

THREE MORTGAGE INNOVATIONS FOR ENHANCING THE AMERICAN MORTGAGE MARKET AND PROMOTING FINANCIAL STABILITY^Y

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ABSTRACT

In recent years, the government has greatly extended its reach into the mortgage markets with the goals of (1) mitigating the deadweight losses associated with mortgage foreclosures, (2) promoting affordable homeownership, and (3) providing low cost mortgage financing. In this paper, we identify three innovations—one in each of these areas—that could be made to the American mortgage market that would help obtain the government’s objectives while enhancing financial market stability—particularly if all are done together. These three innovations are: (1) “buy your own mortgage” options, (2) variable maturity mortgages, and (3) creation of a government mortgage bond insurer, with an emphasis on insuring covered bonds as well as GSE debt. The first innovation would allow homebuyers to repurchase their mortgage at the “market value” of their homes when they move, thereby helping society avoid some of the deadweight losses associated with unnecessary foreclosures. The second innovation would provide a mortgage that could promote affordable housing without unduly raising the default risks of low- and moderate-income families. The third innovation would help create a variety of financing options for mortgages in the United States. Moreover, it could be integrated into the current system of mortgage financing, which would include government-sponsored enterprises (GSEs), in a manner that would help the government manage the systemic risks associated with the quasi-government backing of mortgage credit and mortgage insurance. In particular, we propose that the government *explicitly* insure pre-designated financial instruments used to fund mortgage credit (such as covered bonds and GSE debt) by creating a government-backed insurance fund similar to that currently used for deposits.

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I. INTRODUCTION

In recent years, the government has greatly extended its reach into the mortgage markets with the goals of (1) mitigating the dead-weight losses associated with mortgage foreclosures, (2) promoting affordable homeownership, and (3) providing low cost mortgage financing. In this paper, we identify three innovations—one in each of these areas—that would help obtain these objectives while enhancing financial market stability. These three innovations are: (1) “buy your own mortgage” options, (2) variable maturity mortgages, and (3) creation of a government mortgage bond insurer, with an emphasis on insuring covered bonds as well as GSE debt.

The first innovation – buy your own mortgage options – would allow homebuyers to repurchase their mortgages at the “market value” of their homes when they move. This innovation would likely help society avoid the deadweight losses associated with unnecessary foreclosures and the reduction in labor mobility that can result when home prices decline.

The second innovation – the provision of variable maturity mortgages – would provide a mortgage product that could potentially promote affordable housing without unduly raising the default risks of low- and moderate-income families. We argue that such mortgages, which focus on reducing payment shocks and lowering monthly payments for borrowers, could potentially be effectively financed by US banks using covered bonds.

The third innovation would create a needed financing option for mortgages in the United States, which would allow banks to acquire capital-market funding without using the now discredited “originate-to-distribute” model. Moreover, this innovation could be integrated into the current system of mortgage financing, which is heavily dependent on government-sponsored enterprises (GSEs), in a manner that would help the government manage the systemic risks associated with the quasi-government funding of mortgage credit. In particular, we propose that the government explicitly insure pre-designated financial instruments used to fund mortgage credit, using an insurance fund similar to that currently used for deposits.

II. BUY YOUR OWN MORTGAGE OPTION

During the recent turmoil in the subprime mortgage markets, investors have dramatically marked down the value of subprime mortgage-backed securities (MBS). In line with these lower MBS prices, many financial institutions have taken large losses on MBS held in trading books or other “mark-to-market” accounts. However, despite the decline in the market value of these securities (and by implication the mortgages that backed them) when held as assets by financial institutions, homeowners who hold these mortgages as liabilities still carry their mortgage at par value. Ironically, in some cases, if the homeowner was able to re-contract his or her mortgage at its market value or something close to it, the homeowner’s liabilities would decline and the homeowners’ odds of default would fall. Moreover, as will be described below, allowing such repurchases of mortgages (on a limited basis) might help improve financial stability and boost homeownership. But the current system of mortgage finance makes it difficult for a homeowner to repurchase his or her mortgage at its market value.¹ Instead, the homeowner must refinance his or her mortgage at par (that is, at its current (book) principal balance).

Here, we investigate the possibility of providing a new option in mortgage contracts: the option to pay off a mortgage with the proceeds from a home sale when the homeowner moves. That is, if the market value of the home falls below the par value of the mortgage, the homeowner could sell his or her home and pay the lender only the proceeds from the home sale. However, if the market value of the home was above the par value of the mortgage, the homeowner would not use this option. We begin our investigation with a broader option that is not available in the United States: refinancing a mortgage at its market value.

¹ Markets values, of course, might be quite different in a world where there was a market valuation of each individual’s mortgage. Currently, markets values of mortgages represent pools of mortgages, where some proportion of homeowners are expected to perform on their mortgages despite the fact the home price has fallen below the value of the mortgage, and therefore, some homeowners are expected to default. The former group might benefit significantly if all mortgages were lowered to their current “market values.” As we discuss later in the paper, creating a system of market values that reflect individual mortgages would require a significant degree of homogeneity among mortgages.

The Danish Mortgage Market

In the Danish mortgage market, homeowners can purchase an additional option: the right to prepay their mortgage at its market value rather than at its par value. Like a prepayment option in the United States, and like other options more generally, this option to repurchase at market value is one-sided. When interest rates fall, the option is worthless because the market value of the mortgage is larger than the par value of the mortgage. But when interest rates rise, the market value of the mortgage declines and the homeowner has an incentive to prepay the mortgage at its market value if the decline in the value of the mortgage can offset the effect of the higher rate on the homeowner's monthly mortgage payment.

This option can be valuable both for the homeowner and the lender. The option is valuable to households because it gives them the opportunity to prepay on terms that are more advantageous than would otherwise be available. The option could also be valuable to mortgage investors because it lowers the probability of default. In particular, households who must move because of job transfers, divorce or the inability to pay for their mortgage (e.g., because of unemployment) and who have a house that has declined in value below the par value of the mortgage, can sometimes find it in their interest to refinance and payoff the mortgage at its market value. For these households, if their only option is to repay the mortgage at its par value, as is the case in the United States, they would have likely defaulted, increasing the losses for investors in their mortgages. Indeed, current mortgage contracts in the United States may, at times, provide an incentive for homeowners to stop making their mortgage payments and then attempt to live "rent free" until the foreclosure proceedings are completed and they are evicted.

One study by staff at the BIS finds there is little difference in the spreads of mortgages to government securities or in costs of prepayment options for mortgages between the United States and Denmark (Frankel, Gyntelberg, Kjeldsen and Persson, 2004). (For the United States, conforming mortgages are used for this comparison.) They suggest that one reason there might be little difference in the spreads despite the presence of an additional option in the Danish mortgage is that prepayments are smoother over time in Denmark than they are in the United States, where there are "waves" of prepayments during times of falling interest rates, which amplify interest rate volatility

(Sach and Perli, 2003). In contrast, the “mark-to-market option” in Denmark provides a means to reduce a homeowner’s mortgage payment even when rates are rising. As a result, the homeowner finds it less advantageous to refinance when rates are falling because the mortgage payment would not be reduced as substantially since the mortgage was already refinanced when rates were higher.

Svenstrup and Willemann (2006) use a standard option-pricing model to calculate the cost of a market-value prepayment option in the United States mortgage market. They estimate that this option would cost at most 50 basis points minus the decline in credit insurance costs associated with the lower probability of default. They also argue that the benefits of such an option would be greatest for low- and moderate-income borrowers, who suffer most from the “lock-in” effects associated with not having such an option. In particular, when mortgage rates are high and unemployment is rising, many lower-income borrowers might benefit from moving to acquire more secure, or higher paying, jobs. However, the need to repay a mortgage at par “locks-in” the household even though the economic environment suggests that the market value of mortgage has declined. One result of the “lock-in” effect is that lower-income households are less likely to become homeowners because they perceive they may have a higher probability of needing to move in the future.

