BEYOND GSES: EXAMPLES OF SUCCESSFUL HOUSING FINANCE MODELS WITHOUT EXPLICIT GOVERNMENT GUARANTEES

HEARING

BEFORE THE

COMMITTEE ON FINANCIAL SERVICES

U.S. HOUSE OF REPRESENTATIVES

ONE HUNDRED THIRTEENTH CONGRESS

FIRST SESSION

JUNE 12, 2013

Printed for the use of the Committee on Financial Services

Serial No. 113–28

U.S. GOVERNMENT PRINTING OFFICE

81–763 PDF WASHINGTON : 2013

For sale by the Superintendent of Documents, U.S. Government Printing Office
Internet: bookstore.gpo.gov Phone: toll free (866) 512–1800; DC area (202) 512–1800
Fax: (202) 512–2104 Mail: Stop IDCC, Washington, DC 20402–0001

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CONTENTS

BEYOND GSES: EXAMPLES OF SUCCESSFUL HOUSING FINANCE MODELS WITHOUT EXPLICIT GOVERNMENT GUARANTEES

Wednesday, June 12, 2013

U.S. HOUSE OF REPRESENTATIVES,
COMMITTEE ON FINANCIAL SERVICES,
Washington, D.C.

The committee met, pursuant to notice, at 10:05 a.m., in room 2128, Rayburn House Office Building, Hon. Jeb Hensarling [chairman of the committee] presiding.

Members present: Representatives Hensarling, Miller, Royce, Capito, Garrett, Neugebauer, McHenry, Pearce, Posey, Fitzpatrick, Westmoreland, Luetkemeyer, Huizenga, Duffy, Hurt, Stivers, Fincher, Stutzman, Mulvaney, Hultgren, Ross, Pittenger, Wagner, Barr, Cotton, Rothfus; Waters, Maloney, Velazquez, Watt, Sherman, Capuano, Hinojosa, Clay, Lynch, Scott, Green, Ellison, Himes, Peters, Carney, Sewell, Foster, Delaney, Sinema, Beatty, and Heck.

Chairman HENSARLING. The committee will come to order. Without objection, the Chair is authorized to declare a recess of the committee at any time. The Chair now recognizes himself for 5 minutes for an opening statement.

This is the 10th full or subcommittee hearing that we have had on the topic of forging a new sustainable housing policy for America.

Clearly, all Americans want a healthier economy and they want a fair opportunity to buy a home that they can actually afford to keep. It is clearly time to displace a system of false hopes and broken dreams which have arisen from misdirected government policies and subsidies that regrettably have either incented, browbeat, or mandated financial institutions to loan money to people to buy homes they all too often could not afford.

We know all too well the legacy of these policies: the shattered lives of millions of people who lost their meager savings rolling the dice on a home purchase that Washington encouraged them to make; almost $200 billion of taxpayer bailouts; and a wrecked economy from which this Nation has yet to recover.

Regardless of its relative merits, the Dodd-Frank Act was silent on Fannie Mae and Freddie Mac: silent as to the existence of a government-sanctioned duopoly that was at the epicenter of the crisis; silent as to their cooked books; silent as to a system where Wall Street investors offloaded their risk onto Main Street taxpayers; and silent as to their bullying tactics.

Thus, the task of reforming Fannie and Freddie falls upon us. Notwithstanding the damage they have caused in their checkered past, many cannot conceive of a housing finance market without a government-guaranteed Fannie and Freddie. Thus, our hearing today will examine alternative models and will feature a panel of some of the most respected and knowledgeable experts on the subject.

I believe this hearing will help establish a number of propositions: First, the United States is practically alone in the modern industrialized world in having GSEs directly guarantee mortgage securities. We are practically alone in the level of government subsidy and intervention into our housing market.

We were also practically alone in the level of turmoil in our housing markets as measured by foreclosures and delinquencies. Clearly, there is a direct causal link. By almost any measure, Fannie and Freddie have not propelled the United States to housing finance nirvana. When compared to other modern industrialized nations, whether we look at rates of homeownership or spreads between mortgage interest rates and sovereign debt, the United States can usually be found either at the middle or the bottom of the pack.

However, there is one category where the United States has clearly led. Regrettably, that category is foreclosure rates. In other words, only in America can you find a government that subsidizes housing more, so that we the people can get less.

Next, I believe this hearing will help remind us that we don't have to look overseas to see a well-functioning housing market without GSEs. Indeed, we don't have to look any further than our own jumbo market that has operated without them. Prior to the housing bust, the jumbo market was approximately 20 percent of the total housing market. There was capital, liquidity, competition, the 30-year fixed mortgage, consumer choice, and innovation all right here in America. And all of this was delivered for about 25 basis points or a quarter of 1 percent interest differential from the GSEs, a modest amount to avoid taxpayer bailouts, government control, and economic catastrophe.

And I add parenthetically, as we have learned from previous hearings, whatever modest interest rate benefit the GSEs delivered to home buyers was offset by the cost of housing principal they artificially inflated for those very same home buyers.

Furthermore, I believe that it will be established that although the 30-year fixed-rate with no pre-payment fees may be the "gold standard" mortgage for some, it is clearly the "rusty tin" standard for others. We, again, are practically alone in America having public policy assure its dominant role in the mortgage market. For home buyers facing rising interest rates or home buyers who keep their home for the market average of 7 years, it is almost assuredly not the best mortgage product. Successful alternative systems promote more consumer-friendly choices.

Today, our government controls 90 percent of the housing finance market. Today, Washington elites decide who can qualify for a mortgage and who cannot. Today, taxpayers have bailed out Fannie and Freddie to the tune of $189 billion. Today, taxpayers are on the hook for $5 trillion in mortgage guarantees.

As lawmakers, it is time to open up our eyes and open up our minds to alternative models and a pathway forward. We shouldn't preserve Fannie and Freddie's Federal guarantee just because we have done so in the past. We shouldn't preserve their Federal guarantee just because those who believe they profit from the status quo urge us to continue doing so.

Americans deserve a better finance model, one that's built to last and is sustainable—sustainable for homeowners, sustainable for taxpayers, and sustainable for our economy.

At this time, I yield the ranking member 4 minutes for her opening statement.

Ms. WATERS. Mr. Chairman, I thank you for holding this hearing this morning on international approaches to housing finance. The hearing is entitled, "Beyond GSEs: Examples of Successful Housing Finance Models Without Explicit Government Guarantees." However, if we are to be honest, it should be more properly entitled, "Examples of Other Housing Finance Models with Other Forms of Government Guarantees," because while the United States is among only a handful of countries that explicitly guarantee their mortgage-backed securities, we are not alone in terms of providing government support for housing finance.

As our witnesses today will point out, covered bonds, which are utilized more robustly in Europe, enjoy a preferential status in terms of regulatory and capital treatment in ways that, in fact, mirror the Federal Home Loan Bank System. And as the actions of European governments and the European Central Bank in the wake of the 2008 crisis demonstrate, the covered bond market also enjoys implicit guarantees both in terms of the general market and for the issuers of those bonds.

Of course, no one suggests that the United States model for housing finance is perfect, or that it is not in need of reform. Quite the contrary. That is why I continue to engage stakeholders on the future of the secondary mortgage market and why I call on the chairman to begin a discussion of the specific bipartisan reform proposals, of which there are now several.

I am focused on pursuing reform proposals that preserve the beloved 30-year fixed-rate mortgage here in the United States. I think the recent crisis has demonstrated that this is a stable product which has actually outperformed the exotic mortgages that proliferated in the lead-up to the financial crisis. If we eliminated a government role in housing finance, these exotic products would likely again predominate.

So while I think it is useful to consider international approaches to housing finance, I also believe it is disingenuous to suggest that foreign nations do not make significant government investments in housing. And I think we must acknowledge the important role that the 30-year fixed-rate mortgage has played across the generations of American homeownership and the need to preserve this unique product.

Finally, I think it is important to note that while other countries may invest fewer resources in homeownership than the United States, these foreign nations also make much more significant investments in public and assisted rental housing. This is something that the Majority on this committee is not interested in pursuing.

In fact, we already see that sequestration is pushing renters out of Section 8 housing operated by the Los Angeles City Housing Authority.

I thank you, Mr. Chairman. And again, as you engage us on your interpretation of the role that Fannie and Freddie have played in the housing market, and you blame the victims of a system that literally exploited would-be homeowners, I think this conversation needs to continue so that we can straighten out and get to the bottom of what really happened here in the subprime meltdown.

I yield back the balance of my time.

Chairman HENSARLING. The Chair now recognizes the vice chairman of the committee, Mr. Miller, for 1 minute.

Mr. MILLER. Thank you, Mr. Chairman. While a hybrid public-private model for Freddie and Fannie was fundamentally flawed, our focus should be a viable secondary mortgage market with sound underwriting principles. No matter the path forward, we must capture the important focus that the GSEs have performed in the market, including the securitization process and management of the to-be-determined futures market.

As the committee contemplates changes to the U.S. finance system, it is useful to consider differences between the U.S. mortgage market and the housing finance system in other countries, which the witnesses are going to provide to us today. As we look at reform ideas from other countries, it is important to keep in mind that the size of the U.S. mortgage market is far greater than other countries' mortgage markets combined. It exceeds the entire European mortgage market, if you added it all together.

In addition, while 70 percent of residential mortgages in Europe are held by banks on their balance sheet, only about a quarter are held by our banks. So there is a significant difference between the two. We need to analyze the difference. While reform is absolutely necessary, we should not eliminate the extremely positive features that our system has had in the past.

I yield back.

Chairman HENSARLING. The gentleman yields back.

The Chair now recognizes the gentleman from Michigan, Mr. Peters, for 1 minute.

Mr. PETERS. Good morning. And thank you to our witnesses for being here today. While we are scheduled to examine housing finance models used by countries across the globe, we cannot lose sight of what makes America great: a strong middle class. Affordable, responsible homeownership is a cornerstone of the American middle class and vibrant communities across our great Nation. We need to put an end to the taxpayer-funded bailouts, but we must also ensure that responsible, hardworking families can still achieve the dream of homeownership.

Eliminating the government backstop in the mortgage market would likely undermine the housing recovery and risk eliminating the 30-year fixed-rate mortgage which middle-class families rely on to build equity and responsibly purchase their piece of the American Dream.

I believe our committee has a real window of opportunity in the coming months to meaningfully engage in GSE reform on a bipar-

tisan basis, and I look forward to working with my colleagues on both sides of the aisle on this critical issue.

I yield back.

Chairman HENSARLING. The gentleman yields back. The Chair now recognizes the chairman of the Capital Markets Subcommittee, the gentleman from New Jersey, Mr. Garrett, for 2 minutes.

Mr. GARRETT. I thank the chairman for holding this hearing today.

When I began preparing for this hearing, I remembered reading an International Monetary Fund analysis on the U.S. housing market that compared it to other foreign housing markets. In comparing the level of subsidization of our housing market to other countries, one of the authors, John Kiff, notes, "Compared to other developed countries, only a couple come even close. Everything you could possibly name for supporting homeownership for everybody regardless of whether they can afford it is in place in the U.S."

The IMF report goes on to state, "Since the 1930s, the U.S. authorities have provided a wide range of support to facilities' access to credit. While this has provided access to stable and affordable long-term mortgage financing, there is limited evidence that it has boosted homeownership or has made the system more efficient or provided buffers against economic stress. Meanwhile, it has exacerbated the boom-bust cycle." The report went on to note, "During the pre-crisis boom period, government participation in housing finance tended to amplify the relationship between rising house prices and mortgage credit growth, particularly in advanced countries."

Also, countries with more government participation experienced deeper house price declines in the recent crisis. These findings suggest that government participation exacerbates house price swings for advanced economies. So while it is clear that the extraordinary and unprecedented level of subsidy that the United States provides its mortgage market directly benefits the mortgage market industry participants, there is much less evidence that all these subsidies actually provide much benefit to the borrower. In fact, based on the objective look of the IMF, no conservative think tank, mind you, and the terrible impact our country's housing finance policy has had, I believe a strong case can be made that at least some of these policies, at the end of the day, have done more harm than good. I believe we should learn from some of our foreign counterparts who seem to have quite high levels of homeownership without the dozens of levels of subsidy that this country provides, which mostly benefit the wealthy and not the people who actually need the help.

With that, I yield back.

Chairman HENSARLING. The Chair now recognizes the ranking member of the Capital Markets Subcommittee, the gentlelady from New York, Mrs. Maloney, for 2½ minutes.

Mrs. MALONEY. Thank you, Chairman Hensarling and Ranking Member Waters, for holding this important hearing on alternative models of housing finance. And welcome, to our distinguished panel of witnesses today. One thing that we can all agree on is that the government should not back 100 percent, or 90 percent, or even 80 percent of the mortgage market. Some of my colleagues say that

there should be no government involvement, but the market and most economists believe that that would be a disaster to our overall economy.

So the real question before us today is, how much of the risk should the government bear and how much should private investors bear? When we compare our housing finance system to other countries, we need to look at the whole housing market, not just the mortgage-backed securities market. Other countries provide significantly more government support for rental housing than the United States Government does. And many of the largest European mortgage lenders have implicit government guarantees. So let's remember, it was the GSEs that enabled the widespread availability of the 30-year fixed-rate mortgage, one of the great American innovations that my colleague, Mr. Peters, just spoke about. Do we really want to lose this 30-year mortgage that helps borrowers' monthly payments remain low and predictable and provides a pathway, a road to homeownership?

Housing represents 25 percent of our economy, according to Mark Zandi and other economists. So when we talk about reforming the GSEs, we need to remember that we are really talking about reforming 25 percent of our entire economy. And how do we reduce the government's footprint without harming the overall mortgage market and homeownership availability? Would completely removing the government from the mortgage markets damage our economy as a whole?

These are the kinds of questions that we need to answer as we move forward in deciding how to reform government GSEs.

Thank you.

Chairman HENSARLING. The Chair now recognizes the gentleman from Texas, the chairman of the Housing and Insurance Subcommittee, Mr. Neugebauer, for 2 minutes.

Mr. NEUGEBAUER. Thank you, Mr. Chairman, for holding this hearing. A lot of people are probably wondering why we are having so many hearings on housing finance. The reason we are is that housing finance is important to housing. We talk about a lot of numbers that are the $200 billion that the taxpayers had to pony up because bad decisions were made, bad lending practices.

But I think one of the things that we have to do is to put this in perspective of why it is important to have a sustainable housing finance system in this country. The reason is that it affects housing, not only the purchase of housing, but the homeownership. And what happened to a lot of hardworking Americans that we all are here trying to protect is that some of those folks were doing the right thing. They were making their payments. They had made a downpayment on their house. And what happened was, many of them suffered tremendous losses in the value of their house because of this poor market performance where market discipline was not in place.

So, they got double-dipped. Their tax dollars had to bail out these entities and they lost equity in their house. That is a lose-lose situation for homeownership. If you want to have a positive impact on homeownership, you have to have a stable housing finance market. And there are those out there who think the status quo is the way to do that. I would remind you it is the status quo that got us here

today. And when people quit using proper underwriting standards and they were passing that risk along and weren't paying attention, then we saw carelessness happen and poor lending practices initiated.

What we have to do is to get—the government has nationalized the housing finance market in this country. It is not healthy for the government. Basically, that puts the government in the position of telling you whether or not you get to own a home. And that is not what America was founded on.

Mr. Chairman, I really appreciate you holding this hearing today, and I look forward to hearing some of the other ideas that some of these witnesses will discuss as to what other countries are using to do their housing finance.

Chairman HENSARLING. The Chair now recognizes the gentleman from Georgia, Mr. Scott, for 2 minutes.

Mr. SCOTT. Thank you very much Mr. Chairman. First of all, I think our ranking member, Ms. Waters, really put her hand on the issue here. Yes, we have to make some moves. It is not as healthy as it should be to have 90 percent of the market with government-backed agencies. But what is important is that we get an answer to the question of whether or not the private market is willing to accept and fill this void and whether they are capable of doing so.

We can look at nations all over the world, but there is no nation like the United States. We have a history of demographic issues. We have a history of exclusion. So, we look at this change. There is a reason why we have the GSEs. We have to make sure that the private market is capable and willing to fill the void. That is the fundamental issue and the balance that this committee has to deal with on this very, very important issue. I yield back, Mr. Chairman.

Chairman HENSARLING. The Chair now recognizes the gentleman from Illinois, Mr. Foster, for 30 seconds, and we all look forward to finding out how much he can pack into 30 seconds.

Mr. FOSTER. Thank you. I would like to start by thanking the chairman for having this hearing. I think it is past time that we show some humility in this country after the failure of our system and looking around the world at maybe other countries that got it right. In reading the testimony last night, I was struck by the generally positive comments about specifically the Danish mortgage origination system. It is one that provides a 30-year fixed-rate mortgage by pushing the prepayments and the interest rate risk out to the private markets, and it avoids the moral hazard and bad underwriting by insisting that mortgage originators retain the credit risk. It is also among the most efficient systems in the world. And I think we should give it a long hard look, and I think there is a bipartisan opportunity to really make an improvement by heading in that direction. Thank you very much. I yield back.

Chairman HENSARLING. We now welcome our panel of distinguished witnesses.

Dr. Dwight Jaffee is the Willis Booth Professor of Banking, Finance and Real Estate at the University of California, Berkeley. Professor Jaffee teaches courses in asset-backed securitization. He is the co-chair of the Fisher Center for Real Estate and Urban Economics at UC Berkeley's Haas School of Business. He earned his

Ph.D. in economics at MIT, and his B.A. in economics from Northwestern University.

Dr. Michael Lea is the director of the Corky McMillin Center for Real Estate at San Diego State University. Dr. Lea has published numerous articles on housing and mortgage finance, including an influential 2009 World Bank publication on emerging market housing finance. He received his Ph.D. in economics from the University of North Carolina at Chapel Hill.

Mr. Alex Pollock is a resident fellow at the American Enterprise Institute, and is widely regarded as an expert in housing finance. He is a former president and CEO of the Federal Home Loan Bank of Chicago. He holds master's degrees from Princeton University and the University of Chicago, and a bachelor's degree from Williams College.

Dr. Lawrence White is the Robert Kavesh Professor of Economics at Stern School of Business in New York City. Dr. White previously served on the board of the Federal Home Loan Bank and was one of the three board members of Freddie Mac. He has Ph.D. and bachelors degrees in economics from Harvard, and a master's degree from the London School of Economics.

Last but not least, Dr. David Min is an assistant professor of law at the University of California Irvine School of Law. Dr. Min previously served as a staff attorney at the SEC and as a staffer on the Senate Banking Committee. We welcome you back to the Hill, Professor Min. He earned his law degree from Harvard, and his bachelor's degree from Wharton.

Each of you will be recognized for 5 minutes to give an oral presentation of your testimony. Please bring the microphone very close to your mouth so all can hear the testimony. Without objection, each of your written statements will be made a part of the record. Again, the light is green. And when it turns yellow, you will have a minute to sum up. When it turns red, it is time for us to go to the next witness. And each member of the committee will have 5 minutes in which to ask our panelists questions. Again, thank you for agreeing to testify. Welcome.

Dr. Jaffee, you are now recognized for 5 minutes.

STATEMENT OF DWIGHT M. JAFFEE, WILLIS BOOTH PROFESSOR OF BANKING, FINANCE, AND REAL ESTATE, HAAS SCHOOL OF BUSINESS, UNIVERSITY OF CALIFORNIA, BERKELEY

Mr. JAFFEE. Chairman Hensarling, Ranking Member Waters, and members of the committee, I very much welcome the opportunity to discuss with you today the future role of our government in the U.S. mortgage market. As the comments from the committee members have already indicated, we really are at the point of deciding how to reform the U.S. mortgage market and how to replace the Government-Sponsored Enterprises.

There are basically two alternatives on the table. One is a private market system in which we basically let the private markets run the U.S. mortgage market. The alternative is to create some new form of a government guarantee for most U.S. mortgages that would replace the GSEs. In describing that second alternative, I want to say, at least for myself, that this is separable from the

question of FHA and VA programs. In other words, I do believe that the FHA and VA highly-directed mortgage programs for specific groups are a separable issue. My comments today are directed to government proposals, proposals to have the government take over a large part of the U.S. mortgage market.

My research has come to the conclusion that the private markets are fully capable of carrying out all mortgage market functions in the United States, and that it is, by far, the best alternative. The issues with government guarantees, I will come to at the end of my comments.

The reason for my confidence in the U.S. mortgage market as a private market really comes in two forms. The first is that the markets have already indicated a full capability to carry out this activity. If you go back, for example, and look at the period from 1950 to 1990 in which we had primarily a private mortgage market, the homeownership rate in the United States rose from about 55 percent in 1950 to about 64 percent in 1990, a significant increase virtually all carried out by private market lending. If you look at the period from 1990 to the present, a period which has been clearly dominated by the GSEs, the homeownership rate rose from 64 percent to 65 percent. In other words, there is no evidence of the GSEs contributing anything significant to an increase in homeownership rates in the United States.

A related statistic is to look at the part of the U.S. markets that is independent of the GSEs, the so-called jumbo mortgage market in which, by definition, the GSEs cannot operate. And the private markets, that market, the jumbo market, has often exceeded 20 percent of the U.S. mortgage market, has reached as much as 25 percent, and even today, under the current conditions, is coming back. In other words, the jumbo market is a really strong indicator that the private markets are fully capable of making a large amount of mortgages to most Americans.

The role that is sometimes attributed to the GSEs concerns their role in the mortgage-backed security market where they have guaranteed mortgages. I would like to point out that the role that they have played there is predominantly due to the implicit subsidy. One has to remember that they have approximately a 50 basis-point benefit by convincing investors in all of their debt securities that the government would bail them out if worse came to worst, a fact that turned out to be true. Of those 50 basis points, 25 basis points were passed on to mortgage borrowers, and 25 basis points basically stayed in the pockets of the GSE shareholders.

If you look at the jumbo market, at the same time, the jumbo mortgages were typically priced at about 25 basis points higher than conforming GSE mortgages. If you net out the 50 basis-point subsidy going to the GSEs, you actually come to the recognition that the jumbo market in some sense was pricing their mortgages 25 basis points less than the GSEs once you net out the subsidy.

So this is my confidence in the ability of the U.S. private markets to carry out the mortgage market activities. Comments are sometimes also raised for the GSEs, that they are responsible for the fixed-rate long-term mortgage. This is just plain wrong. First of all, the fixed-rate long-term mortgage was a creation actually of the

Homeowners Loan Corporation in the 1930s long before the GSEs existed. So, they certainly can't claim credit for creating it.

Second, if you look at their activities in mortgage-backed securities, all the GSEs did was pass all of the interest rate risks on to the investors. So it was the investors that were buying the fixed-rate mortgages. The GSEs played almost no role in expediting that. So, there is just nothing to the fact that they created it. Furthermore, many of the jumbo mortgages that had nothing to do with the GSEs were also fixed-rate long-term mortgages.

That is my basis on why the market works. The second point is the European markets which are the focus of a lot of the discussion here. My research on the—

Chairman HENSARLING. Dr. Jaffee, if you could wrap it up, so we could go to the next witness.

Mr. JAFFEE. Sure. So on the European markets, my research there has looked at a comparison of the databases with the behavior of the U.S. mortgage markets versus the European markets. And let me give one summary statistic which is that the homeownership rate of the United States is only the average of 16 European countries. So again, it reinforces the conclusion that the GSE activity here has not realized any benefits.

[The prepared statement of Dr. Jaffee can be found on page 58 of the appendix.]

Chairman HENSARLING. Thank you, Dr. Jaffee.

Dr. Lea, you are now recognized for 5 minutes.

STATEMENT OF MICHAEL J. LEA, DIRECTOR, THE CORKY McMILLIN CENTER FOR REAL ESTATE, SAN DIEGO STATE UNIVERSITY

Mr. LEA. Mr. Chairman, Ranking Member Waters, and members of the committee, thank you for the opportunity to be here today.

I have an extensive background in housing finance, including senior executive positions at major mortgage lenders and as Chief Economist at Freddie Mac. I have been actively involved in the study of international housing finance systems for more than 20 years, having done consulting, business development, and research in 30 countries. I have recently published two international comparative studies of developed country mortgage markets and an article on the long-term fixed-rate mortgage. I would request that these studies be entered into the record, as they provide information supporting the points I make today.

Chairman HENSARLING. Without objection, it is so ordered.

Mr. LEA. The points I would like to make in my opening remarks are as follows: The U.S. housing finance system is hardly the gold standard in the world. It has not performed better, and in many respects has performed worse, than those in other countries. The U.S. housing finance system is unusual in its dominance of GSEs, housing-specific guarantees, and securitization. These characteristics are, in large part, the policy decision to make the long-term fixed-rate mortgage the centerpiece of the system. No other developed country has a government-sponsored enterprise. Among the 13 developed countries surveyed in my research, only Canada and Japan have government mortgage guarantee programs equivalent to Ginnie Mae. Only Canada and the Netherlands have govern-

ment-owned insurance companies. And as mentioned before, only Denmark has a long-term fixed-rate mortgage that can be prepaid without penalty. And they finance it in a much safer and more transparent way.

