
7 Reforming financial executives' compensation for the long term

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1 INTRODUCTION

A myriad of factors have been identified as contributing to the ongoing global financial crisis, running the gamut from misguided government policies to an absence of market discipline of financial institutions that had inadequate or flawed risk-monitoring and incentive systems.¹ Such government policies include low interest rates by the Federal Reserve and promotion of subprime risk-taking by government-sponsored entities dominating the residential mortgage market so as to increase home ownership by those who could not otherwise afford it, which fueled a housing bubble, and bank capital and institutional investor holding requirements dependent on credit ratings by entities which were either conflicted or incompetent (or both), providing triple-A ratings to securitized packages of subprime mortgages. Identified sources of inadequate market discipline include ownership restrictions, deposit insurance inducing moral hazard, ineffective prudential regulation including capital requirements that favored securitized subprime loans over more conventional assets, while internal organizational factors contributing to the crisis include business strategies dependent on high leverage and short-term financing of long-term assets, reliance on risk and valuation models with grossly unrealistic assumptions, and poorly designed incentive compensation. This myriad of factors, taken as a whole, encouraged what was, as can readily be observed with the benefit of hindsight, excessive risk-taking.

Yet only one of the items on the long laundry list of factors contributing to the crisis has consistently been a focal point of the reform agenda across nations: executive compensation. In the United States, for example, multiple legislative and regulatory initiatives have regulated the compensation of executives of financial institutions receiving

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¹ For analyses of the government policies, market failure and internal organizational factors contributing to the crisis outlined in the text, see, for example, Calomiris (2008); Caprio, et al. (2008); and Herring (2008). Economists have further analyzed how the spike in subprime mortgage defaults led to the paralysis of the commercial paper and credit markets due to the opacity of securitized assets, creating a modern bank panic in the repo market that financed major financial institutions (Gorton and Metrick 2009; Gorton 2010).

government assistance. The governments of many European nations have followed a similar regulatory strategy, while the European Union's Competition Commissioner announced that it would be examining banks' compensation in light of government support received during the crisis (see, e.g., BNA 2009a; Ebrahimi 2009; Treanor 2009).² This turn of events might have seemed at first blush peculiar to an informed observer, however, given the manifold and more pressing regulatory issues that had been identified as having contributed to the crisis. Moreover, the best available evidence suggests that the more questioned form of incentive compensation, stock options, does not appear to have significantly adversely affected financial institutions' performance during the financial crisis and, consequently, it is improbable that they were the key contributing factor underlying the global credit crisis.³ That being said, executive compensation is a perennial media flashpoint in democratic politics that lends itself easily to political grandstanding, and the current financial crisis is no exception, as it is self-evident that there were egregious instances where financial institutions' executives and traders did extremely well for themselves while taxpayers have picked up or will be picking up the check.

Given an environment in which political unease over financial executives' compensation is widespread and regulatory constraints have been imposed, we advance in this chapter what we consider to be a superior regulatory approach to that adopted by Congress and to debt-based proposals recently advanced by academics. In brief, we advocate providing all incentive compensation in the form of restricted stock and options—restricted in the sense that shares cannot be sold nor options exercised until two to four years after an individual's last day in office—albeit we would permit a modest amount to be paid out over time to address tax, liquidity and premature turnover concerns. The proposal meets three criteria that we think common-sense and economics suggest compensation packages should meet, not only to provide appropriate incentives, but also to be understandable by investors and the public: it should be simple, transparent and focused on creating and sustaining long-term shareholder value. Although our proposal is specifically addressed to what should be required of financial institutions, given

² In addition, regulating bank executives' compensation took a prominent place on the agenda of the recent G-20 summit, which produced a set of principles as a guideline for nations' regulation of financial executives' pay (Weisman 2009; Treanor 2009).

³ See Cornett, et al. (2009) (comparing performance of publicly traded U.S. banks in 2003–06 and 2007–08, and finding banks whose CEOs had a higher proportion of pay in options performed better during the 2008 crisis); Erkens, et al. (2009) (assessing the performance of 306 financial firms in 31 countries over January 2007–December 2008, and finding firms awarding compensation in cash bonuses rather than equity incentives, which includes stock options, restricted shares and long-term incentive plans, experience higher losses); Fahlenbrach and Stulz (forthcoming) (assessing the performance of 98 U.S. banks over July 2007–December 2008, and finding no evidence that banks with higher CEO option pay performed poorly and no evidence that those with higher CEO equity ownership performed better); Suntheim (2010) (examining CEO compensation at 77 banks in 18 countries, and finding form of compensation, equity incentive, cash bonus or otherwise, has no impact on equity returns during the financial crisis, 2007–08, but accounting performance was higher for banks whose CEOs held more equity and lower for banks whose CEOs had greater incentive pay, either short-term bonuses or option-based compensation). It should be noted that the large increases in executive compensation that have been the source of media attention and public outcry, as reviewed in section 2, were a function of increased use of stock option incentive compensation.

prudential concerns related to protecting the fisc, we are of the view that all firms ought to consider its adoption as well.

The chapter proceeds as follows. We first briefly review the rationale for equity-based incentive compensation, such as our proposal, and why executive compensation, particularly equity-based incentive compensation, has been the principal regulatory target. We then briefly describe the extensive regulation of financial executives' compensation that has been enacted by the United States in response to the credit crisis. Thereafter we explain the mechanics of our proposal, including how it would improve on the approach of Congress, and how it is crafted to respond to potential criticisms related to its incentive structure. We conclude with a brief critique of an alternative approach, shared by several recent reform proposals, that would compensate managers of financial institutions with debt securities, either as a substitute or as a complement to equity incentive compensation.

2 EQUITY-BASED INCENTIVE COMPENSATION AND THE FINANCIAL CRISIS

2.1 The Rationale for Equity-based Incentive Compensation

There is a well-developed and widely accepted economics literature on the fashioning of incentives to achieve consonance between managers' actions and shareholders' interests through the use of stock and stock-option compensation (Holmström 1979; Holmström 1999). Until the set of accounting scandals that began with Enron in late 2001, compensation in the form of stock and stock options was often emphasized as a key to improved corporate performance, and such compensation has been the most substantial component of executive pay for well over a decade. Even Congress implicitly acknowledged the incentive function of executive compensation when in 1993 it eliminated the corporate income tax deduction for executive salaries in excess of \$1 million, since the limitation was applicable only to non-incentive-based compensation.⁴

In an influential study published in 1990, Michael Jensen and Kevin Murphy (1990a) lent support to the use of equity compensation by documenting what they considered to be trivial responsiveness of executive compensation to stock performance, calculating that CEO compensation changed by only \$3.25 for a \$1,000 change in stock value. Jensen and Murphy (1990b) viewed this disconnect to be a matter of considerable policy concern and advocated increasing equity incentive compensation. Brian Hall and Josh Liebman (1998) subsequently documented a significant increase in incentive compensation following the publication of Jensen and Murphy's study. The pay-for-performance

⁴ I.R.C. section 162(m) (2006). The provision was enacted in 1993 as part of the Omnibus Budget Reconciliation Act, at a time of public criticism of executive compensation (Rose and Wolfram 2002). Some commentators have attributed the Enron and related corporate scandals to that legislation. The contention is that, because managers could only receive substantial compensation in the form of stock and stock options, they had an incentive to engage in accounting manipulation to maintain high stock prices (Bartlett 2002).

sensitivity of CEO compensation increased over ten-fold from 1980 to 1999, and Bengt Holmström and Steven Kaplan (2003) contend that this shift to greater equity-based compensation produced a change in the mindset of corporate executives: they became more receptive to undertaking value-increasing transactions, such as acquisitions, and to improving productivity and profitability through internal restructuring, activities previously resisted, as they embraced more firmly shareholder value as the firm's objective.

