

INVITED ARTICLES

THE APPLICATION OF MONOLINE INSURANCE PRINCIPLES TO THE REREGULATION OF INVESTMENT BANKS AND THE GSEs

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ABSTRACT

This article explores the benefits of reregulating the investment banks and government-sponsored enterprises (GSEs, namely, Fannie Mae and Freddie Mac) by applying the monoline principle that has been long established in regulating insurers that offer coverage against mortgage and bond default risks. The monoline regulatory principle was created to ensure that losses on a risky insurance line would not endanger other safe lines. The principle is applicable to both investment banks and the GSEs because both sets of institutions have operated with two basic divisions: a hedge fund division that maintained a highly risky investment portfolio and an infrastructure division that carried out activities with high direct value for the overall financial or mortgage markets. The monoline principle involves placing the two divisions in a new regulatory structure whereby the infrastructure division is bankruptcy remote from any losses that might occur within the hedge fund division.

INTRODUCTION

The financial distress of investment banks and the government-sponsored enterprises (GSEs, namely, Fannie Mae and Freddie Mac) has received intense focus recently in both financial markets and regulatory circles. An investment bank (Bear Stearns), an insurer/investment bank (AIG), and the GSEs have already required specific government bailouts.¹ Even larger but dispersed cash infusions are now in process. As a result,

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¹ The Bear Stearns bailout is detailed in the Congressional testimony of Securities and Exchange Commission (SEC) Chair Cox (2008), Federal Reserve Chair Bernanke (2008), and Federal Reserve Bank of New York President Geithner (2008). The GSE bailout is described in the statement of the Director of the Federal Housing Finance Agent Lockhart (2008). The first AIG bailout was announced by the Federal Reserve (2008). In this article, I treat AIG as an investment bank, since the losses and systemic externalities that required its bailout were unrelated to its traditional insurance business.

there is a consensus that new methods of regulation are necessary to minimize the likelihood of future governmental bailouts. Here I explore the benefits of reregulating the investment banks and the GSEs by applying the monoline principles that have been long established in regulating insurers that offer coverage against mortgage and bond default risks.

State insurance laws imposing monoline requirements were first created for mortgage insurers in Wisconsin in 1956 and for bond insurers after the National Association of Insurance Commissioners (NAIC) Model Act was created in 1986.² The key regulatory purpose was to eliminate the possibility that catastrophic losses on the mortgage or bond default lines of business would bankrupt a multiline insurer, thus forcing it to default on payments due to claimants on its other lines. Monoline restrictions have worked very well for the catastrophe line insurers. Monoline restrictions have a potential regulatory application to investment banks and the GSEs because they both operate across multiple risk classes, creating the distinct possibility that losses on one risk class might create a bankruptcy for the entire firm. Indeed, the recent regulatory bailouts of Bear Stearns, AIG, and the GSEs were required precisely because losses in one activity threatened to have systemic externalities through other activities. Had the firms been operating on a monoline basis, arguably there would have been no systemic threat, and therefore no need for a government bailout. Furthermore, without the moral hazard created by likely government action, private market discipline might well have deterred the very risk-taking behavior that led to the financial distress.

The agenda for the article is as follows. The next section reviews the regulatory and economic basis for monoline restrictions. The section “Reregulating the Investment Banks” applies the monoline concept as a new regulatory framework for investment banks. The section “Reregulating the GSEs” does similarly for the GSEs. The last section provides concluding comments.

THE REGULATORY AND ECONOMIC BASIS FOR MONOLINE RESTRICTIONS

By definition, a “monoline insurer” covers only a single line of insurance. Claims against the insurer will be paid only up to the amount of the capital held.³ To be sure, insurance “holding companies” can own multiple monoline subsidiaries as well as multiline subsidiaries. But the holding company must segregate the capital of each monoline subsidiary, and it is required to pay claims on each such line only from the capital segregated for that line.

