Reexamination of risk-taking incentives in banking: Realign incentives and curtail future episodes of mismanagement

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ABSTRACT

CEO incentive compensation, in particular the equity-based compensation, has been blamed for excessive risk-taking by bank CEOs in the recent financial crisis. This study reassesses the impacts of deregulation on the incentives provided to CEOs and examines how bank boards redesigned CEO compensation contracts during and after the crisis to assess if the government interventions are necessary to realign incentives between CEO and shareholders. Employing a multiple-equation model that allows for simultaneity among vega, delta, and bank investment, I found that banks provided high-vega contracts as incentives for bank CEOs to exploit post-deregulation growth opportunities and to shift from traditional on-balance sheet portfolio lending to nontraditional fee-generating activities. No evidence shows the relation between incentive compensation and risk-taking activities before deregulation. In the crisis and post-crisis period, compensation committees attempted to manage excessive risk-taking incentives at these banks by reducing vega and establishing complementarily high values of delta to align incentives between CEOs and shareholders. Especially in the post-crisis period, the value of vega has been decreased significantly, suggesting government intervention of bank’s CEO compensation works effectively to reduce bank risk.

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1. Introduction

CEO incentive compensation, in particular the equity-based compensation, has been blamed for excessive risk-taking by bank CEOs in the recent financial crisis. The Securities and Exchange Commissions (SEC) suggested that shareholder interests were insufficiently represented in bank CEO pay structures which encouraged too much risk-taking and led to exceptional short-term gains at the expense of the long-term company stability. In response to the huge losses taken by U.S. financial institutions in risky investments (i.e., the mortgage-backed securities) and non-traditional, fee-generated activities, federal legislators have proposed laws that would constrain the ability of bank boards to freely set the size and terms of executive pay. Underlying these proposals is the belief that corporate risk-taking can be controlled by inserting the proper incentives into executive compensation contracts. Several recent studies argue that CEOs at banks had poor incentives that exacerbate the moral hazard problem and propose reform of bank pay (Bebchuk, Cohen, & Spaman, 2009; Bhagat & Romano, 2009; Tung, 2010). Policy makers discuss ways to change compensation practice to more closely align pay with long-term performance1 and to give more voice to shareholders through the adoption of “say on pay” for banks that received public funds through the Troubled Asset Relief Program (TARP).2

However, during this debate, little attention has been paid to how the U.S. banking industry deregulations in the 1990s changed the ways of bank operation and executives’ compensation. This study reassesses the impacts of deregulation on the incentives provided to CEOs and how banks alter their risk-taking investments in response to the changes. Moreover, I examine how bank boards redesigned CEO compensation contracts during and after the crisis to assess if the government interventions are necessary to realign incentives between CEO and shareholders.

I use two market proxies to capture CEO pay incentives. Pay-risk sensitivity, or vega, measures the change in CEO wealth (in dollars) with respect to changes in stock return volatility. Pay-performance sensitivity, or delta, measures the elasticity of CEO wealth (in dollars) to changes in the firm’s stock price. Employing a multiple-equation model that allows for simultaneity among

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vega, delta, and bank investment, I found plentiful evidence to suggest that the risk-taking incentives embedded in CEO compensation contracts are influenced by bank risk-taking investments after the deregulation. The results suggest that compensation committees provided high-vega contracts as incentives for bank CEOs to exploit post-deregulation growth opportunities and to shift from traditional on-balance sheet portfolio lending to nontraditional fee-generating activities. No evidence shows the relation between incentive compensation and risk-taking activities before deregulation. I also found evidence that, in the crisis and post-crisis period, compensation committees attempted to manage excessive risk-taking incentives at these banks by reducing vega and establishing complementarily high values of delta to align incentives between CEOs and shareholders. Especially in the post-crisis period, the value of vega has been decreased significantly, suggesting government intervention of bank’s CEO compensation works effectively to reduce bank risk.

This paper is timely insofar as it not only isolates the effect of incentive compensation from the U.S. banking deregulation, but also informs the current policy debate on the structure of bank executive pay contracts. This paper provides implications for bank regulatory policy, suggesting that compensation for bank executives may offer an effective tool for risk regulation. The findings of this study suggest that regulatory oversight of the compensation structure employed in the banking industry is important. This study provides empirical evidence showing that regulators need to consider a new paradigm that provides appropriate incentives for risk-taking within the compensation structure. Especially in the banking industry, managerial incentives to shift risk to the deposit insurance agency (FDIC) depend on the sensitivity of compensation to managerial risk-taking. Subsequently, the parameter of executive compensation, such as vega and delta, can be used as inputs for banking regulatory schemes to curb the risk-shifting incentives of banking managers. The empirical findings of this study also provide critical insights into the current financial/mortgage crisis as well as bank panic.