Unfortunately, there are no studies about valuing the market-value prepayment option in an environment of falling home prices and rising unemployment. Of course, such an option might be more costly in this environment (depending on the trade-off between losses on the par value of the mortgage and gains in lowering the probability of default.)

We think implementing a Danish-type system in the United States would have many benefits. The main difficulty of implementing a market value prepayment option like the Danish option is the need for a bond market based on large numbers of homogeneous mortgages and a legal structure that gives the bondholders substantial recourse to both the bond issuer and the underlying collateral. Moreover, Danish mortgages are generally underwritten to much stricter standards than mortgages in the United States. Thus, we suggest a more limited and practical alternative.

Americanizing the Danish Option — the Buy Your Own Mortgage (BYOM) Option

Going forward, if mortgage contracts included the option for the homeowner to sell the home and use the proceeds of the home sale—even if it is less than the par value of the mortgage—to pay off the mortgage, all parties to the contract might be better off.² With this option, the homeowner would pay the lesser of the par value of the mortgage or the sales price of the home. The option can only be exercised if the homeowner actually moves from the home. By tying the option to the home sale, exercising this option can be quite costly for the homeowner who loses their downpayment and bears the costs of moving. Furthermore, a market price for the home is readily established.

Like the prepayment option, the BYOM option would be purchased when the mortgage is originated. The BYOM option is contract that allows the homeowner the right to pay the lender the proceeds from selling the home rather than the par value of the mortgages. In essence, the homeowner can “put” the home to the lender.

Our proposed option would essentially allow the homeowner to purchase insurance against foreclosure. It is prepaid as part of the mortgage rate, in the same way that the rate charged for a fixed rate mortgage prices in the insurance the homeowner receives from future interest rate increases and in the same way the mortgage rate prices in the cost of the prepayment option (which prevents the lender from being able to reap the benefit of falling mortgage rates). By having the BYOM option, the homeowner and the lender avoid most of the transaction costs imposed on both of them that are associated with foreclosure.

Besides avoiding the deadweight costs of foreclosure, this option provides a method for the “originate-to-distribute” system to handle foreclosures in some cases. By knowing in advance that mortgages held by movers are going to be prepaid with the lower of either the proceeds of the home sale or the par value of the mortgage, MBS contracts can be written that specify the distribution of the cash flows among the different tranches of securities. Whether the house price is above, or below, the par value of the mortgage, under this contract default would be handled with a short sale and not a

² If there are concerns about the homeowners’ motivation to get the best price for the home, the contract can specify some incentives for the homeowners’ performance or simply turn the home over to the lender for sale by the lender’s real estate broker.

judicial proceeding (except, of course, in cases where the homeowner refuses to follow the contract by selling the home, using the proceeds to extinguish the mortgage, and moving). Thus, the BYOM option could resolve a significant problem with the structure of purely private mortgage-backed securitization in the United States. It provides a contractual method for homeowners to be protected from capital losses on the value of their homes, and thus reduces the probability that they will default on their mortgages. With the put option in place, there is an agreed-upon mechanism for handling a situation that often requires loan modification, or else the lender or investor incurs the significant costs of foreclosure.

A simple model can be used to illustrate the valuation of this option. We use the following assumptions: (1) the homeowner is willing to exert effort to avoid the consequences of foreclosure as long as the private benefits exceed the costs, and (2) the lender is risk-neutral, and chooses a mortgage rate and downpayment requirement to earn a competitive rate of return. Of course, when home prices rise, default results in a “short sale” where the homeowner pays off the mortgage at par and pockets the remaining proceeds. Thus, we focus on outcomes when house prices decline.

The downpayment is key once the BYOM option is included in the mortgage contract. Without the BYOM option, the deadweight foreclosure costs are split between the lender and the borrowers (often using a process that itself is contentious and costly.)³ With the BYOM option, the downpayment becomes the “first loss” position in the mortgage contract with regard to who bears the cost of home price fluctuations. To state the obvious, since downpayments are certain (while mortgage interest payments are not), larger downpayments reduce the cost of offering the BYOM option.

As shown in exhibit 1, mortgage rates may not increase when a BYOM option is included in the mortgage contract. For example, when foreclosure costs are high (e.g. 40 percent of the original value of the mortgage) and the decline in the home price is relatively small (e.g. 20 percent of the original home price), then the lender would prefer that the borrower sell the home and move rather than go through the mortgage foreclosure process. This preference mirrors what sometimes happens during mortgage

³ Cordell, *et.al*, 2008, argue that the deadweight losses associated with foreclosure can be 50 percent or more of the mortgage amount. Moreover, the guidance by investors provided to servicers about loan modifications is often confusing.

defaults — the lender pays the borrower to sell their home and move when the borrower's home equity is negative. BYOM changes the mortgage contract to make a "short sale" when the mortgage is underwater at the borrower's option.

The ultimate cost of the BYOM option depends heavily on foreclosure costs, on the decline in home values, and on the downpayment. As shown in exhibit 2, the BYOM option can raise the mortgage rate when foreclosure costs are small (e.g. 20 percent) and the house price decline is relatively large (e.g. 40 percent).

One problem with the BYOM option from the lender's point of view is that the option might be used by many borrowers with negative equity who would be willing to pay their mortgage at par when they move. The losses associated with providing these borrowers with an option they would have not used offset some of the gains to the lender of using the BYOM option. These losses might be large, especially for low downpayments, but as shown in exhibit 3, they may not be so large as to offset the gains to the lender of adding the option.

In addition, part of these losses might be offset by adding some additional restrictions on exercising the option. For example, if the borrower is required to have a debt-to-income ratio of greater than, for example, 35 percent to use the option, then this option would be limited to being used by only financially stressed households who might be more likely to default. Of course, these additional restrictions add to the lender's costs of monitoring the contract and reduce the attractiveness to homeowners of the BYOM option.

Finally, some homeowners might be induced to move simply to reduce the principle of their mortgage, and not because they need to move to more affordable housing or because they are seeking employment. Such a move, of course, would be costly and would create a capital loss for the homeowner, who would be selling his or her home at a significant loss. Again, the downpayment is key. A significant downpayment would mean that the homeowner's loss would be large and permanent from exercising the BYOM option.

The BYOM Option and Risk Management by Lenders

Of course, if home prices fall enough, then many homeowners might exercise their BYOM option. Lenders would have to price the option appropriately and hold enough capital to assure their solvency in the case of severe house price declines. Moreover, risk-sensitive capital requirements (whether economic or regulatory) would have to incorporate the risks of a housing downturn. One might argue that lenders already bore this risk of house price declines because of the homeowner's option to default. But formally incorporating the BYOM option into mortgage contracts would mean that these risks would receive significant management attention.

The BYOM option may seem complicated, but note that mortgage contracts in the United States already come with a complicated option that reflects the systematic risks associated with interest rates: the option to prepay the mortgage at par. Numerous models have been developed, and papers written, in an effort to understand and value this option.

Like the BYOM option, the prepayment option is often described as a "one-sided" option. Using the prepayment option, a homeowner will typically repay when the current mortgage rate falls below the homeowner's original mortgage coupon rate. But the homeowner will not prepay when the mortgage rate rises above the homeowner's original mortgage coupon rate. Effectively, the homeowner, through the prepayment option, has the right to purchase his or her mortgage at par when the value of the mortgage is greater than par (because mortgage rates have declined). Institutions that extend mortgages with the right to prepay understand that they have sold the homeowner a valuable option and thus they charge for this option through higher mortgage rates. The BYOM option could be managed by lenders and investors in a manner similar to the prepayment option.