In contrast, a “multiline insurer” covers multiple lines and can apply its capital to pay claims against losses on any of its insured lines. This creates an important diversification benefit, since the capital can be applied to whichever lines suffer losses. In particular, a multiline insurer will generally require less capital than a set of equivalent monoline

² Rapkin (1974) and Jaffee (2006) describe the history of the Wisconsin monoline mortgage insurer statute. Perkins and Quinn (2001) detail the history of the NAIC Financial Guaranty Insurance Model Act adopted in 1986, which formed the basis of the New York state monoline legislation passed in 1989.

³ This abstracts from state mutual guaranty funds and reinsurance. This article focuses on mortgage and bond default insurance for which state guaranty funds do not exist and for which there is limited reinsurance. See also footnote 5.

insurers to achieve the same standard of expected solvency. We might thus expect multiline insurers to dominate the insurance industry, and indeed they do for a wide range of both consumer and commercial lines.

For most catastrophe risks, however, the monoline form is dominant. This includes the bond and mortgage default insurance lines, which are generally required by state insurance laws to be monoline. The set also includes the California Economic Authority, a quasi-public entity created to insure California earthquake risk, and the Florida Hurricane Insurance Fund, a public entity created to insure Florida wind damage risks.⁴ This raises the question of whether the monoline requirements created in the NAIC Model Acts and applied in state legislation are consistent with sound economic and finance principles.

I first studied this question in Jaffee (2006), which provides an industrial organization review of the economic basis for the monoline requirement imposed on mortgage default insurance (commonly called private mortgage insurance). That study concluded that the NAIC Model Act and the legislative histories indicated a clear goal to isolate the potentially catastrophic losses that could arise on private mortgage insurance from possible spillovers to the policyholders on other insurance lines. I conjectured, as well, that a monoline industry structure for catastrophe lines could be consistent with welfare maximization, even though this would mean forgoing the diversification benefits available with multiline insurers. A proof, however, requires a formal model, since the industry structure (monoline vs. multiline) is determined simultaneously with decisions on the amount of capital to hold and premium setting. Models with these results are now available in two recent research articles, both joint with my co-authors Rustam Ibragimov and Johan Walden. I next summarize the models and results of these papers and the related literature.

Models With Insurer Default

Insurer default arises when claims exceed the assets available to pay the claims. In principle, insurers could hold sufficient capital to cover all possible claims, in which case there would be no insurer default.⁵ In practice, “costs of internal capital” limit the

⁴ The set also includes the federal National Flood Insurance Program administered by the Federal Emergency Management Agency (FEMA) and the Federal Housing Administration (FHA) mortgage default insurance administered by Housing and Urban Development (HUD). The monoline aspect of these federal programs, however, is dictated by administrative convenience, not default risk, since the federal government guarantees the coverage. The state programs for earthquake and hurricane risks, in contrast, do present a default risk and the monoline structure is intended to limit spillovers to the overall state budget.

⁵ State mutual guaranty funds and reinsurance are two additional mechanisms that in principle could eliminate default risk for an insurer even if it does not hold sufficient capital to cover all possible claims. In practice, however, state guaranty funds do not eliminate all the costs of default (see Cummins, 1988), and, in any case, they do not apply to commercial lines (such as mortgage or bond default insurance) or other catastrophe lines. Similarly, reinsurers may also default, so their ability to eliminate default risk for primary insurers is incomplete. Thus, the qualitative conclusions of this article would be unchanged had I explicitly included either state guaranty funds or reinsurance.

amount of capital actually held.⁶ These costs arise due to such factors as taxes, agency problems, liquidity, and asymmetric information. The result is that all reserve-based insurers face at least some possibility of default.

Two key questions then arise for monoline insurers:

1. What factors determine the optimal amount of capital for the insurer to hold?
2. How are the costs of internal capital and of possible default reflected in premiums?

These questions also arise for multiline insurers, and with two additional issues:

1. How should the costs of internal capital be allocated across the multiple insurance lines?
2. How should the costs of possible default be allocated across the multiple lines?