2.2 Why was Executive Compensation the Initial Legislative Target?

The tide of popular opinion turned against equity- and option-based compensation after the Enron and other corporate accounting scandals of 2001–02 came to light, fueled by repeated assertions in the media by journalists, political officeholders, commentators, and public and union pension funds that executive compensation was unreasonably high. The heated rhetoric intensified with the political backlash to the financial panic and credit crisis, which began in 2007, and the government bailout of financial institutions commencing in 2008. This turn of events is not an altogether surprising development, as executive compensation has a long history in the United States of being targeted by populist attacks following market declines and scandals.⁵ In the search for a scapegoat following a financial crisis that caught government regulators, financial institutions and investors alike by surprise, large bonuses paid to individuals at financial firms bailed out by the government had the salutary effect for public officials of providing a focal point that deflected attention from misguided or poorly executed government policies that contributed significantly to the crisis.

2.3 U.S. Financial Institutions' Executive Compensation Regulation

The regulatory architecture of executive compensation of U.S. financial institutions has gone through several permutations since the onset of the financial crisis. The first iteration was the financial-services industry rescue legislation, the Emergency Economic Stabilization Act of 2008 (EESA), which authorized funds with which the Treasury Department could acquire banks' poorly performing assets, the "troubled asset relief program" (TARP).⁶ The EESA included provisions directed at limiting executive compensation in companies from which such assets were acquired. But as the rescue program transmuted into using TARP funds to purchase equity interests in financial institutions

⁵ For example, Seligman (1995: 25–26) notes that compensation of bank executives was a critical focus of the Pecora hearings that provided the basis for federal securities regulation in the 1930s, and Jensen and Murphy (1990b) list newspaper headlines attacking high executive compensation from the 1980s.

⁶ Pub. L. No. 110-343, section 111, 122 Stat. 3765 (2008). Incentive compensation for the top five senior executives that induced "unnecessary and excessive risk taking" was prohibited, bonuses were to be recouped ("clawbacks") if based on inaccurate performance metrics and golden parachute payments were limited to three times annual compensation. In addition, the tax deduction for executive compensation was limited to \$500,000 in total, in contrast to the existing \$1 million limit of deductibility for non-performance-based compensation.

instead of assets, the EESA compensation provisions appeared to be inapplicable and too timid, leading to increasing calls for greater regulation. The “rhetorical assault” by President Obama on Wall Street executives’ bonuses as “shameful” echoed those sentiments (Lucchetti and Karnitschnig 2009).⁷

Congress responded to the ongoing criticism of executive pay in the February 2009 stimulus package, which allocated several hundred billion dollars in expenditures to revive the faltering economy, by including amendments to the EESA provisions that imposed further restrictions on the compensation of executives of firms receiving financial assistance from TARP funds. Under this legislation, incentive compensation and bonuses are prohibited for executives of those firms unless paid in restricted stock that does not vest until the firm has no outstanding TARP obligation, and that incentive compensation is limited to one-third of the total annual compensation the executive receives.⁸ In addition, Congress expanded the EESA’s claw-back of bonuses based on “materially inaccurate” financial statements or other performance metrics to reach more employees (top twenty-five instead of five most highly compensated employees). Not surprisingly, following this legislation, financial institutions sought to pay off their TARP obligations quickly and, of the largest entities receiving funds in 2008, by 2010, only a few, principally non-bank recipients, had not done so (Dash and Martin 2009; Ydstie 2010).

The regulatory impulse was not sated with the stimulus bill provisions, however. In June 2009, the Obama Administration issued rules implementing the compensation requirements in the stimulus bill, further tweaking the legislation’s restrictions by, for example, mandating that firms exercise claw-backs and tightening restrictions on golden parachutes by prohibiting payment of individuals’ taxes due on compensation. At the same time, and more significantly, it appointed a Special Master tasked with reviewing and approving the compensation arrangements of the top twenty-five executives of firms receiving exceptional assistance under TARP, as well as to review the “structure” of the compensation of all executive officers and the one hundred highest paid employees of those firms (Dept. of the Treasury 2009).⁹ The Special Master was further required to review any prior bonuses and compensation paid to the top twenty-five executives and to

⁷ Shortly thereafter, the Administration issued rules limiting CEO pay to \$500,000 for financial institutions receiving government assistance (Weisman and Lublin 2009).

⁸ American Recovery and Reinvestment Act of 2009, Pub. L. No. 111-5, section 7001, 123 Stat. 115 (2009). The number of executives to which the restriction applies depends on the amount of support received: it applies to the top twenty-five executives of firms receiving the highest amount of \$500 million or more. The statute excludes from the period of an outstanding TARP obligation a situation in which federal government’s only holding in the TARP recipient is warrants to purchase common stock. *Id.*, amending EESA section 111(a)(5). Other compensation provisions required annual shareholder advisory votes on executive compensation packages, prohibited expenditure policies that could be considered “excessive” or “luxury” items, and required the CEO and CFO to certify personally the need for any such expenditures.

⁹ The seven firms receiving exceptional assistance were the insurance company AIG, the Bank of America and Citigroup, and four auto-related firms, General Motors, GMAC, Chrysler and Chrysler Financial. The same seven firms’ senior executives’ non-restricted stock pay was further limited to \$500,000.

negotiate their reimbursement if he determined that the payments were “contrary to the public interest.”¹⁰

Lastly, in October 2009, the Federal Reserve proposed new supervisory guidance regarding banking organizations' compensation practices and launched two supervisory initiatives and an on-going review of banks' compensation practices for compliance with what the regulating agencies consider best practices, thereby aiming to expand the special master approach beyond a small number of large institutions receiving exceptional governmental financial assistance, to all banks.¹¹ The guidance specified the compensation “policies, procedures and systems” banks were expected to have, in conjunction with three general principles banks were expected to follow (“balanced risk-taking incentives, compatibility with effective controls and risk management, and strong corporate governance”) not only for top executives (the Special Master's focus at TARP-recipients), but also for lower-level employees, including traders and loan officers (Federal Reserve System 2009; Andrews and Story 2009). The final guidance was issued in June 2010, essentially paralleling the proposed guidance, with some minor modifications, particularly for smaller banks that do not use incentive compensation, and clarifications of terminology, along with a statement of the banking regulators' expressed intention to “continue to regularly review incentive compensation practices of large banking organizations” (Dept. of the Treasury 2010).¹² With compensation now a formal part of the supervisory review process, regulators will continue to exert influence over financial firms' compensation practices long after TARP, or firms with unpaid TARP obligations, shut down.

¹⁰ The Special Master issued the report in July 2010, in which he criticized bonus payouts made by most of the large TARP recipient firms in 2008 as “ill-advised,” noted that he had “no enforcement authority” and that most had already repaid their TARP funds, and he did not require refunds from the six firms that had not paid back TARP as he did not find that any of the bonus payments were “contrary to the public interest” (Ydstie 2010).