A Financial Stability Rationale for Allowing Households to Move without Default

House prices also influence the prepayment option. When house prices rise, home equity also rises. Borrowers may choose to increase their indebtedness by using cash-out refinancing. With the collateral value of the home increasing, the household is able to borrow more and a "financial accelerator" is engaged that further boosts economic growth.

From past experience, we know that borrowers are more likely to exercise the default option when house prices decline such that the borrower has negative equity. As more borrowers default, house prices fall further and more homeowners find themselves "in-the-money" with respect to the default option. The financial decelerator is operating to slow economic growth.

In this scenario, monetary policy can be employed. But, policymakers run the risk that lower rates may push up other asset values, as well as home values, perhaps causing asset bubbles in other markets. In contrast, with BYOM options in place, mortgage borrowers could "mark-to-market" their mortgage, in the sense that they would pay the market value of the house, rather than the par value of the mortgage if they needed to move. This option would allow a homeowner whose mortgage is underwater who needed to move because of unemployment or because his or her search for higher paying jobs was successful. In addition, homeowners who exercise their BYOM option would be able to get a true "clean start" by moving and would avoid the problems associated with default and foreclosure, such as a damaged credit history, legal costs, and lost savings. Finally, the process of clearing the market for houses when home prices are falling might occur more quickly. Investors and the homeowner would have an agreed upon up-front process for exercising the BYOM option. Since the homeowner is less likely to have a prolonged foreclosure proceeding and since investors are less likely to engage in efforts to collect the par value of the mortgage, some of the home price deflation externalities are abated. As a result, there might be less need to use monetary policy to offset the economic deceleration caused by foreclosures and the associated negative externalities.

III. VARIABLE MATURITY MORTGAGES (VMMS)

Currently, subprime mortgages, such as the 2/28 ARMs, are reviled because of their role in laying the foundations of the subprime mortgage crisis during 2006 and 2007. Issuing such mortgages using weak underwriting standards and selling them to investors (who seemed to have forgotten the need for due diligence) created an environment of early payment defaults by homeowners who often could not afford the

homes they lived in. Moreover, the large resets in mortgage payments associated with these mortgages may have also played a role in increasing mortgage defaults among mortgage borrowers with subprime adjustable-rate mortgages.

Prior to the current financial crisis, however, mortgages like the 2/28 subprime ARM were often viewed as instruments for extending homeownership and for giving households with poor credit histories a second chance. With relatively small payments early on in their mortgage contracts, borrowers were able to establish a credit history and accumulate savings (including, of course, the appreciation associated with higher home prices) so that they could refinance their mortgage and maintain their newfound homeownership.

In the current environment, is there a mortgage contract that, when appropriately underwritten, could help lower-income households obtain homeownership? We suggest variable maturity mortgages (VMMs) might be such a contract.

VMMs are mortgages that hold a household's monthly payment constant by adjusting the maturity of the mortgage in response to changing interest rates. When rates increase, the maturity of the mortgage lengthens. When rates fall, the maturity of the mortgage shortens. The VMM provides the homeowner with nominal payment certainty without the implicit costs of providing interest rate risk insurance that is embedded in the traditional fixed-rate mortgage.

As discussed above, our suggestion of adding a BYOM option to mortgages was essentially a way to add a pre-agreed procedure between the lender and the borrowers for how to handle some cases where the borrower cannot continue his or her mortgage payments. VMMs can be thought of in a similar fashion. VMMs are a pre-agreed upon procedure for handling loan modifications when interest payments are increasing. When a household faces a higher mortgage payment, the mortgage contract is automatically renegotiated to hold the payment constant and lengthen the maturity. Of course, if interest rates fall, the homeowner might refinance the mortgage. But if it cannot refinance, the borrower gains from a shorter maturity mortgage and the associated faster accumulation of equity in the home. Note the lender might also benefit from this faster accumulation of equity if it leads to greater wealth for a credit-impaired homeowner.

VMMs are available in a few other countries. In Hong Kong, where this type of mortgage is popular, VMMs are used by generally risk averse borrowers with slower propensities to prepay their mortgage (Chow, Huang and Liu 2000; Chow and Liu 2003).

Like the BYOM option, VMMs lower the default risk relative to a traditional adjustable-rate mortgages (because interest rate shocks do not cause payments shocks) or relative to a higher rate, fixed-rate mortgage with a fixed maturity (because the mortgage payment is smaller because the borrower bears some of the interest rate risk). However, issuing VMMs can create significant interest rate risks for the lender. The typical 30-year fixed-rate mortgage payments for prime and subprime borrowers (based on recent interest rates and on the average-sized subprime loan) are shown in exhibit 4. The variation in payments with respect to rates, as would occur with a traditional adjustable-rate mortgage, can be seen in this exhibit. The difference in the monthly payment for a prime versus subprime borrower (\$358) is substantial.

Using a VMM for a subprime borrower, the payment might be somewhere between the current the fixed-rate and adjustable-rate subprime monthly payment. The constant monthly payment may substantially lower the prepayment risks associated with a traditional fixed-rate mortgage, while the variable maturity feature might make the mortgage significantly less expensive because some of the interest rate risks are borne by the borrower.

However, the maturity of the mortgage can be difficult for a financial institution to finance. As shown in exhibit 5, reasonable increases in interest rates can greatly lengthen the maturity of the mortgage — in some cases to over 100 years! Of course, the maturity of the VMM could be capped at the point where the mortgage payment consisted almost exclusively of interest (say 50 years). At this point, the borrower is essentially a renter with an option to buy (i.e. the borrower would have the option to accelerate payments on the mortgage).

To avoid negative amortization if rates rose further, either the mortgage payment would need to increase or the lender would have to absorb (or more likely, hedge) the interest rate risks associated with the mortgage. In this latter case, the VMM would be like a traditional 30-year fixed-rate mortgage with the twist that there is a range for the maturity of the mortgage. The interest rate risk would effectively be split between the

borrower and the lender, with the borrower absorbing the risk of interest rate changes within a range surrounding the original mortgage rate, whereas the lender absorbs the risks (probably by incurring hedging costs) of more extreme changes in interest rates.

The difficulties faced by financial institutions when financing longer-term assets brings us to our third mortgage financing innovation: that the government explicitly insures pre-designated financial instruments used to fund mortgage credit by creating a government-backed insurance fund similar to that currently used for deposits. In particular, for depository institutions, the government would provide insurance for *covered bonds*. This innovation would provide the lender a greater ability by depository institutions to issue longer-term bonds and greater access to hedging tools, such as interest rate swaps and swaptions. Before describing our government bond insurance program in detail, we begin with a description of covered bonds.

IV. COVERED BONDS

A covered bond is a debt instrument secured by a perfected security interest in a specific pool of collateral. It provides funding to a depository institution that retains a cover pool of financial assets (usually mortgages or public sector debt) and related credit risk on its balance sheet. These bonds have become a major source of mortgage finance in Europe, one that appears to be somewhat more robust than mortgage securitization during the recent financial market turmoil.

The Structure of a Covered Bond

Covered bonds are sold to investors who do not want to engage in underwriting or conducting due diligence on the bond holder. Indeed, investors desire bonds that are so free of credit risk that the yields should be close to those offered on sovereign debt. These investors are often referred to as “rate” or “yield” investors, and they appear to constitute the majority of the investing public.

Covered bonds are similar to asset-backed securities, but there are several differences between the two products. First, covered bond investors have full recourse to the issuing bank as well as the cover pool. This means that the issuing bank is liable for the repayment of the bonds so long as it is solvent. In contrast, investors in asset-backed

securities only have recourse to the underlying assets and the sponsor of the asset-backed securities is not responsible for any subsequent losses on the transaction.