Literature Review. A key advance in analyzing insurer default was initiated in papers by Doherty and Garven (1986) and Cummins (1988), who modeled monoline insurers as holding an option to default, and valued that option using modern finance methods for option valuation. Phillips et al. (1998) then provided a comparable and tractable analysis for a multiline insurer by introducing the key assumption that losses on all lines are realized at the same future date. With this assumption, an insurer bankruptcy arises if and only if its total claims exceed its total assets at that date. The Phillips et al. analysis, however, also applied the restrictive assumptions that the amount of capital is given and that when the insurer defaults the shortfall in payments is allocated across insurance lines based on the *ex ante* expected losses by line (and not on the *ex post* realized losses). Most recently, Ibragimov et al. (2008a) have generalized the Phillips et al. analysis to endogenize the capital decision and to incorporate a more realistic *ex post* rule for allocating the payment shortfalls when the insurer defaults.⁷

⁶ See Froot (2007) and the citations therein for a complete discussion of the costs of internal capital for insurers. The original Lloyds of London was structured to eliminate the costs of internal capital by contracting with the so-called “names” to provide an irrevocable commitment to pay claims while allowing these parties to keep their capital employed in manufacturing and agriculture. Agency disputes between the managers and “names” have forced Lloyds now to adopt the standard reserve system for most of its coverage.

⁷ The Phillips et al. (1998) assumptions allow a remarkably powerful result: the ratio of the default option value to expected losses is constant across all insurance lines. This means that the option default value for each line depends on the mean of the loss distribution, but not any higher moments. Ibragimov et al. (2008a), in contrast, find that the default option values depend on the shape of the full distribution, and that, in general, distributions with larger dispersion will create higher default option values. The catastrophe lines are the extreme example of such distributions, and this is a fundamental reason they are subjected to monoline regulatory restrictions.

A basic pricing equation results from these analyses:

$$\begin{aligned} (\text{Premium})_i &= (\text{Expected Claims})_i + (\text{Cost of Internal Capital})_i \\ &\quad - (\text{Default Option Value})_i. \end{aligned} \tag{1}$$

That is, for each line i , the premium equals the expected claims on that line, plus the allocated cost of internal capital, and minus the default option value. The allocated cost of internal capital raises the premium because the insurer's shareholders must be compensated for the capital costs they incur. The allocated default option value decreases the premium because it reflects the expected value of unpaid claims if the insurer defaults.

The allocated costs of internal capital and default depend critically on the shape of the loss distribution for each line. In particular, catastrophic lines with fat tails will generally require larger capital allocations and costs of internal capital to maintain any given probability of insurer solvency. If such allocations are not made, then a larger share of the costs of default would be improperly imposed on policyholders for the safer lines, giving these policyholders, incentive to move their insurance to another firm whose capital allocations are aligned with their interests.

While the pricing Equation (1) is intuitive, it requires a method to determine the allocated costs of internal capital and default across the insurance lines. Two primary methods have been proposed in the literature. First, Merton and Perold (1993) determine such allocations by computing the additional capital required if a firm adds each line (one line at a time). The problem here is that the allocated capital amounts do not sum to the firm's total capital because the method does not properly account for the diversification benefit provided by each line. Second, Myers and Read (2001) develop a marginal technique in which capital allocations are determined by computing the required increase in capital as the coverage on each line rises by a marginal amount. The Myers and Read method has the advantage that the capital allocations precisely "add up" to 100 percent of the firm's capital, but the results strictly apply only locally.

Models of Monoline versus Multiline Industry Structure

Ibragimov et al. (2008b) have recently developed a model in which premium setting, capital allocations, and industry structure (monoline vs. multiline firms) are determined simultaneously. The model assumes competitive insurance firms, so the equilibrium outcomes, in effect, maximize the utility of the policyholders by line.⁸ The paper applies a Pareto Optimum concept of equilibrium, modified however to allow a monoline start-up to disrupt an established multiline structure if the policyholders on that monoline are better off (even if the remaining policyholders in the multiline firm are worse off). For example, if a multiline insurer was holding relatively little capital, the policyholders on a safe line might prefer to create their own monoline firm with a lower risk of insurer insolvency. Alternatively, if a multiline insurer was holding a relatively large amount of

⁸ The article also assumes that policyholders are risk averse, insurers have limited liability, and the option to default can be valued in complete and arbitrage free risk markets.

capital, the policyholders on a catastrophe line might prefer to create a monoline firm with less capital and thereby a lower cost of internal capital.

