204. *Cf. supra* Part IV.B.2 (comparing Projects Surefire and Roulette).

205. Capital adequacy rules do, however, prevent firms from having overly leveraged equity interests. *See supra* Part II.C.2.

Thus, compensation reform may address direct incentives to pursue risk, but managers create value for shareholders by pursuing the risky Project Roulette.²⁰⁶ Effective corporate governance structures—such as those promised by Dodd–Frank—could even intensify the pressure on managers to pursue risk. Managers would, of course, face countervailing pressures. Regulators will scrutinize firm risk and leverage. Managers could lose their jobs and reputations by driving their firm into a bailout or resolution proceeding. These countervailing pressures, however, always apply, whether or not regulators reform compensation structures.

B. The Public Safety Net and the Dubious Threat of Default Risk

Debt-based compensation is nothing new. U.S. companies have been paying employees with inside debt for decades, and the practice is nearly universal at large public companies.²⁰⁷ U.S. tax laws effectively mandate that debt-based compensation be unsecured, nonmarketable debt that exposes the employee to the risk of nonpayment should her employer become insolvent or go bankrupt.²⁰⁸ Without a public safety net, debt-based compensation would make bank managers think like bondholders, focusing on safety and soundness rather than upside gains.²⁰⁹

However, this theory of deferred compensation did not withstand the practical realities of bailouts. Federal Reserve

206. Project Roulette makes firm equity worth \$12 while Project Surefire makes firm equity worth \$15. Return to our main example, in which a 10% equity firm chooses between Project Surefire (sure to grow from \$100 to \$102) and Project Roulette (starting at \$100 but going to either \$120 or \$80 with equal probability). With a 0% discount rate, choosing Surefire produces firm equity of \$12 because the equity investors are assured of receiving \$12 in one year. Project Surefire produces firm equity of \$10 and enjoys final payoffs of either \$30 or \$0, depending on the performance. We arrive at an initial value of \$15 by simple averaging. Alternatively, we observe that it would cost \$15 to reproduce the equity returns absent the government safety net. In particular, a \$75 investment in Project Roulette, financed with \$60 of nonguaranteed debt and \$15 of equity, is equivalent. If Roulette wins, it grows by 20% to \$90, leaving equity with \$30. If Roulette fails, it falls by 20% to \$60, leaving equity worthless. In either scenario, debt is fully repaid, making public support unnecessary.

207. See Chason, *supra* note 191, at 1667.

208. See *id.*

209. This vision seems to motivate Professor Tung, who would require depository institutions to pay bankers with debt issued by the bank. Tung focuses on depository institutions. See Tung, *supra* note 3. Yet, while the government certainly did bail out depository institutions, its most important actions were elsewhere. Measured in dollar amounts, the largest recipient of TARP funds was AIG, an insurer that held scant government-backed deposits. WEBEL & LABONTE, *supra* note 60, at 32.

Chairman Bernanke testified that virtually all large U.S. financial institutions were on the verge of collapse in 2008:

As a scholar of the Great Depression, I honestly believe that September and October of 2008 was the worst financial crisis in global history, including the Great Depression. If you look at the firms that came under pressure in that period . . . only one . . . was not at serious risk of failure. . . . So out of maybe the 13, 13 of the most important financial institutions in the United States, 12 were at risk of failure within a period of a week or two.²¹⁰

None of these large firms other than Lehmen defaulted on deferred compensation, but almost all were saved by the U.S. government. In a world of creditor bailouts, debt-based compensation is simply government-backed pay.

At best, mandating debt-based compensation would implement the vision of the FSB *Principles*, encouraging firms to implement *malus* adjustments, reducing past compensation later in time as long-term performance can be measured.²¹¹ Perhaps it would encourage firms to shift away from equity-based compensation—which arguably exacerbates moral hazard,²¹² but it might simply encourage greater compensation as well.²¹³

Dodd–Frank may make debt-based compensation more potent with its threat to end creditor bailouts.²¹⁴ Rather than bailing out a failing firm, Dodd–Frank would push it through a formal resolution process. The FDIC would wind down failing financial firms, subjecting senior executives to clawbacks of amounts paid in the two years prior to firm failure and forcing all employees to lose

210. FIN. CRISIS INQUIRY COMM’N, *supra* note 14, at 354 (citation omitted). Bernanke’s statement set off speculation as to the identity of the 13 important institutions and the one that was not at risk. One educated guess about the 13 is that they were JPMorgan Chase, Bank of America, Citigroup, Wells Fargo, AIG, Goldman Sachs, Morgan Stanley, Merrill Lynch, Lehman Brothers, State Street, Bank of New York Mellon, PNC Financial, and U.S. Bancorp. See John Carney, *Bernanke’s Mystery: 12 Out of 13 Major Firms at Risk in 2008*, CNBC (Jan. 28, 2011, 11:18 AM), <http://www.cnbc.com/id/41310901>.