The extent of government support in other countries is less than that in the United States. A successful housing finance system is clearly not dependent on GSEs. It is important to note that all countries support housing finance indirectly through their banking systems. In most countries, commercial banks are the dominant lenders. They are supported through deposit insurance, liquidity backstops, and temporary guarantees in crisis. It is to support, to sustain and maintain a type of financial institution that is critical for the functioning of modern economies and that conducts a wide variety of business. Commercial banks pay for this support through deposit insurance and meaningful capital requirements. The GSEs have never paid user fees for their support and have operated with inadequate capital for most of their existence.

To understand our housing finance system, one has to focus on the role of the long-term fixed-rate mortgage. As Dwight said, this is a creation of the government. It is not a naturally occurring instrument in modern financial systems, as it creates substantial financial and taxpayer risk. The instrument was born in the Depression as a solution for the refinancing problems of borrowers with nonamortizing mortgages. FHA insured these instruments and private lenders refused to make them. Due to concerns about their financial risks, Fannie Mae was created to purchase their fund with Treasury debt. The dominance of the instrument was entrenched when the savings and loans were required to make only these kinds of mortgages in the 1960s and 1970s. That dependence on fixed-rate mortgages bankrupted the savings and loans industry in the 1980s.

The government continued to support the instrument through the activities of the GSEs. And today, we are in the unenviable position of having over 90 percent of our mortgage products be one instrument and entirely backed by government guarantees. Should this instrument be the bedrock of the housing finance system? It has undeniable consumer benefit. However, there are significant costs. The interest rate and prepayment risk of the fixed-rate mortgage are costly and difficult for investors to manage. A huge volume of derivative instruments is necessary for investors to manage these risks. The premium for both the long-term and prepayment option raise rates for all users of the mortgage. The fixed-rate mortgage can create negative equity in a falling house price environment, as we have seen. And taxpayers have had billions of dollars in losses, backing the credit risk guarantees provided by the GSEs in order to support the fixed-rate mortgage.

If we move away from the housing finance system predicated on fixed-rate mortgages and GSEs, what would emerge? Pre-crisis experience shows that the private market can securitize fixed-rate mortgages as the jumbo experience indicates. Borrowers could lower mortgage rates by selecting shorter fixed-rate terms consistent with their mobility patterns. Few fixed-rate mortgages are held for the 15- to 30-year terms that exist in our current instruments.

In a non-GSE world, instruments like the rollover or hybrid adjustable rate mortgage provide rate and payment stability for up to 10 years and protections through interest rate caps. Lenders can safely finance these through term deposits, covered bonds, or private label securitization. Taxpayer risk would be substantially reduced through the elimination of the GSEs and if lenders are holding meaningful capital.

In conclusion, the experience of other countries is that affordable and stable housing finance can be provided without GSEs and nearly universal government guarantees. Thank you for the opportunity to address the committee, and I look forward to your questions.

[The prepared statement of Dr. Lea can be found on page 64 of the appendix.]

Chairman HENSARLING. Mr. Pollock, you are now recognized for 5 minutes.

STATEMENT OF ALEX J. POLLOCK, RESIDENT FELLOW, AMERICAN ENTERPRISE INSTITUTE

Mr. POLLOCK. Thank you. Chairman Hensarling, Ranking Member Waters, Vice Chairman Miller, and members of the committee, the American housing finance system has collapsed twice in the last 3 decades. We certainly do need to see what we can learn from other countries. Viewing our housing finance sector in an international perspective, as Mike Lea just said, the one thing most unusual about it was and is the dominant and disproportionate role played by Fannie Mae and Freddie Mac. The GSEs themselves used to claim that this made U.S. housing finance, as they said, "the envy of the world." This was, however, a view not shared by the world.

Let us ask and answer five essential questions from an international perspective.

Are GSEs, like Fannie and Freddie, necessary for effective housing finance? No.

Do the GSEs get for the United States an internationally high homeownership rate? No.

Do the GSEs get for the United States an above average homeownership rate? No.

Are GSEs necessary to have long-term fixed-rate mortgages? No.

And even with their disastrous actual outcome, are GSEs the best model in theory? No.

It was often claimed without supporting data that the United States had the highest homeownership rate in the world. This seemed plausible to Americans but it was wrong. For example, England, with a different housing finance system and no GSEs, has a slightly higher homeownership rate than we do. In my written testimony there is a table of comparative homeownership rates which displays homeownership in 28 economically advanced countries. On this list, the United States ranks 20th, just behind England. The median homeownership rate among these countries is 68 percent compared with our 65 percent.

The GSEs, based on the free use of the U.S. Treasury's credit, ran up the leverage of the housing finance sector, inflated house prices, and escalated systemic risk. Foreign investors helped pump

up the housing bubble through the GSEs while being fully protected from any risk. Of course, other countries also made housing finance mistakes. But nobody else made this particular giant mistake.

When Fannie and Freddie were still riding high and Fannie, in particular, was a greatly feared bully boy both in Washington and on Wall Street, I presented the GSE-centric U.S. housing finance system to the Association of Danish Mortgage Banks in Copenhagen.

One Danish CEO memorably summed things up at the end. He said, "In Denmark, we always say that we are the socialists and America is the land of free enterprise. Now I see that when it comes to mortgage finance, it is the opposite." He was so right.

But now, with Fannie and Freddie continuing to be guaranteed by the U.S. Treasury, being granted huge loopholes by the Consumer Financial Protection Bureau, and being heavily subsidized by the Federal Reserve's buying up of their MBS, they have a bigger market share and more monopoly power than before. The American housing finance sector is more socialized than ever.

A senior British financial official said recently, "We don't want a government guaranteed housing finance market like the United States has." They don't want what we have and we don't want it either.

Every housing finance system in the world, as we look around, must address two fundamental questions: The first is how to match the nature of a mortgage loan with an appropriate funding source. To this, there are multiple solutions.

The second fundamental question is, who will bear the credit risk? In most countries, the lender retains the credit risk, which is undoubtedly the superior alignment of incentives. The GSE approach in America, and also that of private MBS, systematically separates credit risk from the lender. So you divest the credit risk of the loans you make to your own customers. This was and is a distinct outlier amongst countries and it has had disastrous results, needless to say.

One impressive solution to the two fundamental questions of housing finance is the housing finance system of Denmark, as discussed in my written testimony and pointed out by Congressman Foster. My written testimony also discusses Germany, England, Malaysia and Canada. Like most of the world, Canada has no GSEs, although it does have excessive government bearing of mortgage credit risk.

Overall, surveying the world emphasizes an essential conclusion. Fannie and Freddie should cease to be GSEs. Considering the international anomaly they represent and the disastrous government experiment they represent, we should all be able to agree on this.

Thank you very much for the opportunity to be here.

[The prepared statement of Mr. Pollock can be found on page 98 of the appendix.]

Chairman HENSARLING. Professor White, you are now recognized for 5 minutes.

STATEMENT OF LAWRENCE J. WHITE, PROFESSOR OF ECONOMICS, STERN SCHOOL OF BUSINESS, NEW YORK UNIVERSITY

Mr. WHITE. Thank you. Chairman Hensarling, Ranking Member Waters, and members of the committee, my name is Lawrence White. I am a professor of economics at the NYU Stern School of Business. As the chairman indicated, from 1986 to 1989, I was one of the board members of the Federal Home Loan Bank Board; and in that capacity, I was also one of the three board members of Freddie Mac. Now in the interest of full disclosure, I think it is important that I add, in 1997, 1998, Freddie Mac asked me to write an article for their publication, "Secondary Mortgage Markets on Bank Capital Requirements." I did so. It was published. It is available. I am happy to send it to anyone. You can find it on my resume. You can look on my Web site and you can find the link. I was paid $5,000 for that article.

In 2004, Fannie Mae asked me to come in to one of their advisory committee meetings and to talk about bank capital requirements. I was paid $2,000 plus transportation expenses. I flew both ways coach class on the shuttle. I used street-hailed taxi cabs to and from the airport. Full disclosure, Mr. Chairman.

The U.S. housing system provides substantial subsidies for housing. Widespread. For homeowners, for home buyers, for home builders, for renters. Now, there is a central tenet of economics. I won't call it a law. Only you men and women of the Congress deal with laws, and maybe Isaac Newton qualifies as a creator of laws, but it is a central tenet of economics: If you make something less expensive, if you make it lower in price, people will buy more of it. For example, through subsidy. And that has been true of housing. Housing has been reduced in price through all those subsidies, and people have bought more houses.

And as a consequence, the U.S. economy has suffered. The housing stock is substantially larger than it otherwise would be—which has meant that investments in other useful productive capital, whether it is business capital plant and equipment, whether it is social capital, schools, roads, bridges, hospitals, whether it is human capital, education and training—has been smaller because the housing stock has sucked up otherwise usable investable funds.

Further, ironically, a lot of the subsidy has gone to benefit high-income households. In essence, they have been subsidized to do what they would do otherwise, which is buy houses—only they bought more houses and they have engaged in excessive leveraging because a lot of the subsidy encourages borrowing. International comparisons, as you have just heard from the three gentlemen on my right, and some of which I reproduce in my testimony, shows that the U.S. housing system doesn't look so good in international comparisons, despite the extensive amounts of subsidy.

So what to do? First, let's cut back on the subsidy. Second, let's especially cut back on subsidized lending, whether through the income tax code or through special institutions like the GSEs. Third, contrary to a lot of what you are going to hear, maybe we ought to cut back on the sanctity of homeownership and recognize that renting is a perfectly good alternative for lots of households, especially when one realizes that housing prices do not always go up.

Fourth, let's target subsidies where they really are needed: on low- and moderate-income households, first-time home buyers. Do it through FHA, VA. Do it on budget in a transparent way.

In a largely private financial housing finance system, where will the financing come from? Partly through depositories. It is important to remember that as recently as 2007, depositories held 30 percent of whole loan mortgages; and without competition from subsidized GSEs, that percentage would likely be higher. Probably also "covered bonds" might be able to help out a little bit. Securitization, simplified, with more information would take up the rest. Insurance companies, pension funds are natural buyers of these long-lived assets, since these institutions have long-lived liabilities. Having sensible prepayment fees would be important there. And in that context, the 30-year fixed-rate mortgage would continue to be available to borrowers.

So in conclusion, a privately-oriented finance system for housing is desirable. It is feasible. And sooner would be better than later. Thank you, Mr. Chairman. I welcome any questions from the committee.

[The prepared statement of Dr. White can be found on page 106 of the appendix.]

Chairman HENSARLING. The Chair now recognizes Professor Min for 5 minutes.

STATEMENT OF DAVID K. MIN, ASSISTANT PROFESSOR OF LAW, UNIVERSITY OF CALIFORNIA IRVINE SCHOOL OF LAW

Mr. MIN. Chairman Hensarling, Ranking Member Waters, and members of the committee, thank you for the opportunity to testify today on the topic of alternative housing finance models. This is obviously a very complicated topic as we have seen from the other witnesses' testimonies, but it is a critically important one. Before I get into the substance of my remarks, I want to emphasize a point that may seem obvious but is not always well taken, which is that it is extraordinarily difficult to try to compare different models of housing finance as these are intrinsically and intricately intertwined with the cultural political and economic systems with which they coexist.

So for example, the low foreclosure rates in Europe can't properly be understood in the absence of also understanding the strong social safety nets and a large availability of public rental housing there. With that important caveat in mind, there are four points I would like to make today in my spoken testimony.

The first point is that contrary to claims of some, including all of my actual fellow witnesses, the United States is not unique in the level of government guarantees that it provides housing finance because such guarantees are universal throughout the developed world. The claim that the United States is unique in this respect is primarily based on observation, as the United States is one of only a handful of countries that provides government guarantees for mortgage-backed securitization. The problem with this analysis is that it focuses myopically on how the United States provides government guarantees for mortgage finance, and ignores how other countries might do so.

While securitization has dominated U.S. housing finance for the past several decades, it is not a major factor in most other countries. As such, in trying to determine whether other countries support their mortgage systems, it makes little sense to look at government guarantees for securitization. Rather, we should be looking to how other countries actually do fund mortgages and whether government guarantees exist on those forms of funding.

Now, as Dr. Lea has noted, by far the largest source of financing for residential mortgages outside the United States is bank deposits, with covered bonds also providing a significant amount of housing finance in Europe. Therefore, in assessing how much government support exists in other mortgage systems, the right question to ask is this: Do other countries provide government guarantees on bank deposits and covered bonds? And the answer is unequivocally yes. Bank deposits, of course, enjoy explicit government guarantees across the world.

And in Europe, covered bonds enjoy a myriad of government guarantees, which brings me to my second point. European covered bonds are really not very different from our own agency obligations in terms of the government support that they enjoy. There are a number of ways in which covered bonds benefit from such guarantees, which I describe in my written testimony, but I will focus on what I think is the most important of these, which is the implicit government guarantees that exist for covered bond issuers. Both because of European aversion to letting banks fail and because of the high prevalence of "too-big-to-fail," European banks are seeing us enjoying implicit government guarantees behind all of their obligations.

As one European Central Bank official said, "We don't let banks fail. We don't even let dry cleaners fail." This statement is actually also borne by history as the last failure of a European covered bond issuer occurred in 1900. In addition to government guarantees, European covered bonds also enjoy a number of other governmental benefits, including preferential capital treatment and eligibility as collateral for ECB repo lending which are similar in many ways to the benefits that are enjoyed by Fannie Mae and Freddie Mac.

In short, in a number of ways European covered bonds look very similar to agency debt and may best be thought of as government-sponsored obligations. This explains why sovereign risk is a central factor in the credit ratings of European covered bonds and why growing concerns about European sovereign risks have negatively impacted covered bond spreads. It is also why European governments and the European Central Bank responded to the financial crisis with a tsunami of bailouts targeted at protecting covered bonds, a partial list of which is listed in my written testimony.

The third point I would like to make here today is that there is no perfect housing finance system, as each of the major housing finance housing models—bank deposits; mortgage-backed securities; and covered bonds—have their strengths and weaknesses. In the United States, we are well familiar with the weaknesses of deposits in MBS due to our previous experiences with the savings and loan debacle and the recent financial crisis. Covered bonds carry their own problems as well, which I will briefly describe to you.

First, because covered bonds require an overcollateralized cover pool of issuer's best assets may necessarily increase risk to other creditors, particularly government deposit insurers who have worse and fewer assets to cover their claims in the event of a bank resolution. This, of course, raises the risk of a taxpayer loss.

Second, because investors and covered bonds look primarily to the credit quality of the issuer, covered bonds tend to be a more suitable funding instrument for large complex banks with AAA ratings. And so any efforts to promote covered bonds in this country would disproportionately benefit "too-big-to-fail" banks and exacerbate that problem.

Moreover, covered bonds did not prove to be a panacea against housing finance instability. Both of the countries that primarily use covered bonds to fund their mortgage needs, Denmark and Spain, experienced housing bubbles that were worse than the one we experienced in the United States, and are currently facing serious housing market problems as a result.

I make a number of other points in my written testimony, but I will conclude with the fourth and final point I will make here today, which is that given the political preferences of Americans, I think it makes more sense to try to fix our current system rather than implement radical changes or import European models.

Deposit-backed lending is unlikely to provide broadly available 30-year fixed-rate mortgages which are tremendously popular with Americans following in the aftermath of the savings and loans crisis. I uncovered bonds with the implicit guarantees they carry and their tendency to promote "too-big-to-fail" seem inconsistent with the long-standing American populous diversion assertion that big banks, hidden subsidies, and bailouts. Sometimes the devil you know is better than the devil you don't. Thank you again for the opportunity to testify. I look forward to your questions.

[The prepared statement of Professor Min can be found on page 77 of the appendix.]

Chairman HENSARLING. Thank you, Professor. And thank you to all of the panelists. The Chair recognizes himself for 5 minutes to ask questions.

Clearly, there is a lot to unpack in this testimony. Professor White, I was kind of intrigued by your use of the phrase, I think it was, "more home"—which I believe was singular and not plural.

Mr. WHITE. "More house."

Chairman HENSARLING. "More house." So I believe what I have heard is that there are a number of countries that have FHA-like systems and structures to target government policy towards helping low- and moderate-income people; but otherwise, we are somewhat unique in having the government involved in a guarantee in the GSEs.

Are the GSE phenomena mainly helping upper-income people get the granite countertops instead of the tile, get the fourth bedroom instead of the third?

Professor White?

Mr. WHITE. Certainly, that is the way I see the income tax deduction for mortgage interest and local property tax payments.

Even the GSEs, if you look at the experience of the 1990s—I would urge you to take a look at a chapter written by Jonathan

Brown, look at the maps that Mr. Brown—I cite it in my testimony—look at the maps that Mr. Brown reproduces from the 1990s of where Fannie and Freddie were doing most of their lending relative to the available possibilities on conforming loans. And it was in the outer suburbs of the metropolitan areas of Chicago, Cleveland, and Dayton, not the inner areas.

Chairman HENSARLING. Mr. Pollock—

Mr. WHITE. And the expansion of the conforming loan limit in 2008 to $729,750 certainly expanded the opportunities again.

Chairman HENSARLING. Mr. Pollock, you have done quite a bit of research here. So I think it is somewhat well-established that the GSEs may have helped buy down a consumer's interest rate by 25 basis points and may have lost it on inflating their principal.

But what did the taxpayer get for his almost $200 billion of bailout? You say in your research we are only 20th in homeownership of the modern, industrialized world. What did we get? What did the taxpayer get for his money?

Mr. POLLOCK. We certainly didn't get a high level of homeownership, relative to other countries. Obviously, we got a lot of senior preferred stock in Fannie and Freddie. We got higher house prices, Mr. Chairman. When you push credit at any sector, especially in housing—but it also applies to colleges, let's say—which is what Fannie and Freddie did, you cause prices to rise. So not only, as Professor White says, do you get more house, but you get higher house prices and you pump up bubbles.

Chairman HENSARLING. Many posit that what the GSEs did deliver was a system that delivers the 30-year fixed with no prepayment penalties and makes that really the center of our housing finance system.

So, number one, Mr. Pollock, do you believe this would exist? Would consumers, if they want a 30-year fixed with no prepayment fees, would that exist in the absence of the GSEs, in your opinion, and why?

Mr. POLLOCK. Mr. Chairman, as my fellow panelists have said, we see the 30-year, fixed-rate alone existed in other markets which were not guaranteed by the GSEs like the jumbo market. As they have also said, the 30-year fixed-rate is primarily a question of whether there are investors in long-dated assets, which there are, not the question of the guarantee of the security by Fannie and Freddie.

I think a robust housing finance system would have a lot of different instruments in it. It would have long-term fixed-rate mortgages. It would have—

Chairman HENSARLING. Permit me to interrupt. My time is just about to run out.

I am curious about the—and I don't want to put words in your mouth, Professor Min, but I think you have shown a preference for having a system that is fixed on the 30-year fixed, but the data I see says that the average first-time home buyer owns their home for 4 years. And if that is true, I have done a little calculus here that if they would have gone with the 15-year instead of the 30-year, or, actually, over a 7-year time period, the difference in cumulative principal is the difference between roughly $14,000 versus $53,000.

So the average American sells their home every 7 years. If that is true, why is this necessarily pro-consumer?

Mr. MIN. Sure. One thing I would note is that the span in which homeowners are living in their house is obviously much longer, given the crisis that we have experienced in the financial system and the economy.

Basically, the safety and certainty of the 30-year fixed-rate mortgage doesn't really benefit people during good economies because they can resell their house during rising markets, et cetera. It is only when we have bad economies and difficulties in refinancing that the cost, certainly, of the 30-year fixed-rate mortgage really shows its value to consumers.

Chairman HENSARLING. Thank you.

I would note that the Chair is setting a poor example by asking a question and not giving the witness the time to answer. I hope the other Members don't follow my example.

Mr. MIN. Hopefully, that was succinct enough.

Chairman HENSARLING. I now yield 5 minutes to the ranking member.

Ms. WATERS. Thank you very much, Mr. Chairman.

I don't know where to start here. Let me start with Mr. Lea, just quickly.

What did you say caused the failure of the S&Ls? And what documentation do you have for that?

Mr. LEA. The failure of the S&Ls was based on the mismatch that existed between their assets, 80 percent of which were long-term fixed-rate mortgages, and their liabilities, which were short-term deposits.

And when you look back in 1981, 1982, about 80 percent of the entire industry was bankrupt and insolvent because of that mismatch. They are paying out more in interest on their liabilities than they are earning interest on those fixed-rate mortgages.

Ms. WATERS. May I ask, what role did the S&L involvement in the commercial markets and all those shopping centers that they invest in, what role did that play?

Mr. LEA. That played a role in making the losses worse. Because what we allowed them to do is to try to grow out of their problems that were created by the fixed-rate mortgage—

Ms. WATERS. Some of us believe that is the major cause. So I just wanted to make sure I understood what you were saying.

Mr. LEA. That is the major cause.

Ms. WATERS. Let me talk about some homeownership rates here.

Professor Min, homeownership rates in Germany are around 40 percent; in Denmark, around 51 percent during the 2000s, were much lower than the United States, which had homeownership rates between 65 and 70 percent.

Granted, from the peak of the housing bubble until today, homeownership rates in the United States have fallen from a high of 69.2 percent—that is, at the end of 2007—to 65 percent in the first quarter of 2013.

As a Nation, do you believe that we are prepared to slide to the homeownership rates of 40 or 50 percent, similar to our international counterparts?

Mr. MIN. I think for that to happen without major macroeconomic and social collapse, we would need to really bring in a lot of the German and Danish social policies, including the strong social welfare systems they have, the large availability of publicly funded rental housing, among other things.

There is just a lot less income volatility, a lot less division of wealth. You can't really bring in the housing finance system of those countries and expect it to work the same way without bringing in all the other policies.

Ms. WATERS. Thank you.

And, Mr. White, are you suggesting that we get rid of the income tax deduction for mortgage interest?

Mr. WHITE. I would do it in a heartbeat.

Ms. WATERS. Would you speak up a little bit louder so all of the middle-class constituents out there can hear you?

Mr. WHITE. I would do it in a heartbeat because most of the middle-class people don't get to take advantage of it because they do not itemize on their tax return. And, further, high-income households are going to buy more house, spend more money, get much greater benefit from the deduction.

I would do it in a heartbeat. But if you are going to keep it, at least convert it from a tax deduction and into a tax credit so that lower-income households—

Ms. WATERS. Okay, so I get it.

Mr. WHITE. —could take advantage.

Ms. WATERS. You are against the income tax deductions for mortgage interest. I get that.

Let me just ask, if you know—I understand that the GSEs have paid back $130 billion of the $180 billion bailout that we afforded them. Are you aware of that?

Mr. Pollock, are you aware of that?

Mr. POLLOCK. Oh, I'm sorry, Ranking Member Waters. I didn't realize—I didn't hear my name.

Yes. They haven't actually paid it back. They have paid it in dividends. Of course, you don't get credit when you pay interest or dividends on an investment for reducing the principal. If we did the math right, we would have to account—

Ms. WATERS. But the fact of the matter is they have paid back $130 billion of the $180 billion; is that correct?

Mr. POLLOCK. They have sent in that money, and it reflects their current monopoly—

Ms. WATERS. And who has—

Mr. POLLOCK. —power and monopoly pricing.

Ms. WATERS. Thank you.

Who has documentation, as it has been represented, that the GSEs have more high-income owners than low-income owners? Who said that?

Mr. WHITE. It was me, Ranking Member Waters.

Ms. WATERS. Give me the numbers. Give me the information. What is the—

Mr. WHITE. All right. I wish I had brought—I would love to—you look at these maps and you want to weep.

Ms. WATERS. No, no, no. I just—

Mr. WHITE. That is the only—

Ms. WATERS. —need the numbers.

Mr. WHITE. I didn't bring them with me. I cite the article in my testimony. I urge you and your staff to look at that article, look at those maps.

Ms. WATERS. What I would like you to do is submit for the record your documentation—-

Mr. WHITE. I will be very happy—

Ms. WATERS. —your data, as it is being identified by my colleagues here, on what you represent.

Mr. WHITE. I will be very happy to send it to you.

Ms. WATERS. All right. Thank you, Mr. Chairman. I yield back.

Chairman HENSARLING. The Chair now recognizes the gentleman from New Jersey, Mr. Garrett, for 5 minutes.

Mr. GARRETT. I thank the Chair.

So I guess I will start with—in light of Professor Min's comment, since we are comparing the U.S. housing finance policy to many other countries in the world, I thought it would be helpful if we look at the various ways that the United States subsidizes the mortgage market and compare and contrast it with the amount of subsidies other countries have actually had. And other countries actually have a higher homeownership rate than the United States.

And on the proverbial back-of-napkin count, the United States has over 20 various ways that we subsidize our Nation's mortgage finance market. This panel may come up with some other ones for me.

These range from the institutional—the FHA as a government mortgage insurer; Ginnie Mae as a government MBS guarantor; Fannie and Freddie as GSEs, MBS guarantors; Fannie and Freddie as GSEs, portfolio investors; the Federal Home Loan Bank as a GSE lender through their Advance program; and then you have the Federal Home Loan Bank as a GSE portfolio investor through their MPF programs. All right.

Now, on top of that, you had the promotion of affordable housing through the FHA; Fannie and Freddie affordable housing goals; HUD's National Home Ownership Strategy; the CRA, Community Reinvestment Act; HUD's Best Practices Initiative; and the Federal Home Loan Affordable Housing Programs.

And in addition to that, you have FHA's Leadership in Low Down Payment Lending; HUD's regulation of GSEs' affordable housing mission; Fannie and Freddie's leverage and preferred stock advantages; risk-based capital rules favorable to agency obligations.

