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REFORMING THE U.S. MORTGAGE MARKET THROUGH PRIVATE MARKET INCENTIVES

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ABSTRACT

This paper assumes that the government-sponsored enterprises (GSEs, Fannie Mae and Freddie Mac) are unsustainable—the expected costs they create for U.S. taxpayers far exceed their expected benefits. The question addressed is then how to reorganize the U.S. mortgage market in the absence of GSEs. The paper focuses on a specific mortgage-market reform proposal to abolish the GSEs and substitute privative market incentives for mortgage originators, securitizers, and investors, while retaining the FHA and HUD programs in support of lower-income and first-time homebuyers. The paper assembles data showing that stable housing and mortgage activity can be sustained with minimal governmental intervention, including data that demonstrate the success of European housing and mortgage markets that operate with little government intervention.

INTRODUCTION

For almost 40 years, Fannie Mae and Freddie Mac dominated the U.S. mortgage market based on their status as government-sponsored enterprises (GSEs). By 2008, however, the U.S. mortgage and housing markets had crashed, and the two GSEs survived only as the result of a government bailout and conservatorship; see Jaffee (2010b). At year-end 2009, the GSE's total debt and MBS obligations had reached $5.5 trillion and the taxpayer costs of the GSE bailout could reach $400 billion (GAO (2009)).

Although the subprime crash devastated the GSEs, their dominance of the U.S. mortgage market actually expanded: during 2009 and 2010 as much as 70 percent of mortgage market activity was carried out through the GSEs, and another 25 percent was guaranteed through the FHA and VA government programs; see Inside Mortgage Finance (2010). This expanded government role reflects the intense use of the GSEs and FHA/GNMA as policy instruments to revive the mortgage market.[2] Some commentators even suggest that a private market for U.S. mortgages is no longer possible. More accurately, however, most private mortgage-market activity has simply been *crowded out* by the now heavily subsidized government programs.

The goal of this paper is to look beyond the current crisis and to analyze proposals for the long-term reform of the U.S. mortgage market. Following the structure of this volume, it is assumed the GSEs are abolished and play no further role as government-sponsored enterprises within the U.S. mortgage market.[3] The analysis focuses on my specific proposal to reform the U.S. mortgage market by applying purely privative market incentives for mortgage originators, securitizers, and investors, while retaining the FHA and HUD programs in support of lower-income, first-time, and other special classes of

[1] I thank the three anonymous reviewers of this chapter for their useful and constructive comments.

[2] The Federal Housing Administration (FHA) and Government National Mortgage Association (GNMA) reside within the Department of Housing and Urban Development (HUD) and provide direct support for the mortgage market. There are also many indirect mortgage and housing policies, the quantitatively most important of which is the federal tax deductibility of household mortgage interest payments. See Jaffee and Quigley (2007, 2010) for surveys of the full range of government programs in support of the U.S. housing and mortgage markets.

[3] Fannie Mae and Freddie Mac would not be the first government-sponsored enterprises to lose their GSE status. Sallie Mae, the GSE supporting the student loan market, was successfully privatized in 1996; see Lea (2006). Although this chapter does focus on the Federal Home Loan Bank System (FHLBS), I see merit in the recent White Paper proposal by the United State Treasury (2011) and HUD that the FHLBS should be allowed to continue to provide support for the mortgage market activities of small- and medium-sized U.S. banks.

home buyers.[4] The analysis develops the case that private incentives and institutions are sufficient to create a functional and efficient mortgage market, while eliminating the need for taxpayer subsidies and bailouts. The discussion marshals the evidence that stable housing and mortgage activity can be sustained with minimal governmental intervention, including data demonstrating the success in Western European housing and mortgage markets. The discussion concludes with an evaluation of alternative proposals to reform the U.S. mortgage market.

REFORMING THE U.S. MORTGAGE MARKET WITHOUT GSES

Reform of the U.S. mortgage market continues to be a critical policy issue. While the Dodd-Frank 2010 financial reform act took no significant action in this regard, the U.S. Treasury has just released its new white paper, United States Treasury (2011), that provides a framework for mortgage market reform. The proposal evaluated in this section fits within the Treasury white paper framework as the "private market" solution to reorganize the U.S. mortgage markets with private market incentives and institutions substituting for the GSEs. Success will be achieved if the private markets create stable and accessible mortgage credit for U.S. borrowers without requiring taxpayer subsidies or bailouts.

A Proposal to Reform the U.S. Mortgage Market on Private Market Principles[5]

The proposal advocated here would be implemented with just two actions:

- Reduce the conforming loan limit—the maximum loan the GSEs may acquire or guarantee—each year until the limit reaches zero and GSE activity disappears. For example, if the conforming loan limit were reduced by $100,000 per year, it will reach zero in approximately seven years. This is also the average duration of a U.S. mortgage, so most of the GSEs' on-balance sheet mortgage portfolios would run off by that time as well. Steadily reducing the conforming limit has three further advantages:
    - It provides an orderly and smooth transition. In particular, private market lenders and investors will know the GSE domain is shrinking, and should be ready to substitute for it.
    - The substitution of private market activity for the GSEs would be observable. If it were failing to occur, alternative actions could be taken—see point 2 below.
    - The GSE subsidy is removed first from the largest mortgages, thus maintaining the GSE benefit as long as possible for lower-income borrowers.
- The existing FHA and HUD programs supporting lower-income households continue under this proposal. These programs will thus provide a safety net were the private market system to fail to satisfy borrower needs as the GSEs retrench. These programs would also be available were a future financial crisis to require new, temporary, government, mortgage market support.

GSE activity could also be reduced by requiring the GSEs to steadily raise their guarantee fees until they are priced out of the market; see Glaeser and Jaffee (2006), Glaeser (2010), and Jaffee (2010a). This device could substitute for, or expand on, the proposal to reduce the conforming loan limits. The discussion here focuses on the proposal to reduce the conforming loan size because it is simple and readily verifiable.

[4] I include here a variety of programs in support of multifamily housing for which the GSEs played a leading role. For more details on these programs, see Ellen, Tye, and Willis (2010).

[5] This was first described in my *Wall Street Journal* Op-Ed of October 25, 2010, Jaffee (2010a).

The Functional Structure of the U.S. Mortgage Market

To create accessible credit, a mortgage market must coordinate three basic functions:

1. originate new mortgages,
2. design mortgage contracts and set underwriting standards, and
3. place the originated mortgages with long-term investors.