¹¹ The Dodd-Frank Wall Street Reform and Consumer Protection Act extended to all public companies some of the provisions applicable to financial institutions: it requires public companies to adopt and disclose clawback policies for incentive compensation upon restatements (broadening the clawback provision of the Sarbanes-Oxley Act of 2002 to apply to more executives and to not require the restatement to be a result of misconduct) and to hold periodic shareholder advisory votes on executive compensation. Pub. L. No. 111-203 (2010). In addition, it requires all public firms to have independent compensation committees (a New York Stock Exchange and NASDAQ listing requirement since 2003), and that the advisors to those committees (lawyers and compensation consultants) be independent, and requires greater compensation disclosure, including the ratio of the median employee's compensation to that of the CEO.

¹² The final guidance was issued by all of the federal banking regulators (the Federal Reserve, Federal Deposit Insurance Corporation and the Office of the Comptroller of the Currency and Office of Thrift Supervision in the Treasury Department), so that it applies to all banks and not just those supervised by the Federal Reserve. Features in plans that commentators expect examiners to look for, in order to merit approval, include deferred bonus payments, claw-backs, and performance bonuses linked to risk, paralleling Congress's compensation requirements for TARP fund recipients (Andrews and Story 2009). But in contrast to Congress's strictures on TARP-recipients, the guidance neither mandates nor prohibits any specific form or level of compensation, incentive or otherwise.

3 OUR PROPOSAL: INCENTIVE COMPENSATION IN THE FORM OF RESTRICTED STOCK

3.1 Our Proposal In Brief

Rather than follow Congress's approach to financial executives' compensation, limiting the dollar amount and prohibiting bonus payments, an approach that the academic literature suggests could be both imprudent and counterproductive,¹³ we recommend instead altering only the *form* in which equity-based incentive compensation is provided, to restricted stock, that is, equity interests that an executive could not sell until a specified number of years—we would suggest two to four—after he or she leaves a firm. In our judgment, this form of compensation will provide managers of publicly traded financial institutions with the proper incentives to operate the business in investors' and society's interest. We think it would be desirable public policy to require that a compensation package along the lines that we advance be adopted by all financial institutions, not solely entities still participating in TARP or any of the various bailout programs created by the Federal Reserve and Treasury Department to combat the financial crisis, because financial institutions are subsidized by the federal banking regime: not only do they participate in federal deposit insurance but they also can borrow at favorable rates from the federal funds window. As a consequence, their failure puts the fisc at risk.¹⁴ As we will elaborate, our proposal is similar only in name to the restricted stock proposal that Congress included in the stimulus bill, which we consider to have taken a perverse form.¹⁵

Consistent with the academic literature, we think that incentive compensation in the form of stock and stock options is, in general, a highly effective mechanism for aligning manager and shareholder interests. However, in light of justifiable public concern over potentially perverse incentives from such compensation for banking organizations and the enactment of what we consider to be misguided government regulation, we suggest that instead of stock and stock options, incentive compensation plans for financial institutions' executives should consist only of *restricted stock* and *restricted stock options*, restricted in the sense that the shares cannot be sold (or the option cannot be exercised)

¹³ See the discussion *infra* related to research by Perry and Zenner (2001); Burns and Kedia (2006); Cohen, et al. (2007). Consistent with that literature, the Obama Administration has expressed concern that the compensation restrictions in the stimulus bill could be "counterproductive" and lead to a "brain drain" from U.S. institutions, suggesting that it would seek to rewrite the provisions (Lengell 2009).

¹⁴ In the 2007–08 financial crisis, as well as the earlier Savings & Loan crisis, the federal deposit insurance fund was inadequate to bail out the banking sector. There is every reason to expect that to be the case in the future (see, e.g., Reinhart and Rogoff 2009). The subsidy is considered necessary given financial institutions' critical role in the payment and credit system, and their relation to systemic risk or contagion (the externality that the failure of one financial institution can lead to a banking panic, in which investors rush to withdraw their assets from other banks, which then also fail) (see, e.g., Gorton 2010).

¹⁵ We would, however, leave the decision to implement such a compensation policy for non-financial firms to their directors and investors, along with the specific duration of the selling restriction, so that the particulars can be tailored to specific firms' and individuals' needs. For a discussion of the need to tailor corporate governance mechanisms to individual firms' requirements, see Bhagat, et al. (2008: 1858–59, 1862–63).

for a period of at least two to four years after the executive's resignation or last day in office. Why do we advocate a two- to four-year waiting period? We think two years should be the short end of the waiting period because managers' discretionary authority, under current accounting conventions in the United States, to manage earnings unravels within a one- to two-year period. On the other side, four years is a reasonable time for at least the intermediate-term results of the executives' decisions to come to realization.¹⁶

Executives who have a significant part of their incentive compensation in the form of restricted stock and restricted options as we have outlined have diminished incentives to make public statements, manage earnings, or accept undue levels of risk, for the sake of short-term price appreciation. Accordingly, the proposal will diminish the unintended perverse incentives to manipulate or emphasize short-term stock prices over long-term value, yet retain the intended benefits to align manager and shareholder interests, of equity-based incentive compensation plans. Managers with longer horizons will, we think, be less likely to engage in imprudent business or financial strategies or short-term earnings manipulations when the ability to exit before problems come to light is greatly diminished. There are, in fact, data that are consistent with our contention. Natasha Burns and Simi Kedia (2006) find, for example, that as a CEO's ownership of restricted stock increases, a company is less likely to be involved in financial misreporting.¹⁷

3.2 Our Restricted Stock Proposal in Greater Detail

The idea of using restricted stock for executive incentive compensation is not original to us. For instance, many companies have restricted-stock plans, the use of which began to increase after stock options were required to be expensed in firms' financial statements, thereby equalizing the accounting treatment of the two forms of compensation (Personick 2005).¹⁸ That change gave an edge to using restricted stock over options: with restricted

¹⁶ Two recent papers present theoretical models of optimal manager incentive compensation (Edmans, et al. 2009: 3–4, 33; Peng and Roell 2008: 20, 24–25). Both papers' models suggest that a significant component of incentive compensation should consist of stock and stock options with long vesting periods.

¹⁷ In addition, firms whose managers have large amounts in deferred compensation and defined benefit pension plans appear to follow less risky investment policies. For example Wei and Yermack (2010) find the initial disclosure of deferred compensation and defined benefit pensions of non-financial firms was accompanied by increases in bond prices and decreases in stock prices, and a decline in both security types' volatility; and Bolton, et al. (2010), examining 27 banks' compensation disclosures, find banks whose CEOs have a higher ratio of deferred compensation and pensions to equity holdings have significant reductions in credit-default swap spreads, which provide a measure of default risk as these instruments insure swap holders against default on the banks' debt. That may be desirable to reduce the moral hazard problem, discussed *infra* in section 3.4. It must be noted, however, that deferred compensation and pensions are not equivalent to restricted stock, because there is no upside: the future return (amount paid) is fixed at the time of deferment (Wei and Yermack (2010)) and this data may therefore be more relevant to the debt-focused compensation proposals discussed in section 3.4 of this chapter.

¹⁸ Personick (2005) predicted a trend to increased use of restricted stock because of the change in accounting treatment, and Cremers and Romano (2007: 16) report a significant increase in the use of restricted stock before and after the 2003 announcement that options would have to be

stock, an employee still receives something of value if the stock price declines post-grant, compared to what would be a worthless under-water option (Personick 2005: 8).