Then, you have favorable rules for second mortgage lending, both as to the capital and the inability of the first mortgage lender to prohibit it. And, of course, we all know the tax deductibility of interest. And then, finally, the overreliance by the Fed on lower rates as a weapon of choice.

And then, of course, on top of that, you have other miscellaneous policies, such as limited use of prepayment penalties, the de jour and de facto limits on recourse deficiency judgments, liberal capital gains exemptions, and procyclical loan losses, reserving and FDSE premium policies.

So that is what we have in this country. Does anyone else have anything close to that whole litany of programs on top of the GSEs?

Mr. MIN. First, let me just say, I would be in favor of streamlining some of the guarantees and other subsidies you talk about.

Second, I guess I would just say it is difficult to tell with European countries because so many of these are implicit and opaque. So, for example, it was difficult to tell how Europe would react to the failure of their housing markets and their financial system in the 2008 crisis. What we saw was the deluge of bailouts that—it was very difficult to predict in advance.

And I think that is one of the reasons I argue that ex ante sort of defined guarantees are better for the United States than a European-style system of after-the-fact—

Mr. GARRETT. Mr. Pollock?

Mr. MIN. —bailouts.

Mr. POLLOCK. Congressman, I am not aware of anybody else who has the panoply which you so well articulated of different programs. It is, of course, difficult, when you do a whole lot of different things, it becomes difficult to track the aggregate impact of all of them. But we can say pretty clearly, the aggregate impact is an increase in house prices.

As for the implicit versus explicit guarantees, of course, one of the problems with Fannie and Freddie was the denial that it really was a guarantee, when, of course, it really was. So we engaged in a kind of make-believe about how much risk we were taking, and that made the problem worse.

Mr. GARRETT. Dr. Lea, do you have a comment before I go on to my next question? It looks like you did.

Mr. LEA. Oh, I was just going to make a comment with regard to two aspects of subsidy.

One is that, if you look on the lending side, no other country that I am aware of has housing goals that specifically require lenders to go down market and hit certain income deciles. And even in terms of supporting first-time buyers, we don't really have that kind of focus. The insurance programs in Canada and the Netherlands, for example, are universal. They are not targeted to any particular group.

Secondly, I think that we look at comparing or discussing guarantees. Ours were specifically for the purpose of lowering the cost of credit to the housing market, the kind of backstops—

Mr. GARRETT. Right.

Mr. LEA. —for issuers of covered bonds, which are commercial banks, are a result of governments not wanting failure of their large financial—

Mr. GARRETT. Let me just cut you off. I only have 20 seconds here.

On the credit risk aspect of this, one of the other arguments is that if you go to an explicit guarantee, one of the benefits is that you are able to attract foreign investors to our marketplace, whether it is implicit or explicit, but, as you say, we go to explicit.

It was in a book back in the summer of last—a couple of years ago, Hank Paulson wrote the book, "On the Brink." And he talks about in the summer of 2008 that the Russians—whoops. You will have to comment back on how they were going to kill our market, basically, by selling our credit risk here. And is that still a risk to us going forward if we make this an explicit guarantee?

But with the chairman's—

Chairman HENSARLING. The witness can respond in writing. Which witness were you directing that to, Mr. Garrett?

Mr. GARRETT. Mr. Pollock.

Chairman HENSARLING. Okay. Please respond in writing, Mr. Pollock.

Mr. POLLOCK. Yes, it is. The bad thing about having government guarantees—

Chairman HENSARLING. That will do.

Mr. POLLOCK. —is that it produces bubbles.

[Mr. Pollock submitted the following response for the record: "Yes, it is. Government guarantees, whether implicit or explicit, create a group of creditors, such as bond or MBS buyers, who do not care or need to care about the soundness of the underlying assets being financed. They therefore promote excessive debt and leverage in the sector which is given the guarantee, and increase the chances of future bubbles and crises in that sector. Such guarantees tend to distort prices and cause misallocation of economic resources."]

Chairman HENSARLING. The time of the gentleman has expired.

The Chair now recognizes the gentlelady from New York, Mrs. Maloney, for 5 minutes.

Mrs. MALONEY. Thank you.

I would like to thank all the panelists, and particularly welcome Professor White, who is a professor in one of New York's great educational institutions. Thank you for being here.

I would like to ask Professor Min and Professor White, isn't it true that the last time we had significant private sector involvement in the mortgage-backed securities market, the end result was a subprime mortgage bubble and a severe financial crisis?

Professor Min?

Mr. MIN. That is correct. In fact, the last time we had such a large level of private sector, nonguaranteed involvement was before the New Deal. Of course, the New Deal introduced guarantees through the form of deposit insurance. The thrifts became a major part of mortgage lending from the 1940s to the 1990s. What happened then was that the GSEs took over and really had the lion's share of mortgage financing from the 1990s until about 2003, at which point private label securitization took over.

And, of course, that is exactly contemporaneous with the housing bubble we enjoyed, which is why most experts who have looked closely at this issue blame the proliferation of private label securitization, which went from a 10 percent market share in 2002, rising to 40 percent of the market share in 2005 and 2006, as the proximate and most likely cause of the financial crisis.

Mrs. MALONEY. So you are saying the private label was the cause of the financial crisis?

Mr. MIN. I would agree with that statement, as I think most experts who have looked at this do, including the Financial Crisis Inquiry Commission and the three minority members who acknowledged that this was a possible cause but argue that there should be a multiplicity of causes looked at.

Mrs. MALONEY. In light of the experiences that you just described, do you think it is safe for the government to leave the

mortgage-backed securities market entirely in the hands of the private sector, which, as you described, caused the financial crisis?

Mr. MIN. I think that every time we have had such a high level of private, nonguaranteed involvement over 30, 40 percent in the United States, we have experienced a proliferation of crises, such as in the pre-New Deal era, where we had crises every 5 to 10 years that really retarded economic growth and really stunted capital formation during that period.

Mrs. MALONEY. Professor White, your comments on the two questions?

Mr. WHITE. There is no question that the subprime expansion was a very unfortunate event. Why people came to believe that housing prices could only go up is something that is a mystery to me. That is not something we teach at the Stern School of Business at New York University. I doubt it is something that gets taught at the University of California or the University of San Diego or at the University of California-Irvine, but somehow people came to believe that. I know it isn't taught at the American Enterprise Institute. Somehow, people came to believe it.

If you believe it, then mortgages can never be a problem, because even if the mortgage borrower can't repay out of his or her income, or gets hit by a truck or gets ill, he or she can still sell the house at a profit and repay the mortgage that way. And so, mortgage securities won't be a problem. That is what happened.

I like to think that people learn from these experiences and that going forward—

Mrs. MALONEY. But do you agree with Professor Min that the cause of the financial crisis was the private label mortgage-backed securities, the private sector involvement?

Mr. WHITE. Okay. It was a triggering event, but that alone would have just meant a recession for the United States economy. It was the spilling of those losses into a financial sector that had five large investment banks, a large insurance company holding company, a large bank holding company, and two large mortgage—

Mrs. MALONEY. But you say it is the trigger. So why do we want to go—

Mr. WHITE. —companies that were thinly capitalized and could not bear the losses. That is what really caused the crisis.

Mrs. MALONEY. But, Professor—

Mr. WHITE. Without those, we would have had a recession and not a crisis.

Mrs. MALONEY. But, Professor, if the private sector involvement, as Professor Min pointed out, led to, he says, the crisis and you say the trigger to the crisis, why in the world do we want to go back to that particular model—

Mr. WHITE. For sure—

Mrs. MALONEY. —which led us to the worst depression, recession, whatever you want to call it, in my lifetime, one that we are still suffering from?

Mr. WHITE. No, of course, we don't want to go back to those particular circumstances. As I indicated, I think people learn—

Mrs. MALONEY. I only have a few seconds.

Mr. WHITE. —and will be a lot more cautious this time around.

Mrs. MALONEY. My time has expired. The chairman has his gavel ready. Thank you very much.

Mr. WHITE. Thank you.

Chairman HENSARLING. The Chair now recognizes the gentleman from California, Mr. Miller, for 5 minutes.

Mr. MILLER. Thank you, Mr. Chairman.

I enjoy these types of hearings because I think we need to look and say, what did we do wrong, and what do we do now?

And I don't think anybody is going to defend the concept of the structure of the GSEs to believe that the taxpayer should be put at risk, yet the private sector should make the profits. Now, they have historically been profitable; they are today. And the money today is going into the Treasury, where I believe it should always have gone. There should never have been a reason for the GSEs to ever go public.

But the private label mortgage-backed securities were a disaster. Most of them were basically predatory loans. And there were trillions of dollars lost, and the investors were absolutely hammered.

But GSEs don't originate loans. They are a purchaser of loans as a conduit. And I believe they should have absolutely held the groups that made these loans accountable. The lenders who issued these loans and sold them off, they were not selling loans that met the underwriting standards to be conforming. They should have held them accountable.

But I don't want to, on the other side, tell somebody what type of house they need to buy or how they need to buy it. And I think, if we look at the Affordable Housing Initiative, the problems that caused by making loans maybe we shouldn't have made. But the mission was a 2008 expansion of the limits. The reason they expanded the limits in 2008 is because everybody else left the marketplace. There would have been no liquidity in the marketplace in 2008 had they not raised the limits to where they did. But the GSEs made huge, huge mistakes.

The thing we need to look at that I think is very important is that the U.S. housing market is greater than any other country's mortgage market. If we look at the European market, we are larger than theirs combined.

And I look and say, how do we get government out? And if we are involved in any way, who should make the profits? I think the entire structure of the GSEs is wrong. They should never have gone public, and the profits should have always gone back to the Treasury. And had it done that, there would have been ample money to handle any losses that might have occurred in the future.

But if you look at the U.K., they are dominated by five lenders, basically, and the government has already taken over some of those. If you look at Germany, they rely on depository institutions. The largest market share belongs to the savings banks that are owned by the government. So you have to look at all those and say, how do we make it work here today?

We had some hearings last year, and what came out of those hearings was that U.S. markets have been predominantly through securitization. How do we change that in the future, I guess should be a debate. Are we going to argue that the private sector is going to put out mortgage-backed securities? I don't think anybody will

buy them today or tomorrow because of the disaster that has occurred in the past. And the other thing that came out was a projection that we would lose $3 trillion to $4 trillion in funding for domestic and foreign investors if you didn't have an agency mortgage-backed security. I don't know if that is true or not. That was just the debate that occurred.

But are there examples of other countries that we could use in our country to pattern ourselves after that can meet the demands and the size of the U.S. housing market?

Anybody? I am willing to hear an answer from anybody.

Yes, sir?

Mr. LEA. You measure the depth of the housing finance system by virtue of relative to the size of the economy. And if you look at that for other developed countries, we are not exceptional in terms of the size of our system versus the economy. Many countries such as Denmark and the Netherlands, for example, actually have a higher percentage of their economy in the form of housing finance.

So yes, they meet the needs of their system. Yes, we are larger. But if we had proper savings and we can tap that savings in a variety of different methods, then I think there is enough savings to go around. And, as Mr. Pollock said, it is really matching the kind of instruments we have with the—

Mr. MILLER. But there is going to be some—even if you emulate what the U.K. does or Germany does, there is still a government backing through their banks. They are going to tend to be there. And we are looking at opportunities or options out there where the taxpayers are not put at risk.

Professor, you had something you wanted to say, too?

Mr. MIN. Yes. I think we can take some lessons from Canada without necessarily taking their model. Canada requires mortgage insurance on most mortgages, any mortgage that is over a certain loan-to-value ratio, and that insurance is then reinsured by their federal government. It is all paid for and capitalized against, so they have two buffers of protection against it.

I think a number of independent think tanks and groups, such as the Bipartisan Policy Center, I think Senators Warner and Corker, have come up with a solution that looks a little like the Canadian model for mortgage-backed securities, which allows us to have 30-year fixed-rate mortgages.

Mr. MILLER. Representative McCarthy—who is out right now with surgery—and I introduced the bill. And it basically says that the profits from the GSEs are a conduit, whatever you want to call it, go to the Treasury. And those funds build up as a backstop against any future losses.

But if you are going to get the government out, you have to get the profits out of the private sector for the risk the government faces.

I yield back.

Chairman HENSARLING. The Chair now recognizes the gentlelady from New York, Ms. Velazquez, for 5 minutes.

Ms. VELAZQUEZ. Thank you, Mr. Chairman.

Professor Min, many of today's panelists believe that the lower foreclosure rates in Europe offer a justification to eliminate government involvement in the U.S. mortgage market. However, Western

European governments provide a number of recourse options to underwater homeowners that are not available in the United States.

I would like to hear from you what type of programs or mortgage provisions the European governments use to help prevent foreclosure.

Mr. MIN. I am not familiar with all of them, and I don't want to get the details wrong.

I know that Spain is contemplating forbearance for many of its underwater homeowners. Of course, Spain is facing a very major housing crisis at the moment that, because of their heavy reliance on implicit guarantees, is translating into a sovereign debt crisis.

Of course, many of these European countries have upfront social subsidies. Germany, for example, has a very, very large public housing program that accounts for a significant percentage of its GDP. This is publicly funded rental housing that competes with private sources of housing finance. They also have transfer payments.

And, of course, many of these European governments are engaging in regulatory forbearance. Because many of the European banks offer adjustable-rate mortgages or short-term rollover mortgages, these are resetting, and the banks are being heavily encouraged to refinance these mortgages, even though they are actually heavily underwater.

So these are the types of sort of ex-post, ad-hoc relief that European governments are providing, along with the ex-ante, upfront, social-welfare-type programs that they have in place.

Ms. VELAZQUEZ. Thank you.

Dr. Lea, would you be able to discuss with us some of the consumer protections and underwriting standards that were in place in Western Europe, Canada, and Australia, during the economic collapse of 2008? And do you believe that contributed to the lower number of foreclosures in those countries?

Mr. LEA. I think there are a number of factors that contribute to lower foreclosures. One, of course, is recourse that provides incentives for borrowers to pay because they are subject to deficiencies. And that is pretty much widespread, though, as Professor Min said, both Spain and Ireland have moved back a bit from that by virtue of this distress.

I think the other things that go into that is that, with our subprime debacle, if you will, it was characterized by what we call risk layering. So it wasn't just that we made loans to people who had bad credit scores; we made high loan-to-value-ratio loans with limited documentation to people who had bad credit scores.

Ms. VELAZQUEZ. Okay.

Mr. LEA. Yes, in the U.K, and to some extent the Netherlands, there was some move towards more of a subprime, but they never risk-layered. So if you had poor credit or if you wanted limited documentation, you still had to put 20 percent or more down. That is another factor in why we haven't seen the significant default rates.

The third is that, as mentioned earlier, you have adjustable-rate-type markets in many countries in Europe, with the extraordinary activities of central banks keeping short-term rates down. That also has contributed to lower foreclosure rates.

Ms. VELAZQUEZ. Thank you.

Mr. Pollock's written testimony included a chart listing homeownership data from a variety of international sources that ranked the United States 20th in homeownership rates. And, to me, it is kind of intriguing because the U.S. data was from 2013 and the international data ranged from 2004 to 2012, which was collected under very different economic circumstances.

So I just would like to ask Mr. Jaffee, Mr. Lea, and Professor Min, as scholars, would you not agree that a single-year snapshot provides a more accurate comparison of international homeownership rates, rather than using data taken from several different years and different economic circumstances?

Mr. POLLOCK. Is that question for me, Congresswoman?

Ms. VELAZQUEZ. I just would like to hear from the scholars who are here.

Mr. LEA. I would just point out two things. One is that homeownership rates really, normally, don't change that much over time.

Ms. VELAZQUEZ. And the economic circumstances?

Mr. LEA. We have had a big change in ours because of the very high rates of foreclosure and people losing their homes. That is internationally unusual; you don't see very high foreclosure rates elsewhere.

In that sense, I think it is okay to use homeownership rates over a period of time because, unless there is a shock of some kind, I don't think they change that much.

Ms. VELAZQUEZ. Professor Min?

Mr. MIN. Sorry, the question again was? Sorry about that.

Ms. VELAZQUEZ. They—

Mr. MIN. Oh, the 1-year snapshot, yes. Of course, circumstances were very different back then. I haven't looked closely enough at the data to be able to judge whether that was a fair comparison or not.

Chairman HENSARLING. The time of the gentlelady has expired, so the witnesses can answer in writing.

The Chair now recognizes the gentleman from Texas, Mr. Neugebauer, for 5 minutes.

Mr. NEUGEBAUER. Thank you, Mr. Chairman.

I want to go back to—someone was saying that the private label was the cause of the housing crisis.

But, in fact—Mr. Pollock, you can answer this question—Freddie and Fannie had these affordable housing goals, where they were going out and making zero-down-payment loans and housing policy. And, basically, they were encouraging the marketplace to bring more people into the housing market with, kind of looking the other direction. Is that correct?

Mr. POLLOCK. That is correct, Congressman. As we know, you don't do somebody a favor by making them a loan they can't repay. And Fannie and Freddie made a lot of bad loans, under government direction. They were also major buyers of subprime loans.

The crisis has a lot of culpable people. Certainly among the culpable in a big way were Fannie and Freddie.

Mr. NEUGEBAUER. In fact, I remember—I can't recall the source of it since it has been a while—that Fannie and Freddie said they were having trouble originating their own subprime lending or af-

fordable home lending and so they were, in fact, buying private label.

In some cases, they were buying private label that they couldn't actually legally themselves originate because of the quality of some of that paper; is that correct?

Mr. POLLOCK. That is correct, Congressman.

Mr. NEUGEBAUER. So, let's go back, then, to the private sector. And the private sector has a small market share right now, about 10 percent, and that is what we call the jumbo space.

And in the jumbo space right now, Dr. Lea, they are making 30-year mortgages.

Mr. LEA. Yes, they do, 30-year, 15-year, and 10-year mortgages. All of those are part of what you see in private.

Mr. NEUGEBAUER. Fixed-rate, too?

Mr. LEA. They make fixed-rates primarily. We only have about 3 or 4 percent of loans right now that are adjustable.

Mr. NEUGEBAUER. So what we do know is the private sector will make a 30-year fixed-rate loan without Freddie and Fannie guaranteeing it?

Mr. LEA. I think they will, and, as we said before, they do. Right now, they are crowded out, I would say. When you have the very high loan limits that Fannie Mae and Freddie Mac have, it is hard to get the volume and scale that is necessary to efficiently fund the instrument today in the private sector.

Mr. NEUGEBAUER. So if I am an investor and I am going to buy a 30-year mortgage or a mortgage-backed security and it goes through Freddie or Fannie, do I really care what the quality of the borrower is?

Anybody?

Mr. LEA. Absolutely.

Mr. NEUGEBAUER. With the guarantee.

Mr. LEA. Oh, with the guarantee?

Mr. NEUGEBAUER. Yes, with the guarantee, do I really care whether that person can—what their FICA score is? Is that of any consequence to me?

Mr. JAFFEE. Not at all. In that case, the government has taken all the risk, and so the investor is not looking to the credit quality whatsoever.

Mr. NEUGEBAUER. So where is the market discipline in that situation?

Mr. JAFFEE. I would say there is none.

Mr. NEUGEBAUER. Yes. And what happens when there is no market discipline?

Mr. JAFFEE. Bad loans get made.

Mr. NEUGEBAUER. Did that happen recently?

Mr. JAFFEE. I think so.

Mr. NEUGEBAUER. So I think what we—it has been mentioned that America is a great country, and it is a great country. I have been in the housing business for over 30 years. And the housing business has existed in America for hundreds of years, and we built a lot of houses before the Federal Government started guaranteeing a substantial portion of them.

And I think what my earlier comments were is that we have seen the destruction when the Federal Government starts trying to

manipulate the housing market or control the housing market. And when you let the government have 90 percent of the housing market, they are, in fact—or the housing finance market, they are, in fact, in control of the housing market in this country.

So I guess the question with the panel is that, if we begin to create some space, more space here for the private market, is there any reason not to believe that if they are playing in the upper levels that they wouldn't come down with the loan limits at Freddie and Fannie and fill that gap if the quality and the underwriting of those mortgages is done with some market discipline?

Mr. WHITE. Congressman, let me just add, basically, you are right, but it would help if we could get some final regulations on the Qualified Residential Mortgage (QRM). Without the certainty that the final regs on QRMs would bring, it is going to be hard to see a lot of securitization, because the securitizers, the investors don't really know what those regulations look like.

Mr. NEUGEBAUER. Thank you.

Chairman HENSARLING. The time of the gentleman has expired.

The Chair now recognizes the gentleman from Texas, Mr. Hinojosa.

Mr. HINOJOSA. Thank you, Mr. Chairman. I want to thank you for having this important hearing today. It is something that is very important to me and to my State of Texas.

My question is directed to Professor David Min.

Over the last two sessions of Congress, there have been many suggestions by my colleagues on the other side of the aisle that Fannie Mae and Freddie Mac need to be abolished, but I have yet to see concrete suggestions for a replacement. Housing is the backbone of the recovery, and, without supporting it one way or another, the economy would never have turned a corner.

My question to you is, the Financial Services Committee has now held several hearings this year on the status of housing finance but has failed to consider any legislation to reform the U.S. market. Nevertheless, there are several proposals that have recently been offered that aim at reforming the GSEs.

For example, the Bipartisan Policy Center published a plan to created a public guarantor to approve issuers and provide a catastrophic government guarantee on qualifying mortgage-backed securities. There is also a plan to allow Fannie Mae and Freddie Mac to use earnings to recapitalize and repay the taxpayers. Additionally, the Center for American Progress proposes Congress create new private-chartered institutions that have the ability to guarantee payment of principal and interest on qualifying mortgage-backed securities.

Professor Min, what are your views on each of these proposals? And please address the level of government support in each of these proposals.

Mr. MIN. Sure, Congressman.

I should state as a disclosure that I was formerly at the Center for American Progress, and I was deeply involved in the drafting of their particular proposal, which was actually a joint effort with a lot of other groups and individuals, which we called the Mortgage Finance Working Group. So, of course, I tend to favor that particular proposal, which in broad strokes shares a lot in common

with the Bipartisan Policy Center, their proposal, as well as the proposal in the works or soon to be released by Senators Warner and Corker over on the other side of Congress.

So I agree that GSEs should be abolished. I think that they have a lot of moral-hazard issues, as has been suggested by a number of you today, as well as my fellow witnesses. That being said, given historical precedent, I think it is important to make sure that we don't engage in radical reforms that might destroy some of the things we like about our housing finance system, or used to like about our housing finance system.

And so that is why I support a limited guarantee at the mortgage-backed-security level that mirrors in some ways what Canada does at the mortgage level, which is have an insurance of that, effectively, that is reinsured by the Federal Government. You pay insurance premiums, and you require capital be held against that, and that provides some protection to taxpayers. Additionally, I think that adds an element of stability that was missing in the past decade, when private label securitization really took over.

I think that particular proposal would be less government involvement than something where, like in 2008, we had the government step in and bail out all sorts of different markets that were tied to private label mortgage securitization. As I think Professor White said, this wasn't just about private label mortgage securitization. Those securities were used and reused as collateral in different private banking arrangements, and that is why the Federal Government had to step in so hard.

And so, I think we avoid that problem of ex-post, really undefined guarantees. As I describe in my written testimony, those guarantees tend to go too far. Because when you are in the middle of a crisis, you want to stop the bleeding, and you will do whatever it takes, even if that guarantees a bunch of people who don't deserve that guarantee and are not necessary to stop that contagion.

Mr. HINOJOSA. So, tell me this: Would the model that Germany is using, which does not have the GSEs, be practical for us?

Mr. MIN. Germany has, as I think was mentioned by Congresswoman Waters, something like a 41 to 43 percent homeownership rate. They utilize primarily bank deposits, with a significant minority of covered bonds, which they call "pfandbrief" over there.

And I think that that model, again, as I said at the outset, would be difficult to import without importing a lot of their other social policies, as well. It is difficult to imagine a 43 percent homeownership rate in this country. Given the lack of affordable rental housing, what would people do for housing, I think, is a real question.

Something that has not really been addressed in this hearing is the need—rental housing also, like homes purchased by their owners, requires a lot of finance, and often those sources of finance come from the same entities. But we really do have to account for that.

Mr. HINOJOSA. My time has run out, and I yield back, Mr. Chairman.

Chairman HENSARLING. The Chair now recognizes the gentleman from North Carolina, Mr. McHenry, for 5 minutes.

Mr. MCHENRY. Thank you, Mr. Chairman.

Mr. Pollock, in your testimony you mention that we have had three cataclysmic housing events in the last 30 years. You had the S&L crisis that originated with housing, you had—or real estate. And then you had the government bailout at the end of that crisis. Then, in 2008, you had Fannie and Freddie that originated at the heart of this housing finance bubble that led to bailouts of a whole array of institutions and nationalization of the GSEs, right?

So what are the housing policies that led to that?

Mr. WHITE. It is important, Congressman, I think, to have that historical perspective. I would say—David Min said we have crises every 10 years before the New Deal and we have crises every 10 years after the New Deal. We just have crises every 10 years.

Mr. MCHENRY. Are they just more expensive?

Mr. POLLOCK. In the S&L crisis, as Mike Lea points out in his testimony, the mismatch of lending long and borrowing short was directed by the government. This was a regulatory creation. And the S&Ls were broke by 1979 on interest rate mismatch directed by the Home Loan Bank Board, which was the cartel manager set up by the government for the savings and loan industry.