211. See *supra* Part III.D.2.

212. See *supra* Part IV.D.

213. The recent proposal from U.S. banking regulators would require firms to defer 50% of the incentive compensation paid to their ten or so top executives. See *supra* Part III.F. Firms that would pay cash bonuses of \$100 million to senior executives might comply simply by increasing (even doubling) their executives’ bonuses.

214. The overall purpose of Dodd–Frank is to promote U.S. financial stability, “end ‘too big to fail,’” and avoid taxpayer-funded bailouts in the future. Dodd–Frank Wall Street Reform and Consumer Protection Act, Pub. L. No. 111-203, pmb., 124 Stat. 1376, 1376 (2010).

unpaid deferred and equity compensation.²¹⁵ The resolution authority, if it is triggered, would certainly force executives and other employees to suffer. Requiring debt-based compensation would make sure they suffer even more.

Punishment may sound attractive but could worsen systemic risk. Dodd–Frank resolution means that executives will be removed and will lose whatever wealth they have tied up in the firm. Executives of modest and spectacular failures receive the same treatment. Suppose that executives see failure on the horizon well before regulators do. Ideally, the executives would preserve firm value as best as they could while guiding the firm into resolution as smoothly as possible. Unfortunately, executives might just double down their bets, taking on even more risk in the hopes that their gambles pay off and save their firms (and themselves). The threat of additional risk taking may also make resolution appear complicated and messy as opposed to a bailout.²¹⁶ Forcing executives to tie up more of their wealth in debt-based compensation would make such strategic behavior even more likely.

If bailouts do return despite Dodd–Frank’s protestations,²¹⁷ they will almost certainly keep executives whole. Bailed-out firms remain solvent. Outside of bankruptcy or resolution, there is no legal theory under which a solvent firm could refuse to pay debt-based compensation, which is simply a contractual obligation of the firm.²¹⁸ The Federal Reserve or Treasury might conceivably condition bailouts on executives’ volunteering to forgo some previously earned compensation, but the executives would surely resist and complicate matters.²¹⁹

215. See *supra* Part III.B.2.

216. Professor Skeel makes a similar point. See SKEEL, *supra* note 62, at 141.

217. See STANDARD & POOR’S, THE U.S. GOVERNMENT SAYS SUPPORT FOR BANKS WILL BE DIFFERENT “NEXT TIME”—BUT WILL IT? (2011), available at http://www.politico.com/pdf/PPM223_7-12-11_-_the_us_government_says_support_for_banks_will_be_different_nexttime_but_will_it_071211.pdf.

218. See Rev. Rul. 60-31, 1960-1 C.B. 174.

219. Bebchuk and Spamann suggest an *ex ante* charge on executive compensation to reflect “payments made by the government to the bank’s depositors, as well as other payments made by the government in support of the bank.” Bebchuk & Spamann, *supra* note 3, at 284. The government steps in to support depositors only in resolution, at which time the executives can expect to receive next to nothing anyway. The “other payments” that governments make—like TARP and the extraordinary lending facilities of the financial crisis—are almost always structured as arm’s-length transactions like preferred stock or loans. The value comes from the nonmarket terms offered by the government. Even if regulators could quantify this value, there is no obvious legal or quantitative way to allocate it to the executives.

Regulators could insist that debt-based compensation be prospectively structured to deal with such contingencies. For example, regulators could require that banks defer half of all executive compensation earned in 2012 and beyond under the following terms. If the deferral period (e.g., three years) passes without incident, the bank would pay the deferred compensation. If, however, the firm fails some objective test for financial stability, then the deferred compensation would be partially or wholly written off.²²⁰ The trick is designing an objective test. Clearly, it should not be subject to management or director discretion.