However, most restricted-stock plans differ from our proposal in an important respect: the vesting requirement is typically three years and the executive must still be employed at the end of the vesting period to receive the award.¹⁹ The stimulus bill, in line with a plan initially advanced by the Obama Administration, went beyond existing plans and was closer to our proposal. As already mentioned, it both prohibited financial institutions receiving government assistance from TARP from paying any incentive compensation other than restricted stock that could not be sold until the government is repaid, and capped the amount of such incentive pay at one-third of the executive's annual compensation. But our proposal differs from Congress's mandate in three important—and we think critical—respects.

First, our proposal's term of the restricted stock is tied to the executives' term of employment (lasting two to four years after employment ends), and not the institution's indebtedness to TARP. We think this holding period better matches individual incentives with taxpayers' and other equity holders' interests. Permitting the sale of the restricted shares upon repayment of TARP funds encouraged executives to repay the funds quickly, which may have been premature and at the expense of the financial institution's long-term value. Because all of the TARP recipients who repaid the obligation are Federal Deposit Insurance Corporation-insured institutions, that long-term value should be of concern to taxpayers, and not just to equity investors. Moreover, to the extent that exiting TARP quickly was in the equity's long-term interest, our proposal furthers that objective because the longer horizon in which the stock is held post-repayment continues to align executives' incentives with equity's long-term interest.

Second, our proposal does not cap the amount of restricted stock that can be awarded executives to a small fraction of total compensation, as did Congress. As noted earlier, incentive compensation is a more desirable form of executive pay than fixed compensation. Incentive compensation should therefore not be the smaller component. The problems thought to have been generated from equity incentive compensation in the past decade—earnings manipulation or the taking on of unwarranted risk—are a function of the *structure*, not the level, of the incentive payments. Congress's restriction will, in fact, make pay even less sensitive to performance than it was before the credit crisis; that is the precise opposite of what is desirable of an executive compensation plan.

expensed in 2005. All other things being equal, companies preferred compensation that was not expensed under accounting rules because that increased reported earnings.

¹⁹ Some companies have restricted-stock plans that require that a specified percentage of shares be held until retirement. For example, since 2002, Exxon Mobil Corp. has had a restricted-stock plan in which 50 percent of equity compensation of senior executives is restricted for 10 years or until retirement, whichever is later (Exxon Mobil Corp. 2003–2010); and prior to coming under the Special Master's scrutiny, Citigroup, Inc. required senior executives to hold 75 percent of equity awarded or owned until they ceased to be members of senior management, albeit before 2006 the policy, adopted in 1999 upon the merger of Citicorp and Travelers Group, was described as a “commitment” (presumably contractual) and exempted restricted-stock plan transactions (Citigroup, Inc. 1999–2007). But, in contrast to our proposal, these companies provide executives additional types of incentive compensation, such as cash bonuses, subject to a shorter vesting period, along with the long-vesting restricted stock.

Moreover, empirical research indicates that companies find a way to circumvent Congressional limitations on compensation. The result is invariably higher and more opaque compensation, as adjustments are made to pre-regulation optimal compensation contracts; those adjustments can and have created perverse incentives for executives. For example, after Congress restricted the income tax deductibility of non-equity-incentive-based cash compensation to \$1 million, firms altered the mix of compensation to reduce cash salaries and increase incentive compensation (Perry and Zenner 2001). One cannot help but appreciate the irony that Congressional action to reduce executive pay appears to have precipitated the mushrooming of equity incentive compensation, the bulk of which accounts for the very large amounts paid to executives that are the present object of attack, and that may have provided some executives with an incentive to engage in accounting improprieties (to bolster the value of their unrestricted stock options).²⁰

A similar reorientation of pay packages with perverse consequences occurred after the Sarbanes-Oxley Act required claw-backs of incentive-based compensation when a firm's financials were restated: companies increased non-forfeitable, fixed-salary compensation and decreased incentive compensation, thereby providing insurance to managers for increased risk (Cohen, et al. 2007). As critics of executive compensation, including President Obama, object to large pay packages that are independent of performance, firms' adaptation to the claw-back provisions had precisely the opposite effect of what they would wish to see of a pay package. Our proposal, which does not place artificial and counterproductive limits on the amount of incentive compensation, as does the stimulus bill, would avoid such perverse adaptive behavior by firms.²¹

Third, our proposal applies to all executives and any individual whose decisions may substantially impact a firm (such as proprietary traders or structured product sales personnel), and not, as does the stimulus bill, only to the "most highly compensated"

²⁰ For example Burns and Kedia (2006: 63) find CEO compensation in stock options is significantly related to accounting restatements, although in contrast, using a different statistical technique, Armstrong, et al. (forthcoming) find no relation between any form of CEO equity incentive compensation and accounting improprieties. However, to the best of our knowledge, no publicly held company has an executive compensation plan mirroring the one we are recommending, so the studies' findings cannot truly inform us of what would be the effect of executive compensation policies that allow only restricted stock and restricted stock options as incentive compensation. Some financial firms do not permit executives to sell stock (or a substantial amount of their accrued incentive stock compensation) prior to their retirement or specified departures, similar to our proposal, e.g., Citigroup, Inc.'s (1999–2007) senior management stock ownership policy. Of particular interest is the following suggestive anecdote. Until Hank Greenberg retired as CEO in 2005, AIG had a long-term deferred equity compensation plan that did not pay out the shares to executives until retirement under an arrangement with Starr International Company (a company controlled by Greenberg and that owned approximately twelve percent of AIG) (American International Group, Inc. 2004: 7–10). But that was not the exclusive form of incentive compensation, as AIG also had stock-option grant programs with more conventional vesting terms (American International Group, Inc. 2004: 11). Nevertheless, if, as Greenberg states, AIG did not write credit-default swaps in huge volumes until after he retired and the incentive compensation post-retirement vesting period changed (Hu 2009), then that behavior would be consistent with our contention that our proposal would more properly align executive incentives with shareholders' interest than would existing shorter-horizon plans.

²¹ We also take account of the need to make adjustments to pay in order to compensate for the restricted form of incentive pay of our proposal; see, e.g., *infra* text accompanying note 26.

employees. We believe the broader coverage is necessary because decisions of individuals such as proprietary traders, who may not be among a financial institution's highest compensated individuals, can adversely affect, indeed implode, a firm.²² Attention must thereby be directed at supplementing management oversight, by creating incentives for individuals in critical positions throughout an organization that are aligned with long-term performance, rather than transactions' short-term impact. For instance, at Merrill Lynch, top executives' incentive compensation was restructured in 2006 to require their holding stock that could not be liquidated for four years, yet that requirement did not avoid massive losses from a highly leveraged business model and a portfolio of securitized assets (Story 2009).