Ibragimov et al. (2008b) determine the conditions under which either monoline or multiline industry structures are optimal depending on the underlying loss distributions. Specifically,

1. Multiline structures dominate when diversification benefits are significant because the underlying risks are numerous and uncorrelated. The intuition is that the diversification benefits allow insurers to hold relatively little capital, which therefore minimizes the costs of internal capital, while creating only a very small probability of insurer default.
2. Monoline structures may be optimal when the risks are difficult to diversify because they are limited in number or heavy tailed, as is characteristic of the various catastrophe lines. The intuition for this result is that a multiline insurer with a portfolio of diversifiable risks will accept a catastrophe line only if that line contributes enough capital to leave the insurer's expected default rate unchanged. With very heavy tails, the required capital contribution is very large, and it may be in the best interest of the catastrophe line policyholders to create a monoline insurer that holds less capital, albeit with a higher propensity to default.

The latter result provides the theoretical basis for monoline regulations imposed on catastrophe lines. In principle, private markets could just adopt the optimal monoline structure. The insurance industry, however, is highly regulated and it is not surprising that monoline restrictions have been explicitly imposed as a form of consumer protection. Indeed, both the mortgage and bond default insurance industries have acquiesced to the monoline restrictions, suggesting they recognize that it would be the likely market outcome in any case.⁹

Glass-Steagall as a Monoline Restriction

Commercial banking legislation also has a long tradition of applying a monoline structure to control the undesired spillover of risks. The original 1933 Glass-Steagall Act was a pure monoline restriction: it allowed a commercial bank to carry out a "banking business"—generally defined as taking deposits and making loans—and nothing else. The Act clearly separated commercial banks from investment banks, but it actually separated commercial banks from any other business line.

The Glass-Steagall Act was modified over the years to be more flexible, including the 1956 Bank Holding Act that allowed bank holding companies (BHCs) to carry out activities

⁹The insurance regulations cover more than monoline restrictions, and the industries might well oppose these additional regulations. For example, mortgage insurers are prohibited from holding mortgage securities as assets or from securitizing them. These regulations reflect the severe conflicts of interest that arose because mortgage insurers during the Great Depression also invested in and securitized mortgages. For another example, these insurers face unique capital requirements whereby they must hold earned premiums for an extended period, commonly 10 years. This requirement reflects that 10 years is more appropriate than 1 year as the period relevant to determining when premiums have been truly "earned" on such catastrophe lines.

“closely related to banking” and the 1999 Financial Services Modernization Act (FSMA) that allowed BHCs to own investment banks and insurance entities. This latter authority allowed BHCs such as Citigroup and Bank of America to operate both investment banks and commercial banks, and the investment banks Goldman Sachs and Morgan Stanley to switch recently to a BHC structure.

Although FSMA is sometimes said to have repealed Glass-Steagall, the fundamental monoline principle remains. In particular, BHCs are regulated by the Federal Reserve, and the Fed’s regulations ensure that the first priority of the holding company is to protect its commercial banks. As one example, BHCs that own investment bank subsidiaries must meet the Federal Reserve’s highest capital requirements (referred to as “well capitalized”). A second example is that special conditions of profitability and capital adequacy must be met before capital can be transferred “upstream” from a commercial bank to its holding company. A third example is that bank regulators must take “prompt corrective action” if a BHC fails to meet its capital requirements; that is, the holding company must promptly raise new capital, merge with a sound bank, or be liquidated (even if the BHC is solvent). The overall conclusion is that even under the FSMA, the monoline principle remains that “safe” banking subsidiaries should be segregated from the much riskier activities that may be carried out by the holding company.

I now turn to my proposal to apply monoline concepts to investment banks in order to limit the negative externality their bankruptcy would impose on the financial system. Indeed, this is exactly the externality that motivated the government to bailout Bear Stearns and AIG.