Mr. WHITE. My predecessors.

Mr. MCHENRY. Right.

Mr. POLLOCK. This time, we have a different cartel, Fannie and Freddie, who took over and dominated the broad middle part of the mortgage market, the middle-class and upper-middle-class mortgage market, where perfectly sound loans can be made with no government guarantees. That is a market that would naturally have been a thoroughly private market, except that it was preempted by the government and by government direction through Fannie and Freddie.

So you had a government market instead of a private market through preemption, with the resultant pushing of credit against the asset. This was a very important contributor to the bubble, which then collapsed, as we know.

Mr. MCHENRY. So, Dr. Lea, one of the benefits—one of the potential benefits, I think you might agree, of the GSE system is standardization. Is that fairly accurate?

Mr. LEA. I think in the early days of their existence that definitely was a benefit that they afforded the market, yes.

Mr. MCHENRY. Is that still important to think about, the standardization, in order to access mortgages?

Mr. LEA. I don't believe it is important anymore, in that we have developed a lot of these standards, and there is a potential downside of excessive standardization, where you end up compartmentalizing housing finance with too narrow of a range of products and potentially too narrow of a range of underwriting standards.

I do worry that some of the things being discussed in the QM and QRM world will eliminate, virtually, things that can be effectively used in certain circumstances.

Mr. MCHENRY. Okay. So overreliance on standardization could limit options for my constituents?

Mr. LEA. Absolutely.

Mr. MCHENRY. The question here is, if you have the interest rate risk and you have the credit risk—right? The interest rate risk for a 30-year fixed, you can hedge out. An institution, complex institu-

tions can hedge out interest rate risk, and that is done every day by moderate- and large-sized businesses. And so that is resolvable.

The credit risk question, though, the benefit of standardization for securitization is that you can have a wider pool. And that can be effectively done without the government then purchasing that standardized product and being the securitizer, can it not?

Mr. LEA. Absolutely. You can diversify across geographic areas, borrower types, and institutional originators. That diversification is a significant value in terms of reducing overall credit risk.

Mr. MCHENRY. So I want to know this: If we end Fannie and Freddie, if we end GSEs, can my constituents still get a mortgage?

Mr. LEA. Absolutely.

Mr. MCHENRY. Is it one that they could reasonably afford?

Mr. LEA. Absolutely.

Mr. MCHENRY. All right.

Thank you, Mr. Chairman. And I will happily yield back my remaining 15 seconds.

Chairman HENSARLING. The Chair recognizes the gentleman from Massachusetts, Mr. Capuano, for 5 minutes.

Mr. CAPUANO. Thank you, Mr. Chairman.

I want to thank the witnesses for being here today.

It is kind of interesting, today we are looking around the world for different financial services issues that we can follow, which I think is a great idea. We should be checking every possibility we can. Yet, tomorrow, we are going to have a hearing that basically says we shouldn't look around the world.

I just find it kind of an interesting juxtaposition. We look when we want to find the right answer; we don't look when we don't want to find—not an issue for the panel, but I guess I will bring it up tomorrow, so you might want to be watching.

I also find it interesting that—for me, this is very educational. I don't know a lot of these things around these international matters, and I don't know some of the history of it, and I am very interested in learning it.

And, honestly, it is kind of interesting when you look at some of the covered bond things that the other bills do, that if we are going to adopt any other country's system, we really have to adopt the whole system, we shouldn't adopt it piecemeal, which means we would have to pick up the covered bonds, which, to me, sounds an awful like "too-big-to-fail."

And I don't like "too-big-to-fail," which is why, by the way, I just filed a bill yesterday, based on a paper written by Peter Wallison at AEI and a friend of mine, Con Hurley at BU, that kind of does an additional thing to suggest that "too-big-to-fail" needs to be addressed again. Yet, today, I have implications that we should adopt "too-big-to-fail" for mortgage bonds by private companies. That is a different hearing for a different day.

So when I get all of these confused things, I tend to go to the simple matters, and for me, it is math. It is just numbers. So I don't really know how to get a mortgage. I do the same thing everybody else does. I go online, I visit my local banker. So I did it again today. And in the United States right now, approximately, you can get a 30-year mortgage with 20 percent down, for 4 percent. That is a pretty typical mortgage today.

I have no idea what to do in other countries. So I picked one. I picked England, because I figured I didn't have to translate the Web site. Maybe I could figure out what they were doing.

So I pulled up the 10 top mortgages in the U.K. today, and I got one of these typical Web sites, money.co.uk, typical thing, and do the same thing here. And I looked at them, and I said, okay, that is all well and good. And I don't know most of these companies, but I do know HSBC, one of the biggest banks in the world. So I went to their Web site to figure out what they actually do.

And here is what HSBC offers today, as of this morning, on a typical mortgage. The rates are about the same, about 3.99 percent. Good stuff. But there is a minor little problem, actually two, because I know everybody here knows, but some people want to talk about rates as the only thing that matters. The other thing that matters is the term, and the other thing that matters is the downpayment.

The downpayment, in this case, at HSBC, is 40 percent. A 40 percent downpayment on a $300,000 house is $120,000 down. Now, maybe a lot of people have $120,000 in cash sitting around that they can put down on a $300,000 home. I don't.

But let's get past that. The next little issue is, the longest term I could find was a 10-year mortgage. They have 2-year mortgages, they have 7-year mortgages, they have 5-year mortgages. And the truth is I didn't do the numbers on those, because, just on that, I know that is obscene. But you do the numbers on a 10-year mortgage versus the typical mortgage we just talked about, you get the exact same loan under the HSBC's Web site as of this morning.

And in the United States, the average person would have to pay $60,000 down and would pay roughly $13,752 a year in principal and interest. That same loan under these terms would require $120,000 down and $21,852 a year, which is $8,100 more than my average U.S. constituent, which means, for all intents and purposes, out of their own pocket they would have to pay for an extra 7 months a year. I pay 12 months a year; they would have to pay 19.

Does anybody here think that is a good deal? Go right ahead. Anybody?

Mr. LEA. That particular example would not be a good deal, Congressman. But I would say that that is not a representative loan in the U.K. today, looking at—

Mr. CAPUANO. HSBC is not representative?

Mr. LEA. Well—

Mr. CAPUANO. Actually, it was the best rate on this page. This page shows me the highest rate is 5.79 percent, and that is for a 2-year loan.

Mr. LEA. When they talk about 2-year loans, Congressman, in the U.K., they are talking about the period of time the rate is fixed. So these loans are longer-term, typically—

Mr. CAPUANO. I understand that.

Mr. LEA. But you—

Mr. CAPUANO. So there is no 30-year fixed-rate mortgage in England?

Mr. LEA. That is correct, Congressman.

Mr. CAPUANO. Ah, bingo. Here we go.

Mr. LEA. But the LTV that you are suggesting, 40 percent down, is not representative.

Mr. CAPUANO. Now, on the private market that happened before the creation of GSEs—and, by the way, I want to be really clear. I absolutely agree that we need to do something with Fannie and Freddie, first of which is we should stop using them as a piggybank and allow them to pay down their debt, which is a different issue. But that is another argument for another day.

But I absolutely agree. I actually particularly like the consolidation of regulations. I want to do that as much as anybody. I want to make it simple. All those issues are non-issues to me.

The only question in the final analysis is whether the taxpayers, through some degree, either directly or indirectly, either explicitly or implicitly, are going to back mortgages for this country. And I haven't heard anybody suggest anything other than they have to, with the sole exception of people who tell me the private market can do it alone.

Mortgages will be available under the private market, just like they were in 1930, just like they were in 1920. There were private mortgages. But guess what the rates were? Just like England: 50 percent down, 5-year repayment, 5 percent. Same problem.

Will there be private mortgages? Of course, there will. Affordable? I don't know where you live; they are not affordable in most of my district. It would be available to some of my constituents on Beacon Hill and maybe in Brattle Square in Cambridge. But my average constituent in Chelsea will never own a home.

Do you think that is good for America?

Mr. POLLOCK. And yet England has a higher homeownership rate than we do.

Mr. CAPUANO. I fully understand that. And it is a good thing. I am going to be very interested to look at the historic thing. And, by the way, I would love to increase the homeownership rate.

I guess my turn is over. Thank you, Mr. Chairman.

Chairman HENSARLING. The time of the gentleman has expired.

The Chair recognizes the gentleman from, New Mexico, Mr. Pearce.

Mr. PEARCE. Thank you, Mr. Chairman. And I would yield a minute to the gentleman from New Jersey to complete a question that he had.

Mr. GARRETT. Only 30 seconds.

Can you just respond, Mr. Pollock, with regard to the question I was asking before? That was the question on what Hank Paulson was talking about, who we are actually selling our guarantees to, and does that put us in a more dangerous position going forward?

You can be brief on that.

Mr. POLLOCK. There is a wonderful couple of pages in Mr. Paulson's memoirs of the crisis, which you cited, where he talks about how they have to make good on the guarantee because the Chinese and the Russians are calling them up and saying, how about it, do you want us to sell all these mortgages? This is a great example of the dangers of having a GSE.

I think as Congressman Miller said, the key mistake was having a GSE. That is basically how you could summarize his remarks. I

think it is very important, that the worst of the cases is the GSE status. We need to end that.

Mr. GARRETT. I yield back.

Mr. PEARCE. Mr. Min, the question about public- versus private sector involvement in the meltdown was brought up by one of my colleagues, and you, I think, discussed the role of the private institutions in that meltdown of 2008.

Were there things that originated in public policy that also contributed to that?

Mr. MIN. Absolutely, of course.

Mr. PEARCE. Could you highlight those? And could you pull your microphone just a little bit closer to you?

Mr. MIN. Sure. So I said, absolutely, yes.

I think some of the things that were problematic, going back to the 1960s and 1970s, bank regulators started allowing banks to do more activities. You started developing universal banks in the United States. Our regulatory system was not well-suited for that. We allowed a lot of "shadow banking" to occur, financial intermediation or banking, as most people think of it, the use of short-term—

Mr. PEARCE. What about the Affordable Housing Act?

Mr. MIN. Sure. And so I think that—

Mr. PEARCE. What about the Affordable Housing—

Mr. MIN. I would make a distinction between affordable housing and subprime, because they were not always the same. Many subprime mortgages, for example—

Mr. PEARCE. If I could reclaim my time—

Mr. MIN. Sure.

Mr. PEARCE. —when I read in Gretchen Morgenson's book here, "Reckless Endangerment," before the affordable housing law was passed, 1 in 230 lenders had a downpayment of less than 3 percent. So we came in with something above 3 percent of a downpayment. And by 1992—the bill was passed in 1989—there was only one in three who had—one in three had less than 3 percent. So from 230 lenders down to 3 lenders.

And then, also, at that time, James Johnson with Fannie was fighting vicious warfare in this body, and he was paying off—he was giving contributions to people to vote for things which would push the affordable housing goals, which set into policies then that the bankers were required to perform, which then started all of these loans that were in the subprime category.

Would you not consider that to be substantial in contribution to the 2008 collapse?

Mr. MIN. If I could, first, I would say I have never taken any payments from Fannie Mae or Freddie Mac.

The second thing I would say is—

Mr. PEARCE. No, I am talking about people in this body, that they were putting—

Mr. MIN. No, no, as a disclosure.

Mr. PEARCE. Yes.

Mr. MIN. And how I would answer your question—I know you are running out of time—is that, in fact, there was zero connection between the affordable housing goals and the subprime crisis. There was almost no overlap, that most of these loans did not qualify because of various reasons. In fact, the Alt-A portfolio of Fannie

Mae and Freddie Mac was a much bigger cause of their losses. Hardly any of that qualified for their affordable housing goals.

Similarly, CRA, which has been blamed for the crisis, almost none of the subprime mortgages were originated by CRA-regulated lenders—

Mr. PEARCE. If I could reclaim my time, Mr. Chairman. During that period of time, before 1996, Fannie had a portfolio of $156 billion, and they doubled it. And then, it went up to what it is today. The five executives were sporting $44 million total in stock in Fannie and Freddie.

Mr. MIN. Sure.

Mr. PEARCE. During that time, Mr. Johnson was able to pay himself $100 million from this government-guaranteed program. His follower, Franklin Raines, took $29 million as his pay.

And yet, I am to believe from you that all of these changes in the way that they were underwriting and the fact that they had to keep these things going or they couldn't drive their balance sheet higher and they could not drive their pay higher, that had no effect downstream on the private market. Sir, that just defies imagination.

I yield back, Mr. Chairman. My time has expired.

Chairman HENSARLING. The Chair now recognizes the gentleman from California, Mr. Sherman, for 5 minutes.

Mr. SHERMAN. Thank you.

Professor White, thanks for pointing out how important it is that we get those QRM regulations published. Long-term reform may take us a while here in Congress, but the agency has had plenty of time to write those regulations. And that is one step we all can agree on.

Mr. WHITE. I agree, Congressman.

Mr. SHERMAN. And, Professor Min, I think you are right to point out the important role private label subprime mortgage-backed securities played in this debacle.

I just want to take a second to point out that the reason I think that happened was the credit rating agencies. Once they gave AAA to Alt-A, well, the lion's share of capital in our system is in loans, bonds, publicly traded bonds, and any portfolio manager who turned down the opportunity to get somewhat higher yields with high-rated securities looked like a fool in 2006 and was fired before 2007.

So, as long as we have a system in which the issuer hires the bond rating agency, we are going to have bubbles here or there, just as, if you let me hire the umpire, I would have a bubble in my pitching record, 27 strikeouts per game.

Now, we have been comparing ourselves to other countries. And one thing that is great in America still is that you can get a 30-year fixed-rate mortgage, often with a 10 percent downpayment if you have good credit. These other countries we have been talking about, can you get a 30-year fixed-rate mortgage, and can you get it with a 10 percent downpayment if you have good credit?

Dr. Lea?

Mr. LEA. The 30-year fixed-rate mortgage is unusual. The only other country which has that long of a term is Denmark, and they have a 20 percent down requirement.

Mr. SHERMAN. So if we are going to let Americans buy homes the way they are used to when they have good credit, we are not going to be able to just adopt even the Danish system, let alone the systems we see in some other countries.

Now, we are hearing about high homeownership levels in other countries. Often, in Europe, you meet people whose great-grandparents lived in the same house that they do. You can't find that anywhere in California. We have the most adaptable workers in the world, or at least in the high-income world. Our people are willing to move across town or across the country for a better job. And so, we have a lot of people moving from here to there.

Do these other countries, if you adjust for longtime family ownership, have the kind of homeownership rates we do? Or is there a way for you to adjust it to try to give me a picture of whether a young family who doesn't inherit a home from great-grandparents can find a place to live and then find another place to live when they move to another city?

Mr. POLLOCK. I will try that, Congressman, since that table is mine. Those numbers, of course, are fairly hard to get and have some estimates in them. The point of the table is it gives you a pretty good sense overall that we don't have an outstanding homeownership ratio.

We do have high labor mobility and lots of moving, as you correctly say, Congressman, which is just why, as I think the chairman said, you don't really need 30-year loans if you are going to move every 4 or 5 years.

Mr. SHERMAN. We need 30-year loans to keep payments lower than the 15-year loan, and—

Mr. POLLOCK. Yes. One important thing about 30-year loans is, while they are good in an inflation, they are terrible in a house-price deflation with falling interest rates.

So if we look at other countries, we see that the crisis was helped by the fact that the house payments on a floating-rate loan automatically fall. You don't have to refinance your mortgage. You don't have to have a government program. Your payment automatically falls with the rates.

One of the things, interestingly, and I think little understood, is what made the crisis in this country much worse was exactly the 30-year fixed-rate mortgage. In a house-price deflation, it is a bad instrument.

Mr. SHERMAN. I have met too many people who have suffered too much because their ARM adjusted upward.

And I yield back.

Chairman HENSARLING. The Chair recognizes the gentleman from Florida, Mr. Posey.

Mr. POSEY. Thank you very much, Mr. Chairman.

Have any of you gentlemen ever purchased a home through FHA? Just raise your hand if you have.

None of you have. Mostly everyone I know purchased their first home through FHA or VA. I surmise maybe a lot of people are just better off than the people that I know. And it is unfortunate.

Have any of you ever processed a mortgage loan? Okay. Do any of you think it makes—

Mr. LEA. I have managed people who process mortgage loans, Congressman.

Mr. POSEY. Okay. Do any of you think it makes any sense that as of 2 years ago, we have spent $166 million defending the top 3 executives at Fannie Mae and Freddie Mac? Do any of you think that makes sense? Raise your hand if you think that makes a bit of sense. Raise your hand if you think any of the other countries in these charts that you gave us would ever think of doing something that stupendous.

We had a crisis, and the crisis was caused by Congress; if we had to start locking people up, you would probably start with Congress. And then, you would go to the people who actually did the dirty deeds. And because there has been no accountability for that activity, that is why we have to fear it happening again. They haven't pulled the same shams they did in S&L, did they? They didn't have any S&Ls doing that stuff, did you? A thousand people went to prison. Now what do we do? Stipulated settlements and we buy off our prosecution with stock corporate's money these days, it seems.

I looked at the information that you provided us. I know you all don't think we read your written testimony, but we do. And I compared the chart to Dr. Jaffee, Mr. Pollock, and Professor White. And you are not all on the same page. You are in the same neighborhood, but there are some differences in the data, the hard data that you have given us. Not to say that decisions to move in the direction Congress is going to move need to be made based just on those charts or comparisons with other countries.

We know there is an awful lot of difference there. And the view we have of the international market that you provided us is really relatively slim. It came close compared to debt, but I would be interested in knowing the average cost of homes in other countries or the average value to their GDP or the total value to GDP. I am okay with moving away from GSEs. I am a REALTOR® by profession. I think it is just fine, just so long as someone has a detailed plan, not just a vision like we have passed on many national priorities recently, but a detailed plan of how we would replace it without upsetting an already very fragile—and I use that word as the nicest way of describing the current real estate market—as being very fragile. Without making that worse.

Do any of you claim to have a detailed plan of how we get rid of the GSEs and replace the ability for funding and financing for future generations with the same opportunities that this generation had? And if you have a detailed plan of that, raise your hand, because I am going to hold you accountable for giving me a detailed plan. That is just wonderful. Okay. We don't have time to hear your four detailed plans now. But I would appreciate it if you would give me those absolute four detailed plans and give us a chance to look them over, and hopefully the chairman will be kind enough to bring us back in here and we could discuss both sides of the solution. I see my time is up, Mr. Chairman.

I yield back.

Chairman HENSARLING. It wasn't quite up, but we will take it nonetheless. The Chair now recognizes the gentleman from Texas, Mr. Green. Apparently, the gentleman from Texas is going to yield to the gentlelady from Ohio, Ms. Beatty, for 5 minutes.

Mrs. BEATTY. Thank you, Mr. Chairman, and Ranking Member Waters. And I thank all of our witnesses who are here today.

As I have had a chance to listen briefly and read through your testimony, I find it very interesting and educational for me to be able to evaluate the international alternatives to our models of housing finance. Hearing in the last part of the testimony when we talk about eliminating some of the GSEs like we can still have homeownership at an affordable level if there is no FHA, Fannie Mae, Freddie Mac.

Now I am from Ohio, where we have had a collapse in our housing market. We are trying to get through the recovery. I have also spent 20 years of my life working with public housing authorities to get people to be more self-reliant. So first-time homeowners who don't have that 40 or 20 percent downpayment that we have talked about, who might have some challenges with their credit scores.

So when I hear we can still have an affordable market, it puts me on pause because in Ohio, I have not had that experience. Let's just assume that I have a different answer than your answer. My question then would be, if we don't take steps to preserve access to housing for the working-class families, what risks do you foresee in the housing markets?

Mr. WHITE. Congresswoman, I think most of us would agree that targeted programs through FHA are worthwhile—in fact, Professor Jaffee explicitly mentioned FHA. I mentioned FHA in my testimony as well. Target low- and moderate-income households, first-time home buyers, absolutely. That is a worthwhile place to be focusing and targeting subsidies. On budget, transparent, and as far as I am concerned, we should expect this program to be a net cost in the budget. Because it is a subsidy program, we should expect it to be a subsidy. It is absolutely worthwhile. Absolutely worthwhile.

Mr. POLLOCK. Congresswoman, in my testimony it says something like this—you can be a private company or you can be part of the government but you can't ever be both at the same time, which is what the GSEs pretended and claimed to be with disastrous results. I think in a resulting real-world scenario, we will have some mix of private and government, but you will be one or the other. That which is government will be clearly government, on budget, approved and appropriated by the Congress.

Then you can ask, what is the mix? Some of us think the right mix is 80 percent private, 20 percent government, which is a long way from where we are now in a much healthier way. We can debate about exactly what the mix should be. But we need to go in the more private less government direction. I think virtually everyone agrees with that.

Mr. LEA. And Congresswoman, I would like to make two other quick observations. One is that if we put weak households—weak from a standpoint of income capacity, lack of savings, or past credit problems into a house—a house is a large financial obligation and it isn't necessarily the best thing for all people.

So I would agree, for example, with what Professor Min was talking about earlier in that we need to have a balance of policies for affordable rental as well as homeownership. We want to have a balance in that regard.

And the other thing to keep in mind is that while we have people we want to help from the standpoint of their homeownership and housing, other people provide savings and are bearing those risks.

Mrs. BEATTY. You mentioned rental. Let me ask this very quickly: Do you think that the U.S. rental markets are significantly equipped to handle a larger rental population if we get into that? If people want a home, they can't buy, they go to rent and all—

Mr. LEA. We have seen a decline of almost 4 percentage points in the homeownership market. And the rental markets have been able to absorb a lot of that, yes.

Mrs. BEATTY. Thank you. I yield back.

Mr. LUETKEMEYER [presiding]. Thank you. The chairman had to step out for a little while, so I am in the chair. And it just so happens that I am up to ask questions, so you get a double dose of me here.

I will be brief so that we can get to some other folks here before the time runs out.

Dr. Jaffee, in your testimony, you talked about the period between 1950 and 1990 when homeownership rose to 64 percent. What was the percentage during that timeframe of GSE involvement in the housing market?

Mr. JAFFEE. The GSE growth was steady over that period. If you start in 1950, it was minimal. It was maybe 1 or 2 or 5 percent of the mortgage market. Even by 1980, it was only maybe 10 percent of the market. So I would describe the period from 1950 to 1990 to be a U.S. mortgage market that was dominated by private market bank participants.

Mr. LUETKEMEYER. Okay. So by 1990, it was what, roughly?

Mr. JAFFEE. All in, maybe 35 percent.

Mr. LUETKEMEYER. 35 percent by then. And we had 64 percent homeownership numbers, is that right?

Mr. JAFFEE. Exactly right.

Mr. LUETKEMEYER. And now today, we have 90 percent GSE guarantee, according to your written testimony.

Mr. JAFFEE. Yes.

Mr. LUETKEMEYER. On page 3, I guess it is. And we have 65 percent homeownership, is that correct?

Mr. JAFFEE. That is correct.

Mr. LUETKEMEYER. So basically, we have almost tripled the amount of GSE involvement with basically no change in the amount of homeownership; is that basically correct?

Mr. JAFFEE. That is correct.

Mr. LUETKEMEYER. Okay. Mr. Pollock, you made, a minute ago, a comment with regards to 80/20 with regards to the ideal mix. Can you go back and explain just a little bit why you think that is a good number and why it would be not 50/50 or something like that?

Mr. POLLOCK. We can remember how we used to think about the mortgage market. It was 15 or 20 percent what we call government loans, which is FHA/VA. I think realistically, politically, while the FHA has plenty of problems and lots of bad credit on its books, it will be reformed but not taken away. What is not government, in my view, should be private. That is how we get to 80/20. So it is

20 percent formally government, on budget, appropriated; 80 percent private; and zero percent GSEs, Congressman.

Mr. LUETKEMEYER. Part of the discussion earlier was with regards to 30-year fixed loans. As a former banker, I have made a lot of loans to individuals on homes before. And when you sit there and you look at their budgets and you look at the house they are trying to buy, and if it is something they can afford, and they have a proper downpayment, and you look at how they want to stretch it out to 30 years versus 20 years, if they just make an extra $50 or $150 a month, they can go from 30 down to 20 and save literally thousands and thousands of dollars. And I don't think we are doing them a favor by stretching it out to 30 years. I think we are doing them an injustice by putting them in a 30-year loan.

Mr. Pollock, you made the comment a minute ago how this can be a detriment. I would like for you to expound on that just a little bit if you wouldn't mind.

Mr. POLLOCK. I am also a former banker, Mr. Chairman, and I fully agree with your point.

Mr. LUETKEMEYER. You are recovering from that, are you?

Mr. POLLOCK. I remember talking long ago to a guy who ran an old mutual. He still called it a "building and loan," in downstate Illinois. His mortgage loans were for a maximum of 15 years. If you didn't like the payments, you bought a less expensive house because, he said, "Look at the difference in the equity build-up between a 15-year and a 30-year loan." And it is really quite remarkable. So there is a strong argument that the shorter loans, because of the much faster equity build for the borrower, can be more advantageous.

Mr. LUETKEMEYER. This is one of the ways that individuals save, is it not, to get equity in their homes as they make payments into it? That is one of the best ways that the individual can save. It is also, as we go through this process, we have found that 7 years is the average length of a loan. And why do we need a 30-year mortgage whenever it endangers them, sometimes whenever the markets fluctuate? So I will stop right there and move on. I believe the gentleman from Texas, Mr. Green, is next in the queue.