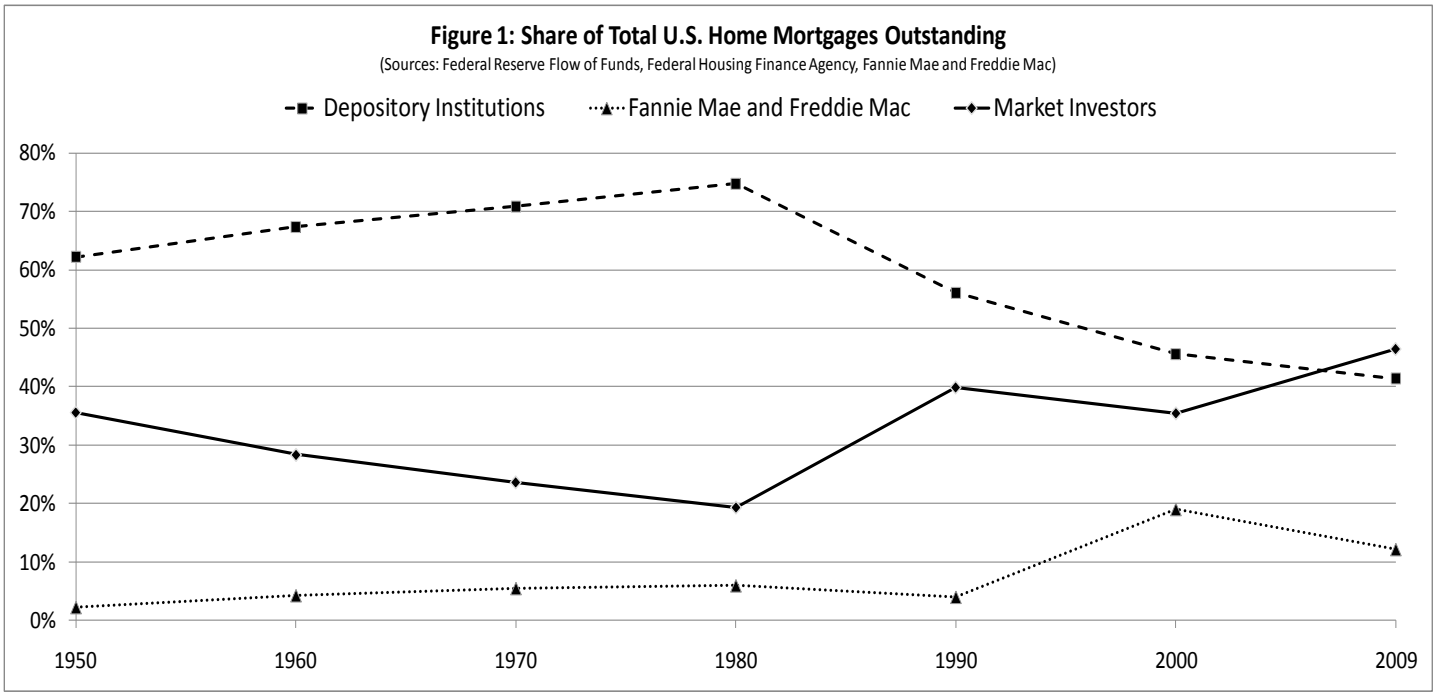
In this section, I discuss how these activities are currently carried out and provide introductory comments on how they might change under a private mortgage market.

The Mortgage Origination Function

The mortgage origination function in the U.S. has always been carried out entirely by private firms, even in the presence of the GSEs and the government's FHA and VA programs. In fact, the GSE charters prohibit them from originating mortgages, and the FHA and VA programs only insure mortgages that are originated to their specifications by private market firms. The termination of the GSEs thus has no direct impact on which firms will originate U.S. mortgages.

Mortgage Design and Underwriting Standards

The GSEs always set the contract design and underwriting standards for the loans they acquired.[6] In the reformed system, the contract design and standards will be set by the private market alone. Since mortgages will be originated only if there are willing final investors, it is these investors who will really set the designs and standards. Given that a significant share of all U.S. mortgage originations have always been placed *outside* the GSEs, the change is more of a degree than of a kind. Specifically, I will argue below that, as the private market replaces the GSEs, mortgage choice will expand and the overall underwriting standards for the U.S. mortgages are likely to rise significantly (i.e. mortgages will generally be safer).



[6] Over time, this standard became automated as part of the computer software maintained by both GSEs, called *Loan Prospector* by Freddie Mac and *Desktop Originator and Underwriter* by Fannie Mae. Using this software, a mortgage originator would know if a GSE would accept a specific pool of mortgages.

The Mortgage Investment Function

The third fundamental mortgage-market function is to place the originated mortgages with long-term investors. Figure 1 shows the percentage of all U.S. home mortgages and related securities held by the three primary investor categories—depository institutions, market investors, and the GSEs—at the end of each decade as available over the last 60 years. 2009 represents the most recently available year-end data, and also represents the last year before the GSEs became government-dominated under their conservatorship. The figure is unique in that it integrates the holdings of whole mortgages and MBS and then computes the respective market shares as a percentage of total home mortgages outstanding.

Between 1950 and 1980, the depository institutions (commercial banks, thrift institutions, and credit unions) held the vast majority of home mortgages, and almost entirely as whole mortgages. The depository institutions were also the primary originators of home mortgages.[7] The depository institutions thus combined the activities of origination and investing: this "make them and hold them" model completely dominated the U.S. mortgage market through 1970.

Several major events occurred in the U.S. mortgage markets about 1970:

1. In 1968, the GNMA government agency was created within HUD to issue the first modern mortgage-backed security (MBS). GNMA only securitizes FHA and VA mortgages.

2. Also in 1968, Fannie Mae was transformed from a government office within HUD into the public/private hybrid of a government sponsored enterprise (GSE).

3. In 1970, Freddie Mac was created as a second GSE.[8]

The three events initiated the mortgage securitization that has dominated the U.S. mortgage markets ever since. Following the prototype created by GNMA, Freddie Mac quickly added its own "PC" brand of MBS, and by the early 1980s Fannie Mae was also issuing its own MBS. Only the GNMA MBS had an official government guarantee against losses from borrower default, but the GSE's MBS traded as if there were a strong, albeit implicit, government guarantee; indeed the three sets of MBS became collectively known as "agency" MBS. As the last step, by the mid-1980s, private-market firms were creating their own MBS brands, known as Private Label Securities (PLS). Because these securities had no government guarantee of any form, they applied the innovation of *structured finance*, whereby the default risk was allocated differentially across the various *tranches*, with the senior tranche protected by the subordinated junior tranche. The most knowledgeable and risk tolerant investors purchased the junior tranche, thus taking on the first-loss position, and were compensated with an appropriately higher interest rate.