Second, the cover pool assets remain on the issuing bank's balance sheet, so any credit or prepayment risks on the loans remains with the bank. In contrast, asset-backed security transactions are structured off the balance-sheet, and the foregoing risks are transferred to the security holders at the time of the securitization.

Third, covered bonds enable the issuing bank to actively manage the underlying assets in the cover pool. The issuer is allowed to change the assets backing the covered bonds, as well as the terms on the loans backing the bonds, subject to the covenants provided to the bond holders. For example, the issuing bank can substitute performing loans for non-performing loans in the cover pool. In contrast, asset-backed security collateral pools are static and substitution is restricted.

Fourth, mortgage-backed securities typically amortize over 30 years as the mortgages pay down, but covered bonds are usually issued as fixed-rate securities repayable in one bullet installment, with maturities ranging from one to ten years.

Finally, all covered bonds are issued in series and rank *pari passu* and without priority among the covered bonds, whereas asset-backed securities are generally issued in the form of senior and subordinated tranches.

Covered Bonds in the United States

In some European countries (Germany, France, Spain and Ireland) special legal structures have been put in place for covered bonds. First and foremost, such bonds have legal priority over all other claimants in cases where the issuer goes bankrupt. In addition, the bonds are required to have minimum levels of collateralization and the collateral is limited to very high quality mortgages or public sector debt. Finally, the maturity of the bonds is required to be closely matched to the maturities of the underlying mortgages.

In contrast to the legal structure often used in Europe, in the United States, a contractual structure has been put in place to accommodate covered bonds. The Uniform Commercial Code (UCC) provides the legal background to pledge assets through the creation of a first-priority perfected security interest. Segregation is achieved by

identifying the pledged mortgages in the depository institution's books and records, and there is no sale or conveyance of ownership of the mortgages that act as collateral. This legal instrument enables US depositories to issue full-recourse debt instruments with the additional protection of assets pledged to investors in the event of an issuer's insolvency.

In the event of an issuer's insolvency, the primary regulator is authorized to appoint the Federal Deposit Insurance Corporation as conservator or receiver for that institution. In that capacity, the FDIC has three options: (1) to affirm outstanding contracts of the covered bond issuer and continue to make the covered bond payments as scheduled, (2) to repudiate or terminate the contract by paying the par value of the covered bonds plus accrued interest up to the value of the pledged collateral, or (3) allow the trustee to exercise self-help remedies by liquidating the pledged assets to pay off the covered bonds. With respect to option (3), the FDIC is allowed a 90-day automatic stay.

On April 8, 2008 the FDIC issued an Interim Final Covered Bond Policy Statement that reduced the automatic stay period from 90 days to 10 days for covered bond programs that meet certain conditions, including (1) the covered bond issuance must be made with the consent of the issuer's primary federal regulator, (2) mortgages eligible for covered bond funding must be performing first-lien residential mortgages on 1-to-4 family residential properties, must be underwritten at the fully indexed rate relying on documented income, and must comply with existing supervisory guidance governing the underwriting of residential mortgages, (3) substitute collateral may include cash, Treasury and Agency securities and/ or AAA-rated mortgage-backed securities backed by eligible collateral as necessary to manage the cover pool and subject to a limit of 10 percent of the cover pool, (4) the initial covered bond term must be between one and 30 years, and (5) total outstanding covered bond issuance must account for less than 4 percent of the issuing institution's total liabilities. In addition, the policy statement confirmed that in a conservatorship or a receivership, and if the FDIC does repudiate the obligations of the financial institution, it will pay holders of covered bonds as actual compensatory damages the par value of the bonds principal amount plus accrued interest to the date of the appointment of the FDIC as conservator or receiver up to the value of the collateral.

On July 28, 2008, the Treasury issued a list of “best practices” for depository institutions that wish to issue covered bonds that meet the conditions that were specified by the FDIC’s Interim Final Covered Bond Policy. Such best practices included specifics with respect to mortgages that would be eligible for cover pool collateral (e.g., maximum loan-to-values, maximum geographic concentrations, and mortgages that are not delinquent more than 60 days), as well as guidance on over-collateralization, interest payment swaps, disclosures, SEC registration, asset coverage tests, and the usage of an asset monitor. As is typical of covered bonds in Europe, the Treasury suggests that one best practice is for the appointment of an asset monitor, who assures that the assets in the covered bond pool meet the underwriting criteria specified in the covenants for the bonds.

Covered Bonds and Government-Sponsored Enterprises

Fannie Mae, Freddie Mac, the Federal Home Loan Banks (FHLBs), and Ginnie Mae are the organizations most responsible for insuring and funding mortgages in the United States. Each organization is government-backed and each uses a different mix of credit risk guarantees and government-backed financing to help expand mortgage credit availability.

Fannie Mae and Freddie Mac guarantee the timely payment of principle and interest of MBS that is backed by the mortgages that the Congress permits them to purchase for securitization (i.e., conforming mortgages). The \$5.2 trillion of MBS guaranteed by these government-sponsored enterprises (GSEs) are mainly held by a broad range of investors, although Fannie Mae and Freddie Mac hold somewhat less than \$1 trillion directly.

As is now well understood, Fannie Mae and Freddie pose a systemic risk to U.S. financial system. The debt they issued to fund their portfolio purchases was viewed by the market as “implicitly guaranteed,” meaning that investors assumed that the government would back the debt regardless of the GSEs’ financial condition. This assumption by investors has been borne out by recent events.

The Federal Housing Administration (FHA) also guarantees the performance of mortgages it insures. Mortgage insured by FHA are used to back securities issued by Ginnie Mae. Ginnie Mae MBS are explicitly-backed by the U.S. government.

Finally, the FHLBs, which are also GSEs, provide loans to (mainly) depository institutions. These loans are financed by debt issued by the FHLBs (referred to as “consolidated obligations”). Like the debt of Fannie Mae and Freddie Mac, this debt is viewed by investors as “implicitly guaranteed” by the federal government.

What is common in all these approaches to government-backed assistance to the mortgage market is the desire to convert mortgage credit into a relatively risk-free investment for a broad range of investors. All of these approaches result in either an MBS without credit risk or in the issuance of corporate debt by a GSE. In normal times, all these mortgage-backed assets yielded only slightly more than a Treasury bond (the MBS yield, of course, must be adjusted for the cost of the prepayment option extended to the homeowner). Like covered bonds, the target investor is an investor who desires an investment that is so free of credit risk that the yields should be close to those offered on sovereign debt.

Thus, covered bonds and GSE obligations compete for the same investors and the competition is mainly through investors’ varying perceptions of implicit or explicit government backing. Covered bonds benefit from the government safety net support for depository institutions generally, along with perceptions that the largest depository institutions are too-big-to-fail. The GSEs benefit from the investor perceptions concerning government sponsorship of their debt and guarantees.

V. CREATING A GOVERNMENT BOND INSURER FOR MORTGAGE-RELATED BONDS

Government policy is clearly oriented toward creating low cost and widely-available mortgage credit by creating financial instruments that are implicitly government-backed. Such instruments create systemic risk because unlike purely private firms, the firms that issue such debt do not face higher costs and greater market scrutiny if they fail to run their businesses well (i.e., they are not subject to full market discipline). Moreover, government-sponsorship means that such firms may focus more on their relationship with the government rather than running their business operations.

In addition, the government has created a multitude of institutions that are encouraged to extend mortgage credit. The financial instruments used by these institutions directly, or indirectly, compete against each other and thus the institutions

have an incentive to make their government-backing look stronger than that claimed by other providers of mortgage credit.