REREGULATING THE INVESTMENT BANKS

The starting point is to recognize that investment banks carry out multiple activities with a wide range of risk attributes. For present purposes, I focus on two relevant activities: (1) risky investment portfolios that can threaten firm bankruptcy—what I call the “hedge fund division,” and (2) market making and related counterparty activities, the failure of which would have systemic implications—what I call the “infrastructure division.”¹⁰ The core of my regulatory proposal is to ensure that the infrastructure division is bankruptcy remote—can operate on a stand alone basis if necessary—even when losses from the hedge fund division threaten the holding company’s solvency. In effect, this imposes a monoline structure on the holding company to ensure that losses from the hedge fund division cannot infect the infrastructure division.

The investment bank portfolios—what I am calling the hedge fund division—accumulated highly risky, cash-flow-mismatched, and leveraged positions in subprime mortgages. Beyond the fundamental risk of the subprime mortgages, the leverage strategy required issuing large amounts of debt, and the cash flow strategy required that this debt be primarily short term (an example of the so-called “carry trade”). While high losses on the subprime mortgages were the fundamental cause of the investment bank failures, the proximate source was the inability of the firms to rollover their

¹⁰ This discussion is an updated and expanded version of Jaffee and Perlow (2008) and Jaffee (2008).

maturing debt. Had the government not intervened, the firms would have been immediately forced into bankruptcy due to their failure to redeem maturing debt. Indeed, Lehman Brothers was bankrupted for this reason, whereas the government bailed out Bear Stearns and AIG in order to avoid this outcome. It is worth noting that the AIG insurance subsidiaries seem to be operating quite normally and without any financial distress.

This raises the question, of course, why the Treasury and Federal Reserve felt it necessary to intervene to protect the creditors of Bear Stearns and AIG. The record is quite clear. Both firms served as major counterparties in the over-the-counter (OTC) derivatives market, what I am calling their "infrastructure division."¹¹ These derivatives allow investors to hedge or speculate on market risks including foreign exchange rate movements, interest rate fluctuations, and credit default events. The derivatives are primarily traded OTC with an investment bank as the counterparty; this allows the contracts to be tailor-made in terms of principal amounts, maturity, payoff events, and other technical features. As a result of this large and complex market, financial firms (including banks and hedge funds) have created an extended network of interlinking derivative positions. This network creates systemic risk as an externality, since if one key counterparty were to fail on its derivative obligations, the failure would likely create a cascade of failures larger than any single counterparty has the incentive to try to prevent.

The overall implication is that the investment bank bailouts were necessitated by the negative externalities and systemic risks that the firms' bankruptcies would have imposed on the financial system. In contrast, had the investment bank's hedge fund divisions been segmented from the holding companies infrastructure activities, there would have been no systemic consequences to a holding company failure, and no need for a government bailout. Indeed, the bankruptcy of Long-Term Capital Management in 1998, the first major hedge fund failure, required no government bailout because the firm had no significant infrastructure activities. Similarly, a number of hedge funds have failed more recently as part of the subprime mortgage crisis, but no government bailouts were provided because these funds were basically monoline entities, maintaining risky investment portfolios as their only business.

With the problem posed in this manner, the general structure is clear for the reregulation of investment banks that carry out both hedge fund and infrastructure activities: ensure that the infrastructure division is bankruptcy remote from any losses created by the hedge fund division. With all the major investment banks now operating within BHCs, the need for such a monoline restriction is more essential than ever because catastrophic losses created by the hedge fund division of the investment bank would now endanger, as well, the economy's payment system if it threatened the associated commercial bank subsidiaries.

¹¹ Bear Stearns appears to have operated its derivative desk primarily as a market maker, with positions that netted close to zero at the close of a business day. This is a pure infrastructure activity. AIG, in contrast, appears to have maintained very large open positions as the writer of credit default swaps as well as acting as a market maker. I would consider the speculative positions as an activity of the hedge fund division, while the market maker function remains an infrastructure activity.