Mr. GREEN. Thank you, Mr. Chairman. You look quite well in the chair. I thank the ranking member.

Mr. LUETKEMEYER. You will get more time for that, sir.

Mr. GREEN. I thank the ranking member for hosting this hearing as well.

I thank all of the witnesses for appearing. Many of you indicated that you have detailed plans. I am not going to ask for your plans. But I do ask, do you have a statement from the builders who are in support of your detailed plan? If so, would you kindly extend a hand into the air from the builders, home builders who are in support, if you have a statement from them. Do you have a statement from the REALTORS® who are in support of your detailed plan? If you do, would you kindly extend a hand into the air?

Let the record reflect that thus far, we have had no hands which connotes, as I understand it, with this en banc process, that we don't have any statements from anyone.

Do we have a statement from the bankers who are in support of the detailed plan? I take it from the absence of hands that the

plans, though they may be great plans, they haven't been either vetted by the bankers, the REALTORS® and the builders, or that they are not in support of the plans. And I said that to give you a little bit of latitude so as not to imply that they have had an opportunity to see them and they are opposed to it. But let's just say they haven't been vetted.

I do see Mr. Min. Mr. Min, do you have something that you would like to share with us?

Mr. MIN. The National Association of REALTORS® (NAR), the Mortgage Bankers Association (MBA), and the National Association of Home Builders (NAHB) have all looked at the plan that I was formerly associated with, which was released by the Mortgage Finance Working Group, and organized by the Center for American Progress. They indicated they were in broad support of it generally, but of course we didn't have written statements from them for a number of different reasons.

Mr. GREEN. Your plan has a 30-year rate associated with it?

Mr. MIN. Yes, it does.

Mr. GREEN. A 30-year fixed-rate?

Mr. POLLOCK. And Congressman, the plan that my colleagues and I at AEI put together has also been given to all of those people.

Mr. GREEN. Been given to, but not received a response from?

Mr. POLLOCK. Home builders and REALTORS® in particular never saw a GSE they didn't like, Congressman.

Mr. GREEN. I understand. That may or may not be the case. I won't speak for them in terms of your report.

Let me go on. The 30-year fixed-rate does allow lower monthly payments, generally speaking. I think that is a fair statement. And I appreciate what you are saying about the ability to save money by having a 15-year mortgage or a 20-year mortgage. But let me ask this: Is there anything that precludes a 15-, 20-, or 25-year mortgage right now, notwithstanding the 30-year fixed-rate being offered? Nothing precludes that. A person can still get a 25-year, or a 15-year. You just have to either ask for that and negotiate that product, or you can simply make your payments such that you pay down your house in 15, 20, or 30 years. It is your option. And once you get the 30-year fixed-rate—let me do this, Mr. Min. And I will try to get back to you.

Let's talk about something else quickly. People not only need houses and homes, they also need transportation. If you get a 30-year fixed-rate mortgage, that $150 can go toward a vehicle for transportation. I have a good many constituents, my dear friends, who find $150 extra per month to be a rather handsome sum of money. And that can help them do other things. So if you change the 30-year fixed-rate such that this becomes a part of the culture—and it is a change in the culture that you are talking about—you will also impact other aspects of the economy. Perhaps the auto industry might have a little bit of concern with only 15- or 10-year rates because they may be impacted in terms of the products they produce and sell. There is an impact that goes beyond simply having that one mortgage.

Finally this, with my last 29 seconds—and I apologize to you, Mr. Min. But we do have to ask ourselves, Mr. White—and I like your animation, by the way—why people thought that we would

have housing prices that go up forever. But let's ask, why did they go up? You don't have to know why people thought they would. But why did they, is the question? And when you have IRS regulations that cause flipping to be profitable, when you have other aspects of buying a home, not to own it, but to sell it, that is a part of it. Thank you. I yield back, Mr. Chairman.

Mr. LUETKEMEYER. Thank you. The gentleman from Wisconsin, Mr. Duffy.

Mr. DUFFY. Thank you, Mr. Chairman. I think this is an important conversation we are having today. If you look at Americans, the largest investment they usually make in their lifetime is their home. And we are having a conversation about potentially changing the market in which Americans engage to make that largest purchase of their lifetime. We are also dealing with an issue where American taxpayers are forced to bail out the GSEs. And America hates that as well. So I think it is a great conversation. It is an important conversation to have.

Mr. Jaffee, to you, I want to get you engaged here. I think you were commenting about the basis point difference in the GSE market as opposed to a non-GSE market. Is that correct? You would see a 25-point basis differential?

Mr. JAFFEE. That was prior to the crisis, not in the current conditions. But over a long history, the jumbo mortgages would be priced at about 25 basis points above what was virtually an identical mortgage that was just under the conforming loan limits.

Mr. DUFFY. I want to drill into that a little bit. If you look at the jumbo market, is it fair to say that those who were given a jumbo loan, a jumbo mortgage, are wealthier? They put more money down. In essence, they are probably a little better risk than the mid- to low-income individuals who may be getting mortgages as well. And to maybe use that as an example of the differential in basis points may not be an accurate representation of what we would see with middle-income Americans.

Mr. JAFFEE. The 25 basis points difference that I was referring to was a computation which did try to control for the different borrower attributes on either side of the line.

Mr. DUFFY. Including downpayment? Because on average, jumbo borrowers are putting 20 percent down, is that right?

Mr. JAFFEE. Sure.

Mr. DUFFY. And on average, we are seeing Americans put 5 or 10 percent down.

Mr. JAFFEE. For sure. So I am agreeing, the average jumbo borrower was different from the average conforming mortgage borrower which, in computing the 25 basis points, we just tried to control for that.

Mr. DUFFY. Okay. So you think you have an accurate representation?

Mr. JAFFEE. As good as can be. I think it is generally agreed that is a reasonable number.

Mr. DUFFY. So looking at a world without our GSEs—which, listen, I am on this pathway, so don't take my questions the wrong way. But what does the market look like? Do we have mortgages that are amortized for 30 years that will have a fixed rate for 10 or 20 years? How does this look? How much are we putting down?

What can Americans expect? I know the four of you have plans. You have probably done this analysis. But Mr. Jaffee, if you want to go first, what does the market look like in a non-GSE world?

Mr. JAFFEE. The way I look at it is, we once had, not 100 years ago, but 20 and 30 years ago, such a market. The U.S. mortgage market in the 1970s certainly, and I would say into the 1980s, was predominantly a private market-driven system. And what we had were mortgages. The standard U.S. mortgage was a 30-year, fixed-rate, 20 percent downpayment mortgage. And I know of no reason to think that would not recur if we were not crowding out the private market today.

Mr. DUFFY. But we have to agree that there is going to be a significant difference in Americans' ability to purchase a home if you are saving 20 percent to put down as opposed to 5 or 10 percent. It is going to take far longer. It is going to have a significant impact on how the market works. And maybe that is a good thing. We are going to have less risk in the mortgage market. Is it fair to say a little longer in saving?

Mr. JAFFEE. Except again, that I would say, remember now that the homeownership rate over this period from 1950 to 1990, when we did have this 20 percent downpayment mortgages, the standard did go up from 55 to 64 percent. So it is not clear to me, at least, that a 20 percent downpayment mortgage is not a feasible solution.

Mr. DUFFY. So it is not a correlation is what you are saying in regard to downpayment and homeownership?

I only have a limited amount of time left.

Quickly. I come from rural Wisconsin. We have a lot of small community banks. They expressed concern about what kind of market would exist for them to still engage with homeownership. Are they going to see the big banks take over the mortgage business and leave them out? Because they are concerned about the market they will be able to sell into.

Do you guys see a pathway for small community banks and credit unions to still engage in a mortgage market without our GSEs, Mr. Pollock?

Mr. POLLOCK. Yes. It is a very important part of the system. Almost all of the 7,000 banks are small banks and we should make sure they have a vibrant, competitive role. There are various ways you can work on that. I would be happy to take it up with you in more detail, if you would like.

Mr. LEA. One quick comment on that is that the GSE activities during the 1990s actually encouraged a lot of consolidation in the markets because the GSEs gave the big banks, the aggregators preferential pricing, and that led to the situation where the smaller community institutions were increasingly dependent on the ability to sell to a Wells Fargo or a Bank of America. And that was all due to GSE pricing policy.

Mr. DUFFY. I yield back.

Mr. LUETKEMEYER. Thank you. Mr. Delaney?

Mr. DELANEY. Thank you, Mr. Chairman. And I thank the witnesses for your testimony here today.

Let's assume for a second that the 30-year fixed-rate mortgage, as it is structured, is a good deal for the borrower and not a good deal for the lender, which seems to me to be a reasonable assump-

tion because no lender would ever make a 30-year fixed-rate prepayable mortgage unless they knew rates would stay high, or unless they had a way of hedging the interest rate risk and the prepayment risk, which they can do better now than they probably ever could. But still, it is a better economic proposition for the borrower and the lender.

And let's assume for a second the GSEs were poorly crafted and poorly designed institutions. I think Mr. Pollock, you said it quite well. You can be government, or you can be private, but you can't be both. Because you get—from their perspective, it was a "heads they win, tails we lose" kind of business.

And let's assume for a second that the government is crowding out the private market, which I think to some extent they are. So let's assume all these things for a second.

I am curious. And first, Mr. Pollock and then Dr. Lea. Two questions. First, Mr. Pollock, have you done any analysis in your evaluation of the housing market to indicate the cost of the various subsidies and operating model that we have deployed across the last, call it 30 or 40 years, to the taxpayer, and compared that or contrasted that to the economic benefit that was created in the country broadly for this kind of housing finance system? Because it seems to me, we can't look at what is wrong with our housing finance system in isolation without doing deep serious research into the economic benefits that were transferred to the economy to the tax base and to consumers broadly.

And my second question for Dr. Lea is, as we think about new housing finance models, which we clearly have to do, and deciding what the role of government should be—I think there should be some role of government, but it needs to be very different than what it has been in the past. And we contrast it to international markets which have idiosyncratic aspects, as Professor Min indicated. But have you analyzed how those markets, which are materially smaller than the U.S. housing market, because I think the mortgage market in the United States is the second smallest fixed income market in the world and at different times, it was the largest fixed income market in the world.

Have you thought about how those scale? Do they scale successfully into a much larger model? And have you done detailed research around that notion? So the first question for Mr. Pollock, which is contrasting the benefits, really, has this been a good investment for us economically?

Mr. POLLOCK. Congressman, that is a great question. It would make a good project for an economist, of which I am not one. I am a banker.

I would say this: We know that if you want to get efficient allocation of resources you have to have markets and market pricing. That is the way to do it. That is what we haven't had. And that is what we need to move toward so that the prices of these instruments and the prices of the houses are not to be distorted. It is my view—and I think it is right—that all our subsidy efforts have had the effect of pushing up the price of houses, which is great if you happen to own one and your price is going up. It is very bad if you are trying to buy one as an entry level home buyer.

Mr. DELANEY. I am not an economist either; I am actually a banker by trade. But don't you think it is somewhat intellectually dishonest to propose that the housing finance system we have deployed, which in my introductory comments I acknowledged, had deep structural flaws in it. But isn't it somewhat intellectually dishonest to say that is not an appropriate system absent an analysis of what benefits it has created in the economy? So maybe we should have another time to talk about that. Maybe we will go to Dr. Lea.

My question was, how do these other markets scale into the first or second largest fixed income market in the world?

Mr. LEA. There are a couple of different ways of doing that. You obviously have a demand for credit on one side through the housing loan demand; and then you have a supply of savings that is going to meet that demand. That savings comes in a variety of forms. So as you mentioned before, commercial banks are the dominant lenders and the dominant funders not only in other countries, but if you look at what commercial banks buy, Fannie and Freddie securities, in fact, they are the dominant funding source here in the United States as well. And what they are doing is engaging in regulatory arbitrage where they are basically taking a 4 percent capitalized asset and turning it into a 1.6 percent capitalized asset because it could be guaranteed.

Mr. DELANEY. So with 20 seconds left, do you think these other markets can scale their models, could scale into our sized market?

Mr. LEA. Yes, because it has been a variety of instruments that are going to tap different sources of savings. So covered bonds as well as mortgage securities can tap longer term savings. And you want to have a mix of that. I think it is a savings and investment question.

Mr. LUETKEMEYER. Thank you. The gentleman from South Carolina, Mr. Mulvaney.

Mr. MULVANEY. Thank you, Mr. Chairman.

Gentlemen, thank you for doing this. I want to chat for a little bit about a couple of different pieces of a credit facility you have heard discussed a little bit today, which is a 30-year fixed facility. I am a former home builder, so I am a little familiar with it. I also did mortgage closings for a long time, so I have been on all sides of these transactions. And one of the things that I have heard discussed back and forth a couple of times today is whether or not this particular facility would continue to exist. Dr. Pollock thinks that it would, that you don't need a GSE to have a 30-year. And Mr. White probably agrees with him. And I agree with you, Doctor. You had mentioned that you thought that insurance companies were the proper funding source for those future loans because that would match up.

Mr. WHITE. And pension funds, Congressman.

Mr. MULVANEY. There you go. They are long-term.

Mr. WHITE. They have long-term liabilities. They are natural buyers.

Mr. MULVANEY. I recognize that Professor Min may disagree. But tell me, Mr. Pollock, we will start with you, why you think we would we still have a 30-year facility if we got rid of the GSEs?

Mr. POLLOCK. For starters, we have 30-year loans where there aren't GSEs. So, they clearly happen already. We had 30-year loans when the GSEs were tiny and before one of them—namely Freddie Mac—existed. We will have whatever the market likes between demand and supply, just like always in markets. At some price we will have the balancing point between what the buyers demand and the suppliers will supply.

Mr. MULVANEY. And I think that is important. We had 30-year fixed facilities before we had this dramatic participation in the market by these GSEs, correct? In fact, I think—

Mr. POLLOCK. That is correct.

Mr. MULVANEY. —Dr. Jaffee correctly pointed out, you go back to the 1960s and 1970s and my family was building houses. Yes, we had a 30-year facility. No, we didn't really have the same type of GSE participation. But we did have 20 percent downpayment requirements. But we also had homeownership rates well above 60 percent. So what we have seen over the course of the last generation is that the downpayment requirements have gone down, but homeownership has not gone up that dramatically. All that has gone down dramatically is the equity in homes, which I think exposes us to dramatic risk.

I want to ask one last question dealing with a 30-year fix, which is that I can't help but wonder—each of you I think has mentioned, I think accurately so, one of the root causes of the S&L crisis, a previous financial crisis that we faced in this particular industry which was caused by a mismatch of terms. We had short-term money funding, long-term types of durations on debt. Aren't we encouraging the same type of risk now? Isn't this GSE proclivity, isn't the GSE the default preference for a 30-year fixed facility leading us down the exact same risk today? Are we simply encouraging short-term money to invest in long-term debt?

Mr. POLLOCK. It is certainly true that the banking regulators are worried about the build-up of interest rate risk under the current low interest rate environment. And I think you and they are right.

Mr. MULVANEY. Dr. Lea?

Mr. LEA. Yes. I was just going to mention that it still exists. We haven't gotten rid of that risk in our financial system. I mentioned before that banks buy mortgage securities and are funding them with a lot of short-term debt.

Mr. MULVANEY. And to the extent there is a bias in favor of the 30-year mortgage, the market by itself might not issue as much 30-year fixed debt as it is right now. I think that is fair to say. It would offer more options. You would have more 10-year; you would have more 5-year balloons; you would have more 20-year debt. Then, we have a 30-year fixed. That is the market because our rules push us toward this 30-year fixed.

Professor Min, I am going to ask you the same question. Are we going down the same type of road today with this bias towards this 30-year fixed facility through the GSE subsidy that you saw as being one of the root causes of the S&L crisis?

Mr. MIN. I think it is important to recognize that asset mismatch still continues to be the case in every country in the world. I don't think personally there is enough long-term demand for long-term elongated maturity securities. Even insurance companies and pen-

sion funds want a lot of stuff that they can roll over. I think the fact that so many countries have that type of intermediation is important. So I think that it is important to recognize also that in the 1960s and 1970s, the real issue was that we encouraged risk to lend to 30-year fixed. We gave them a benefit. It wasn't a private system, as Dr. Jaffee has said. And it collapsed.

So I think today the problem is that banks have shied away from interest rate risk. When you talk to bankers, they typically will tell you that they want more than 10 percent of their balance sheet being of these 30-year type—

Mr. MULVANEY. Do you think that one of the reasons they are shying away from interest term risk is because we have had this zero interest rate policy in place for the last 4 years?

Mr. MIN. This was pre-crisis as well when you talked to bankers. They didn't want the interest rate—it was post S&L crisis that they shied away from that risk. So I think going back to the depository system doesn't work as far as supplying the 30-year fixed mortgage. I think covered bonds would do it. But that comes with its own issues.

Mr. MULVANEY. Dr. Jaffee, you look like you had something to add.

Mr. JAFFEE. Yes. No one has commented that—we had some prior discussion suggesting a 15-year mortgage might be more reasonable, actually, given the high mobility of U.S. citizens. What no one has commented on is the 15-year mortgage has a lower interest rate than the 30-year. We have been deceived into thinking the 30-year is so wonderful because it is subsidized through the GSEs. If you take away those subsidies, actually the desirable mortgage for most U.S. homeowners would be the 15-year mortgage and they would actually get a rate benefit because the interest rate would be lower.

Mr. MULVANEY. Thank you, Doctor. Thank you, Mr. Chairman.

Chairman HENSARLING. The gentleman from Illinois, Mr. Foster.

Mr. FOSTER. Thank you. One of the things that makes it hard to compare mortgage systems across national boundaries is the very different loan-to-value limits that happen in different countries. And under normal market conditions, a 90 or even more than 90 percent loan to value is actually a fairly safe thing. But when there is a bubble market going on, like in Las Vegas where the prices doubled in 2 years, even a 20 percent loan-to-value is a very unsafe mortgage. And I was wondering if any of you have comments on proposals to procyclically adjust the loan-to-value limits on mortgages and how that might be used to strengthen the system? We will start with Mr. Pollock.

Mr. POLLOCK. Thank you very much, Congressman, for that question. Yes. Along with my colleagues, I do have such proposals and I think it would be a very positive thing in the American mortgage system if loan-to-value limits were countercyclically geared to the behavior of prices. I like to tell my banking friends, you think the collateral is the house but it is not the house. It is the price of the house. And as the price rises very high in a bubble, you need to be adjusting the loan-to-value ratio down. I think it is very realistic to think we could design such a system. Interestingly, our neighbors in Canada did make some countercyclical loan-to-value

adjustments like that. They did it by regulation. I think a systematic rule would be much better. Thank you.

Mr. FOSTER. Are there any other comments?

Mr. LEA. One very quick comment is that in Germany, they do the adjustments through the appraisal process. So instead of having an LTV regulation, they impose what is called a mortgageable value valuation which tries to take a more cycled view of what the true value of a house is.

Mr. FOSTER. So in other words, they look at the long-term trend value of the house and treat rather skeptically the recently expanded value of a house—

Mr. LEA. Absolutely yes.

Mr. FOSTER. —in terms of underwriting the mortgage.

Secondly, I was really, as I mentioned in my opening comments, surprised about the positive things said about the Danish system. And I was wondering if we could just go—anyone who wants to comment or maybe all of you about what would be the downside if we simply adopted the Danish system for both the covered bond and noncovered bond part of their market?

Mr. MIN. I addressed this in my testimony. I think that the covered bond model could work in the United States. That being said, I don't think it is a panacea against housing bubbles. Denmark actually had a worse housing bubble than we did, partly because of the proliferation of interest-only mortgages, which currently have a market share of about 56 percent there. They are facing a big fallout. It is a big policy problem right now. But covered bonds could work. And particularly, they have been providing the 30-year fixed-rate mortgage as they do in Denmark. The downsides from the U.S. perspective, I think, are that they tend to promote "too-big-to-fail," because they are best suited to be issued by large issuers.

In Europe, at least, where they have been successful, they really do benefit from these government guarantees I describe at length. So I am not sure they will achieve liquidity without all sorts of these types of regulatory and other mechanisms that really create guarantees for them if we transfer that to the United States. So that is sort of the cost we would have to deal with is implicit guarantees, "too-big-to-fail," and all the stuff that comes with that.

Mr. LEA. To point out one benefit of the system is that you have a match between the loan and the bond. And it becomes a very transparent system, a very efficient, much simpler than what we have today. Of course, it also achieves high credit quality by virtue of a maximum 80 percent loan-to-value ratio. The downside is that it does require a higher borrower downpayment.

Mr. MIN. If I could respond to the maturity mismatch point, the fact is that covered bonds—much like many long-term obligations here where—collateralized and in the shadow banking system, it actually became short-term liquid liabilities, covered bonds serve the same purpose in Europe. They really are a core part of the shadow banking system, as I described in my written testimony.

So in fact, a lot of what seems to be long-term demand for covered bonds is actually short-term demand for short-term liabilities, which is one of the reasons they bailed out covered bonds so heavily.

Mr. POLLOCK. Nothing, Congressman, saves financial systems from cycles. It is a part of human nature, and therefore part of financial systems. We could do very good things to moderate the cycles like the countercyclical loan-to-value ratios we were discussing. I think also the Danish-style covered bond would be a very good addition to the United States, as one instrument among others. The great advantage, as I see it, is that while the interest rate risk doesn't go away, it is all taken by the bond buyer, while keeping all the credit risk with the maker of the loan, which aligns the incentives correctly.

Mr. FOSTER. The interest rate risk and the prepayment risk, as I understand it. So you just simply could not have had, for example, a savings and loan crisis with the Danish system because it would have been agony in the bond market, which that is what the bond market is for, is dealing with that. All right. Thanks so much. I guess my time has expired.

Mr. LUETKEMEYER. Thank you. The next questioner is the gentleman from Kentucky, Mr. Barr.

Mr. BARR. Professor Min, a question for you specifically pertaining to your testimony, assigning principal blame to private label securitization as the proximate cause for the financial crisis. Why would the private secondary mortgage market not securitize subprime when the GSEs, in order to promote their affordable housing goals, were the largest purchaser of subprime and Alt-A mortgages during the exact time period that your testimony referred to, the 2004–2007 time period? If the government is churning that, why would the private secondary mortgage market not be securitizing subprime?

Mr. MIN. I believe that the GSEs actually started—became the majority purchaser, I think, starting in 2005 or so, when they convinced the regulator to do that. They also were the largest purchaser of Alt-A. That being said, the demand for AAA-rated private label securities has been described by a lot of sources—universally, as almost infinite, that the AAA demand, because it offered a higher coupon yield than agency debt or treasuries, and had that AAA rating that was seen as safe and because it was then recollateralized in different markets, like repos and derivatives and over-the-counter sort of transactions, there was almost infinite demand for it. So I don't think the GSEs contributed materially to that. A lot of people have written about that particular issue.

Mr. BARR. You acknowledge, though, Professor, that there was a massive growth in the GSE subprime portfolio during the time period that ran up to the financial crisis, correct?

Mr. MIN. Sure. And I think a number of studies have looked at that purchase amount. First of all, it was all AAA, and determined that was not necessarily the driving cause of the demand. Really the limiting factor on private label securitization was the equity and mezzanine tranches. You had to sell those to somebody. So that was the limit basically. You could sell as much of the AAA stuff as you wanted. Somebody was going to buy it. Central banks, insurance companies, banks, et cetera.

Mr. BARR. You talk about the devil you know versus the devil you don't know. We know—a little editorial comment here—devil that we do know is a system with GSEs that operated at a leverage

ratio of over 200 to one—well over 200 to 1, primarily because of the hybrid models that allowed politics to drive it instead of market-based underwriting decisions. Where profits were privatized, losses were socialized, and where as a result, the taxpayers were exposed to up to $200 billion. So that is the devil we know.

A question for Professor Lea. Alex Pollock has pointed out that the long-term fixed-rate mortgage, while it has been described as consumer friendly for obvious reasons, may not be so consumer friendly in practice. As he puts it, consumers do not benefit if rates go down, if they find that the values of their homes have fallen and they can't refinance because the long-term mortgages have effectively trapped them in their homes. Isn't there another problem though that comes about because the 30-year fixed-rate mortgage forces some borrowers to subsidize others because lenders can't charge prepayment fees? I think you mentioned that the absence of prepayment fees raises the price of mortgages by 50 basis points. If this is true, doesn't this force those who have no intention of refinancing or moving from their homes to subsidize those who want that option?

Mr. LEA. Yes. In fact, the cost is socialized and spread through the mortgage interest rate to all buyers. And in fact, you do find that there are certain groups who are more likely to refinance and not surprisingly, it is better-off people who have equity and are going to refinance more often. So the contrast is to have a system where you pay for the option only when you exercise it. That is the European model, which applies prepayment penalties not for the 30-year time period, but generally for the time the rate is fixed, which is oftentimes just 5 to 10 years.

Mr. WHITE. Can we expunge from the discussion the phrase "penalty?" It is a fee for exercising a valuable option. Don't think of it as a penalty. Think of it as a fee for exercising a valuable option. Please.