Policy-makers are currently grappling with a similar problem in the way that banks finance their operations. As noted previously, regulators require that banks finance with a certain amount of “capital” (such as common equity) that can absorb losses without throwing the bank into insolvency.²²¹ Banks, however, tend to prefer funding themselves with debt because it is cheaper than equity.²²² “Contingent capital” is a proposed method for banks to raise outside financing. Structured like debt upon issuance, contingent capital converts to equity upon some triggering event (like financial distress at the bank or extraordinary public assistance). The goal of contingent capital is to recapitalize a troubled bank before it fails without the need for resolution, bailouts, or infusions of new equity from troubled markets.²²³ Moreover, the holders of contingent capital would become watchdogs for the firm, as they would actually bear losses in the event of distress.²²⁴

Whether contingent capital would actually absorb losses in a crisis is debatable. For example, several banks continued paying dividends on preferred stock—a form of equity—throughout the

220. For this reason, regulators are seriously considering “contingent capital” that automatically converts debt instruments into equity upon distress, automatically recapitalizing the firm with more equity and less debt. *See infra* notes 220–226 and accompanying text.

221. *See supra* Part II.C.2.

222. *See supra* note 180 and accompanying text.

223. Professor Gordon proposes that executives be paid in equity that converts to debt upon distress, the reverse of contingent capital. His primary concern appears to be that executives will resist seeking new equity capital when firms are distressed out of fear that their existing stakes will be diluted. *See Gordon, supra* note 34, at 7. An alternative reason for resistance is the signal of weakness and stigma that raising new equity capital sends to the market. The contingent capital model makes the executives incentives irrelevant either way.

224. *See generally* CEYLA PAZARBASIOGLU ET AL., INT’L MONETARY FUND, CONTINGENT CAPITAL: ECONOMIC RATIONALE AND DESIGN FEATURES (2011). Before the crisis, however, banks issued a great deal of preferred stock, which should absorb losses even more effectively than contingent capital.

crisis, suggesting that preferred stock does not absorb losses well.²²⁵ Proposals vary in how the conversion or write-off would be triggered. Some triggers attempt to be objective, based on the level of firm capital or market-based indicia of distress.²²⁶ In contrast, the Basel Committee prefers to entrust the trigger to the discretion of regulators.²²⁷

Piggy-backing on the contingent-capital model to write-off debt-based compensation might be feasible. Regulators could link debt-based compensation with contingent capital, subjecting both to write-off (or conversion to equity) at the same time. To date, however, contingent capital has mainly been the subject of proposals, not actual regulations. “Contingent-capital compensation” probably needs to wait for finalization of the underlying contingent-capital model.

C. Incentive for Even Greater Risk-Taking with Implicit Leverage

The aim of debt-based compensation is to lower risk. Yet, it might actually encourage more risk taking even if regulators can somehow subject executives to default. Recall the example from above²²⁸ comparing Projects Surefire and Roulette. Assume that our firm is a bank and regulators require it to fund its operations with at least 10% equity. All other financing is from zero-interest debt or deposits that are government-guaranteed. The relative payoffs are these:

- Project Surefire grows to \$102 in one year. Firm assets thus return 2%. Firm equity is sure to go from \$10 to \$12, offering a risk-free return of 20%.
- Project Roulette has a 50% chance of falling to \$80 and a 50% chance of growing to \$120 in one year. Firm assets are risky and have an expected return of 0%. Firm equity will go

225. See Raj Date, *Now More Absorbent! Five Principles to Make “Contingent Capital” More Like Capital, and Less Contingent*, CAMBRIDGE WINTER CTR. FOR FIN. INSTS. POL’Y (2010), available at <http://www.bis.org/publ/bcbs174/cambridgewinter.pdf>.

226. See GOLDMAN SACHS, *CONTINGENT CAPITAL: POSSIBILITIES, PROBLEMS AND OPPORTUNITIES* 6 (2011), available at <http://www.goldmansachs.com/our-thinking/public-policy/regulatory-reform/contingent-capital.pdf>.

227. “The trigger event is the earlier of: (1) the decision to make a public sector injection of capital, or equivalent support, without which the firm would have become non-viable, as determined by the relevant authority; and (2) a decision that a write-off, without which the firm would become non-viable, is necessary, as determined by the relevant authority.” BASEL COMM. ON BANKING SUPERVISION, *PROPOSAL TO ENSURE THE LOSS ABSORBENCY OF REGULATORY CAPITAL AT THE POINT OF NON-VIABILITY* 5 (2010), available at <http://www.bis.org/publ/bcbs174.pdf>.