The key fact of figure 1 is the dominance by 2009 of market investors and commercial banks as holders of all U.S. whole mortgages and MBS—a combined 88 percent market share, while the retained mortgage portfolios of Fannie Mae and Freddie Mac represent only 12 percent of the total. The mortgage investments of the "market investors" in figure 1 are computed as the residual category. Their growth begins in 1980 and is almost entirely represented by MBS positions, both agency MBS and PLS MBS.

This investor category includes mutual funds, REITs, property and life insurers, pension and retirement funds, and foreign investors. The list demonstrates how mortgage-backed securitization achieved the benefit of expanding the class of investors far beyond the depositories who, otherwise, had to hold directly all the whole home mortgages they originated. By 2009, these market investors were holding 46 percent of all U.S. home mortgages.

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[7] Life insurers were also significant and expanding home mortgage lenders in the U.S. until 1970, with a market share about equal to that of commercial banks. Thrift institutions were the single largest lender group through 1970.

[8] The Federal Home Loan Banks (FHLBs) are also government sponsored enterprises, but in this paper GSE refers only to Fannie Mae and Freddie Mac. As noted earlier, while the FHLBs are not the focus of this chapter, there is merit in allowing this system to continue to support for the mortgage market activities of small and medium sized U.S. banks.

The implication is that a gradual run off of the GSE mortgage portfolios—over the approximately seven-year period proposed here--should be accomplished without any major stress in the flow of funds for U.S. mortgages. Either the market investors or the commercial banks should have no serious problem replacing the 12 percentage point market share left by terminating the GSEs.[9] For example, as shown below, in the European mortgage market commercial banks hold the majority of home mortgages, funded with either deposits or, to a significant degree, by issuing covered bonds to capital market investors. Covered bonds provide an alternative instrument to securitization for funding bank originated mortgages with financial market resources, and I discuss below their possible future role in the U.S. mortgage market.

In this context, it is important to recognize that private label securitization was highly successful from its origins in the mid 1980s until the subprime mortgage crash. Specifically, through 2006, if PLS MBS credit ratings were changed at all, the changes were generally upgrades, not downgrades. The same is true for the loan securitizations that expanded into auto loans, credit card loans, and commercial mortgage backed securities. The losses suffered on subprime MBS is actually the first time large losses had hit any major class of U.S. securitizations. The subprime crash is thus not a problem with securitization *per se*, but with the poor quality of the underlying subprime mortgages; indeed, large losses occurred on subprime mortgages whether the loans were securitized or not. As a result, securitization continues to be an effective instrument for transferring mortgages from originators to third-party investors, and I expect securitized mortgage pool performance will return to its historically positive record as soon as the quality of the underlying mortgages does the same.

In summary, all mortgage investments start in the capital markets, whether through bank depositors, covered bonds, the GSE retained portfolios, or direct MBS investments, and a restriction in one channel is generally and easily offset by growth in the other channels. For this reason, elimination of the GSE on balance-sheet portfolios is a minor concern.

The Performance of the U.S. Mortgage Market Without GSEs

While abolishing the GSEs creates no significant flow of funds issues, the quality of the mortgage and MBS assets that will be available in the market remains a question. At year-end 2009, there were $6.2 trillion in home mortgage MBS outstanding, of which $3.9 trillion, or 62 percent of the total were issued by the two GSEs. Most investors in these GSE MBS relied on the associated implicit Treasury guarantee, and thus ignored the default risk embedded in the underlying mortgages. Following the GSE Conservatorships in September 2008, the implicit guarantees became "effective", so these investors are basically home free. Under the proposal here, however, these assets will mature and new MBS will be issued by private firms and without any form of government guarantee. What will happen then? The answer comes in two parts.

The first part assumes that the quality of U.S. mortgages remains unchanged. In this case, investors must directly face the default risk embedded in these mortgages and will therefore purchase them only with a higher yield. Mortgage interest rates in the U.S. will thus rise. Most empirical studies indicate that the mortgage interest rates on GSE conforming mortgages were approximately 25 basis points (bps) below the interest rates on equivalent mortgages that could not be acquired or guaranteed by the GSEs. Some recent studies suggest an even lower differential between GSE and private mortgages.[10] Even using the 25 bps spread, however, the amount seems quite minor given that mortgage interest rates commonly fluctuate by full percentage points as the result of macroeconomic shifts in the financial markets. Furthermore, the GSE subsidy came at a huge cost to U.S. taxpayers: I noted earlier that current estimates suggest that the final GSE losses may cost U.S. taxpayers upwards of $400 billion. Thus a 25 bps cost seems a low price to pay to avoid all the taxpayer subsidies and costs of maintaining the GSEs.

The second part of the answer is even more optimistic. It reflects the fact that private market lenders and investors will pay much more attention to the quality of new mortgage loans than was their behavior under the GSE-dominated market. The fact is that the GSEs discouraged risk-based pricing in the mortgage market: the GSEs either accepted or rejected the mortgage loans they evaluated. It was basically a pass-fail system. And as most professors can attest, this leads to lower overall performance compared to a system in which superior performance is properly rewarded. A private market system

[9] In particular, as the GSE retained mortgage portfolios run off, so will the debt that funded these portfolios. The investors in this debt thus are one example of a set of investors who could replace the GSEs as mortgage holders.

[10] See Ambrose, LaCour-Little, and Sanders (2004). Some recent press reports suggest mortgage rates could rise as much as a full percentage point, but I know of no studies that document an increase of anywhere near this amount.

will charge lower mortgage rates on safer mortgages and higher mortgage rates on riskier mortgages. The outcome will be a market with overall safer mortgages, which implies lower overall mortgage interest rates.

It is, of course, an empirical question whether the shift to safer mortgages will actually dominate the loss of the 25 bps subsidy provided by the GSEs to conforming mortgage borrowers. There is, fortunately, a large and long-standing market place that can provide useful insights into the likely answer: most of the countries of Western Europe have mortgage markets that have operated for many years with minimal government intervention—and certainly without government intervention at the level of the U.S. GSEs. As we will now see, the mortgage interest rates in these countries are generally lower than those created by the GSE dominated system in the U.S. In fact, we will now see that the performance of the Western European mortgage and housing markets has dominated that of the U.S. on basically all relevant measures.