As earlier noted, the largest banking institutions have repaid their TARP obligations, no doubt largely to avoid the compensation restrictions. Quite apart from concerns over such firms potentially posing a systemic risk, we do not think that it would be overreaching for the government to impose our restricted-stock proposal on firms after they have repaid TARP funds, to the extent that those firms are still obtaining other benefits of government financial assistance (through, for example, access to the Federal Reserve Bank's discount window or participation in guaranteed short-term debt or deposit insurance programs). Indeed, we are of the view that the use of restricted-stock plans as the sole form of incentive compensation should be mandated for managers of financial institutions whose liabilities are guaranteed by the government through other forms of government guarantees or assistance, to align managerial incentives against unwarranted risk-taking and thereby protect the fisc.²³

There are two further benefits of our proposal. First there is its natural "claw-back" feature that renders unnecessary intricate mechanisms requiring executives to pay back bonuses received on income from transactions whose value proved illusory. Because executives are compensated in equity that is not received until years after it is earned—two to four years after they leave the firm—they cannot capture short-lived income from transactions whose value is not long-lasting: the "compensation" will be dissipated as the value of the firm's shares decline. In other words, executives will receive less in value than the originally granted bonus if the stock price drops thereafter. This automatic "claw-back" is simpler to administer than the claw-backs mandated in legislation such as the stimulus bill and the Sarbanes-Oxley Act, which require specific triggers, such as an accounting restatement, and can be subject to litigation to resolve a host of thorny issues, such as whether an item in a financial statement was material or whether scienter is required for forfeiture of the incentive compensation.²⁴

²² Traders who engage in small-scale transactions that could not threaten the firm's financial stability would, of course, not come under our proposal.

²³ Value-based deferred-credit-type incentive plans, similar to restricted stock plans, could be designed for executives of non-stock (mutual) institutions. Small institutions, for which the systemic risk to the federal deposit insurance fund is trivial, could be exempt from the restricted stock requirement in exchange for paying a higher fee to the insurance fund to account for the higher risk of loss from having less desirable incentive pay structures.

²⁴ American Recovery and Reinvestment Act of 2009, Pub. L. No. 111-5, 7001, 123 Stat. 115 (2009); Sarbanes-Oxley Act of 2002, Pub. L. No. 107-204, section 304, 15 U.S.C. section 7243 (2006). The Securities and Exchange Commission has brought clawback charges for restatements against executives who were not involved in any wrongdoing, action that is the subject of ongoing

Second, because a CEO would be exposed to the impact of decisions made by his or her successor, the proposal will have the additional salutary influence of focusing the executive more attentively on succession planning. Exposure to successors' decisions could also have a perverse effect of increasing an executive's incentive to sell the company at a low price in order to cash out upon retirement. But a strategy of accepting a low sale price would be constrained by the need for shareholder approval (whether by tendering their shares or voting for the merger or asset sale) and by the probability that a low price would attract a competing bidder.²⁵ To the extent that those constraints are not perfect, this is a tradeoff in which, in our judgment, the cost of our proposal (a potential increase in sales at "too low" a price) is outweighed by the benefit (a reduction in mismatched incentives to engage in "too risky" transactions whose short-term profit may result in imploding the firm in the long term).

3.3 Concerns Raised by our Proposal

We note three important concerns raised by the proposal. First, if executives are required to hold restricted shares and options, then they would most likely be under-diversified. This would lower an executive's risk-adjusted expected return. One way of bringing an executive's risk-adjusted expected return back up to the former level (that before the executive was required to hold the shares and options) would be to increase the expected return by granting additional restricted shares and options to the executive.

To ensure that the incentive effects of restricted stock and options are not undone by self-help efforts at diversification, executives participating in such compensation plans should be prohibited from engaging in transactions, such as equity swaps, or borrowing arrangements, that hedge the firm-specific risk from their having to hold restricted stock and options (where not already restricted by law).²⁶ Of course, derivative transactions based on other securities, such as a financial industry stock index, could be used to undo the executive's interest in the restricted shares, subjecting the executive to the lower level of basis risk (the risk that co-movements in the firm's stock and the security or securities underlying the hedge are not perfect). To address this possibility, we would recommend that approval of the compensation committee or board of directors be required for other

litigation, *SEC v. Jenkins*, No. 2:09-cv-1510-GMS (D. Ariz. 2010), but some of the litigious issues will be eliminated in the future as the Dodd-Frank Act's claw-back provisions do not have the Sarbanes-Oxley's requirement that the restatement be a result of misconduct.

²⁵ The concern that restricted stock will encourage low-priced sales only involves cash offers, which are less likely to produce low valuations compared to stock offers, given the higher premiums paid in cash transactions; see Andrade, et al. (2001: 111) (abnormal stock returns for large cash acquisitions 50 percent higher than those for stock deals). This is because, if the consideration for the sale is stock or securities, then the post-retirement two- to four-year holding period for the executive's restricted stock would attach to those instruments, reducing any incentive to accept a low-priced bid.

²⁶ For a discussion of constraints on executives' hedging options and stock from contract, securities and tax laws, see Schizer (2000). It should be noted that these rules make it more difficult or costly to hedge options than stock (or at least stock that is not the subject of a compensation plan grant).

(non-firm-specific) derivative transactions, such as a put on a broader basket of securities.

In addition, to ensure that under-diversification does not result in managers taking a suboptimally low level of risk, compared to the risk preferences of shareholders (behavior that may be of particular concern as an aging executive nears retirement and may wish to protect the value of accrued shares), the incentive plan can be fine-tuned to provide a higher proportion in restricted options than shares to increase the firm's leadership's incentive to take risk (see, e.g., Holmström 1979). Of course there is a tradeoff with respect to using restricted options rather than stock in an effort to reduce managerial risk aversion: from the perspective of protecting the fisc, when the assistance takes the form of deposit insurance rather than government equity ownership, a more risk-averse executive may be precisely what is desired.²⁷

Second, if executives are required to hold restricted shares and options past retirement, it would raise concerns regarding a lack of liquidity. To offset the loss of liquidity, we propose first that there be a higher limit on cash compensation for tax deductibility purposes, up to, say, \$2 million for executives who receive equity compensation in the form of restricted stock, and a restoration of the unlimited deductibility for such incentive compensation, compared to the existing \$500,000 limit on all compensation paid to executives of financial institutions receiving TARP funds (and the \$1 million limit for cash compensation for all other employees and firms).²⁸ In addition, we propose that 85 to 90 percent, and not all, of the incentive compensation received in a given year be in the form of restricted stock or options whose receipt is postponed until two to four years beyond the term of employment. The executive would thereby be able to access a modest proportion (the remaining 10 to 15 percent in a given year) in the shorter time frame prevalent in existing restricted-stock plans or in the year of receipt, the choice of which we would leave to the decision of a firm's compensation committee.

²⁷ For a model suggesting when stock option compensation results in managers taking less or more risk (which depends on how much "in the money"—exercise price below the stock price—the options are), see Lambert, et al. (1991).

²⁸ I.R.C. section 162(m) (2006). We would therefore undo the decrease in the deduction contained in the EESA, and counsel against the idea, suggested by Senator Levin at Treasury Secretary Geithner's confirmation hearing, to expand the reduction in deductibility to all firms (BNA 2009b). David Walker (2009) suggests that firms might respond to this piece of our proposal by increasing fixed cash compensation and reducing the amount of incentive compensation, attenuating the link between pay and performance. Indeed, firms may respond with higher fixed pay regardless of the level of the tax deduction, as some firms have continued to pay executives over \$1 million in cash despite the loss of the deduction, and the impact on net income from the loss of the tax shield from the deductibility of compensation over the lower \$1 million level would appear to be trivial for many firms (Perry and Zenner 2001). Accordingly, executives who could not access incentive compensation until several years after retirement or termination, as we propose, would be likely to seek to obtain higher fixed cash payments to offset the reduction in available funds. But our proposal would have less of an effect in that regard than Congress's plan, which limits incentive pay to one-third of fixed compensation, thereby exacerbating the incentive for firms to increase fixed pay (as incentive pay depends upon that base). Moreover, two features of our proposal—the increase in the tax deduction and the allowance of an annual payout of a modest percentage of the restricted shares and options—should decrease the probability that compensation committees would perceive a need to provide a higher proportion of fixed compensation.