2. U.S. banking deregulations in 1990s

Top commercial banks in the U.S. have grown immensely larger over the past two decades. In the beginning of the 1990s, the Federal Reserve Board began to authorize securities subsidiaries to underwrite corporate debt and equity securities under Section 20 of the Glass–Steagall Act. These section 20 subsidiaries are originally subject to a substantial set of firewalls. For example, total revenue from these activities cannot exceed a specific amount (originally 5% of the subsidiary’s revenue, later raised to 25%). Initially, only limited activities are allowed, such as municipal bonds, government securities, and commercial paper. By 1996, the Federal Reserve dropped some of the firewalls, allowing commercial banks to expand into other non-banking businesses. As a result, most of the superregional and regional banks can get involved in extensive securities activities, including the most risky investments in non-government securities and substantial market shares in mortgage-backed and asset-backed securities. The fee-generated income has been increased enormously. From 1990–1999, the total assets of these subsidiaries grew from $20 billion to $150 billion. Moreover, the Riegel–Neal Interstate Banking and Branching Efficiency Act of 1994 allowed banks to expand their geographic footprints across state lines. The Gramm–Leach–Bliley Financial Services Modernization Act of 1999 allows banks to expand into non-banking products such as investment banking, brokerage, and insurance sales and underwriting. It allows banks to use their traditional expertise in loan underwriting to originate loans, but instead of issuing deposits to fund these loans on-balance sheet, they (or their investment bank partners) issue securities to fund large pools of loans in off-balance sheet loan securitizations. This process allows banks to sell their otherwise illiquid loans to the securitization and use the proceeds of these sales to fund additional loans. Banks earn noninterest income from loan origination fees, loan securitization fees, and loan servicing fees. After 1999, fee generated income has been increased significantly in banks.

Parallel to the changes in the regulatory environment, technological progress kept pace in the 1990s. The advances in financial engineering, payment technologies, and delivery methods for deposit services had significant impacts on the competitive environment. Innovative financial markets and information technologies created new options for depositors, savers (money market funds, 401k plans, discount brokerage) and borrowers (commercial paper, high-yield debt, OTC stock markets) and set in motion a process of disintermediation that threatened to make the heavily regulated U.S. banking sector obsolete. The deregulation during the 1990s and the associated technological changes have dramatically reshaped the landscape of the industry and led U.S. banks to an environment that was materially different from that of the beginning of the decade. Large commercial banks had been transitioning their retail businesses away from the traditional “originated-and-hold” lending model that relies on interest income generated from repeat borrower-lender relationships toward an “originated-and-distribute” loan securitization model that relies heavily on the fee income generated by non-repeat, arms-length financial transactions. This new business model efficiently channels trillions of investors’ (i.e., commercial and investment banks) dollars to mortgage borrowers, in the form of mortgage-backed securities (MBS) and/or derivatives of MBS. This business model proved very profitable, generating record earnings for the commercial banking industry from the mid-1990s through the mid-2000s (Hughes, Lang, Mester, & Moon, 1996; Rossi, 1998).

However, once external growth options (i.e., acquiring other banks) are exhausted, internal growth requires increasing the number of loan originations, which creates an incentive to relax lending standards and make loans to less creditworthy borrowers. Given the fact that all banks make the same non-differentiated financial commodities such as mortgage loans and credit card loans (i.e., the loans were packaged by hundreds or thousands of individual loans) and have access to the same information (e.g., credit scores), MBS investors bear the bulk of risk. But the relatively benign economic conditions grow for decades without appropriate disciplining, which will affect economic stress encouraged excesses. The collapse of the housing bubble exposed these excesses. Most subprime mortgages performed poorly once home prices stopped rising. The headlines in the financial press showed over $2 trillion

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4 Loan securitizations are investment trusts that purchase existing home mortgage loans (or auto loans, or credit card receivables) from banks, using funds raised by selling mortgage-backed securities (MBSs) to third-party investors—usually other financial institutions who are more willing to take the likelihood of default and return of diversified pools of mortgage loans without having to generate these loans themselves.

5 These derivative securities include interest-only and principal-only instruments backed by pools of mortgages and more complex collateralized debt obligations which are backed by pools of MBS. Loan securitization has also increased in credit card, auto loan, student loan, and small business credit markets; financial losses on the asset-backed securities created in these transactions have not occurred as quickly, however, nor have they been as large, as for MBS.

6 Between 1991 and 2007 there was only a single, relatively shallow recession, and ironically, the consumer spending generally credited for the mildness of the 2001 recession was made possible by mortgage securitization, which permitted homeowners to more readily access the equity that would previously have been locked up in their homes.
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