228. See *supra* Part IV.B.2.

from \$10 to either \$30 or \$0, offering a return of either 200% or a loss of 100%.

Surefire is the better project, but equity returns for Project Roulette are artificially inflated because of government-guaranteed debt. Absent compensation reform, equity compensation might lure the executives into choosing the patently inferior Roulette.

Paying the bankers with sufficient levels of debt is supposed to cause them to abandon the Roulette in favor of Surefire. Most notably, Professors Bebchuk and Spamann propose paying bankers with a representative basket of firm securities (common stock, preferred stock, and bonds).²²⁹ As discussed earlier, a practical problem is subjecting the debt to default risk.²³⁰ Overcoming this problem would, in theory, force the bankers to be paid according to the return on assets, not the return on equity. Unfortunately, the representative basket of firm securities may not reflect all forms of firm leverage. Indeed, implicit leverage from financial derivatives may allow our bankers to sidestep the Bebchuk–Spamann proposal altogether.

To see how, suppose our bank continues to invest its assets in Project Roulette. Assume it (like any large bank) has access to derivatives markets and can find a counterparty to enter into an agreement under the following terms:

- If Project Roulette wins, our firm receives \$180 from the counterparty.
- If Project Roulette loses, our firm has the legal obligation to pay \$180 to the counterparty.

We would characterize this derivative as a swap agreement.²³¹ From the executives' perspective, the swap agreements perfectly offset the Bebchuk–Spamann proposal.

- If Project Roulette wins, the firm's direct investment in Project Roulette goes to \$120, and it receives \$180 on the swap. Its total assets are \$300, producing a return on assets of 200%. Because return on assets determines compensation, the bankers receive a 200% gain.
- If Project Roulette loses, the firm is obliged to pay \$180 on the swap and \$100 to its creditors. Its direct investment in Project Roulette is worth only \$80, and the firm is insolvent. Let us assume that the swap counterparty is paid the remaining assets. The return on assets is a total loss of 100%.

229. See Bebchuk & Spamann, *supra* note 3, at 283.

230. See *supra* Part V.B.

231. See generally HULL, *supra* note 17, at 148–75. The swap is priced according to market principles as our firm and its counterparty are simply swapping fixed and floating returns that they can otherwise find in the market.

Thus, our bankers achieve the same result for themselves under the new rules as they did under the old rules without regulation: either a 200% gain or a 100% loss.

What explains this oddity? As an accounting matter, entering into the swap does not change the firm's balance sheet. Initially, the swap is neither an asset nor a liability, although later performance will appear on the balance sheet.²³² In substance, however, the swap is a huge and leveraged purchase of Project Roulette.²³³ The results are the same as if the firm invested \$1,000 directly in Project Roulette using a mere \$10 of equity and \$990 of debt. Our executives are simply leveraging up their investment, using a form of liability that is not captured on the balance sheet and is presumably not in the Bebchuk–Spamann model.

From the perspective of systemic risk, the result is a disaster, as the firm is much riskier now with the swap strategy. As with all simple examples, this one lacks realism. Our executives may find future employment difficult with such a spectacular failure. Our swap counterparty would not enter the transaction unless certain the government would save it in the event of default.²³⁴ If our firm really does enjoy government support, then it would have a systemic-risk regulator that would not knowingly allow the transaction to take place.

The current move under Dodd–Frank to put swaps on regulated exchanges should make it more difficult for firms to obscure their balance sheets with derivatives.²³⁵ Nevertheless, the example and possible responses all enervate the claim that compensation reform complements traditional financial regulation.²³⁶ Reformed

232. See *id.* at 39–40; DONALD E. KIESO ET AL., INTERMEDIATE ACCOUNTING 1015–16 (14th ed. 2011).

233. See generally HULL, *supra* note 17, at 148–75.

234. Based on historical practice, derivative counterparties can expect to be the first to be bailed out. Most recently, the government bailed out AIG mainly to ensure that it would be able to perform on its massive obligations under credit default swaps. Ten years earlier, the Federal Reserve Bank of New York brokered a private deal to save Long Term Capital Management to keep its counterparties whole as well. See ROGER LOWENSTEIN, WHEN GENIUS FAILED: THE RISE AND FALL OF LONG-TERM CAPITAL MANAGEMENT 185–218 (2000).