Two principles would appear to be essential for enforcing a monoline principle on the investment banks with regard to their derivative market making and counterparty divisions:

1. The derivative infrastructure division should be required to operate at a very high standard for safety and soundness. This could well involve capital requirements that are similar to those imposed on the mortgage and bond default risk insurers under state insurance laws. These requirements should also be risk based, with lower requirements imposed if the entity maintains a generally balanced book of derivatives, leaving only small net positions.
2. The derivative infrastructure division should be bankruptcy remote from the parent holding company and capable of operating on a stand-alone basis if necessary. The goal would be that the regulator could rapidly spin off the counterparty division to avoid systemic risks.

A common complaint against reregulation following a financial crisis is that the regulatory system responds to the crisis just passed but ultimately becomes subject to some new systemic risk. It is of course true that we cannot very well regulate in detail a risk that we do not recognize. Nevertheless, I believe that the monoline principle provides a mechanism that can adapt rapidly as new classes of systemic risk become apparent. There is no doubt that regulatory vigilance and imagination is required to recognize the appearance of new categories of systemic risk. But once the new risk is recognized and understood, monoline rules have the advantage that they can be readily imposed. Monoline restrictions have the further advantage that they would not impede new innovations in either the hedge fund or infrastructure divisions.

At the same, monoline restrictions are not the only tools to be considered for the reregulation of the investment banks. For one thing, higher capital requirements would provide a greater layer of protection, although it is worth noting that Bear Stearns and AIG required bailouts because they were unable to rollover their maturing debt and not because they were insolvent. In this regard, restrictions on overall leverage and cash flow mismatches might be more important as safeguards against future crises.

Another regulatory intervention concerns the programs now being initiated to reduce the exposure of the OTC derivative system to network externalities. Specifically, clearing house arrangements are being designed to match and offset the very large outstanding gross derivative positions, leaving the network with much smaller underlying net positions. A more extreme change would be to switch the derivative trading to organized exchanges, which manage their counterparty risk by creating mutual guaranty funds among the participating brokers, in a manner parallel to the mutual state guaranty funds that protect policyholders on consumer insurance lines such as auto and homeowners. For derivative clearing houses and exchange trading to be efficient, however, the underlying contracts must be standardized. This conflicts with the tailor-made feature of the OTC derivatives, and thus an important element of counterparty risk will remain if there is true value in this aspect of the OTC derivatives. In summary, imposing monoline restrictions on the derivative counterparty divisions of the investment banks will provide a low-cost and dependable mechanism to protect the financial system, and it should be a key component of any reregulation of the investment banks.

REREGULATING THE GSEs

The GSEs (i.e., Fannie Mae and Freddie Mac) are chartered by Congress and operate with a primary public mission to support the secondary markets for U.S. mortgages.¹² At the same time, the firms are shareholder owned and at one time had aggregate stock market capitalizations in excess of \$125 billion. They are now regulated by the Federal Housing Finance Agency (FHFA), and the director placed both firms in a conservatorship on September 7, 2008 (see Lockhart, 2008). In that status, the firms are managed by the FHFA to pursue the joint goals of continuing to support the mortgage markets and returning them to a safe and sound operating status.

The GSEs, like the investment banks, carry out two key business activities: one that is managed to maximize shareholder value—I again call it the hedge fund division—and the other that supports the public mortgage market mission—I call it the infrastructure division. The hedge fund divisions maintain balance-sheet-based mortgage portfolios, now totaling about \$1.5 trillion in combined mortgage assets. The portfolios are funded with so-called “agency” debt (in recognition of the GSE status), for which investors assumed there was an “implicit government guaranty” to bailout them out if the GSEs were to fail. The result is that the GSEs were able to fund their portfolios at interest rates at small spreads to U.S. Treasury rates while investing in mortgage securities that offered investment spreads of 1 percentage point or more.

Under these conditions, the shareholder value-maximizing strategy for the hedge fund division is to make the portfolios and their risk attributes as large as possible, subject only to the constraint that the marginal investments have a positive net present value. The firms were aggressively and effectively managed with exactly this strategy, and for many years they were immensely profitable (see Jaffee, 2003). In particular, the portfolios were leveraged by close to 40 to 1, while substantial interest rate and liquidity risk was created by mismatching the timing between the asset and liability cash flows. Moreover, starting in 2005, the GSEs began to invest heavily in subprime mortgages. The 2008 conservatorship was required as a result of the losses created by these subprime mortgages, together with the GSEs’ increasing difficulty of rolling over their maturing debt. Details aside, the strategy employed by the GSE hedge fund divisions and the ultimate GSE bailouts are indistinguishable from the investment bank case already discussed.