Whether our proposal adequately addresses well-founded concerns regarding liquidity can be better appreciated when informed by real-world comparisons. First, our proposed 10 to 15 percent liquidity allowance is greater than the average annual percentage of personal equity holdings sold by CEOs of large financial institutions during the decade before the financial crisis.²⁹ Second, our proposal requires executives to not sell their shares or exercise their options for a period of at least two to four years after their last day in office. The median tenure of CEOs in larger U.S. corporations is five and one-half years (Bhagat, Bolton and Subramanian forthcoming; table 5).³⁰ Hence, on average, a CEO can expect to wait between seven and ten years before being allowed to sell shares or exercise options from assuming office.³¹ In this regard, we would note a parallelism between our proposal and compensation in the non-public corporation setting, which buttresses the feasibility of our proposal: it is quite common for those firms' top executives to wait for seven to ten years before receiving a substantial portion of their compensation for work done earlier. For instance, the general partners of private equity partnerships commonly receive their compensation in two parts. The first part is a management fee which is typically two percent annually of the committed capital they are managing. The second part of the compensation is carried interest, which is a fraction (usually 20 percent) of the lifetime profits generated by the private equity partnership. Most of these profits are realized towards the end of the life of such partnerships, usually seven to ten years (Metrick 2007; Litvak 2009). The widespread use of such a deferred compensation structure in a real world setting where principal-agent problems are thought to be better managed, suggests that our proposal not only is plausible but also could improve substantially corporate managers' incentives, despite well-known differences between private equity and public company operating environments.

Third, to the extent an executive incurs tax liability from receiving restricted shares and options that is greater than the amount permitted to be received in the current year, then that individual should be allowed to sell enough additional shares (and/or exercise enough options) to pay the additional taxes.

In addition to the above concerns, there are three important questions about the efficacy of our proposal that need to be addressed. First, should not managers be rewarded on the basis of relative performance, that is, performance relative to an industry or targeted market benchmark? The suggestion has obvious merit in that controlling for industry or market performance would provide an arguably superior measure of a

²⁹ Sanjai Bhagat and Brian Bolton (2010) examined the stock sales over 2000–07 of the CEOs of 14 large financial firms, including the major TARP recipients. The CEOs sold over \$3 billion of stock during that interval, averaging an annual sale of 8 percent of their equity holdings.

³⁰ Bhagat, et al.'s (forthcoming) sample consists of all firms with available data in standard compensation and financial data sources from 1993–2007. The median tenure of CEOs of large banks is longer: in a sample of 134 large banks run by 200 different CEOs from 1994–2006, DeYoung, et al. (2010: 27 n.24) find that 84 percent of the CEOs ran their banks for seven years or fewer, with seven years the median tenure. The mean CEO tenure of the two studies is somewhat closer, at eight and nine years respectively.

³¹ Of course, many CEOs are employed at lower executive levels before reaching the top, and therefore the time frame in which they would not have access to their accrued incentive compensation would be longer. This is an ancillary reason for our advocacy of release of 10–15 percent of the incentive compensation of a given year from the long-term restriction.

manager's contribution to share price performance.³² However, it should be noted that several recent papers suggest that relative performance pay is not optimal.³³ Moreover, as noted at the outset, we think it is critical for executive compensation reform to lead to policies that are simple and transparent. Relative performance measures are at odds with this aim, given the ambiguities in, and correlative ability to game, the selection of the appropriate industry or market benchmark.³⁴ Additionally, with relative performance measures it is possible for managers to receive significant compensation even when their shareholders incur significant losses; this result would again undermine the credibility of manager compensation in the eyes of the investing and general public.³⁵ Our proposal does not pose such a perceptual problem. Finally, such options may increase managerial risk-taking beyond the impact of conventional options (a phenomenon Saul Levmore (2001) refers to as "super-risk alternation"), for with the ability to exert greater influence on firm-specific outcomes, executives might undertake high risk projects or otherwise seek inefficiently to differentiate themselves from other firms, to increase the chance of outperforming the benchmark (Levmore 2001: 1923, 1930). In the case of financial firms where the taxpayer bears the ultimate loss, exacerbating the risk-taking induced by stock options would be undesirable from the viewpoint of protecting the fisc.

Second, would our proposal lead to early management departures, as executives seek to convert (after the two to four year waiting period) illiquid shares and options into more liquid assets as soon as possible? We tend to think this scenario is improbable and overblown, but perhaps that would be so. Permitting a fraction (10 to 15 percent as we have proposed) of each year's incentive compensation to vest and be sold should mitigate somewhat such a concern, particularly for lower-level managers, whose bonuses may not be as large as, and whose employment horizons under normal circumstances would be

³² Some have criticized the stimulus bill mandate of restricted stock for covering executives who are lower level managers with limited responsibilities, on the ground that it is preferable to tie those individuals' pay to the unit rather than the company as a whole (Bebchuk 2009). That may be true but it misses the mark because it moves incentive compensation away from benchmarks that are simple, transparent, and not easily manipulable. The market currency of stock prices is a far better benchmark for performance than the accounting-based measures used to assess units' performance, which are themselves manipulable. In any event, the criticism can be accommodated within our proposal by combining a unit performance benchmark with a restricted-stock approach: lower-level managers could be allocated restricted shares in proportion to their unit's accounting performance compared to that of the rest of the company.

³³ For a collection of references, see Frydman and Jenter (2010).

³⁴ As discussed in the next section, a recent executive compensation proposal by Lucian Bebchuk and Holger Spamann (2010) suffers from similar difficulties.

³⁵ Saul Levmore (2001) advances a parallel explanation for the nonuse of indexed options, that they would violate what he terms a norm of "nonconflicting fortunes": in a downturn, when the firm and economy have experienced poor absolute returns, if the firm did better than the benchmark, employees with indexed options would fare well when others did not. It would not, he contends, be efficient to provide all employees with indexed options because they can exacerbate organizational risk-taking and consequently, the disparate outcomes they can produce would be inconsistent with what he views as a quite common preference or norm that everyone in a group should rise or fall together, to the extent necessary to prevent intragroup conflicts (Levmore 2001: 1932).

longer than, those of the CEO.³⁶ Further, informing our skepticism regarding this objection is our expectation that managers who develop a reputation for early departures from firm to firm are likely to negatively impact their future career opportunities. There is, for example, evidence of reputational effects in the managerial market as executives of public firms that file for bankruptcy do not appear to get a second chance at managing a public company (Gilson 1989). Finally, concern for managers' need for liquidity and consequent early departures needs a bit of perspective. Our proposal allows tax-deductible cash compensation up to \$2 million for executives receiving incentive pay in the form of restricted stock. The adjusted gross income (AGI) of the top 0.5 percent in 2004 had a threshold of \$0.48 million, and the AGI of the top 0.1 percent in 2004 had a threshold of \$1.4 million (Kaplan and Rauh 2010). In addition, our proposed \$2 million limit could be indexed to inflation, further mitigating liquidity concerns.