235. See generally DAVISPOLK, SUMMARY OF THE DODD–FRANK WALL STREET REFORM AND CONSUMER PROTECTION ACT 44–47; 52–63 (2010), available at <http://www.davispolk.com/dodd-frank/> (follow “Read Dodd–Frank Summary Memorandum” hyperlink).

236. Cf. Bebchuk & Spamann, *supra* note 3, at 278–86 (arguing that pay regulation is necessary to complement traditional regulation); Guidance on Sound Incentive Compensation Policies, 75 Fed. Reg. 36,395, 36,407 (June 25, 2010) (“Risk-management procedures and risk controls that ordinarily limit risk-taking do not obviate the need for incentive compensation arrangements to properly balance risk-taking incentives.”).

compensation may well put more, not less, pressure on the traditional system of financial regulation.

As in the prior Section, the critique has a theoretical solution. The swap counterparty is, in essence, providing financing to the firm, allowing it to increase its exposure to Project Roulette. Just as executives can be paid like shareholders and bondholders, they could theoretically be paid like derivatives counterparties to curtail moral hazard. Doing so, however, seems at odds with the fiduciary duties of the executives because the counterparty's interests are clearly adverse to those of the firm. Even if federal preemption solved such problems, firms would face the daunting task of somehow excluding all the gains and losses from derivatives contracts from the executive's pay.

D. The Weak Incentives of Perfect Debt-Based Compensation

This Section assumes away the practical problems raised in the prior two Sections. Now, banker pay carries the full risk of default and reflects all firm leverage (including implicit leverage from derivatives). This Section introduces the reality of variable compensation, under which the amount of an individual banker's pay reflects individual performance. In short, the dollar amount of individual pay is set by individual achievement but delivered using debt. Using a simple example, this Section shows how comparatively weak debt-based compensation controls risk taking, both at the firm and individual levels.

Suppose a trader receives a portion (e.g., 60%) of the profits she earns at her firm. The firm defers payment for three years, exposing her to risk of default in the interim. If the firm defaults before three years are up, she receives nothing; if the firm survives, she receives full payment. Her activities alone dictate the likelihood of default. Here are the ground rules for our trader:

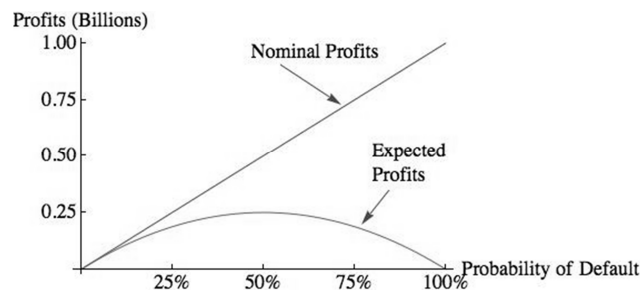
- As the trader produces more in nominal profits, she incurs more risk of default.
- To produce \$1 billion in nominal profits, she must take on so much risk that default is inevitable. At profits of \$0, she has taken on no risk, and default is impossible. In between, profits are linearly related to risk. So, profits of \$500 million produce a 50% risk of default.
- Our trader is risk-neutral and is so talented and hard-driving that she can select the amount of profit she earns.
- Our banker cannot, however, reduce the risk of default by any means other than lower profit.

Above, I suggested that our banker receives 60% of the profits she earns, but her share of firm profits does not actually matter

(beyond retaining her at the firm). She will pursue a level of nominal profits—determined before default—that maximize the expected level of profits after accounting for default. To see the difference between nominal and expected profits, note the following:

- Nominal profits of \$1 billion make default a certainty, resulting in expected profits of \$0.
- Nominal profits of \$250 million produce a 25% chance of default, resulting in expected profits of \$62.5 million.

The following graph illustrates how nominal and expected profits are related. Nominal profits go up linearly as the trader takes on greater risk (measured by the probability of default). Expected profits go up more slowly,²³⁷ peaking when the trader takes on risk of 50%, and falling thereafter.²³⁸



Our risk-neutral trader would maximize expected profits for the firm (and also herself) by taking on default risk of 50%. At this level of risk, the firm would have nominal profits of \$500 million and expected profits of \$250 million. She would receive her share after the risk of default passes.