The GSE infrastructure divisions carry out the GSE public mission to support the secondary market for mortgages by guaranteeing mortgage-backed securities (MBS) against any credit risk, and then selling the MBS to third-party capital market investors. Because the securities are sold to investors, the GSEs have no continuing interest rate or liquidity risk. In compensation for the credit risk guaranty, the GSEs have historically received fees of approximately 0.20 percent (20 basis points) annually, which historically have been more than ample to cover the very small credit losses the GSEs experienced on their prime quality mortgage portfolios. The GSE MBS division also benefits from the implicit—now quite explicit as a result of the conservatorship—government backing of

¹² The discussion in this section is based on Jaffee and Perlow (2008) short version and Jaffee (2008) long version. The GSEs have a secondary mission to support the market for lower-income mortgages. For a discussion of the specific issues relating to this secondary mission, see Jaffee (2008) and Jaffee and Quigley (Forthcoming).

all the GSE obligations. The GSEs currently have approximately \$3.5 trillion in outstanding MBS.

Overall, while the investment banks and GSEs may appear superficially quite different, they share the same fundamental structure of carrying out two business activities, one of which is reasonably described as a risky hedge fund and the other as an infrastructure division. It then follows directly that the monoline principles, I already described, for reregulating the investment banks should apply equally well to the GSEs. Of course, the explicit public mission of the GSEs is a differentiating factor, but it turns out that this also fits remarkably well within a monoline solution.

My specific proposal, when the GSEs are released from their conservatorship, is to split them into two distinct parts:

1. The MBS issue/guaranty businesses—the infrastructure divisions—should be retained as an activity within a government agency. These businesses provide benefits to middle-income U.S. mortgage borrowers in very much the same way that the government's FHA has insured lower-income mortgages and the Government National Mortgage Association (GNMA) has securitized them. The proposal is thus to combine the MBS businesses of the GSEs with the existing FHA/GNMA programs into a combined governmental program in support of low- and middle-income mortgage borrowers. Since it was created in 1934, the FHA has operated as a government insurer, with premiums required to be set to reflect expected losses. Over its long history, the FHA has never required a government bailout. It is proposed that the new government insurance program for middle-income borrowers be operated on the same sound insurance principles.
2. The GSE mortgage portfolios—the hedge fund divisions—should be spun off and returned to the firms' shareholders in recognition of their property rights, then operated as privatized hedge funds or mortgage real estate investment trusts. Carried out in this manner, it will be credible that there will be no continuing links, explicit or implicit, with the U.S. government. The new private entity will, as well, no longer be constrained by restrictions in their congressional charters, and they will be able, for the first time, to participate directly in the origination of new mortgages. Sallie Mae, another GSE operating in the market for student loans, was similarly "privatized" and for many years it prospered by originating student loans.

CONCLUDING COMMENTS

The article proposes reregulating the investment banks and the GSEs by applying the monoline principles that have been developed and successfully applied in the regulation of insurers covering mortgage and bond default risks and BHCs. The monoline regulatory principle was created to ensure that losses on a risky insurance line or risky banking division would not endanger other safe lines or divisions that operated within the same holding company. It is applicable to both investment banks and GSEs because both sets of institutions have operated with two basic divisions: a hedge fund division that maintained a highly risky investment portfolio, and an infrastructure division that carried out activities with high direct value for the overall financial or mortgage markets.

The monoline principle involves placing the two divisions in a new regulatory structure whereby the infrastructure division is bankruptcy remote from any losses that might occur within the hedge fund division. The major investment banks are now all operating within BHCs, so the proposal provides more specific guidance for how the Federal Reserve should regulate BHCs. The GSEs are currently operating under a government conservatorship, and the proposal is, when the firms are released, to privatize the hedge fund division while keeping the infrastructure division as a government agency.

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