To both provide the mortgage credit that the government desires, but avoid the associated systemic risks, we propose that the government explicitly insure the financial instruments used by institutions it sponsors to provide mortgage credit. In particular, the FDIC or a similar institution—in a manner similar to that used for deposit insurance—would insure financial debt instruments used for mortgage financing and designated by the Congress as government insured. This bond insurer would explicitly charge risk-based insurance premiums for this insurance and maintain a reserve for the purpose of covering bondholders' losses in the case where the debt defaults. We propose that such insurance cover the debt of Fannie Mae, Freddie Mac, the FHLBs, as well as covered bonds issued by authorized depository institutions.

Our proposed government bond insurance could also cover the MBS issued by Fannie Mae and Freddie Mac or other mortgage securitizers. Note that the mortgage payment guarantee function of the GSEs and other securitizers can be separated from the MBS portfolio investments. The systematic risk that underlies mortgage guarantees is the risk of a nationwide prolonged downturn in the housing markets, or the economy more generally. Such catastrophic events are difficult for private insurance markets to competitively price and to build adequate reserves to cover the losses associated with one event. For this extreme "tail event," the government insurer could encourage the industry to build reserves to insure against extreme events — reserves each entity might have difficulty maintaining in a competitive environment without such government regulation.

There are three advantages to creating a government bond insurer for mortgage-related bond financing. First, government bond insurance resolves some of the problems associated with systemic risk and implicit government guarantees and thus enhances financial stability. When insuring debt (such as the debt of the GSEs or covered bonds), the government insurer is substituting for market discipline. Over the past two decades, millions of investors have treated the implicitly-back debt of GSEs and other large financial institutions as effectively government debt and therefore engage in little due diligence. This lack of due diligence raises concerns about systemic risks at these institutions because as their portfolios get larger, this debt becomes more widely held. As

a consequence, when a large institution fails — which is made all the more likely without debtholder market discipline — the effects are widespread and severe because many skittish “yield” investors are likely to dump the debt.⁴

A government bond insurer makes the government guarantee explicit. Deposit insurance successfully resolved the problem of bank runs and has assisted in maintaining financial stability when the banking system is under stress. In essence, deposit insurance substitutes the (limited) market oversight of many small depositors with the oversight by a government-backed insurer. Similarly, our proposed federal mortgage bond insurer would substitute the (limited) market oversight by yield investors with the same government oversight.

The second advantage of a federal mortgage bond insurer that oversees all types of mortgage bonds, including covered bonds as well as GSE debt, is that it can assure that similar risks are treated similarly through the bond insurance premiums imposed during the issuance of all types of bonds. In addition, ideally, the same risk-based insurance approach would be used for federally-insured deposits too. The government’s deposit insurer and bond insurer would need to work together to assure that the multitude of financial instruments that investors perceive as backed by the government are explicitly insured in a fair and equitable manner across instruments and entities—both depository institutions, and government-sponsored enterprises. In this manner, mortgage credit would remain widely available even in stressful financial environments, but the systemic risks associated with government-backed debt of all kinds would be mitigated.

The third advantage of government provided bond insurance is that it would give depository institutions better ability to issue and hedge long-term debt for the purpose of providing more affordable mortgages by using government-insured covered bonds. Covered bonds and GSE debt with explicit government insurance and a well-managed insurance fund would be a lower cost and more stable sources of funds because such bonds could be issued under almost all financial market circumstances,. Moreover, such insured debt, under most circumstances, could be issued for very long maturities and

⁴ Note that the conservatorship agreements with Fannie Mae and Freddie Mac required that their portfolios be reduced to as little \$250 billion each over time.

could be more easily hedged against interest risk, resolving some of the problems associated with the interest rate risks of VMMs, and other mortgage contracts.

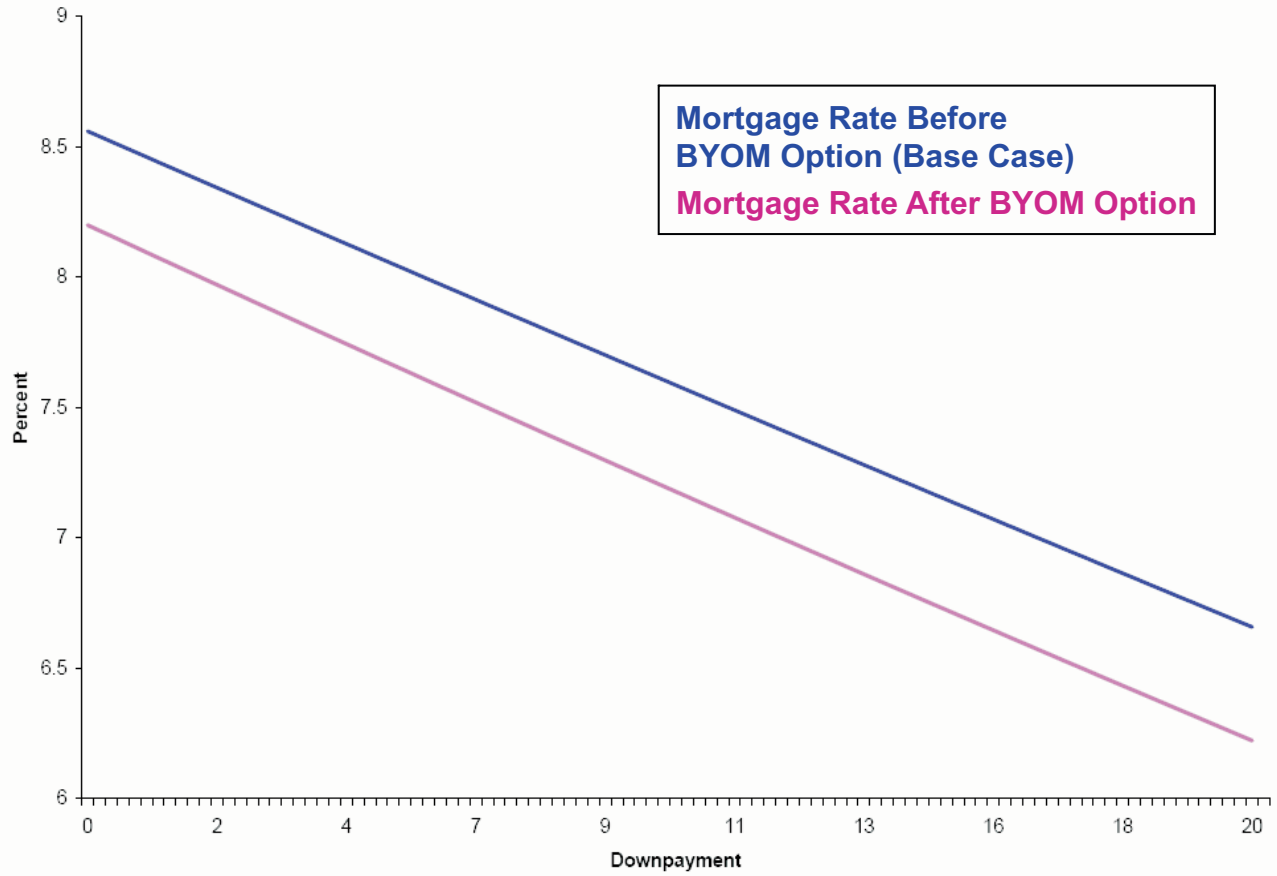
Federal Reserve Chairman Bernanke has proposed limiting the GSEs portfolios to supporting affordable housing for low- and moderate-income households. Former Federal Reserve Chairman Greenspan has proposed breaking the GSEs into many entities, similar to a national banking industry. Others have proposed creating alternative financing systems using exclusively covered bonds issued by depository institutions. Under any of these scenarios, a federal mortgage bond insurer that explicitly insures all types of bonds backed by mortgages is consistent with protecting taxpayers and avoiding both systematic and systemic risks.