In fact, our trader would always be content with a 50% risk of default. Her percentage of firm profits makes no difference because she always maximizes her individual share by maximizing total firm profits. The relationship between profits and risk does not matter either: if certain default were to occur at \$2 billion of nominal

237. Readers nostalgic for high-school geometry will note that expected profits are parabolic.

238. The two key variables are the probability of default PD and the trader's expected compensation EC . The trader generates profits for the firm (in millions of dollars) of $1000 \times PD$. Recall that default is certain ($PD = 1$) with \$1 billion of profits and impossible ($PD = 0$) with no profits. The trader's nominal compensation is 60% of nominal profits, or $600 \times PD$. The probability of actually being paid, though, is $(1 - PD)$. Thus, the trader's expected compensation (EC) is given by $EC = 600 \times PD \times (1 - PD)$. Note that EC is expressed in millions of dollars.

profits, she would still maximize expected firm profits at a 50% default risk.²³⁹

Without other regulation or controls, our trader would be totally indifferent to default if she were paid in current cash. Debt-based compensation does force her to scale back to a 50% default risk. This level of risk, however, is completely unacceptable for a systemically important financial institution. Regulators would force the firm to operate at a much lower default risk (maybe 1%) by limiting the firm's projects and leverage. In our example, the trader generates higher profits by taking on a higher default risk and thus more leverage. Forcing her to fund her activities with equity capital, however, would reduce or eliminate the risk, bringing it in line with the interests of society. Because our trader would be willing to bear any level of default that is acceptable to regulators, debt-based compensation would not affect her actions at all.

This critique applies more generally to the approach of the Financial Stability Board's *Principles*.²⁴⁰ The key demand of the FSB is to adjust incentive compensation to reflect risk.²⁴¹ In broad terms, the FSB views compensation as a matter of governance, asking banks to treat their employees like miniature firms, each bearing separate costs of failure or risk. The example above can readily be reinterpreted as a firm's implementation of the *Principles*. The trader is one of many at a firm and is given a certain amount of capital to use for trading. She generates nominal profits in year one, which entitle her to a bonus. Her activities, however, expose her employer to risk of loss at the end of year three. At least in the structure described above, she is willing to face a default risk of up to 50%.

Nothing about this level of individual risk suggests that deferring banker pay improves upon the overall risk at the firm. If she could bring the firm down by herself, the 50% risk is too high. If all traders at the firm are pursuing the same strategy, then the firm still faces an overall default risk of 50%. On the other hand, if the firm's other traders are all pursuing unrelated trades, they may

239. In the example, the firm faced certain default at profits of \$1 billion. Let λ be this level of profits in more general terms. So, the firm's nominal profits are $\lambda \times PD$. In the example, the trader received nominal compensation of 60% of nominal profits. Let ρ be the trader's share in more general terms. So, the trader receives nominal compensation of $\rho \times \lambda \times PD$. Because the probability of actual payment is $(1 - PD)$, expected compensation is given by $EC = \rho \times \lambda \times PD \times (1 - PD)$. The constant $\rho \times \lambda$ does not affect the value of PD at which EC takes its maximum value; it is always at 50%.

240. Cf. *supra* Part III.D (discussing FSB *Principles*).

241. See BASEL COMM. ON BANKING SUPERVISION, *supra* note 126, at 9.

diversify the firm's risk profile, meaning that no individual trader poses a threat worth regulating.

VI. CONCLUSION

Practically speaking, governments must enact some regulation of banker pay. A soft, principles-based approach, like that found in the Financial Stability Board's *Principles for Sound Compensation Practices*²⁴² could conceivably improve overall risk management and supervision. At best, financial firms would at least need to establish to regulators that they are monitoring employee risk-taking and adjusting compensation accordingly. At worst, firms would have a minor regulatory nuisance to handle.

The deferral requirements of the FSB's *Implementation Standards* and other debt-based compensation proposals are different. The best case for them is that they provide a very weak restraint on bankers' incentives to pursue uncompensated risk. They do not, however, affect shareholders or any pressure they may place on banks to achieve high returns through. The worst case is that debt-based compensation will frustrate the resolution of troubled firms and lead to even more risk taking.

At the risk of being overly reductionist, this Article closes by noting the underlying problem of systemic risk: that distress or insolvency at one firm can destabilize other firms and the economy as a whole. Making banks more resilient and less interconnected should be the focus of financial regulators, not fussing over banker pay.

242. FSF PRINCIPLES, *supra* note 1.