Third, the variety of existing compensation systems across firms suggests that mandating standardized pay packages may be inefficient, in that compensation may substitute or complement other governance mechanisms, which vary across firms, and undoubtedly getting incentives exactly right is quite complicated (Walker 2009; Yermack 2009: W2). This is, indeed, a concern. But we think that the need for variety or customization in incentive compensation arrangements is most pronounced across industry, rather than within an industry, which is the focus of our proposal. The variability in the nature of assets and business risk across industry sectors calls for different governance structures and, correspondingly, could prompt a need for different approaches to incentives.³⁷

Our proposal's focus on financial institutions renders the need for such tailoring less of concern, although, of course, there are obvious and substantial differences between the operations of large complex banking organizations and small community banks. But our proposal provides room for some customization across financial institutions: for large institutions, we would permit variation in terms of the combination of restricted stock versus restricted options provided, and the amount and timing of distributable funds (within the suggested 10 to 15 percent range). For small institutions, whose threat to the fisc is limited, as earlier noted, we would not constrain them to use restricted stock for incentive compensation in exchange for charging a higher deposit insurance fee, or imposing higher capital requirements, in accordance with the increased risk from using shorter-vesting incentives.³⁸

³⁶ For instance, CEOs typically receive over one-third of total compensation paid to the top five executives in a firm (Bebchuk, et al. 2008).

³⁷ For a study indicating that governance mechanisms are related to firm characteristics related to assets and investment strategies, see Gillan, et al. (2007).

³⁸ Robert DeYoung and colleagues (2010) provide data suggesting that bank boards adjusted CEO compensation (increased options over stock) to incentivize managers, in the wake of regulatory changes, to undertake the now permissible more profitable albeit riskier activities, and conversely, they shifted CEO compensation to increased stock over options when they wished to reduce the bank's engaging in such risky activities. As they conclude, these data indicate that bank CEOs respond to compensation incentives directed at affecting their institution's risktaking, which suggests a role for government regulation, but that government intervention to limit such risk-taking could as well "interfere" with bank boards' "compensation-based risk mitigation behaviors," as strengthen them, and that the data are consistent with a need for tailoring bank compensation and indicate that regulation, at best, should be focused on banks that pose systemic risk (DeYoung, et

A final consideration influences our judgment to eschew a more tailored approach. We think that it is desirable to have simple and transparent incentive compensation packages, particularly when a firm's failure implicates the fisc, as these characteristics will mitigate public skepticism toward high levels of executive pay in conjunction with poor performance. Using only restricted stock for incentive compensation meets those criteria.

3.4 Comparison to an Alternative Approach: Compensation in Debt Securities

A number of reform proposals have advocated compensating bank managers with a share of the bank's debt securities, rather than (or in addition to) equity-based incentive pay.³⁹ Although specifics of the proposed debt or debt-like compensation differ, the rationale is the same: to address the moral hazard, or agency problem of debt, using an idea suggested by Michael Jensen and William Meckling (1976: 352) in a classic article published over thirty years ago, to compensate managers with debt as well as stock to mitigate equity's incentive, in a levered firm, to take on increasingly risky projects because equity obtains the entire upside but does not have to pay creditors in full on the downside, given limited liability.⁴⁰ Deposit insurance, of course, only exacerbates the moral-hazard problem because the government stands behind the depositors, so they have no incentive to monitor the equity holders' risk-taking.

All of the debt-focused compensation proposals are, in our judgment, less desirable than our restricted-stock proposal, particularly from the desiderata that compensation plans be simple and transparent, as well as aligned with long-term firm value. First, reform proposals advocating a package of equity and debt or debt-like securities are more complex and opaque than restricted-stock compensation. For example, most senior securities of financial institutions are either not publicly traded or trade infrequently; the absence of market prices renders it difficult to value debt-based compensation packages with precision. In addition, given that firms' capital structures are dynamic, changing over time, executives' portfolios would require frequent rebalancing to maintain proportionate holdings, which would, in turn, require a complicated, and therefore costly,

al. 2010: 37). Our proposal is in the spirit of their conclusions, as it provides limited room for tailoring compensation at large institutions likely to pose systemic risk, and it is more likely to strengthen, than worsen, boards' efforts to influence executives' risk-taking, in contrast to Congress's approach of caps and minimal incentive pay for TARP recipients.

³⁹ E.g., Bebchuk and Spamann (2010) (recommending compensation package of a proportionate mix of financial institutions' senior securities—debt and preferred stock—and equity); Bolton, et al. (2010) (recommending tying compensation to changes in the spread on credit default swaps, which are contracts written on debt securities that insure the holder against the debt's default); Gordon (2010) (advocating conversion of financial institutions' senior management's equity-based compensation into subordinated debt at a discount to the equity value, when a firm experiences financial difficulty); Tung (2010) (recommending compensation in the form of subordinated debt of the bank subsidiary). A detailed discussion of what are, in our judgment, feasibility and transparency problems with the Bebchuk and Spamann (2010) proposal is provided in Bhagat and Romano (2010). We discuss here the shared shortcomings of debt-focused compensation reform proposals.

⁴⁰ Gordon (2010) further advocates the use of contingent debt compensation on the rationale that management with a large block of equity will not raise needed additional equity capital at a time of financial distress in order to avoid dilution of their ownership.

administrative process. Proposals that advocate pegging compensation to a specific debt security, such as credit-default swaps or subordinated debt, rather than a proportionate package of the capital structure, while seemingly avoiding complexity, do not satisfactorily avoid the problem, as those securities are also typically not publicly traded,⁴¹ and it appears that, particularly in times of crisis, credit-default swap spreads understate the risk of loss, with volatility manifested in equity prices instead (Singh and Youssef 2010).⁴² Finally, determining the appropriate formula with which to relate changes in default spreads to executive compensation bonuses or claw-backs would undoubtedly be a challenging task, for the calculation of swap prices is complex, as values do not change linearly with changes in other economic variables.⁴³ Furthermore, managers will have an incentive to misrepresent financial/accounting numbers (which may be partially under their control) that analysts use to compute the default spreads or other variables on which their compensation is contingent.

Second, although in theory a manager holding a mix of debt and equity securities might not take on inappropriate risk, we think that in practice it might well be otherwise. The gain on an equity position from following a high risk strategy might well exceed the loss on the position attributable to senior securities in the executive's portfolio. Moreover, if the value of the equity position is quite low compared to the senior securities in a compensation package, a manager would still have an incentive to take on risky projects,

⁴¹ As Bolton, et al. (2010: 28) state, their proposal would be feasible for only the largest financial institutions that have "highly liquid" credit default swap markets. In fact, credit default swaps are issued only on the larger financial institutions' securities. Hence, a proposal using such instruments as the benchmark for compensation is not suitable for the majority of financial institutions. Besides the lack of transparency from the absence of market pricing, because credit default swap spreads are computed using accounting figures which are partially under managers' control, they may also be subject to manipulation, as managers will have increased incentives to misrepresent figures used in swap pricing when it immediately would impact their compensation. Although credit default swaps have historically traded in private over-the-counter markets, the Dodd-Frank financial reform legislation requires regulators to implement rules to establish the use of centralized clearing exchanges to trade those products, which could increase the transparency of prices, but will not eliminate the need for accounting data to calculate spreads, as the underlying debt is infrequently traded.