VI. CONCLUSION

If our innovations were implemented—particularly if they were implemented together—American homeowners could avoid many of the problems associated with mortgages and foreclosure. Mortgages would be more affordable and problems associated with mortgage rate resets would be reduced. Finally, with a government-backed mortgage-bond insurer in place, the financing of mortgages would be available under almost all circumstances. Explicitly government-backed forms of mortgage financing resolve the difficulties associated with implicit government guarantees and the resulting potential systemic risks—as highlighted by the recent experiences with Fannie Mae and Freddie Mac. Such insurance would also allow a diversity of mortgage financing programs; in particular, it could help develop a covered bond market in the United States that would be on even footing with GSE debt and mortgage-backed securities.

Exhibit 1

Mortgage Rates Before and After Buy Your Own Mortgage Option: A Simple Example



Cost of the BYOM Option

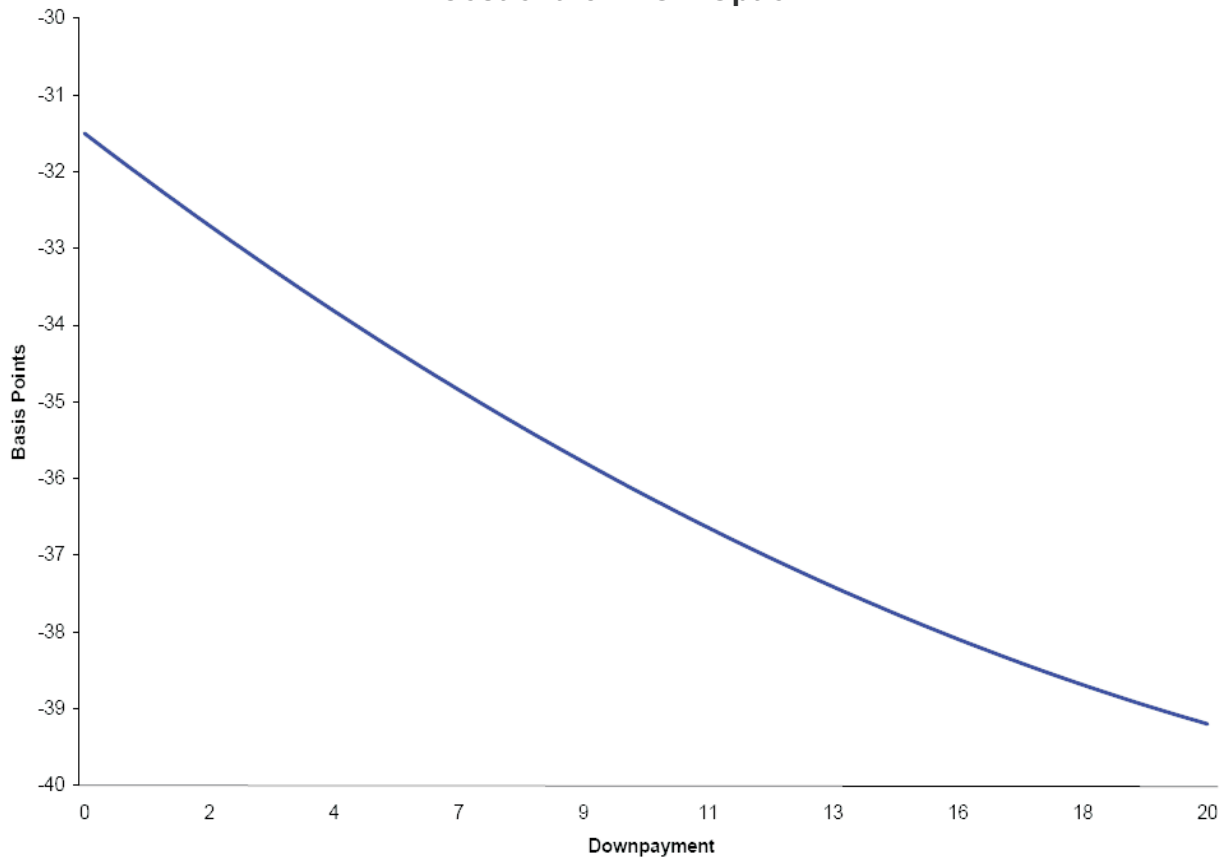
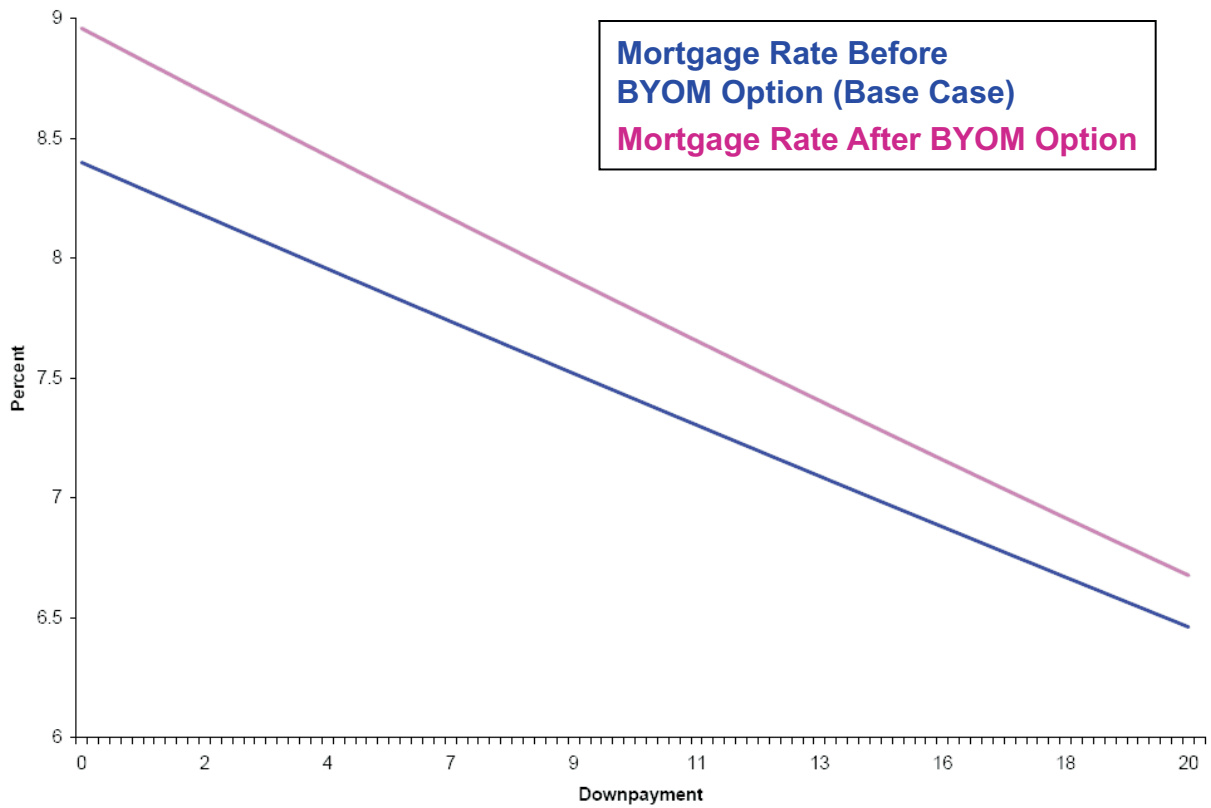