Mr. BARR. Let me just conclude. I have a little bit of time left. Let me just conclude by asking kind of a more general question for anyone who would like to chime in. I would like to inquire about the Federal Home Loan Bank model. We have been talking about, okay, beyond GSEs, what do we go to next? How do we have a vibrant private sector-driven secondary mortgage marketplace that gives us a range of products for consumers, including the 30-year fixed-rate mortgage? What are your views on the Federal Home Loan Bank model in terms of driving, I guess, that secondary mortgage marketplace as a substitute to the GSE model? Professor Min, I would like your thoughts on this too.

Mr. MIN. I think it would create lots of liquidity. It has been a proven model. I am not sure it would lead to 30-year fixed-rate broad origination because of that interest rate risk that would be held by the depository institutions that receive the advances.

Mr. POLLOCK. I am an interested party, Congressman, as you know, having run a Home Loan Bank and invented their mortgage business. I think we do need to consider how the Home Loan Bank, which is a GSE, but a much better kind of a GSE than Fannie and Freddie, could fit into this bigger picture. I would be glad to come talk to you about that if you would like.

Mr. BARR. Okay. I yield back.

Mr. LUETKEMEYER. Thank you. Just as a housekeeping matter, we do have to clear the room here by 1:00, so we will have one more Member on each side speaking. First, Mr. Ellison, and then Mr. Royce will finish it up. And with that, Mr. Ellison from Minnesota.

Mr. ELLISON. Thank you, Mr. Chairman. And let me thank everyone on the panel. This is a very important discussion. Let me just lay a little groundwork for my question. The U.S. housing market is subsidized by tax incentives. And one of those tax incentives is mortgage interest deduction. I know Professor White, you and Representative Waters talked about that a little bit before. But it is also true that the Simpson-Bowles Deficit Commission and other bipartisan commissions have recommended converting the deduction into a tax credit. Others have recommended eliminating the deduction entirely to lower rates or to reduce the deficit. The benefits of the mortgage interest deduction are primarily to the top quintile of the income scale. And that is families with incomes above about $100,000 a year. Could you all talk about whether other countries use these kinds of tax incentives? To what extent do other countries provide generous tax benefits to homeowners or do they subsidize the interest on a mortgage property tax and capital gains while also exempting imputed rent? Go right ahead, Mr. Pollock?

Mr. POLLOCK. Congressman, many other countries do not have the home interest deduction, such as Canada, for example, our neighbor. And yet, they have homeownership equal to or greater than ours.

Mr. WHITE. The U.K., the United Kingdom, England used to have it. I think they changed from a mortgage interest deduction to none, I believe it was in the 1970s. And grass didn't start growing in the streets. It is possible to make a transition to a less subsidized system.

Mr. ELLISON. Professor Min?

Mr. MIN. One additional comment. Germany has an interesting model where I believe they give tax subsidies to landlords and renters. So that might be something we are considering as well.

Mr. ELLISON. Do you all think that we could reform the mortgage interest deduction so that it reaches more future homeowners and isn't so highly concentrated in the top quintile?

Mr. WHITE. If you want to keep it, Congressman, turn it into a refundable tax credit so that not just high-income households that are more likely to take deductions rather than use the standardized deduction. Sorry. Itemized versus the standard deduction. If you want to keep it, turn it into—

Mr. MIN. You could cap it. That would be an easier fix but maybe not as effective.

Mr. ELLISON. Dr. Lea?

Mr. LEA. I will make a more general comment. If you look particularly at the housing market, but more broadly at trends in the U.S. economy, we have become addicted to debt generally. Not just mortgage—student, auto, everything else. And if you are going to talk about providing subsidies for particular activities such as home purchase, then doing it through the savings side makes sense

because we need to have more savings generally in this country and less emphasis on debt.

Mr. ELLISON. Thank you for that. I will try to move quickly, because they only give us 5 minutes.

Professor Min, you have mentioned I think in your testimony that other nations make a more significant investment in rental housing than the United States does. I would like to give you a chance to elaborate on that. One of the little factoids out there that I picked up on which is important to me is that in the United States, more than half of renters pay more than 30 percent of their income for housing; for the lowest-income families, more than 80 percent pay more than half of their income for housing. And we already have a shortage of about 7 million homes affordable to families at the 30 percent area median income. In my own district, I can tell you, we have 10,000 people on the waiting list for public housing. Could you elaborate a little bit?

Mr. MIN. I have not done an exhaustive analysis, but in looking at a few countries, I think generally what you see is two ways in which rental housing is subsidized: one is direct subsidies; and the other is sort of tax credits. And I guess there is a third which is transfer of payments so that people have a higher minimum level of income. I think all of those help support rental housing, particularly in European countries.

Mr. ELLISON. With my very short time, does anybody care to comment on how other countries help people who are renters or particularly at the low-income level?

Mr. LEA. Again, mainly through rental subsidies to help people afford rents beyond a certain percent of their income but to a much larger portion of the population than we do.

Mr. ELLISON. Do other countries have this problem with low-income housing on the same scale we do? Is this a worldwide problem among industrialized economies?

Mr. MIN. What do you mean by a problem?

Mr. ELLISON. We need 7 million more homes which are affordable to families at the 30 percent.

Mr. MIN. Affordability—I think that the United States is probably pretty unique among the advanced economies in that regard.

Mr. POLLOCK. I know that in international discussions of housing finance, the problem of affordability and low income is often discussed by many countries.

Mr. ELLISON. Thank you all.

Mr. LUETKEMEYER. With that, the gentleman from California, Mr. Royce, will wind it up.

Mr. ROYCE. Thank you, Mr. Chairman.

I think at the end of the day, the question here with 90 percent of the market currently, the housing market, in the hands of the GSEs, is what are we going to do to reform the system to have private capital come back into the market, so as to return the stability to our housing finance system? And the element of this that concerns me is that the more distance there is from the last housing implosion, the memory loss that we are going to have over the factors that played into it, and the euphoria that we are going to feel over maybe the rise of Fannie and Freddie stock, or what have you, will take precedence over the actual impact this had on the average

homeowner, the type of individual who lost their home, the consequences of political interference in the market—and I know not everybody agrees with this. But I have always thought that replacing political poll by putting that in charge instead of market forces, that would always be the crux of a moral hazard problem, because good intentions have no limits in terms of Congressional interaction or from the Executive Branch.

So if we go back to the good intentions with respect to zero downpayment loans, or the good intentions with respect to allowing the GSEs to overleverage 200 to 1, I understand what drove that, the idea to put everybody into a home. But I understand how injurious it was because at the end of the day, we had a lower homeownership rate.

Traditionally, when private capital dominates, the ownership rate is pretty constant, and you do something to mitigate the boom-bust cycle. But here we had three factors of government intervention in play at one time. We had, from 2003 on, the decision by the Federal Reserve to run negative real interest rates for 4 years in a row—and I remember the economist opining on this, the London economist foresaw the asset bubble that this would create. But when I went back through the minutes, it was Mr. Bernanke who suggested this approach at the time. And I understand what they were trying to do. But central banks always overcompensate during growth periods and set those interest rates—traditionally, set them too low. And here we had the consequence of an asset bubble. But on top of that bubble, we were able to further leverage it because of some of the actions that Congress took. And in one case, action the SEC took.

By allowing the investment banks the SEC decision on that, allowing the investment banks to leverage it 30 to 1, that was a profound error. But combining that with the GSEs, which by then were 60 percent of the market, who had imposed upon them this added mission with the housing goals of purchasing subprime and thus putting their—on those documents and holding those subprime in their portfolio up to 200-to-1 leverage, as I mentioned, that was $1.7 trillion.

I had legislation in 2003 to try to allow the regulatory community to do what they wanted to do, which was to regulate this for systemic risk. And I remember how difficult it was during a housing boom to get anybody to focus on what the downside risk would be if the implosion came. But we had at the Fed at that time those who understood this problem and who told me this will start in housing and it will spread. And sure enough, when the GSEs collapsed and went down like dominos, the investment banks came out after them. By the way, AIG was overleveraged 170 to1.

Your comments, Dr. Lea or Dr. Jaffee, on how we get action now before we lose the institutional memory of—there were other factors of course. But I am giving you some of the ones that were most immediately observable to me. Dr. Lea?

Mr. LEA. I think we have to continue and accelerate the course we have started on with regard to reducing the footprint of the GSEs. One way is through reducing the loan limits. I don't see a rationale for the high loan limits we have today. Also in terms of raising their guarantee fees because right now, they are crowding

out the private sector. We don't have the option to see what the private sector can do because the GSEs are taking the bulk of the market.

Mr. ROYCE. Dr. Jaffee?

Mr. JAFFEE. Yes, sir. I would agree. The two vehicles are to reduce the conforming loan limits, perhaps raise the guarantee fees that the GSEs are charging, and do that step by step. And it is actually a very safe way because you will see the results. You will see the jumbo markets coming back. If you don't see them, of course, you will go more slowly. If it is working great, you go more quickly. I think it is a very feasible path.

Mr. ROYCE. Thank you, Mr. Chairman.

Mr. LUETKEMEYER. Thank you, Mr. Royce. And I would like to thank all the witnesses again for their testimony today. You guys have done a great job and we appreciate the opportunity to pick your brains and be able to get certain information for our further discussion and deliberation.

The Chair notes that some Members may have additional questions for this panel, which they may wish to submit in writing. Without objection, the hearing record will remain open for 5 legislative days for Members to submit written questions to these witnesses and to place their responses in the record. Also, without objection, Members will have 5 legislative days to submit extraneous materials to the Chair for inclusion in the record.

The Chair would also announce that we have another hearing in here starting at 1:00, so please take any conversations you have with your staff or anybody else to the back room or outside. And with that, the hearing is adjourned. Thank you.

[Whereupon, at 1:00 p.m., the hearing was adjourned.]

A P P E N D I X

June 12, 2013

To the Committee on Financial Services

of the U.S. House of Representatives

June 12, 2013

For Hearings On:

Reforming America's Housing Finance System

Prepared June 10, 2013

Written Testimony of

Dr. Dwight M. Jaffee

Booth Professor of Banking, Finance, and Real Estate
Haas School of Business
University of California, Berkeley
Email: Jaffee@haas.berkeley.edu
Phone: (510) 642-1273

Mr. Chairman and Members of the Committee, I welcome the opportunity to discuss with you today the future role of our government in the U.S. mortgage market. There is now a widespread consensus that Fannie Mae and Freddie Mac should no longer operate as government sponsored enterprises (GSEs). It is thus timely to consider the best means for replacing the two GSEs.

Current discussions focus on two primary alternatives. The first would allow the private markets to replace the existing GSE functions. The second would create a government successor to the GSEs to continue to provide government guarantees against borrower default losses.

My research leads me to a strong endorsement of the private markets as the preferred alternative for two reasons. First, there is strong evidence that the private markets would operate at a standard substantially higher than that actually experienced under the GSE regime. Second, experience indicates that a new government mortgage guarantee program would again leave taxpayers at high risk, while creating little or no sustainable increase in American home ownership. I do believe, however, that there is a valid role for the FHA and VA programs, operating in their traditional manner with precisely defined programs, to provide benefits to lower income households and armed forces veterans.

The evidence that private markets can and should replace the GSEs comes in two parts. The first is U.S. experience itself. Making new mortgages---mortgage origination—has always been 100% a private market activity. Similarly, banks and other private investors have always owned the vast majority of U.S. mortgages and mortgage-backed securities (MBS). GSE portfolio holdings of mortgages and MBS rarely reached even 20% of the total.

Guarantees of mortgage backed securities is the quantitatively most important GSE activity. But even here, only once (in 2003), did the total of GSE portfolio holdings and guaranteed MBS

reach 50% of total outstanding home mortgages. Prior to 1990 this total GSE share was always below 30% and prior to 1980 it was always a single-digit percentage. It is also worth remembering:

1) The GSEs did not invent mortgage-backed securities—that honor goes to GNMA, an agency within HUD.
2) All the innovations in asset-backed securitization, including prime jumbo MBS and commercial mortgage MBSs, were fully developed in the private sector. Indeed, during the 1990s, jumbo mortgage originations, which by definition exclude GSE participation, averaged over 20 percent of all mortgage originations. In 2000, jumbo mortgage originations reached 25 percent of all mortgage originations.

The conclusion is clear: the private markets are fully capable of efficiently carrying out all of the GSE mortgage investment and securitization activities.

This conclusion is reinforced by data that show the limited contribution the GSEs have made to expanding U.S. homeownership rates. Between 1950 and 1990, a period in which private markets dominated the U.S. mortgage markets, the U.S. homeownership rate rose from 55% to 64%, a notable achievement. Since 1990, the 23 year period of the most extensive GSE operations, the homeownership rate has been basically flat—today it is 65%, one point higher than the 1990 value of 64%.

Not to be deterred, the advocates for continuing government guarantees in the U.S. mortgage market often point to the 30-year, fixed-rate, mortgage as a major benefit of the GSEs. This is plain wrong for two reasons. First, the long-term, fixed-rate, mortgage was actually popularized in the U.S. by the Home Owners Loan Corporation during the Great Depression, long before the GSEs existed. Second, the GSEs have always pushed 100% of the interest rate risk embedded in

fixed-rate mortgages onto the private sector investors that purchase their MBS and bonds. The willingness of U.S. private sector investors to hold long-term, fixed-rate, mortgages and mortgage securities is thus independent of the GSEs.

Given the limited contribution of the GSEs to the U.S. mortgage market, it is reasonable to ask why they were often held in high esteem, at least until their collapse in 2008. The answer is simple: by promoting the concept of an implicit government guarantee, the GSEs garnered a subsidy of approximately one-half of 1 percent point on their funding costs, i.e. 50 basis points. The GSEs then passed approximately one-half of this subsidy, i.e. 25 basis points, to mortgage borrowers on their conforming mortgages. There was simply no way private markets could compete with such highly subsidized GSE mortgages. This is crowding out 101. The remarkable fact is that, nevertheless, the private markets efficiently served jumbo mortgage borrowers with a mortgage rate that was actually below the GSE mortgage rate after netting out the GSE subsidies.

Turning to current conditions, the subsidies currently provided the GSEs are even more extreme: their securities are explicitly guaranteed by the U.S. Treasury, and the Federal Reserve purchases their securities as part of its Quantitative Easing. The GSEs, together with the FHA and VA programs, now guarantee about 90% of all new U.S. mortgages. Again, this is no surprise—it is just crowding out on steroids. Nevertheless, the private markets continue to originate jumbo mortgages, and their volumes have been rapidly rising since Congress reduced the GSE conforming limits and the GSEs are now required to charge guarantee fees closer to market levels. Indeed, this approach—lower confirming loan limits and raising GSE guarantee fees--provides a transition path forward to a well-functioning, private, mortgage market for the U.S. My recent Op-Ed in the American Banker, with Mark Willis, provides further details.

My research has also identified a second set of evidence confirming that private markets will outperform the GSEs in providing mortgage finance for homeownership. This evidence comes from Western European countries. European Union rules prohibit member states from creating entities such as the U.S. GSEs, since the subsidies are considered an unfair trade advantage. A comparison of these EU countries with the U.S. thus provides another test of the GSE impact. The results show the European countries outperforming the U.S. on virtually every measure of housing and mortgage market performance. Perhaps the most stunning result is that the U.S. home ownership rate equals only the average of 15 major Western European countries. The European housing and mortgage markets have also been substantially more stable than those in the U.S. Of course, house prices have recently declined sharply in countries such as Greece, Ireland, and Spain, but this is a failure of their macroeconomic budget policies, not their mortgage markets. Indeed, even with their crisis conditions, the mortgage default rates in these countries remain far lower than the recent U.S. experience. I am attaching, as an appendix, a table from my research that provides more details.

In closing, I turn briefly to my final reason for advocating private mortgage markets for the U.S., namely that, in my view, new government mortgage guarantee programs will inevitably fail because they will create the same taxpayer costs as the GSEs, just under a new name. To be clear, I recognize that many advocates of these programs ask for the government to provide only a catastrophe backstop, and they propose that the government charge appropriate fees for the guarantees it provides. This is acceptable in principle, and the current U.S. government terrorism insurance program—TRIA—could be seen as a prototype. However, in my view, the more realistic comparison is to the National Flood Insurance Program. This program also began with the best of intentions, with no intended subsidies, but in reality it provides large subsidies and

especially to the very homes that are at the greatest risk of flooding. The result has been both a financial catastrophe for U.S. taxpayers and a human tragedy for those households for whom the National Flood Insurance Program creates subsidizes to place themselves in harm's way.

The bottom line is that no mechanism exists through which the U.S. government can effectively provide mortgage subsidies to most U.S. households. After all, almost all U.S. homeowners are also taxpayers. A subsidy then simply transfers money from a household's taxpayer pocket to its homeowner pocket. At best, this achieves nothing. While in reality it creates a misallocation in which funds that could create productive investments and job opportunities are diverted instead to the profit of third parties such as the GSEs.

Appendix

Table1: The Performance of European Mortgage Markets in Comparison with the US, 1998 to 2010

	(1) Rate of Owner Occupancy	(2) Coefficient of Covariation Housing Starts [2]	(3) Standard Deviation of House Price Inflation	(4) Mortgage Interest Rate Average Level	Mortgage Interest Rate Average Spread [3]	(6) Mortgage To GDP Ratio
	Latest Year					2010
Western Europe						
Austria	57.5%	7.2%	2.7%	4.83%	1.79%	28.0%
Belgium	78.0%	15.2%	7.4%	5.61%	2.58%	46.3%
Denmark	53.6%	56.1%	8.5%	5.80%	2.58%	101.4%
Finland	59.0%	11.9%	3.8%	4.13%	1.09%	42.3%
France	57.8%	17.4%	6.2%	4.83%	1.80%	41.2%
Germany	43.2%	29.0%	1.7%	5.07%	2.05%	46.5%
Ireland	74.5%	99.2%	14.2%	4.32%	1.15%	87.1%
Italy	80.0%	25.7%	3.4%	4.70%	1.56%	22.7%
Luxembourg	70.4%	17.9%	4.7%	4.08%	1.05%	44.7%
Netherlands	55.5%	14.5%	6.5%	5.08%	2.06%	107.1%
Norway	85.0%	24.6%	5.0%	6.11%	1.44%	70.3%
Portugal	74.6%	35.5%	2.9%	4.43%	1.35%	66.3%
Spain	85.0%	93.0%	8.1%	4.16%	1.08%	64.0%
Sweden	66.0%	45.5%	2.9%	3.75%	0.91%	81.8%
United Kingdom	66.4%	25.0%	6.8%	5.12%	0.93%	85.0%
EU Average	**67.1%**	**34.5%**	**5.6%**	**4.80%**	**1.56%**	**62.3%**
US	**66.9%**	**45.5%**	**7.3%**	**5.07%**	**2.26%**	**76.5%**
US Rank	**8th of 16**	**3rd of 16**	**5th of 16**	**6th of 16**	**3rd of 16**	**6th of 16**

Source: Dwight M. Jaffee, "Reforming the U.S. Mortgage Market Through Private Market Incentives, published in House of Cards: Reforming America's Housing Finance System, Mercatus Center, March 2012 available at http://mercatus.org/sites/default/files/House_of_Cards_March_2012.pdf

Testimony of
Dr. Michael J. Lea
Director
The Corky McMillin Center for Real Estate
San Diego State University

To the U.S. House of Representatives Committee on Financial Services
Hearing on Comparison of International Housing Finance Systems

June 12, 2013

Mr. Chairman, Ranking Member Waters and Members of the Committee thank you for the opportunity to be here today. I am Michael Lea, Director of the Corky McMillin Center for Real Estate and Professor of Finance at San Diego State University. I have an extensive background in housing finance including senior executive positions at major mortgage lenders and as Chief Economist of Freddie Mac. I have been actively involved in the study of international housing finance systems for more than 20 years having done consulting, business development and research in 30 countries and serving as Director of Research for the International Union of Housing Finance. I authored a comparative study of mortgage products released by the Research Institute for Housing America in 2010, a comparative study of developed country mortgage markets published by the Brookings Institution in 2011 and an academic journal article on the long term fixed rate mortgage in 2011. I would request that these studies be entered in the record as they provide information supporting the points I will make today.

In addressing the committee today you have asked me to address whether a sustainable housing finance system is possible without government guarantees and government sponsored enterprises (GSEs). In answering this question I will draw on the experience of major developed housing finance systems with a focus on Canada, Denmark, Germany and the United Kingdom. I will divide my remarks in three sections: First examining the incidence of guarantees and GSEs in major developed country housing finance systems; second summarizing the major features of the Canadian, Danish, German and British housing finance systems; and third

providing my thoughts as to what a system without government guarantees or GSEs would look like.

1. Guarantees and Government-sponsored Enterprises in Housing Finance

The U.S. is internationally unusual in the extent of government involvement to support owner-occupied mortgage finance. No other developed country has a government-sponsored enterprise similar to Fannie Mae and Freddie Mac. Among 13 developed countries surveyed in my research, only Canada and Japan have government mortgage security guarantee programs equivalent to Ginnie Mae. Only Canada and the Netherlands have government-owned mortgage insurance companies. Australia sold its government mortgage insurer to the private sector in 1997.

For countries with government mortgage market support the market share of government-supported entities is far less than the current U.S. situation in which over 90 percent of mortgage credit is coming from government-backed institutions. In Canada approximately 50 percent of mortgages have government-backed mortgage insurance which is required for all loans over 80 percent loan-to-value (LTV). Approximately 25 percent of mortgages have been securitized with guarantees from the Canada Housing and Mortgage Corporation. A similar proportion of mortgages have been securitized in Japan with guarantees from the Japan Housing Finance Agency. Governments do not directly support mortgage securitization in other countries.

It is important to note that all countries support housing finance indirectly through their banking systems. In most countries commercial banks are the dominant lenders. They are supported through deposit insurance and in some cases government support in crisis. This type of support differs from that given to US GSEs. It is a support to sustain and maintain a type of financial institution that is critical for the functioning of modern economies and that conducts a wide variety of

business. Commercial banks pay for this support through deposit insurance premiums and meaningful capital requirements. The GSEs have never paid user fees for their support and have operated with inadequate capital for most of their existence.

2. Major Mortgage Markets: A Comparison

Canada: The Canadian mortgage market is dominated by the top 5 commercial banks that have a 75 percent market share. The market is well developed with a mortgage debt-to-GDP ratio of 65 percent.

The dominant product is the roll-over mortgage which is a short term fixed rate instrument amortized over a longer term – typically 30 years. Rates are "rolled" or renegotiated when the fixed rate period ends. The most common period of rate fixing is 5 years but the borrower has a choice of fixed rate terms ranging from 1-10 years. During the time the rate is fixed (up to 5 years) the lender charges a penalty for prepayment. All loans over 80 percent loan-to-value are required to have mortgage insurance, which is provided by the government-backed National Housing Administration (NHA equivalent to the US FHA) or private mortgage insurance companies (which have a 90 percent backstop from the government). Approximately 50 percent of mortgages have mortgage insurance. There is no mortgage interest deduction in Canada.

The banks fund a majority of their mortgages on balance sheet with deposits. Canada recently passed a mortgage "covered bond" law to broaden funding options. The Canada Housing and Mortgage Corporation (CMHC) provides guarantees on pools of NHA insured loans that are securitized (similar to the Ginnie Mae program in the US – CMHC also operates the NHA program). Approximately 25 percent of outstanding mortgages have been securitized through this program. CMHC is a crown corporation with an explicit guarantee from the Canadian government. The

government caps its total insurance volume at C$600 billion and it recently reached this cap.

The Canadian mortgage market performed well through the crisis. Despite a run up and subsequent fall in house prices default rates have remained quite low (less than 0.5 percent). Canada had virtually no subprime market prior to the crisis. Canadian mortgages are full recourse to the borrower for deficiency judgments. The Ministry of Finance temporarily authorized CMHC to purchase mortgage securities during the crisis – an authority that has been terminated.

Denmark: The Danish mortgage market is dominated by 5 specialized mortgage credit institutions (MCI) that fund loans up to an 80 percent loan to value ratio. Commercial banks supply a small amount of unsecured "top up" loans above the 80 percent mortgage loan limit. Denmark has one of the highest mortgage debt-to-GDP ratios in the world at 101 percent.

Danish borrowers have a variety of mortgage instruments from which to choose. The traditional mortgage design is a long term (20-30 year) fixed rate mortgage prepayable without penalty (the same loan that dominates the US housing finance system – Denmark is the only other developed market that offers this types of mortgage). In addition, Danish borrowers can use an adjustable rate mortgage (ARM) in two forms: an indexed ARM using a Euribor index and a roll-over instrument that adjusts to the current market rate at the end of the fixed rate period. These loans are offered with and without a prepayment penalty. Mortgage interest is tax deductible in Denmark at a maximum 33 percent marginal tax rate.

Danish MCI are funded entirely through issuance of covered bonds and equity. The covered bonds are issued in accordance with the "balance principle" in which the loan is funded with the simultaneous issuance of a bond that corresponds to the individual loan. In so doing the MCI has no interest rate risk. The Danish system is very transparent and efficient. The mortgage note rate equals the bond coupon rate

and the MCI adds a 50 basis point fee for its administration. Another important feature is that fact that the mortgage bonds are corporate obligations of the issuer – as such the credit risk remains with the originator thus aligning incentives. The Danish covered bond market is the largest in Europe with over €345 billion outstanding.