WESTERN EUROPEAN MORTGAGE AND HOUSING MARKETS[11]

It is more than 30 years since the U.S. mortgage markets operated without a significant presence of GSEs, so an immediate question is whether a private market can adequately provide the mortgage origination and investment services required by a large and dynamic housing market? Fortunately, the mortgage markets of Western Europe have operated for decades with limited government intervention and thus provide a ready-made laboratory to observe the efficiency and effectiveness of basically private housing and mortgage markets.[12]

[11] A parallel paper by Lea (2010) uses a different data set to provide a comparable survey of mortgage markets for developed countries around the world. There is virtually a complete concordance of results for the two data sets.

[12] It may seem surprising that the "socialized" countries of Western Europe have limited government interventions in their housing and mortgage markets. One explanation is that such interventions would likely violate the European Union prohibitions against countries using subsidies to provide unfair advantages to local agents and firms.

TABLE 1: THE PERFORMANCE OF EUROPEAN MORTGAGE MARKETS IN COMPARISON WITH THE UNITED STATES[1]
(Statistical Measures Computed with Annual Data by Country for the Years 1998–2009)

Finland	59.0%	14.4%	4.0%	4.34%	1.39%	58.0%
France	57.4%	18.2%	6.4%	4.90%	1.96%	38.0%
Germany	43.2%	29.5%	1.7%	5.19%	2.32%	47.6%
Ireland	74.5%	84.2%	13.8%	4.43%	1.48%	90.3%
Italy	80.0%	25.7%	3.1%	4.96%	1.81%	21.7%
Luxembourg	75.0%	19.2%	4.8%	4.26%	1.31%	42.0%
Netherlands	57.2%	12.3%	6.6%	5.13%	2.19%	105.6%
Norway	76.7%	24.3%	5.2%	6.28%	1.43%	70.8%
Portugal	76.0%	27.2%	4.1%	4.91%	1.97%	67.5%
Spain	85.0%	60.5%	7.7%	4.29%	1.19%	64.6%
Sweden	66.3%	61.7%	3.4%	3.83%	0.80%	82.0%
UK	69.5%	13.9%	7.1%	5.24%	0.74%	87.6%
European Average	**67.2%**	**31.4%**	**5.6%**	**4.96%**	**1.74%**	**63.3%**
U.S. Value	**67.2%**	**40.0%**	**7.5%**	**5.18%**	**2.13%**	**81.4%**
U.S. Rank	**8th of 16**	**5th of 16**	**4th of 16**	**6th of 16**	**5th of 16**	**5th of 16**

NOTES

[1] Unless noted otherwise, the data are all from European Mortgage Federation (2009), an annual fact book that contains comprehensive mortgage and housing market data for the years 1998 to 2009 for 15 Western European countries and the United Sta

[2] Computation based on housing starts where available; all other countries use housing permits.

[3] The mortgage interest for the European countries is the country's representative variable mortgage rate; see European Mortgage Federation. The U.S. rate is the Freddie Mac 1-year ARM commitment rate.

[4] The mortgage interest rate spread equals the mortgage interest rate (column 4) relative to the Treasury bill rate of each country from the International Financial Statistics of the International Monetary Fund where available. Many of the Eurozone countries no longer publish independent Treasury bill rates; the French Treasury Bill rate is used as the standard in these cases.

The Performance of Western European Housing and Mortgage Markets[13]

Table 1 compares the U.S. and Western European mortgage markets for a range of quantitative attributes from 1998 to 2009 based on a comprehensive data base of housing and mortgage data for fifteen European countries from the European Mortgage Federation (2009).

Column 1 compares the 2009 owner occupancy rates for the U.S. and European countries. The U.S. value is 67.2 percent, which is just below its peak subprime boom value. It is frequently suggested that the high rate of homeownership is the result of the large U.S. government support of the mortgage market, including the GSEs. It is thus highly revealing that the U.S. rate is just at the median—8th out of the 16 developed countries—and precisely equals the average value for the European countries. Furthermore, the lower owner occupancy rates in some of the countries, Germany for example, appear to be the result of cultural preferences rather than government inaction. A full analysis of the determinants of owner occupancy rates across countries should also control for the age distribution of the population, since younger households, and possibly the oldest households, may have lower ownership rates in all countries. Chirui and Jappelli (2003) provide a start in this direction, showing that lower downpayment rates are a significant factor encouraging owner occupancy after controlling for the population age structure in a sample of 14 OCED countries. The U.S. has also generally benefitted from very low downpayment rates, but it still has an average ownership rate, reinforcing the conclusion that the government interventions have been largely ineffective in raising the U.S. home ownership rate relative to its peers.

Column 2 measures the volatility of housing construction activity from 1998 to 2009 based on the coefficient of variation of housing starts as a measure of relative volatility. The U.S. relative volatility is the 5th highest out of the 16 countries, implying that the government interventions have failed to reduce U.S. housing cycles relative to those in Western Europe.

Column 3 measures the volatility of house price changes based on the standard deviation of the annual house price appreciation from 1998 through 2009. Here the U.S. stands 4th, meaning the country has faced a relatively high rate of house price volatility. This negative result is all the more significant because the U.S. is far larger than any of the individual European countries, and thus the benefits of regional diversification should have lowered the observed U.S. volatility.

Column 4 compares the level of mortgage interest rates in Western Europe and the U.S., using "representative variable mortgage rates" for Europe and the Freddie Mac one-year ARM commitment rate for the U.S.[14] The column shows that the U.S. has the sixth highest average mortgage interest rate from 1998 to 2009, and exceeds the Western European average by 22 basis points. Since overall interest rates also vary across countries, as a further test, column 5 shows the average spread between the mortgage rate and the Treasury bill rate for each country. The U.S. ranks fifth highest based on the spread and exceeds the Western European average by 39 basis points. Of course, mortgage contract terms, such as downpayment requirements, also vary by country, and the resulting variations in mortgage risk will be reflected in the mortgage rates.[15] Below, I return to the question of underwriting standards in a reformed U.S mortgage market. For now, the primary conclusion is that U.S. government mortgage market interventions have failed to improve access to homeownership through the channel of lower mortgage rates.[16]

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[13] See European Central Bank (2009) for an extensive review of housing finance in the European Union countries.

[14] Variable mortgage rates are the only data systematically available for Europe over the required time span and for all the countries; see European Mortgage Federation (2009) for the detailed definitions. The Freddie Mac one-year ARM rate was chosen as the closest equivalent for the U.S.