Exhibit 2

**Mortgage Rates Before and After Buy Your Own Mortgage Option:
Lower Foreclosure Costs, Higher Decline in Home Values**



Cost of the BYOM Option

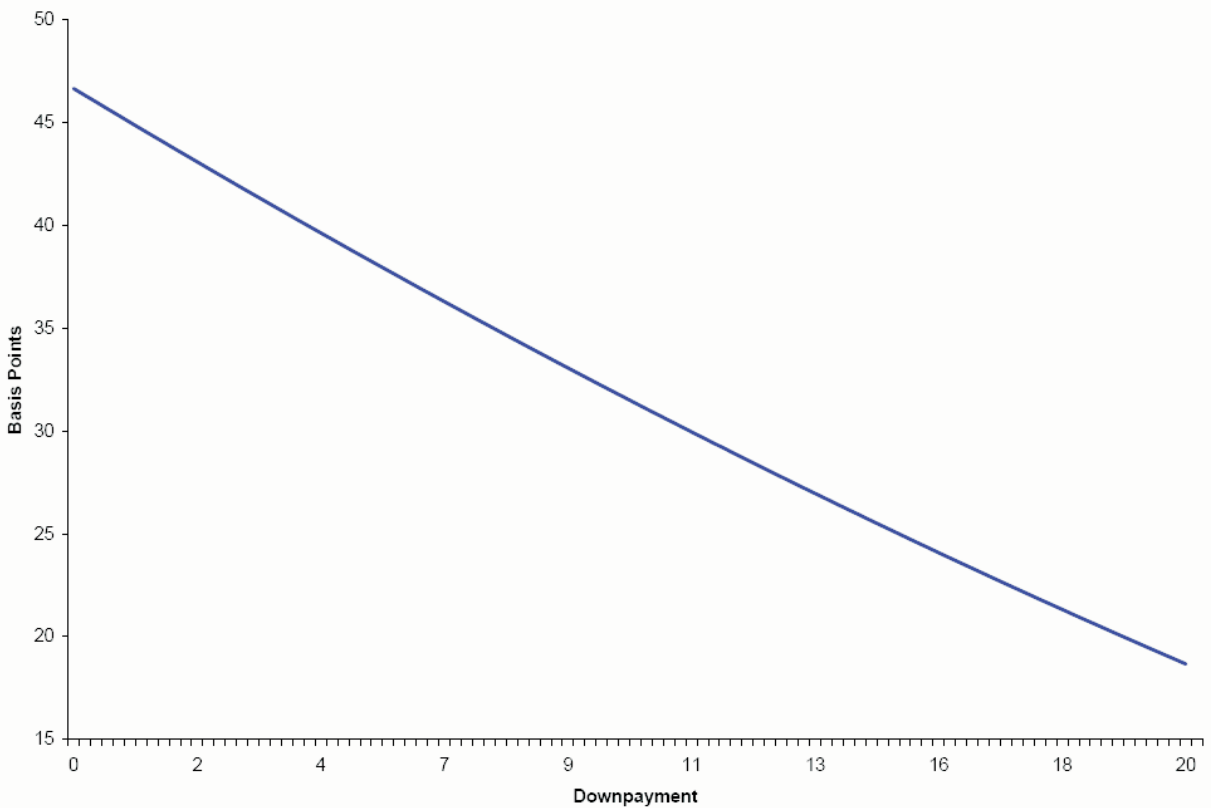


Exhibit 3
The Problem of Mortgage Contract Selection:
Many Homeowners Who Move Can Pay Off the Par Value of their Mortgage