As with US GSE mortgage-backed securities the bonds are pass-throughs of principal and interest. The individual bonds are part of larger series that are purchased by investors on a pro rata basis. An important feature of the Danish system is the buy-back privilege of borrowers. In the event of a market rate increase the bond trades at a discount. The borrower can purchase the bond in the market (usually through their lender) and present it to the lender to pay off the mortgage. In this way the borrower can deleverage by lowering their loan amount at a time in which house prices are falling, thus reducing the likelihood of negative equity. In a falling market interest rate environment the borrower can refinance her mortgage without penalty as in the US. There is no securitization or GSE in Denmark.

The Danish mortgage market performed exceptionally well during the crisis. The covered bond market remained open throughout the crisis ensuring a steady flow of funds without government guarantees. As in other developed countries, the Danish central bank did purchase mortgage bonds for a short time period in 2008 to ensure liquidity in the market. The Danish housing market experienced a greater boom and bust than most of the US yet Danish mortgage default rates remain very low (less than one percent). Danish mortgages are recourse obligations, which contribute to the low rates of default and foreclosure. Many borrowers took advantage of rising rates in 2007-8 to deleverage. Danish lenders have not offered sub-prime or limited documentation loans.

Germany: Germany has a diverse mortgage market with several types of lenders taking significant market share. The largest market share belongs to the savings banks that are owned by state governments. The second largest lending group is

cooperative banks that are mutually owned. Specialized mortgage banks and commercial banks are also significant originators. The market is stable and mature with a mortgage debt-to-GDP of 48 percent.

The German mortgage market has a unique institution, the Bausparkassen that provides second mortgages linked to a savings account. Households take out a Bauspar contract that promises a loan in the amount equal to the sum saved for a downpayment over a period 4-5 years. The typical financing package in Germany is 20 percent downpayment, a 20 percent Bauspar loan and a 60 percent first mortgage. The government provides small savings bonus upon completion of the Bauspar contract and most households have a contract. Mortgage interest is not deductible in Germany. The country is unique in that it has a (small) subsidy for savings rather than the more common mortgage debt subsidy.

Most German mortgages are rollover contracts with a fixed rate for 1-15 years over a 25-30 year amortization. There is a yield maintenance prepayment penalty for refinance during the fixed rate period up to 10 years. Savings banks also offer short -term adjustable rate mortgages.

German mortgages are funded with a mix of mortgage covered bonds and deposits. German covered bonds ("Pfandbrief") differ from those in Denmark in that they are issued against a portfolio of mortgage loans ('the cover") rather than a 1:1 loan-bond correspondence. The bonds are bullet maturities with a term equal to the fixed rate period of the loans. The Pfandbrief covered bond market is the second largest in Europe with over €224 billion outstanding. There are no government guarantees or government sponsored enterprises in Germany; however the state-owned Landesbanken traditionally provided wholesale finance to the savings banks. The European Central Bank (ECB) supported the covered bond market during the crisis with purchases. Covered bonds throughout Europe are eligible collateral at the ECB discount window.

The German mortgage market performed well during the crisis with very low default and foreclosure rates. Mortgage loans are full recourse in Germany. There were a number of bank failures but none were related to residential real estate lending. The German government injected funds into selected institutions and guaranteed bank liabilities to ensure access to wholesale funds in 2008-2009.

United Kingdom: The UK mortgage market is dominated by 5 large lenders: 4 commercial banks and one mutually owned building society with a combined market share of 90 percent. Prior to the crisis UK-style mortgage companies called centralized lenders funded by loan sale and securitization accounted for approximately 10 percent of the market but they disappeared with the collapse of wholesale funding markets. The UK mortgage market is large relative to the size of the economy with a mortgage debt-to-GDP ratio of 75 percent.

The dominant mortgage instrument in the UK is the short-term adjustable rate mortgage. There are two versions: a "tracker" loan indexed to Libor and a discretionary ARM ("standard variable rate") wherein the rate is set at the lender's discretion (typically following the Bank of England base rate). Initial fixed rate periods of 1-3 years with a modest discount are common. UK mortgage market exhibits significant churn as lenders aggressively compete for borrowers with the initial period fixed rates. A prepayment penalty during the fixed rate period and somewhat beyond is common. Mortgage interest is not deductible in the UK.

UK lenders are funded primarily with deposits. Prior to the crisis approximately 15 percent of lending was funded by securitization primarily by the centralized lenders. Large depository lenders have issued covered bonds and the UK has passed covered bond legislation. There are no government-sponsored enterprises and until recently no government mortgage guarantees. The UK government has proposed a guarantee program wherein the government will provide partial loss insurance for high LTV loans (over 80 percent) for a maximum of 7 years. An important difference

from the FHA program is the requirement that lenders take a first loss position (5 percent of loss over 80 percent LTV).

Prior to the crisis the UK was one of the more aggressive markets with sub-prime and limited documentation (self certification) lending. Sub-prime lending accounted for approximately 8 percent of UK lending. Unlike the US, however, British lenders did not typically layer risk (e.g., granting high LTV loans to sub-prime borrowers). As in the US this type of lending disappeared in the crisis.

The UK mortgage market has managed the stress of the financial crisis relatively well. Default and foreclosure rates are elevated but at 2.5 percent and 0.3 percent respectively they are well below US levels. UK non-conforming loans have high rates of delinquency but relatively low rates of foreclosure. The predominance of ARMs is an important factor – borrowers benefitted from sharply falling interest rates due to monetary policy easing. Unlike the US, negative equity is not a major problem and loans are full recourse (up to 6 years). Several large mortgage lenders including Northern Rock and Bradford and Bingley were nationalized as a result of an excessive dependence on wholesale finance to fund non-conforming mortgages.

3. A Vision of the Future

The U.S. mortgage market is internationally unusual in several respects: the large role of government in directing credit to the housing market (even before the crisis); the presence of GSEs and extensive use of government guarantees to promote securitization; the dominance of securitization as a funding technique; and the high market share of a long-term, fixed rate mortgage (FRM). These characteristics are interrelated. The origins of the GSEs lie in an expanding role of the government in the Great Depression. Securitization through the GSEs rose to be a dominant funding technique because of the wide-spread failure of savings and loans due to a government prescribed mismatch in which they were required to offer only long term fixed rate mortgages. The advantages of the GSE charter

allowed them to cement their role as the dominant funding source and in so doing enshrine the FRM as the major instrument. Today defenders of the GSE status quo point to the necessity of maintaining this instrument in its dominant position.

Before turning to the benefits and costs of the FRM, it is instructive to review the history of the GSE. This brief review will show that GSEs are largely an unintended consequence of decisions made for reasons other than explicitly subsidizing housing finance. The GSE story begins in the Great Depression. The FHA was created in 1934 as an independent, federally sponsored mutual mortgage insurance fund authorized to insure only the long term (up to 20 years) fully amortizing fixed-rate mortgage (FRM) with a maximum loan to value (LTV) ratio of 80 percent on new construction. The National Housing Act also gave FHA the authority to establish private national mortgage exchanges to "make a market" in these FHA-insured FRMs and thereby promote their use. However portfolio lenders refused to fund the FHA FRM because of its inherent funding risk. Thus the government created the National Mortgage Association of Washington (later changed to the Federal National Mortgage Association or "Fannie Mae") to purchase FHA loans funded with Treasury debt.

The GSE charter was born in 1968 – not for the purpose of creating the secondary mortgage market but rather as political expediency to get the Association "off budget". The Government National Mortgage Association—"Ginnie Mae"—was established at the same time with the sole purpose being to "manage and liquidate" the Treasury-financed FHA/VA-insured Fannie Mae portfolio. Ginnie Mae created the mortgage-backed security using the grantor trust statute to facilitate a sale of assets without corporate double taxation (at the trust and investor level). A major rationale for creation of the Ginnie Mae security was to pre-empt state security law restrictions. This new instrument provided an efficient funding source for FHA and VA mortgages – a role that Fannie Mae had traditionally done. Fannie Mae's new owners, mortgage bankers, lobbied for and won the authority to invest in conventional, non-government insured mortgages. Fannie Mae funded its purchases with corporate debt through 1981. The savings and loans, seeing that the mortgage

bankers now had a GSE funding source, lobbied for their own leading to the creation of Freddie Mac in 1970. Politics rather than policy lie behind its creation.

While Freddie Mac and Ginnie Mae slowly developed the secondary mortgage market in the 1970s, savings and loans continued to build up their exposure to fixed rate mortgages. Federally chartered S&Ls were prohibited from offering ARMs and state-chartered S&Ls offered only a limited amount. This changed in 1981 when regulators and Congress realized that the sharp rise in interest rates had effectively bankrupted the entire industry. The S&Ls were allowed to issue ARMs and given accounting and tax relief to encourage them to sell FRMs leading to strong GSE growth during the decade. Fannie Mae was insolvent at the same time for the same reason but like the S&Ls allowed to grow out of its problems. It began securitizing loans in 1981.

GSE dominance grew as interest rates fell. Ever greater volumes of mortgages were refinanced as one of the main attributes of the FRM, the ability to prepay without penalty, became more apparent and borrowers refinanced their loans to lower payments and tap housing equity. Over time the interest rate sensitivity of borrowers grew and the mortgage industry became dependent on refinancing. The GSE MBS became a dominant trading instrument as investment banks and hedge funds speculated on prepayment risk. While the GSE securities stated they were not obligations of the US government, they were traded on investment bank "agency desks" and soon had the highest volume of trading in the fixed income market. The investment banks moved beyond market making to active investment, creating "proprietary trading desks" to structure and manage mortgage-backed security portfolios. In this way the entire mortgage securities market, not just the GSEs, became "too big to fail".

Which brings us back to the GSEs and the FRM. Securitization (more accurately capital market funding) is necessary to fund the FRM due to its inherent cash flow risk. It also turns illiquid mortgage loans into liquid securities. However, as other

panelists will attest, a government guarantee is not a necessary condition for securitization. A vibrant private label security market in jumbo FRMs existed before the crisis and will re-emerge if and when GSE loan limits return to normal levels. And the Danish market funds FRMs through non-guaranteed covered bonds. But the real question for policy makers is whether it is healthy to build a market around GSEs and the FRM.

The FRM has undeniable benefit. In addition to penalty free prepayment it is a simple, easy to understand instrument. It provides protection against rising interest rates for a long time period. However there are significant costs to the FRM. The interest rate and prepayment risks in the FRM are costly and difficult for investors to manage. A huge volume of derivative instruments is necessary for investors to manage the risks increasing systemic risk in the financial system. There is a premium for both the long term and the prepayment option that are paid by all users of the mortgage. The FRM causes instability in the mortgage market through periodic refinancing waves. The FRM can create negative equity in an environment of falling house prices. And the taxpayers are on the hook for hundreds of billions of dollars in losses backing the credit risk guarantees provided by Fannie Mae and Freddie Mac to support securities backed by the FRM.

If we move away from a housing finance system predicated on FRMs and GSEs what would emerge? As noted above, the FRM would continue to be offered but at a higher price reflecting non-subsidized financing. Borrowers would benefit through lower mortgage rates from moving down the yield curve selecting fixed rate terms consistent with their mobility patterns. Very few FRMs are held to term so supporting an instrument that has a fixed rate for 15-30 years is not essential to the workings of the housing finance system. In a non-GSE world, shorter term fixed rate instruments like the roll-over and hybrid ARM would provide rate and payment stability for up to 10 years. Lenders could safely finance these instruments through term deposits, interest rate swaps and covered bonds or through private-label securitization. Loans could be offered with and without prepayment penalties

providing borrowers with greater choice. And taxpayer risk would be substantially reduced through elimination of the GSEs.

4. Conclusions

There is no ideal housing finance system. Individual country arrangements reflect history, market structure and government policy. However, almost all developed country housing finance systems performed better during the crisis than that of the US. What can the U.S. learn from other countries?

First no other country has as much government involvement in the mortgage market. The combined effect of the various forms of government intervention undoubtedly contributed to the housing boom and bust in the U.S. Other countries have achieved comparable or higher rates of homeownership and well-developed, stable mortgage markets with much less government support.

Second, no developed country has a GSE. GSEs were created primarily for political not policy reasons. The GSEs rose to dominance as a result of economic policy (falling interest rates), consumer protection policy (requirements for S&Ls to offer FRMs) and their government backing. It is fair to say that policy makers never intended to create a duopoly providing over 75 percent of all mortgage credit in the US.

Third, only one other country has the FRM as a major mortgage instrument. And that country, Denmark, has a safer and more efficient way to fund the FRM. The FRM has large costs to the consumer, lender and government. Continuation of its dominance should not be a public policy objective. A more balanced, market-driven system will provide a range of mortgage products and funding instruments addressing a wide variety of consumer and lender needs without exposing the taxpayer to undue risk. Average mortgage rates may be lower if borrowers switch to shorter term fixed rate and adjustable rate mortgages.

Finally it is important to keep in mind that the pre-GSE housing finance system in the US generated comparable levels of homeownership without the distortions caused by government guarantees, institutions and programs. The experience of other countries is that private capital can fund the vast majority of demand for housing finance. A high rate of homeownership and a stable mortgage market meeting the needs of consumers and lenders can be achieved without the degree of government intervention that exists in the U.S. today. In that respect the U.S. clearly can learn much for international housing finance systems.

Thank you for the opportunity to appear before this committee.

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Written Testimony of

David K. Min
Assistant Professor of Law
University of California Irvine School of Law

Before the United States House of Representatives
Committee on Financial Services

"Beyond GSEs: Examples of Successful Housing Finance Models Without Explicit Government Guarantees"

Wednesday, June 12, 2013
10:00am
2128 Rayburn House Office Building

Chairman Hensarling, Ranking Member Waters, and members of the Committee, my name is David Min and I am an Assistant Professor at the University of California Irvine School of Law, where I teach and research in the area of banking law and financial regulation. Before coming into academia, I spent over a decade working in banking and capital markets regulation, both in private practice and in the federal government, including as a Senior Policy Advisor for the Joint Economic Committee of Congress, where I had the pleasure of working with several of you and your staff. I thank you for the opportunity to testify today on the topic of alternative housing finance models. In the aftermath of the 2007-08 financial crisis, which has generally been attributed to problems in the U.S. residential mortgage markets, it is critically important that leading policy makers such as yourselves thoughtfully consider how best to reform a U.S. housing finance system that is widely seen as broken.

Before I get into the substance of my remarks, I want to emphasize a point that may seem obvious, but is not always well understood. And that is that it is extraordinarily difficult to try to compare different models of housing finance, as these are intrinsically and intricately intertwined with the cultural, political, and economic systems with which they co-exist. For example, Germany has recently enjoyed relative home price stability and low mortgage delinquency rates, while maintaining an abundance of affordable rental housing, and so it might be tempting to look to Germany's housing finance system, which has a uniquely low homeownership rate and an abundance of affordable rental housing, as a model. But the experience of the German housing and mortgage markets cannot be properly understood without also looking to other factors unique to Germany, including the large rental subsidies offered by the government;[1] the large stock of quality affordable public housing;[2] a tax code that favors landlords and tenants over homeowners;[3] a strongly pro-tenant regulatory regime that limit rent increases and evictions;[4] the provision of generous social welfare payments;[5] the relatively flat income and wealth distribution in Germany;[6] and the macroeconomic policies of the German government, which have led to high current account surpluses and low unemployment even during the global financial slowdown of the last several years.[7]

With that important caveat in mind, there are seven points I would like to make today:

1. *Government Guarantees Are Universal:* There are three types of funding instruments that collectively account for almost all of the residential mortgage financing in the developed world: bank deposits, mortgage-backed securities (MBS), and covered bonds. Generally

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[1] *See* Michael Voigtländer, *Why is the Germany Homeownership Rate So Low?*, 24 HOUSING STUDIES 355, 359-60 (2009).
[2] *Id.*
[3] *Id.* at 365-67.
[4] *See* Axel Börsch-Supan, *Housing Market Regulations and Housing Market Performance in the United States, Germany, and Japan*, *in* SOCIAL PROTECTION VERSUS ECONOMIC FLEXIBILITY: IS THERE A TRADE-OFF? 132-36 (Rebecca M. Blank, ed., 1994).
[5] *See* Stefan Boeters, et al., *Reforming Social Welfare in Germany—An Applied General Equilibrium Analysis*, 7 GERM. ECON. REV. 363 (2006).
[6] *See* Organisation of Economic Co-operation and Development, *Crisis Squeezes Income and Puts Pressure on Inequality and Poverty: New Results from the OECD Income Distribution Database* (2013), *available at* http://www.oecd.org/els/soc/OECD2013-Inequality-and-Poverty-8p.pdf.
[7] *See* Anna Ivanova, *Current Account Imbalances: Can Structural Policies Make a Difference?* (Int'l Mon. Fund, Working Paper No. 12/61, 2012).

speaking, with only limited exceptions, investors in these instruments enjoy the benefits of either explicit or implicit government guarantees. While the United States is relatively unique in its heavy reliance on government-guaranteed MBS, it is decidedly not unique in its dependence on government guarantees to fund residential mortgages.

2. *European Covered Bonds Are Best Thought of as Government-Sponsored Obligations*: A corollary of the previous point is that covered bonds also enjoy government backing. Contrary to the claims of some, European covered bonds are not purely private financial instruments, but rather enjoy a myriad of government guarantees, as well as preferential regulatory and capital treatments that mirror or surpass the benefits provided to Agency obligations in the United States.

3. *Government Guarantees Are Prevalent Because They Address Key Market Failures in Housing Finance:* Government guarantees are so ubiquitous because they address certain market failures that are inherent in financial intermediation—the use of short-term, illiquid liabilities to fund long-term, illiquid loans—which is necessary to meet the enormous long-term capital requirements that housing entails. In particular, these guarantees ensure liquidity, stability, and affordability in housing finance. In the United States and Denmark, government guarantees also facilitate the wide and affordable availability of the 30-year fixed-rate, fully self-amortizing mortgage, a product that is pro-consumer and helps to promote financial stability.

4. *There is No Perfect Housing Finance Model:* In the aftermath of the problems with the U.S. housing finance system, it is of course tempting to look at other models and assume the grass is greener on the other side. But each of the three major types of housing finance models—deposits, securitization, and covered bonds—experienced major failures in the recent credit crisis. And it is clear that each of these models has its advantages and disadvantages. While the weaknesses of securitization and deposits as funding vehicles are well recognized in the United States, it is important to recognize that covered bonds come with their own problems. The issuance of covered bonds typically increases the risk to other creditors, including the governmental deposit insurer, and can thus create a moral hazard problem, insofar as covered bond investors have reduced incentives to engage in market discipline. Perhaps most troubling, from a U.S. perspective, is that covered bonds are inherently best suited for very large financial institutions thought to enjoy a government backstop—so-called "Too Big To Fail" banks.

5. *The Common Thread in Global Housing Bubbles Was Financial Deregulation:* The United States, Spain, and the United Kingdom were perhaps the countries hardest-hit by housing market issues. All three of these countries underwent significant banking sector liberalization in the decades preceding their housing bubbles. At the same time, Canada, which did not have significant financial deregulation but does have an outsized government role in housing finance, did not experience such housing problems. This suggests that financial deregulation is a primary factor in explaining international problems with housing finance.

6. *Explicit, Ex Ante Guarantees Are Preferable to Implicit, Ex Post Guarantees:* The choice facing policy makers is not whether to adopt a housing finance with explicit guarantees or

no guarantees, as the title of this hearing might suggest. Rather, the choice is between explicit, well-defined, *ex ante* guarantees with buffers against taxpayer loss, or implicit, undefined, *ex post* guarantees that have no protections for taxpayers. For a number of reasons, I believe that explicit guarantees are preferable as a policy matter.

7. *Given U.S. Political Priorities, Improving the Status Quo May be Preferable to Importing Other Models :* Housing finance reform efforts should consider the specific characteristics of our polity. Several are worth noting. First, the U.S. does not have a social safety net as robust as those of most other advanced economies. As such, affordability in housing finance should be a much more important policy priority here than elsewhere. Second, the 30-year fixed-rate mortgage is both politically popular, and has an extensive track record of proven success in our country. Third, the United States has a long and storied history of populist opposition to big banks, hidden subsidies, and bailouts that has translated into a strong opposition to "Too Big To Fail" banks and the implicit subsidies they enjoy. Collectively, these characteristics point to the conclusion that rather than trying to adopt radical wholesale changes or import European models of housing finance into our country, we should consider fixing the problems with our current model of housing finance. This appears to be the conclusion reached by a growing number of experts and policy leaders on both sides of the aisle, including, most recently, the Bipartisan Policy Center and Sens. Bob Corker and Mark Warner.

The Global Ubiquity of Government Guarantees in Housing Finance

Critics of the federal government's role in housing finance argue that the United States is unique among developed countries in providing significant levels of government backing for home mortgage financing.[8] This claim is primarily based on the observation that the United States funds the vast majority of its residential mortgages through the issuance of government-backed securities by the government-sponsored enterprises (GSEs) Fannie Mae and Freddie Mac, as well as the governmental agency Ginnie Mae, and that no other country provides so much governmental backing for mortgage-backed securitization, or that no other country has GSEs.[9]

The problem with this analysis is that it focuses myopically on how the United States provides government guarantees for mortgage finance, and ignores how other countries might do so. While securitization has dominated U.S. housing finance in the past several decades, it is not a major factor in most other countries. As such, in trying to determine the level of governmental involvement in other housing finance systems, it makes little sense to look to government

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[8] *See, e.g.,* Michael Lea, *International Comparison of Mortgage Product Offerings* 12-14, Research Institute for Housing America, Sept. 2010 (contending that the United States is "unusual" in its use of government guarantees and contending that the "market share of government-backed institutions" in other countries is far less than in the United States); Dwight Jaffee, *Reforming the U.S. Mortgage Market Through Private Market Incentives* 14-21, Paper Presented for Presentation at "Past, Present, and Future of the Government Sponsored Enterprises," Fed. Res. Bank of St. Louis, Nov. 17, 2010 (claiming that Western European mortgages have "operated for decades with limited government intervention").

[9] *See* Lea, *id.*; Jaffee, *id.* As Lea notes, Canada, Korea, and Japan are the only other countries that utilize government-backed MBS for their housing finance systems.

guarantees on securitization. Rather, we should be looking to how they actually do fund mortgages, and whether government guarantees exist on those forms of funding.

As Michael Lea has noted, by far the largest source of funding for residential mortgages outside the United States is bank deposits, with covered bonds also providing a significant amount of housing finance in some countries.[10] Deposits and covered bonds are both bank liabilities, as compared to MBS, which in the United States are typically issued by off-balance sheet conduits that have no other assets other than those in the MBS pool. Therefore, in comparing the relative level of international governmental support in housing finance, the right question to ask is this: do other countries provide government guarantees on bank deposits and covered bonds?

The answer to this question is unequivocally yes. Bank deposits of course enjoy explicit government guarantees across the world, as 29 of the 30 OECD countries have governmental deposit insurance programs in place, with New Zealand being the sole outlier.[11] And in those countries where covered bonds are a major source of housing finance, these instruments enjoy a myriad of government guarantees, as I will explain next.

In fact, the claim that the United States has some extraordinarily high level of government backing for housing finance seems rooted in a misunderstanding of how other countries guarantee their housing finance systems. When government guarantees on instruments other than MBS are taken into account, it appears fairly clear that the United States is not particularly exceptional in the level of government support it provides to housing finance.

Understanding "Government-Sponsored" Covered Bonds

In the European countries where they account for a significant amount of housing finance, covered bonds benefit from a number of guarantees that are well recognized among investors. In order to understand how these implicit and explicit government guarantees work, it may be helpful to first briefly explain what covered bonds are. Covered bonds, like deposits, are uniquely bank obligations, and are perhaps best understood as a hybrid of general obligation bonds and MBS. Like other unsecured bank bonds, covered bond investors are paid out of the bank's general cash flows, and in the event of default, they have claims against the issuer's

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[10] Lea, *id.* In Denmark, mortgages are primarily funded through covered bonds. Canada has a slight wrinkle in its deposit-based system of housing finance, insofar as it requires mortgage insurance, which is mandatorily reinsured by the Canadian government, on most mortgages originated by Canadian banks. Canada also has a healthy dose of government-backed securitization, insofar as 25% of its mortgages are financed by MBS issued by the Canada Mortgage and Housing Corporation. *See* David Min, *True North: The Facts About the Canadian Mortgage Banking System*, CTR. FOR AMER. PROGRESS (2010).

[11] Prior to the financial crisis, Australia and New Zealand were the only OECD countries without explicit deposit insurance schemes in place. *See* The Treasury (Australia), *Study of Financial System Guarantees* ("Davis Report") (Commonwealth of Australia, 2004), Chapter 2. In response to the 2008 global financial crisis, both Australia and New Zealand implemented temporary deposit insurance programs. *See* The Treasury (Australia), *Guarantee Scheme for Large Deposits and Wholesale Funding*, *available at* http://www.guaranteescheme.gov.au; The Treasury (New Zealand), *Retail Deposit Guarantee Scheme*, *available at* http://www.treasury.govt.nz/economy/guarantee/retail. In September 2011, Australia implemented a permanent guarantee program for bank deposits up to $250,000, which was formally implemented in February 2012. *See* The Treasury (Australia), *Questions & Answers About the Guarantee on Deposits*, *available at* http://www.guaranteescheme.gov.au/qa/deposits.html.

general assets on a *pari passu*, or equal footing, basis with senior unsecured creditors.[12] But as with MBS, investors in covered bonds also enjoy a first claim against a pool of high-quality assets (the "cover pool"), which is typically overcollateralized, in the event of default. Another defining characteristic of covered bonds is that cover pools are typically "dynamic," insofar as poor quality assets are typically replaced by good assets throughout the entire term of the covered bond.[13] As a number of commentators have noted, these features of covered bonds are shared with Federal Home Loan Bank advances.[14] Because covered bonds have "dual recourse" to both the issuer and the assets of the cover pool, a risk analysis of covered bonds necessarily looks to both the characteristics of the issuer and the cover pool.