[15] For example, Neuteboom (2004) has computed the *net interest rate*—the nominal interest rate adjusted for contractual, cost, and subsidy factors—for a range of European countries. Austria, Ireland, and Spain are the only countries for which the net interest rate is significantly higher than the nominal rate—about 100 basis points in each country. It is unclear how U.S. mortgage rates would fare under this criterion.

[16] The conclusion of generally higher mortgage interest rates in the United States is confirmed in European Central Bank (2009), p. 71.

Finally, column 6 shows the 2009 ratio of home mortgages outstanding to each country's annual GDP, a standard measure of the depth of a country's mortgage market. The U.S. ratio is 81.4 percent which puts it 5th within this group of 16 developed economies. A relatively high U.S. result is not surprising given the large mortgage subsidies provided through the GSEs and other channels. It is noteworthy, moreover, that four Western European countries achieved even higher ratios without substantial government interventions in their mortgage markets.[17]

Mortgage defaults are a remaining and obviously important mortgage market attribute to consider in comparing European and U.S. mortgage markets. Table 2 tabulates the available recent data on mortgages in arrears, or impaired, or in foreclosure for the available Western European countries as well as the United States. The most dramatic difference between Western Europe and the U.S. is in the foreclosure rate. The U.S. foreclosure rate at year-end 2009 is 4.58 percent for all mortgages and 3.31 percent for prime mortgages (not to mention 15.58 percent for subprime loans). In contrast, Spain and the U.K. are two of the most distressed countries, but their foreclosure rates are 0.24 percent and 0.19 percent respectively. Ireland is the other Western European country currently facing serious mortgage distress as shown by its high rate of mortgage arrears in table 2. Ginsberg and Turner (2010), however, report that actual foreclosure rates in Ireland remain very low. More generally, the European Central Bank (2009, p. 73) states, "borrowers in Euro area countries do not generally have major incentives to default on a mortgage, since they remain personally liable for any difference between the value of the property and the amount of the loan."

The clear conclusion is that European mortgage default activity is very benign compared with the United States. To be clear, countries such as Iceland, Ireland, Greece, Portugal, and Spain are facing major banking crises. However, domestic mortgage defaults are not a primary source of their bank difficulties: if the bank losses are real estate related at all, they primarily arise from construction loans and/or commercial mortgages, and not residential mortgages.

The overall conclusion has to be that Western European residential mortgage and housing markets have outperformed the U.S. markets over the full range of available measures. Although data are not provided here, a similar conclusion would hold for the Australian, Canadian, and New Zealand mortgage markets. The next section considers the factors that created the superior performance in Europe and other countries.

TABLE 2: TROUBLED MORTGAGES, WESTERN EUROPE AND THE UNITED STATES

	≥ 3 Month Arrears %	Impaired or Doubtful %	Foreclosures	Year
Belgium	0.46%			2009
Denmark	0.53%			2009
France		0.93%		2008
Ireland	3.32%			2009
Italy		3.00%		2008
Portugal	1.17%			2009
Spain		3.04%	0.24%	2009
Sweden		1.00%		2009
UK	2.44%		0.19%	2009
U.S. All Loans	9.47%		4.58%	2009
U.S. Prime	6.73%		3.31%	2009
U.S. Subprime	25.26%		15.58%	2009

Source: European Mortgage Federation (2010) and Mortgage Bankers

[17] Warnock and Warnock (2008) and Renaud (2009) note that significant depth for a country's mortgage market requires a sound legal and accounting infrastructure. All the countries in table 1 have such an infrastructure, but creating it is of fundamental importance if developing countries are also to create significant mortgage markets.

TABLE 3: GOVERNMENT MORTGAGE PROGRAMS

Country	Government Mortgage Insurer	Government Security Guarantees	Government Sponsored Enterprises
Denmark	No	No	No
Germany	No	No	No
Ireland	No	No	No
Netherlands	NHG	No	No
Spain	No	No	No
U.K.	No	No	No
Australia	No	No	No
Canada	CMHC	CMHC	No
Japan	No	JHF	Possible
Korea	No	No	Korean Housing Finance Corp.
Switzerland	No	No	No
U.S.	FHA	GNMA	Fannie Mae, Freddi Mac, FHLBs

Source: Lea (2010)

The Unique Features of Western European Mortgage Markets[18]

What features of Western European mortgages or mortgage markets have created this outstanding performance? This section considers a range of possible answers: government intervention, MBS versus covered bond systems, and mortgage contract terms and conditions.

Government Intervention[19]

Given the multi-dimensional structure of government interventions in mortgage markets, no single metric can provide a complete comparison of the Western European countries with the United States. It is possible, however, to distinguish at least three separate channels for government intervention and to make comparisons one channel at time. The channels are:

[18] Few studies have provided quantified and institutional comparisons of mortgage systems among the developed countries of the world. Boleat (1985) provides an early, unique, and book-length description of housing finance systems in developed and developing countries around the world. Diamond and Lea (1992) dedicate a full issue of the *Journal of Housing Research* to country studies and a statistical comparison of the efficiency of alternative mortgage market systems. The consulting firm Mercer Oliver Wyman has participated in two studies of the European mortgage markets, Mercer Oliver Wyman (2003, 2005). Most recently, Andre (2010) provides an overview of OECD housing and mortgage markets.

[19] Lea (2010) and Mercer Oliver Wyman (2003 and 2005) provide good overviews of European government interventions—including subsidies, taxation, and regulation-- for the mortgage markets.

1. Government support for low-income mortgage borrowers.

2. Direct purchases/guarantees of middle-market mortgages by government sponsored entities.

3. Indirect government mortgage market support.

We shall see that the level of U.S. government support generally exceeds the European average, and the U.S. government interventions often rank at the top of the list. The superior European performance has thus been achieved with very modest government support.

1. **Support for Low-Income Borrowers**. The U.S. mortgage reform proposal under consideration here continues the existing FHA and HUD programs that provide mortgage and housing market support for lower income families. Furthermore, it appears that the U.S. and the Western European countries carry out a similar range of programs in support of lower-income households. The conclusion is that government programs in support of lower-income borrowers are not a differentiating factor with regard to the performance of the European mortgage markets.

2. **GSE Activity**. No European government entity approaches the dominant role of the GSEs in the U.S. mortgage market. In the absence of GSEs, almost all Western European mortgage lending is carried out privately by banks, funded by bank deposits and covered bonds. This conclusion is confirmed by the data from Lea (2010) shown in table 3.