⁴² An explanation for the understated spreads is that bondholders viewed the institutions as too big to fail, and therefore did not expect to bear losses (Milne 2010). Singh and Youssef (2010) suggest alternative complicated methodologies to better price risk than straightforward use of credit default swap spreads. The convertible security that Gordon (2010) proposes has further valuation difficulties: because management's stock differs significantly from that of other stockholders (i.e., management's shares will become debt securities, which are senior to the outstanding shares of stockholders, when the firm experiences financial difficulty), their stock will not be equivalent in value, nor will its value move in tandem with the value of the outstanding common stock. Moreover, determining the value of management's equity will be complicated because it depends on the likelihood of conversion, and the rate that will be applicable (which under the proposal requires a further calculation, the value of the common stock at an unknown point in time that is prior to the moment at which conversion occurs).

⁴³ In discussing the formal model informing their proposal to tie bank executives' compensation to credit default swap spreads, Bolton, et al. (2010: 13) note that the optimal compensation contract consists of debt and equity in a ratio equal to the "rate of return promised to bondholders at the optimal risk level," which "may be difficult to calculate." In our judgment, this acknowledgment is too gentle.

given the option value of the position each year.⁴⁴ Additionally, the incentive to undertake riskier projects would be greater than the incentive to take on such projects created by our restricted stock proposal because with restricted-stock, the option value cannot be realized until years after the manager is no longer with the firm. Indeed, as we discussed earlier, incentive compensation paid in the form of restricted stock is likely to decrease managers' risk-taking, as it increases the under-diversification of executive portfolios, in addition to the long-term holding period for the stock.

Third, and importantly, government bailouts of banks, particularly in the recent 2008 crisis, have been by and large one of bailing out creditors, not shareholders. Given that experience, providing a portion of bank executives' compensation in debt would not necessarily lead the executives to take a socially optimal level of lower risk, as they would plausibly expect not to lose the value of debt securities on the downside while they would still expect to obtain the upside on the equity portion. If, however, the executives' debt is constructed so as not to be able to participate in a government bailout, then their securities would be of lesser value than those sold to investors, whose prices and terms would incorporate the rational expectation of a bailout should the institution fail, rendering debt market prices, such as they exist, inapposite for valuing precisely an executive's compensation. Yet a key component of debt-focused proposals is that market price signals of the riskiness of the debt, such as a bank's credit-default swap spread, or proportionate values of debt and equity securities, should determine an executive's compensation.

The concern over moral hazard induced by deposit insurance which motivates proposals to use debt, rather than equity, for bank executives' incentive compensation is, of course, well recognized, and we do not wish to minimize its seriousness; that is the principal rationale for regulating financial executives' compensation rather than leaving arrangements to the market. But we think it is daunting to determine, no less effectively implement, an optimal incentive compensation structure combining debt and equity. All-debt incentive compensation would certainly reduce the moral-hazard problem, but it would not necessarily be best from society's point of view to run banks in the interest of debtholders rather than shareholders: banks that take on nominal risk do not lend, a business strategy that is not conducive to economic growth. We think instead that the moral-hazard problem is better addressed directly by strengthened, possibly time-varying (countercyclical) capital requirements, and by encouraging changes in the form of debt in banks' capital structures, through those requirements, such as greater use of subordinated debt or creation of hybrid debt instruments, which convert to equity in situations of financial distress.⁴⁵

⁴⁴ As earlier noted, stock in a levered firm, from a finance perspective, is equivalent to an option on the firm, in which the equity holder obtains the upside of future risky projects but can walk away from the firm, without repaying creditors, if the firm's downside value is less than its liabilities. The model of executive compensation in Lambert, et al. (1991) indicates that managers are more likely to take on risk when the probability of the option finishing in the money is low, the scenario in the text, and of greatest concern to the fisc. With restricted stock, the longer horizon increases the probability that an option will finish in the money, which, in the Lambert, et al. (1991) model, *increases* the manager's aversion to risk, the exact opposite effect of that predicted by proponents of debt- rather than equity-based incentive compensation for banking executives.

⁴⁵ Such recommendations are discussed in the Squam Lake Report (French, et al. 2010), a roadmap for financial reform offered by fifteen prominent economists; and Kashyap, et al. (2008).

4 CONCLUSION

The financial institutions' rescue legislation, stimulus bill, and Administration regulations may quench the public's ire over perceived excesses in executive compensation, but they are not an appropriate solution to the problem of compensation providing poor incentives. Our proposal would have incentive compensation take the form of only restricted stock and restricted stock options (restricted in the sense that the securities may not be sold or exercised until two to four years after the executive has left the firm), with a modest amount accessible by the executive to address tax, liquidity and premature turnover concerns. Our proposal protects the fisc, while providing superior incentives for executives to manage financial firms in investors' longer-term interest and avoiding the perverse incentives of both an artificial cap on incentive compensation and of unrestricted or short-vesting stock and option compensation plans prevalent at many firms, and the complexities and conflicting incentive effects of debt-based compensation proposals. While our restricted-stock proposal is directed at financial institutions, in light of the increased attention that will be paid to the work of compensation committees given the compensation-related provisions of the Dodd-Frank Act,⁴⁶ we think that public companies more generally should give serious consideration to adapting a version of it that best fits their circumstances as well.

Of course, changes in banks' executive compensation alone will not prevent another financial crisis because, as we have noted, compensation would not appear to have been the sole or even principal cause of the crisis. There is, accordingly, a pressing need to

The Squam Lake Report also advocates withholding a fixed amount of cash compensation of systemically important financial institutions' executives for several years. Those funds would be forfeited if the firm goes bankrupt or receives "extraordinary assistance" from the government (French, et al. 2010: 81–82). Conceptually the Squam Lake proposal has merit since the clawback will discourage managers from undertaking high-risk negative net present value investments and trading strategies, and while cash with a fixed return is debt-like in its incentive effect regarding moral hazard, it is not subject to the valuation problems entailed by debt-based incentive compensation. However, the proposal's implementation would be problematic, because it is more complex and less transparent than our restricted-stock proposal. Consequently, the conceptual benefits might be difficult to realize. For example, how much is held back and for how long? What constitutes "bankruptcy" and "extraordinary government assistance"? If the withheld amount is not a substantial component of compensation, it is not likely to have much of an impact on managers' incentives. Nor will the time frame of a few years be as effective as our proposed long-term horizon through retirement (the cash will be withheld post-retirement only coincidentally, i.e., only for managers close to retirement age), and so it may prompt the taking of long-tail risk gambles, whose near-term gains could be undone by adverse consequences occurring after the withholding period ends. While our restricted-stock proposal is not insulated from gaming, we think its more straightforward, mechanical operation is likely to minimize the potential for such behavior. In addition, restricted-stock and option holdings provide for an automatic, ongoing, direct and proportionate impact of the change in a company's equity value on a manager's net worth, compared to the vagaries of a reduction in compensation only upon the extreme events of bankruptcy or extraordinary government assistance, which would lead to litigation and adjudication by a court, as managers or shareholders would seek a legal interpretation of whether a triggering event had occurred.

⁴⁶ As mentioned in note 11, *supra*, the Act requires independent compensation committees and consultants, periodic say-on-pay votes, increased disclosure on compensation and includes expanded regulation of claw-back policies.

consider other institutional reforms, as many banking and financial economists have stressed, such as revising the regulatory approach to capital requirements to be less procyclical and more sensitive to risk, and in determining how to revive the repo and securitization markets, which were regrettably not addressed in the Dodd-Frank Act.⁴⁷ Nevertheless, we believe that our proposal that financial institutions' incentive compensation take the form of restricted stock and options would contribute to getting the incentives of those firms' decision-makers right, and accordingly, not work at cross-purposes with other regulatory efforts to mitigate the likelihood of future financial crises.

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