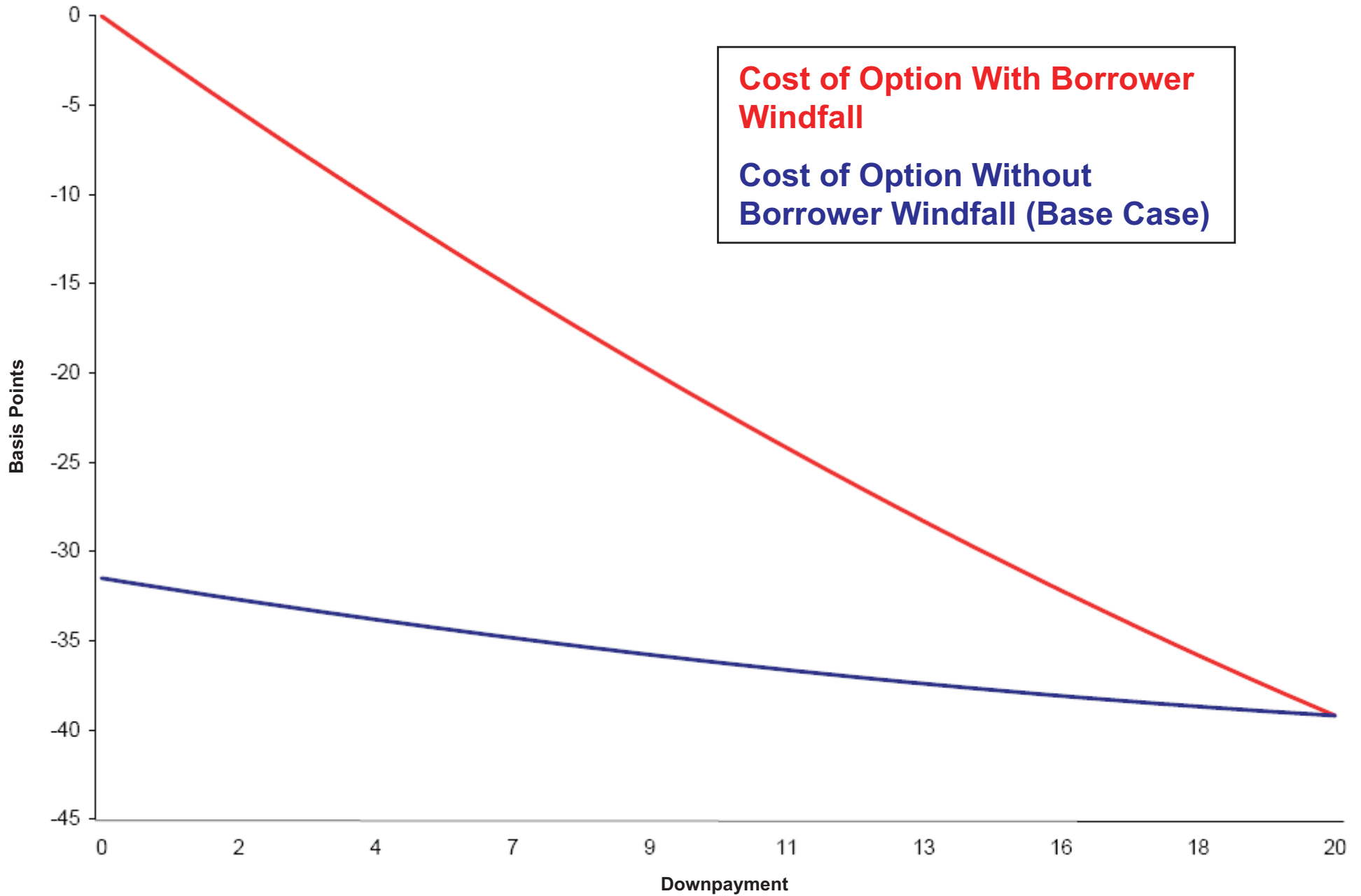


Exhibit 4

**30-Yr. Fixed-Rate Mortgage for an Average Subprime Loan (\$218,042):
A Comparison of Average and Subprime Borrowers**

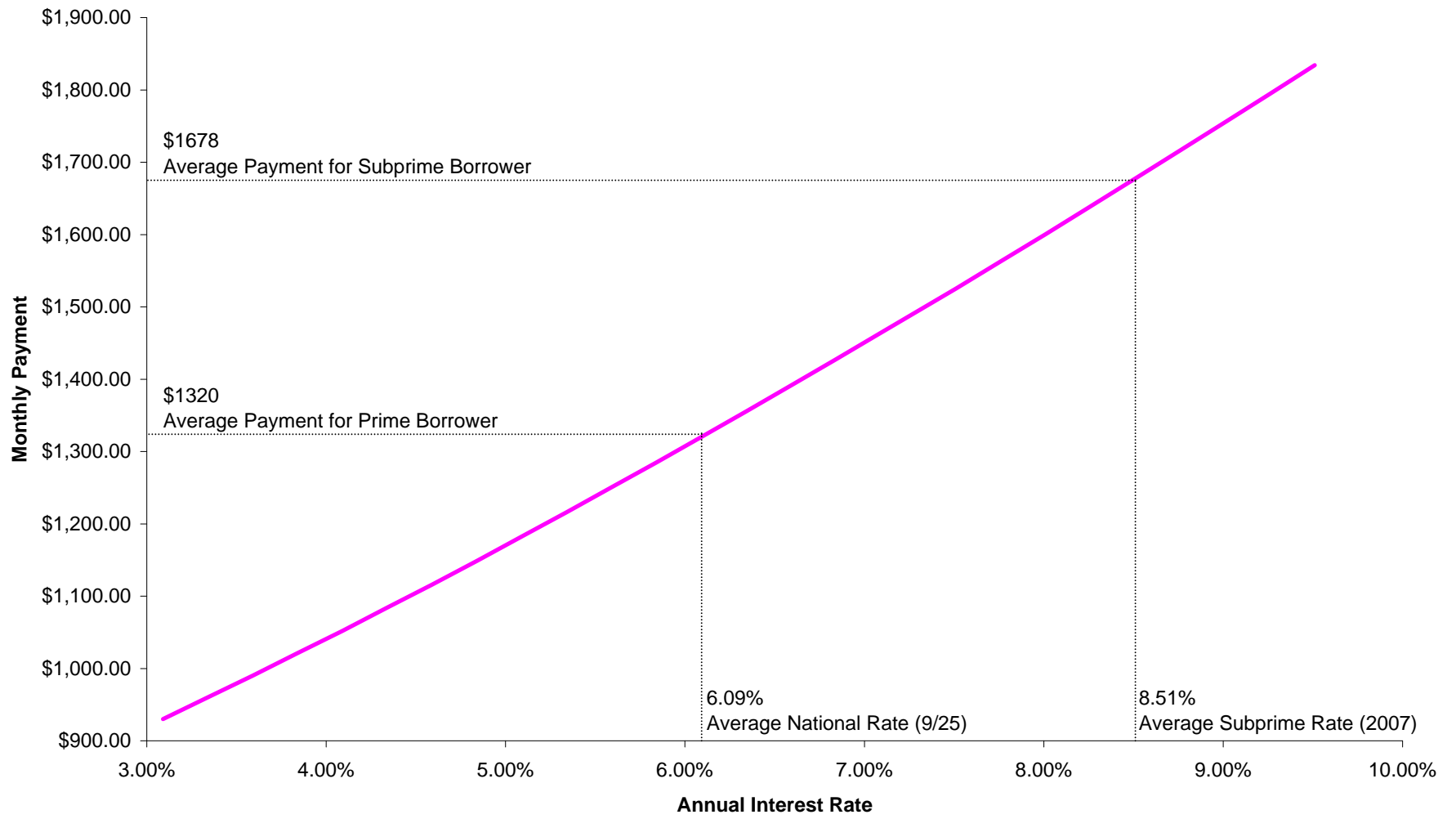
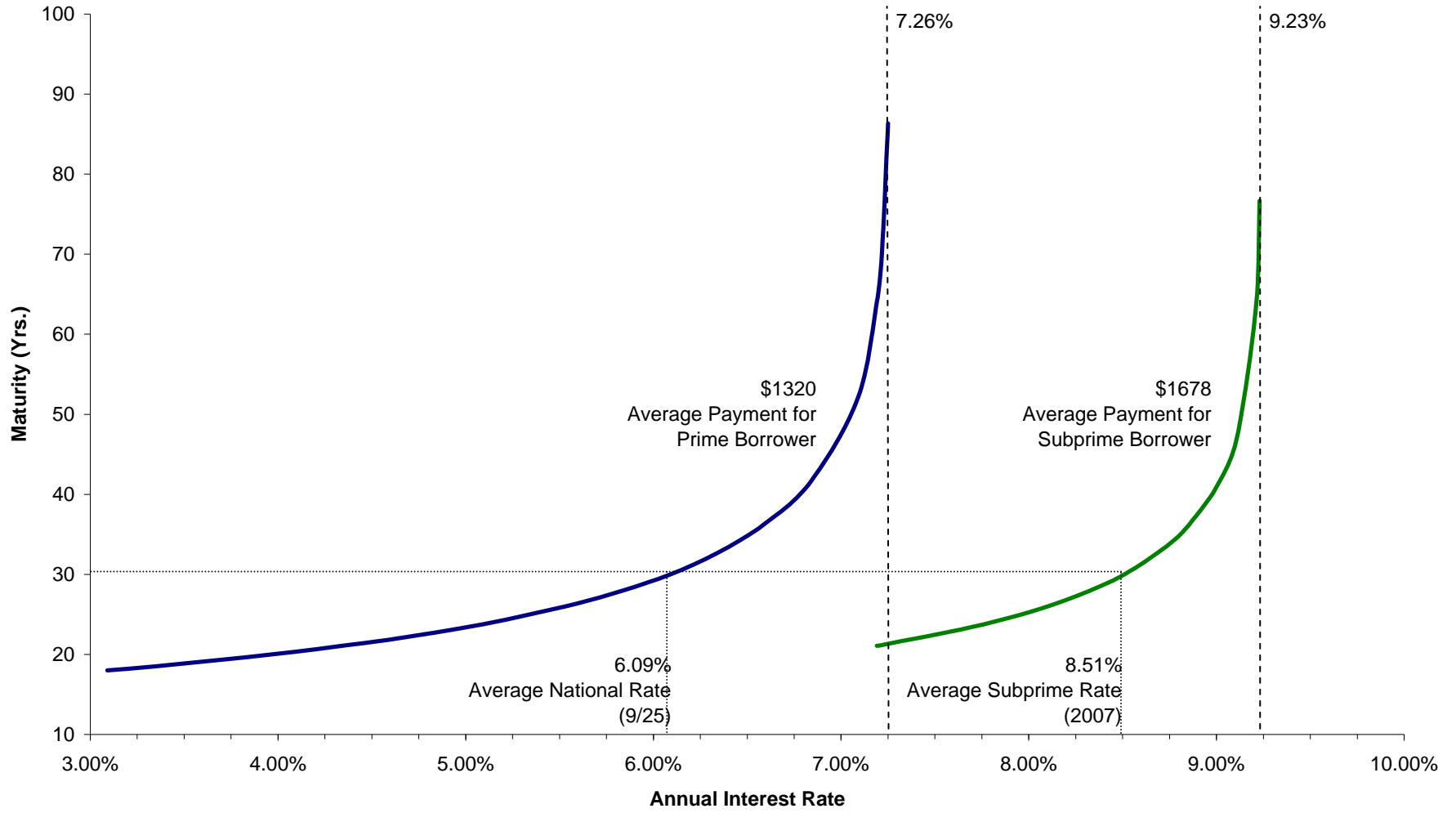


Exhibit 5
**Variable Maturity Fixed-Rate Mortgage for an Average Subprime Loan (\$218,042):
 A Comparison of Average and Subprime Borrowers**



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