3. **Indirect Government Support**. Governments may support their mortgage markets through indirect tax and subsidy instruments. While countries vary widely in such support, the U.S. programs rank at or near the top of the list. The most significant program is the personal income tax deductibility of mortgage interest. The U.S. appears to allow the most complete deductions, while the U.K.—as a primary example—allows no deduction at all.[20] Other unique U.S. tax benefits include special capital gain rules and the tax deductibility of state property taxes.

As a summary of the comparative role of government sponsored enterprises in Europe and the U.S. it is useful to consider the conclusion of Coles and Hardt (2000, p. 778), the latter author being the Secretary General of the European Mortgage Federation at the time:

> There is no national or European government agency to help lenders funds their loans. Mortgage loans have to be funded on the basis of the financial strength of banks or the intrinsic quality of the securities. EU Law (Article 87 and 88 of the EC treaty) outlaws state aid in the form of guarantees as there may be an element of competitive distortion.

The overall conclusion has to be that the strong performance of Western European housing and mortgage markets has been achieved with decidedly less government intervention than the U.S. The analysis thus continues by looking at two other factors that may be responsible for the success in Western European housing and mortgage-market performance.

Covered Bonds versus Mortgage-Backed Securitization

European mortgage markets use relatively little mortgage-backed securitization, but covered bonds are a significant factor and serve a similar function of linking bank lenders with capital market investors. Table 4 shows the ratios of covered bonds to residential mortgages outstanding for the same set of Western European countries covered in table 1. While most of the countries use covered bonds to fund from 10 to 20 percent of their mortgages, covered bonds dominate in three

[20] European Central Bank (2009), p. 84, provides a detailed description of the income tax benefits afforded mortgage finance in a large number of European Union countries.

countries, Denmark (100 percent), Sweden (57 percent) and Spain (50 percent). Tests for statistical correlations indicate no significant relationships between the covered bond use in table 3 and the mortgage market performance in table 1.[21]

TABLE 4: 2009 RATIO COVERED BONDS TO RESIDENTIAL MORTGAGES OUTSTANDING

Austria	7.3%
Belgium	N.A.
Denmark	100.0%
Finland	6.5%
France	23.9%
Germany	19.6%
Ireland	20.1%
Italy	4.2%
Luxembourg	0.0%
Netherlands	4.7%
Norway	26.3%
Portugal	18.5%
Spain	49.6%
Sweden	56.7%
UK	14.7%

Source: European Covered Bonds Council (2010)

In comparing the U.S. and European systems, it is noteworthy that private-label MBS investors look only to the mortgage collateral to protect against credit losses, whereas covered-bond investors receive a bank guarantee as well as the housing collateral. On the other hand, covered bonds are issued as a single-class obligation, whereas MBS use their multi-class structured format to allocate the primary credit risk to the most junior tranche.[22] The implication is that the MBS system is better able to handle relatively risky mortgages by allocating the risk of the junior tranche to more knowledgeable and risk tolerant investors. Covered bonds, in contrast, are generally backed by very high quality mortgages, including the associated contractual and regulatory requirements.

The conclusion is that a covered bond system is most effective with relatively safe underlying mortgages, whereas securitization is most valuable when the mortgages contain significant credit risk. Thus both systems have adapted to the nature of the underlying mortgages.

Western European Mortgage Market Success: Safe Mortgages

Mortgage contract features and underwriting standards are the one remaining topic for comparison between European and U.S. mortgage markets. The U.S. is renowned for offering a wide menu of mortgage choice. It turns out, however, that European countries also offer a wide range of mortgage contracts, albeit with more of the variation occurring across countries than within each country.[23] This section discusses three key mortgage attributes that have differentiated U.S. and Western European mortgages:

- Fixed-rate versus adjustable rate mortgages.

[21] Covered bonds are also backed by local government loans in some of these countries, but those bonds are not included in table 3.

[22] The multi-class structured instruments also allow the interest rate risk to be distributed among those investors who are most tolerant of this risk.

[23] Lea (2010) provides a detailed discussion of the mortgage contracts offered in a range of developed countries.

- Prohibitions against prepayment penalties.

- Prohibitions against lender recourse to a borrower's non-housing assets in default.

Fixed-Rate versus Adjustable-Rate Mortgages

European countries historically specialized in either fixed-rate mortgages (FRMs) or adjustable-rate mortgages (ARMS). For example, the U.K. has long emphasized ARMs, whereas Denmark primarily used FRMs. The trend throughout Europe, however, is to offer a greater menu of contract options, and it appears that both ARMs and FRMs are now available in most countries. For the U.S., a common view is that the GSEs are critical for the provision of FRMs in the United States, but the facts are quite the opposite. First, GSE MBS impose 100 percent of the interest rate risk on the third-party investors. Second, GSE MBS generally allow free prepayment options for the borrowers, thus accentuating the interest rate risk imposed on the investors. Neither of these features promotes FRMs. Indeed, the U.S. ARM share has reached 35 percent during at least three separate episodes over the last 15 years, while the ARM share in the European Union is about 40 percent; see Krainer (2010) and European Central Bank (2009). Finally, the availability of FRMs in most European countries, and the dominance of FRMs in several European countries, is a final demonstration that GSEs are not at all essential for FRM contracts.

Government Regulations Prohibiting Prepayment Penalties

Some U.S. states restrict the ability of residential mortgage lenders to impose prepayment penalties on their mortgage contracts. In addition, the GSEs have always resisted acquiring mortgages with prepayment penalties, in part as a mechanism to standardize their MBS. This contrasts with the U.S. market for commercial mortgages, where prepayment penalties in the form of yield maintenance or defeasance are standard. European residential mortgage contracts also regularly require significant prepayment penalties, very much like the penalties required on U.S. commercial mortgages; see Mercer Oliver Wyman (2005). The absence of prepayment penalties on standard U.S. FRMs is estimated to add approximately 50 basis points to the mortgage interest rate. Prepayment penalties are thus one factor that has contributed to the superior performance of the European mortgage markets. However, private U.S. mortgage markets will be able to provide comparably lower U.S. mortgage rates for those U.S. borrowers who are willing to accept penalty costs if and when they prepay a mortgage.

Recourse and Limited Mortgage Defaults

Recourse and limited mortgage defaults are perhaps the most important distinction between U.S. and Western European mortgage contracts. In the U.S., recourse varies across the states, and even where it is allowed, it is rarely applied; see Ghent and Kudlyak (2009). Recourse is rarely applied because a bank must satisfy the strong U.S. consumer protection rules before it can obtain a recourse judgment, and consumers always have the option to apply for a relatively easy bankruptcy. Recourse is therefore not an important safeguard for U.S. mortgage investors. In Europe, in contrast, recourse is standard and enforcement is firm on most European mortgage contracts, with the effect that European lenders, borrowers, and governments act in their mutual interest to create safe mortgages. [24] Even with rapidly falling home prices, default rates on European mortgages remain remarkably low from a U.S. perspective. Furthermore, the superior European mortgage market performance applies to most market indicators as shown in table 1.

THE LIKELY STRUCTURE AND PERFORMANCE OF A PRIVATE U.S. MORTGAGE MARKET

By combining information from the above case studies of 15 European counties with the unique features of the U.S. housing and mortgage markets, a view of the likely structure and performance of a private U.S. mortgage market can be developed. Of course, future regulations may either facilitate or rule out certain features, so the view put forth here is necessarily conditional on how mortgage market reform is actually implemented.

[24] European Mortgage Federation (2007) describes the mortgage collateral rules and recourse across all of the Western European countries.

As developed earlier in this chapter, the fundamental features of a mortgage market are described by the mortgage origination, contract design and underwriting, and final investment functions. I now use these features to describe the changes that can be expected as the U.S. shifts from a GSE-dominated to a private-institution-dominated mortgage market.

1. **Mortgage Originations**. U.S. mortgages have always been originated by private firms and banks, and this will surely continue in the absence of the GSEs.

2. **Contract Design and Underwriting**. The absence of GSEs will immediately allow a private market to provide a greatly expanded range of contract choices. The GSEs focused on creating a single standardized mortgage contract, the 30-year, fixed payment, fixed-rate, mortgage with no prepayment penalties and effectively no recourse to borrower assets beyond the housing collateral. While private lenders did create a range of alternative mortgages, including ARMS, Jumbos, and the like, they were always swimming upstream against the subsidized GSEs.

   Without the GSE obstacle, a private market will provide, in effect, an extended menu: fixed-rate versus adjustable-rate, prepayment penalties or not, recourse or not, and so on. A lower mortgage rate will result when the choice benefits the lender; a higher rate will result when the choice benefits only the borrower. Each borrower will choose the contract features that are the best in his or her individual circumstance. Of course, very complete and accessible disclosures of the terms and conditions of these mortgages is required if borrowers are to make informed decisions. The July 2008 expansion of the Truth in Lending regulations by the Federal Reserve (2008) already ensures a great deal of this disclosure, and I fully support further expansion to fill in any missing parts. The key principle is that informed borrowers will make good decisions as long as a competitive mortgage market provides a full menu with fair prices.

   I expect the outcome of this process will be a U.S. mortgage market in which the mortgages are intrinsically safer, with default and foreclosure outcomes that more closely resemble the European markets than the recent U.S. subprime experience. The fact is that mortgage default is incredibly costly to all parties: lenders and investors face the legal costs of foreclosure and the need to sell properties under distressed conditions, borrowers lose their homes and credit ratings, and the government is then called on to fix the problem after the fact. A key virtue of a private mortage market is that both risky and safe mortgages will be originated, but the risky contracts will pay the full price of their risk, and the safe mortgages will realize the full benefits of their safety. Almost surely, the end result will be decidedly safer mortgages in the U.S.

3. **Mortgage Investors**. On the surface, the changes for mortgage investors will be minor. The GSEs hold approximately 12 percent of all U.S. whole home mortgages and MBS, and this share will be readily taken up by the depository institutions and capital market investors. At a deeper level, however, the changes will be more substantive. The market will determine who holds the new mortgages: depository institution mortgage portfolios can be funded with deposits or with covered bonds, or they can be sold to third-party investors through traditional securitization. The preferred outcome will depend to an important degree on the quality of the underlying mortgages. Mortgage pools of very high-quality mortgages may well be retained by the depository lenders and funded with either deposits or covered bonds. Mortgage pools of riskier mortgage will more likely be securitized, taking advantage of *structured finance* to allocate the first-loss risk among the most knowledgeable and risk tolerant investors.

   It is not always recognized that over the last 100 years of U.S. (and I would say world) finance, the demand for virtually risk-free investments has generally exceeded the readily available supply. A large payoff was thus available to any entrepreneur who could expand the supply of AAA investments. In fact, the demand for such securities was a major force leading to the creation of the senior and super senior AAA tranche of the subprime MBS and CDO securitizations. Alas, these senior and super senior securities turned out to be nowhere near as safe as advertised--wine from water is not easy. But the high demand for AAA investments persists today, perhaps even more so than ever, and truly high-quality mortgages can become a very important part of the solution, as backing for either AAA-rated covered bonds or senior MBS tranche. The mortgage markets and the capital markets will both benefit.

4. **Further Features**. The recreation of the U.S. mortgage market without the GSEs will surely motivate a variety of renewed activities and new innovations. For example, there could very well be an expanded role for private mortgage insurance (PMI) in the U.S. mortgage market. Although the GSEs were a major customer for the PMI industry, modern U.S. PMI existed and expanded well before the GSEs became important. More generally, a key benefit of a private mortgage market is that the market itself will test and evaluate the proposed innovations, then implement the successes and discard the failures. And this activity will occur without imposing any costs on U.S. taxpayers.

5. **Regulatory Requirements**. While I expect a private mortgage market will generally operate in a safe and stable fashion, just it has in Western Europe, a critical role for regulation and government oversight definitely remains. I have already noted that the FHA and HUD programs continue as part of my proposal. I have also noted that the borrower protections and full disclosures under the Truth in Lending Act and similar statutes are critical. I now add to this list the need for expanded regulatory oversight of the depository institutions in regard to all their activities as mortgage originators, servicers, investors, and covered bond issuers. There are two reasons for my emphasis on such depository regulation: (1) deficient bank regulation was a major source of the subprime crisis and this must be fixed; (2) a private mortgage market will likely channel a greater volume of mortgage lending, investing, and securitizing through the banking system, and given that taxpayers backstop the banking system through the government's deposit insurance, it is critical that the taxpayer's interests be protected by aggressive regulation.

ALTERNATIVE PROPOSALS

The need to reform the U.S. mortgage markets has been recognized at least since 2008 when the full dimensions of the GSE and subprime crash became evident. For example, Federal Reserve Chairman Ben Bernanke (2008) provided an early call for action, including a taxonomy of alternatives ranging from a completely private market to recreating the GSEs. The Government Accounting Office (2009) and Congressional Budget office (2010) have followed with a similar taxonomy, including factual comments on the alternatives. And the long-awaited U.S. Treasury/HUD white paper and proposal, United State Treasury (2011), was released on February 12, 2011.

Consistent with the premise of this volume, the Treasury white paper sets the unequivocal goal of winding down the GSEs. And consistent with the specific proposal offered in this chapter, the white paper proposes to achieve this goal by lowering the conforming loan limits and raising the GSEs guarantee fees. Furthermore, the white paper's "Option 1" is in effect the private market proposal already analyzed in this chapter. The white paper's "Option 2" is also closely aligned with the proposal of this chapter, since it primarily adds the capability to expand rapidly the FHA or a similar government guarantee program in the face of a future crisis.

The white paper's "Option 3," however, goes further by creating the possibility of government mortgage guarantees on a continuing basis and on a potentially wide range of mortgages. In one interpretation, this option replaces the government guarantee of the GSEs with a direct guarantee on all conforming MBS. Specific versions of similar proposals are available from Acharya, Richardson Van Nieuwerburgh, and White (2011), the Center for American Progress (2010), Ellen, Tye, and Willis (2010), Hancock and Passmore (2010). While the plans differ in details and specificity, a composite can be summarized:

1. The plans anticipate that the government will set quite high underwriting standards for all mortgages that underlie the qualifying MBS.

2. Investors in the qualifying MBS will be protected from default losses by a mixture of private capital and government guarantees (with the government component considered essential).

3. Both the private and government insurers will receive risk-based insurance premia.

For simplicity, I will refer to this structure as the "insurance proposal." It is clearly preferable to any plan that would recreate the GSEs, since for the first time the government would control the underwriting standards and be compensated for the risk it bears. The key questions are:

1. Can the government carry out this activity effectively and efficiently?

2. Is the government's role important for a well-functioning U.S. mortgage market?

My answer to both questions is negative, which I take up in turn.

Regarding the first question, the government is generally very ineffective in setting the standards for its insurance programs. Fundamentally, government is unable to enforce any risk-based pricing (meaning that greater risks should pay appropriately larger premiums); the actual outcome for government plans is almost always significant subsidies, especially for the highest risks. This occurs because political pressures, understandably, make it very difficult for a government program to set high underwriting standards that exclude many higher-risks from the program. And once higher risks are allowed into the program, the same political pressures make it very difficult to impose higher premiums on these riskier policy holders.

As a result government insurance programs invariably have two negative effects. First, by subsidizing the riskier participants, the government actually encourages these participants to put themselves in harm's way. Second, sooner or later, the riskier pool will create large losses, and taxpayers will pay the costs. The National Flood Insurance Program provides a case study. While for many years the program appeared to break even—with premiums covering losses—it turned out that no reserves had been accumulated for the "big one." This became clear only when the losses created by Katrina required a taxpayer bailout on the order of $22 billion. Bank insurance provided by the Federal Deposit Insurance Corporation (FDIC) is another example. Further discussion of failed government insurance programs is provided in Jaffee and Russell (2006).

With regard to the second question, government insurance is simply not needed. Most Western European mortgage markets operate without government insurance, and there is no evidence that this has impeded their performance. Furthermore, the U.S. already has two forms of mortgage insurance programs that can, and would, be expanded as needed. First, private mortgage insurance (PMI) already exists, including a well structured regulatory regime. It is likely that certain classes of mortgages should be insured, and that the PMI industry would provide the insurance. Second, the government's FHA program for insuring mortgages for lower-income and other socially worthy borrowers program has existed since 1934, and it has never required a government bailout. The FHA program could be rapidly expanded if it did occur that the private markets were failing to provide adequate access to the U.S. mortgage market. This is, in effect, the Treasury white paper's Option Two. An example could be a future financial crisis—whether originating in the housing market or elsewhere in the economy--in which the supply of private capital to the mortgage market is disrupted.

SUMMARY AND CONCLUSIONS

This paper has developed and evaluated a proposal to reform the U.S. mortgage system on private-market principles and without any form of government-sponsored enterprises. The proposal is implemented through the simple process of reducing the GSE conforming loan limit by, say, $100,000 annually, with the result that the GSEs will cease to operate after about seven years. The transition process with be smooth, anticipated by the private markets, and allow for a government reaction if it fails to proceed as expected. The proposal also advocates continuing the current FHA and HUD programs in support of lower-income families. In this form, the proposal is very similar to the "Option 1" and "Option 2" proposals released in the February 2011 white paper by the U.S. Treasury (2011) and HUD.

The primary issue facing the proposal is actually very direct: will a private market provide the stability and access to mortgage credit required by U.S. homebuyers? The paper provides a fully affirmative answer based on two sets of evidence. First, the GSEs have actually played no role in originating U.S. mortgages and a relatively minor role as investors in these mortgages. Thus it will not be difficult for the private markets—principally depository institutions and capital market investors—to replace the GSEs. Second, Western Europe provides a very important case study of the high performance that is achieved by private mortgage markets in the absence of significant government interventions.

The analysis in the paper further outlines the likely structure of a private U.S. mortgage market operating without GSEs. Mortgage origination activity would be unchanged from the current system, since originations are already only carried out

by private market entities. Mortgage investing would similarly continue to be dominated by the two largest existing holders, depository institutions and capital market investors. Depository institutions will continue to hold a significant amount of whole mortgages in their portfolios, and the capital market investor portfolios will continue to be dominated by mortgage-backed securities. It is also likely that covered bonds will play a more important role in the U.S. market, as depository institutions fund some of their mortgage portfolios by issuing secured debt to capital market investors. In this fashion, the market should readily absorb the 12 percent market share vacated by the departing GSEs.

The most important changes in the U.S. mortgage market are likely to occur in the types of mortgage contracts that are offered, and the underwriting standards that are imposed on the borrowers. A private mortgage market is likely to provide borrowers with an expanded menu of choices, including such features as (1) fixed-rate versus adjustable rate loans, (2) contracts with or without prepayment penalties, and (3) contracts with or without recourse to the borrower's non-housing assets. At the same time, borrowers will face risk-based pricing: borrowers who are intrinsically risky or who choose riskier mortgages will face appropriately higher mortgage rates, while safer borrowers and safer contracts will be rewarded with lower mortgage rates. Given this direct incentive, borrowers will overall choose safer mortgages, thus reducing the average mortgage interest rate. Based on the Western European experience, it appears that U.S. mortgage interest rates will actually be lower under the proposed system, since the benefits of safer mortgages will more than offset the loss of government subsidies. Of course, the proposal is also a complete win for U.S. taxpayers, since the taxpayer costs of the GSE subsidy far exceeded all of its possible benefits.

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