In those countries where they have achieved significant liquidity, covered bonds have benefited from several types of government guarantees. First, and arguably most importantly, covered bonds benefit from the implicit government guarantees that exist for the issuing banks. European banks have historically enjoyed implicit guarantees on all of their debt obligations, in part because of the high prevalence of "Too Big To Fail" in Europe. While TBTF is a relatively recent phenomenon in the United States, due to the longstanding restrictions on interstate banking and universal banking, this has decidedly not been the case in Europe, where national governments have long encouraged and facilitated the emergence of "national banking champions" with the size and scale to successfully compete with their neighbors.[15] Because of these political and historical differences, European countries have much more concentrated banking sectors than the United States, and their largest banks account for a far higher level of systemic risk.[16]

Moreover, European governments are generally far less tolerant of bank failures than the U.S. federal government, perhaps because the last major European banking crisis in 1931 is seen as having played a major role in the rise of Adolf Hitler's National Socialists.[17] This antipathy towards bank failures is reflected in the remarks of an anonymous European Central Bank official, who purportedly stated, "We don't let banks fail. We don't even let dry cleaners fail."[18] This statement is borne out by historical facts, as the last failure of a European issuer of covered bonds occurred 1900.[19]

Second, covered bonds as an asset class are thought to enjoy systemic importance independent of their issuers, particularly in those countries where these instruments account for a significant portion of the residential mortgage funding. As such, it is appropriate to recognize that covered bonds enjoy a TBTF guarantee, which explains why the European Central Bank felt compelled to announce a major covered bond bailout program in the midst of the 2008 financial

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[12] *See Covered Bonds: Potential Uses and Regulatory Issues: Hearing Before the S. Comm. On Banking, Housing, and Urban Affairs*, 111th Cong. 3-4 (2010) (statement of Michael H. Krimminger, Deputy Chairman, Fed. Deposit Insurance Corp.).

[13] *See* Steven L. Schwarz, *The Conundrum of Covered Bonds*, 66 BUS. LAWYER 561, 566-68 (2011).

[14] *See, e.g.*, EDWARD V. MURPHY, CONG. RESEARCH SERV., R41322, COVERED BONDS: ISSUES IN THE 112TH CONGRESS 7-8 (2011).

[15] Morris Goldstein and Nicholas Véron, *Too Big to Fail: The Transatlantic Debate* 6-7, Bruegel Working Paper No. 2011/03 (2011).

[16] *Id.* at 13.

[17] *Id.* at 7.

[18] DAVID WESSEL, IN FED WE TRUST: BEN BERNANKE'S WAR ON THE GREAT PANIC 22 (2009).

[19] *See* Frank Packer, et al., *The Covered Bond Market*, BIS QUARTERLY REV. 45, 49 (Sept. 2007).

crisis, as outlined below. Indeed, all three of the major credit rating agencies expressly recognize the "systemic importance of covered bond programs in the issuer's jurisdiction" as a major factor in the ratings they provide to these instruments.[20]

Third, because covered bonds generally enjoy a first lien on the best assets of the issuer, and continue to replace weak cover pool assets with good assets on a dynamic basis, they effectively benefit from the explicit guarantees behind bank deposits, which help finance the purchases of good bank assets that are then used to collateralize covered bonds. In this way, covered bonds effectively piggyback on governmental deposit insurance.[21]

All three of these types of government guarantees—implicit guarantees behind the bank issuers of covered bonds, implicit guarantees of the covered bond market generally, and explicit guarantees of bank deposits which are used to fund assets that go into the cover pool—are important factors in the credit quality and liquidity enjoyed by covered bonds in those countries where they have achieved scale. This is why sovereign risk—the risk that the issuer's host country might default on its own government obligations—is a central factor in the credit ratings of European covered bonds.[22] It is also why European governments and the European Central Bank responded with a tsunami of bailouts intended to maintain investor confidence in covered bonds, including a as illustrated by Figure 1, below, and why the continuing concerns about European sovereign risk have translated into concerns about covered bond risk.[23] It is fair to say that European covered bonds enjoy the same or even greater implicit guarantees as Agency obligations here.

In addition to government guarantees, European covered bonds also enjoy from a number of other governmentally granted benefits. First, qualifying covered bonds enjoy beneficial capital treatment across the European Union, which is actually more preferential than the capital treatment accorded to Agency securities[24] here in the United States.[25] Second, covered bonds are eligible as collateral for European Central Bank lending, just as Agency securities are eligible as

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[20] *See* Yehudah Forster (Vice President, Moody's Investor Service), Hélène M. Heberlein (Managing Director, Fitch Ratings), and Alla Sirotic (Senior Director, Fitch Ratings), *Covered Bond Ratings*, *in* COVERED BONDS HANDBOOK 7-31 (James R. Tanenbaum and Anna T. Pinedo eds., 2012). *See also* Karen E. Naylor et al., *Covered Bonds Counterparty and Supporting Obligations: Methodology and Assumptions*, Standard & Poor's Global Credit Portal report, May 31, 2012, *available at* http://www.standardandpoors.com/spf/upload/Ratings_EMEA/CoveredBondCounterparty.pdf.

[21] This particular concern has been raised by the Federal Deposit Insurance Corporation on several occasions. *See, e.g.*, Statement of Michael H. Krimminger 12-14, *supra* note 12.

[22] *See, e.g.*, *Sovereign Risk a Key Element in Covered Bond Credit Risk*, Fitch Ratings, May 28, 2012, *available at* http://www.fitchratings.com/web/en/dynamic/articles/Sovereign-Risk-a-Key-Element-in-Covered-Bond-Credit-Risk.jsp.

[23] *See, e.g.*, Moody's Investors Service, *Spanish Mortgage Covered Bonds: High Credit Risks, Despite Tightening Spreads in Early 2013* (2013) (stating that sovereign risk has been the main driver in covered bond spread movements); *Covered Bond Roundtable 2012*, INT'L FINANCING REV. (2012) (quoting Jose Sarafana, a covered bond analyst, as observing that "the sovereign factor is extremely important for pricing covered bonds" and arguing that the high concerns about sovereign risk have made this the most important factor in covered bond spreads), *available at* http://www.ifre.com/covered-bond-roundtable-2012-part-1/21026480.article.

[24] The term "Agency securities" refers to MBS and debt obligations issued by Fannie Mae and Freddie Mac.

[25] Under the European Union's "Capital Requirements Direct," qualifying covered bonds are risk-weighted at 10%. This compares to a risk-weighting of 20% for Agency debt and Agency MBS.

collateral with the Fed.[26] Given that European covered bonds, like Agency debt, enjoy strong governmental guarantees and highly preferential capital and collateralization treatment, it may be most appropriate to describe these instruments as "government-sponsored" covered bonds.

Figure 1[27]

European bank bailouts during the 2008 financial crisis

Select list of banks and bank rescue packages for a number of banks rescued by their governments

Country	Bailout	Amount	Type
Belgium, France, Luxembourg	Dexia bailouts (Oct. 2008, Oct. 2011)	€100 billion	2008: Initial recapitalization of €6.4 billion; 2011: €4 billion nationalization of Belgian sub; €90 billion in guarantees.
Belgium, Netherlands, Luxembourg	Fortis bailout (Sept. 2008)	€11.2 billion	Recapitalization of €11.2 billion + liquidity guarantees.
Canada	IMPP (Oct. 2008)	$125 billion	Purchase of insured mortgage pools to ensure liquidity
Denmark	Roskilde Bank nationalization (Aug. 2008)	$8.3 billion US (41.8b kroner)	Nationalization of Denmark's eighth largest bank
Denmark	Financial Stability Act (aka Bank Package I, Oct. 2008)	Unlimited	2 year blanket guarantee on all obligations of Danish banks
Denmark	Bank Package II (Jan. 2009)	$17.1 billion US (100b kroner)	100 billion kroner recapitalization fund
European Central Bank	Covered Bond Purchase Programmes (June 2009, Oct. 2011)	€100 billion	€60 billion for covered bond purchases in June 2009, €40 billion in Oct. 2011, to ensure liquidity in these instruments.
France	SFEF/SPPE (Oct. 2008)	€360 billion	€320 billion liquidity facility providing interbank lending guarantees, €40 billion recapitalization fund.
France	Natixis bailout (Oct. 2008)	€40 billion	€5 billion investment, €35 billion in guarantees on toxic assets
Germany	Financial Market Stabilization Act/SoFFin (Oct. 2008)	€480 billion	€400 billion for guarantees, €80 billion for recapitalization. Sunset December 2010, but reactivated Jan. 2012.
Ireland	Blanket guarantee (Sept. 2008)	Unlimited	Blanket guarantee on all obligations of Irish banks
Ireland	Nationalization of four (of six) banks (Jan. 2009 – July 2011)	€65 billion	Nationalization of Anglo Irish, Irish Nationwide Building Society, Irish Life & Permanent, Allied Irish Banks
UK	Nationalization of Northern Rock (Feb. 2008)	£100 billion	Nationalization of the UK's fifth largest mortgage lender after a £4.6b deposit run.
UK	Bank rescue plan (Oct. 2008)	£500 billion	£50 billion recapitalization fund, £250 billion in credit guarantees, £200 billion in short term loans to ensure liquidity.

Sources: Economic Times (2008), The New York Times (2008) (2011), BBC News (2008), Forbes (2008), European Union, European Central Bank, RFI, BaFin (German Federal Financial Authority), The Wall Street Journal (2008) (2011) (2012), HM Treasury's National Audit Office.

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[26] *See* Marketable Assets, European Central Bank Collateral, *available at* http://www.ecb.int/mopo/assets/standards/marketable/html/index.en.html. European covered bonds are also used as collateral in repo transactions. *See* European Repo Market Survey No. 24, Int't Capital Market Assn. (Mar. 2013).

[27] David Min, *The Global Importance of Government Guarantees in Mortgage Finance: An Analysis of How Guarantees Work in Different Developed Nations* 5 (Fig. 4), CTR. FOR AMER. PROGRESS, May 2012.

Government Guarantees Address Key Market Failures in Housing Finance

Why are government guarantees so ubiquitous in global housing finance? I believe it's because they ensure certain outcomes in housing finance that are seen as socially and economically optimal, which do not occur in the absence of such guarantees. These are liquidity, stability, and affordability. I will address each of these points in turn.

Liquidity

Because housing is necessary but costly, it requires an enormous investment of capital, greater than any other class of assets in the world. For example, the United States has some $13 trillion[28] and the European Union has roughly €6.5 trillion in residential mortgage debt outstanding.[29] Moreover, because housing is a long-duration investment, with a typical depreciation schedule of several decades, residential mortgages are almost always long-dated, with amortization periods of between 25-40 years being the norm across the developed world.[30]

Given the high capital intensity of housing finance, ensuring that there is sufficient liquidity to meet these needs is a major concern. Government guarantees provide liquidity in three ways.

First, government guarantees assuage investor concerns about credit risk, which allows mortgage liabilities to have access to a far deeper pool of capital. Historically, the vast majority of investors in housing finance have sought "safe" assets—that is to say, assets that they believed did not bear credit risk, perhaps because it had a government guarantee, bore a AAA rating, and/or had structural safeguards against investor losses (such as the $1 net asset value that money market funds are required to maintain).[31] This certainly has been true in the recent past. Even during the 2002-2007 housing bubble, when government-backed Agency debt lost significant market share to Wall Street's "private-label" mortgage securitization, some 90% of the private-label securities issued were AAA rated.[32]

Long-dated mortgage debt carries with it enormous amounts of liquidity and interest rate risk. Adding significant amounts of credit risk to these existing risks would certainly drive away most of these "safe" investors. Given the huge amount of interest rate risk that purchasers of long-dated mortgage debt already take on, there is no evidence to suggest that there would be significant demand for long-dated mortgage debt that carried significant credit risk on top of the

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[28] *See* Federal Reserve, Table 1.54, Mortgage Debt Outstanding (Mar. 2013).
[29] European Mortgage Federation, *Hypostat 2011: A Review of Europe's Mortgage and Housing Markets* 89 (Table 13) (2012).
[30] *See* Lea at 17-20. A number of countries utilize short-term fixed rate mortgages, such as the 5-year fixed-rate mortgage that dominates Canadian mortgage lending, but these generally amortize over a 25-40 year period.
[31] Gorton et al. (2012) lay out the notion of "safe" assets, which they generally describe as sovereign debt and "the safe component of private financial debt." They argue that safe debt is so highly in demand because of the demand for money substitutes that are "informationally insensitive" and thus do not require due diligence despite the presence of steep information asymmetries. *See* Gary B. Gorton et al., *The Safe Asset Share* (Nat'l Bureau of Econ. Research, Working Paper No. 17777, 2012).
[32] *See Housing Finance Reform: Should There Be A Government Guarantee?: Hearing Before the S. Comm. On Banking, Housing, and Urban Affairs* 2 (2011) (statement of Adam J. Levitin, Professor of Law, Georgetown University Law Center).

huge amounts of interest rate and liquidity risk that already exist for such liabilities. That is why private-label securitization went to such great lengths in the past several decades to develop a structure that could produce securities that were seen as free of credit risk, including the creation of subordinated tranches and overcollateralized asset pools to absorb first losses, the heavy use of credit enhancements (such as monoline insurance and credit default swaps), and the heavy lobbying of credit rating agencies for investment-grade ratings.

Of course, the financial crisis revealed significant flaws in private-label securitization, and shattered the perception that securities issued through this process carried no credit risk. As a result, it is unlikely that private mortgage-related liabilities without a government guarantee will be seen as safe anytime in the near future. One of the most prominent "safe" investors, PIMCO founder Bill Gross, has stated that in the absence of government guarantees, PIMCO would not purchase MBS without drastically more conservative underwriting standards, including at least a 30 percent down payment, that harken back to the onerous mortgage terms that existed in the pre-New Deal era.[33]

Second, and relatedly, guarantees facilitate liquidity in the financial intermediation—the use of short-term liquid liabilities to fund investment in long-term, illiquid loans—that is, and historically always has been, responsible for the vast majority of housing finance. As I will discuss shortly, financial intermediation is inherently fragile and quite vulnerable to runs and panics. Government guarantees provide an inoculation against the problem of bank runs and thus allow for deep liquidity.

Third, guarantees help to ensure countercyclical liquidity in housing finance. As has been extensively described in the banking literature, the financial system suffers from an inherent procyclicality—the tendency to provide too much risk during good times and to pull back too heavily on risk-taking during bad times—that has been attributed to the "financial accelerator" described by Irving Fisher and elaborated by Bernanke/Gertler, as well the difficulties of measuring changes in risk over time and the existence of improper incentives for market participants.[34] In the aftermath of the financial crisis, a key focus of policy makers and regulators has been to rein in the procyclical tendencies of financial intermediaries to take on too much risk during financial booms. But another paramount concern must be in ensuring that countercyclical liquidity is available during financial busts, when private financial markets pull back excessively from the market. It is well documented that the lack of liquidity that follows financial crises can amplify economic distress, as falling home prices, increasing delinquencies and decreasing availability of mortgage finance all feed into a "vicious circle."[35]

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[33] *See* David Lawder, *PIMCO's Gross: Government Mortgage Guarantee "Essential,"* REUTERS, AUG. 17, 2010.
[34] *See, e.g.*, Claudio Borio, et al., *Procyclicality of the Financial System and Financial Stability: Issues and Policy Options* (Bureau of Int'l Settlements, Working Paper No. 1, 2001); Viral Acharya and Tanju Yorulmazer, *A Theory of Procyclical Bank Herding* (Aug. 15, 2003) (unpublished paper) (available at http://www.fdic.gov/bank/analytical/CFR/Acharya.pdf).
[35] Irving Fisher

Since the crisis, some 90 percent of housing finance has been provided by Fannie, Freddie and Ginnie.[36] One can imagine how bad the housing downturn would have been in the absence of such government-backed mortgage finance.[37]

Stability

Government guarantees are also critical to ensuring stability in housing finance, particularly with respect to the financial intermediation that has always been the primary source of residential mortgage funding. As I discussed previously, the uniquely long durations of mortgage debt (even the short-term fixed rate mortgages that are popular in Canada are amortized over a 25 year period) present a challenge to housing finance, insofar as it is difficult to find sufficient patient capital (investors willing to buy and hold long-dated debt to term) to fund the massive needs of housing finance. This challenge has mostly been addressed through the heavy use of financial intermediation—the use of short-term liabilities such as bank deposits to fund and hold investments in long-term assets such as mortgages.

Traditional deposit-backed bank lending was the primary source of U.S. mortgage financing since at least the late 19th century,[38] up until the collapse of the savings and loan industry in the early 1990s.[39] But in recent years, capital markets funding has grown to become an increasingly important factor in global housing finance. In the United States, MBS have come to dominate housing finance, displacing deposits as the major source of mortgage funding. While bank deposits still dominate Canadian mortgage finance, a significant and growing share of its housing finance system has been funded by government-backed securitization, which currently accounts for about 25% of outstanding home loans. Similarly, European housing finance also relies mainly on bank deposits, but has seen strong growth in covered bonds in recent years.

MBS and covered bonds, at first glance, appear to be an alternative to traditional banking, insofar as they issue liabilities that are long-dated and tend to be closer in maturity to the mortgages they finance.[40] But a closer look reveals that these liabilities are also part of a process

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[36] As Richard Green points out, the heavy reliance on Agency financing in the aftermath of a financial crisis is not new. Following the Long-Term Capital Management crisis, which was a smaller, more benign financial crisis, private sources of liquidity dipped precipitously, as reflected in the spread between jumbo and conforming mortgages, which widened from 10 to 40 basis points in the aftermath of LTCM's problems. *Housing Finance Reform: Should There Be a Government Guarantee?: Hearing Before the S. Comm. On Banking, Housing, and Urban Affairs* 6-7 (2011) (statement of Richard K. Green, Lusk Chair in Real Estate, Univ. of Southern Cal.).

[37] Some have contended that Agency mortgage finance is crowding out private sector options. This seems inconsistent with the limited experience we have seen with private-label securitization since the financial crisis, which strongly suggests that investors have lost all confidence in PLS. Since the crisis, there have been but a handful of private-label securitization deals, with all of these that I am aware of having been sponsored by Redwood Trust, a Northern California investment firm. The investors in these relatively small deals have all been MBS specialists who have performed loan-level due diligence , even as the loan pools securing these deals had extraordinarily safe underwriting characteristics, such as a 40%+ average down payment and a 770 average FICO score).

[38] *See generally Kenneth* A. Snowden, *The Anatomy of a Residential Mortgage Crisis: A Look Back to the 1930s* (Nat'l Bureau of Econ. Research, Working Paper No. 16244, 2010).

[39] *See* David Min, *How Government Guarantees in Housing Finance Promote Stability*, 50 HARV. J. ON LEG. ___ (forthcoming 2013).

[40] Agency MBS are pass-throughs, in which investors are effectively purchasing a share of the cash flows of a pool of mortgages. Thus the duration on Agency MBS is effectively the life of the pool of loans. Covered bonds are typically issued in 5-10 year or 2-3 year maturities, which tends to match the generally shorter duration of European

of financial intermediation that has been described as "shadow banking," largely because it takes place outside the penumbra of traditional deposit-backed banking. MBS and covered bonds are both utilized as collateral in a wide array of public and private sector lending markets, including central bank lending, public and private repo markets, securities lending transactions, and derivatives deals. The heavy demand for these securities as collateral has effectively given them a money-like quality, as they not only can be pledged to receive actual currency, but these assets themselves are used and re-used as a liquid form of collateral. Thus, in the aggregate, MBS and covered bonds are a key part of the shadow banking system in the United States[41] and Europe,[42] respectively, insofar as they are effectively used to transform long-term illiquid assets (home mortgages) into short-term liquid liabilities (repos, securities lending claims, etc.).

As is well understood in banking economics, the maturity and liquidity transformation inherent to banking create an inherently fragile situation, as banks (and by extension, shadow banks) are highly vulnerable to the problems of bank runs and panics. The steep maturity and liquidity mismatches between their assets and liabilities means that banks do not have the ability to pay off more than a small number of withdrawal claims at any given time. Thus, if a large number of depositors simultaneously seek to withdraw their funds from the same bank, that bank must find new sources of liquidity, and this may entail selling off its loans in a "fire sale" environment. This dynamic can cause the insolvency of even a healthy, well-managed bank, by forcing the liquidation of profitable loans at a loss.[43]

Moreover, bank runs can quickly lead to the problem of contagion, in which a run on one bank causes deteriorating confidence among depositors at other banks, leading to further bank runs. If these runs reach a critical mass, they can cause systemic dislocation and large economic losses, as banks across the system are forced to firesale illiquid assets at a loss in order to meet increasing redemptions by depositors. In other words, contagion can quickly turn runs on individual banks into system-wide banking panics. Such banking panics can lead to enormous costs across the broader macroeconomy,[44] as we have just witnessed.[45]

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mortgages. *See Covered Bonds in the EU Financial System* 18, Eur. Central Bank Report (2008). In Denmark, maturity matching is even more pronounced, as Danish covered bonds are required to adhere to the "balance-principle," which requires that covered bond cash flows exactly match those of the underlying cover assets on a loan-by-loan basis. *See* Jens Dick-Nielsen et al., *Liquidity in Government versus Covered Bond Markets* 5 (Bank for Int'l Settlements, Working Paper No. 392, Nov. 2012).

[41] Pozsar et al. (2012) have a good explanation of shadow banking in the United States. Zoltan Pozsar et al., *Shadow Banking* (Fed. Reserve Bank of New York, Staff Report No. 458, Feb. 2012).

[42] Anand et al. describe how covered bonds are a core part of the European shadow banking system. Kartik Anand, et al., *Covered Bonds, Core Markets, and Financial Stability* 2-3 (Sonderforschungsbereich 649, Discussion Paper No. 2012-065, 2012).

[43] *See* Douglas W. Diamond and Philip H. Dybvig, *Bank Runs, Deposit Insurance, and Liquidity*, 91 J. POL. ECON. 401 (1983).

[44] As Reinhart and Rogoff have observed in their comprehensive review of financial crises, banking panics lead to enormous macroeconomic costs, resulting in sharp decreases in tax revenues that, on average, cause government debt to increase by 86% in the three years following such a panic. CARMEN M. REINHART AND KENNETH S. ROGOFF, THIS TIME IS DIFFERENT: EIGHT CENTURIES OF FINANCIAL FOLLY 142 (2009).

[45] Following the recent financial crisis, U.S. households suffered an estimated $10 trillion decline in wealth. *See* Anthony J. Crescenzi, "Cyclical Tailwinds, Secular Headwinds and the Market of Bonds," Pimco (originally published on CNBC.com), Apr. 7, 2010. The median household experienced an 18% decline in its total net worth. *See* Jesse Bricker et al., "Surveying the Aftermath of the Storm: Changes in Family Finances from 2007 to 2009," Federal Reserve Board Finance and Economics Discussion Series, 2011-17, Mar. 24, 2011. The OECD estimated the crisis would cause a 2.4% reduction in the long-run GDP of the United States. *See* ORGANISATION OF ECONOMIC

It is well recognized that government guarantees ameliorate and possibly solve the problems of bank runs and panics, by providing a credible backstop against credit risk, and thus removing any incentive for bank runs to happen. Indeed, it is notable that during the recent financial crisis, the various collateral calls and fund withdrawals that have been characterized as a run on the shadow banking system did not significantly impact government-backed liabilities and were instead primarily limited to purely private financial instruments.

Government guarantees also may be important for systemic stability in another important way, and that is that they are critical in promoting the origination of affordably priced, consumer-friendly mortgages. More affordable mortgages are of course less likely to default, all else being equal, because their payment streams are less onerous. Similarly, mortgage characteristics that do not lay other risks (such as liquidity or interest rate risk) onto the borrower are similarly less likely to default.

Affordability

Given the extremely finite demand for long-dated assets,[46] the simple laws of supply and demand dictate that mortgages would be much more expensive in the absence of government guarantees. Regardless of how one views these guarantees, it is clear that they make mortgage finance more affordable, simply by greatly expanding the pool of potential investors, as described above. For example, PIMCO head Bill Gross contends that in the absence of such a guarantee, mortgage rates would rise by as much as 4 percentage points.[47] This is consistent with the higher costs of mortgage finance in the pre-Depression era, or in commercial real estate today, where government guarantees do not exist.

In the United States and Denmark, government guarantees are also responsible for the wide and affordable availability of the 30-year fixed-rate, fully self-amortizing mortgage, a product that is pro-consumer and has experienced extremely low delinquency rates when compared with alternative products. In the United States, of course, 30-year fixed-rate mortgages (FRMs) have experienced delinquency rates that are exponentially lower than those for adjustable-rate mortgages (ARMs). For example, prime 30-year FRMs had a serious delinquency rate of 4.74% as of Q2 2011, as compared to 11.76% for prime ARMs. Similarly, ARMs in Denmark look to be much more of a problem than 30-year FRMs. The proliferation of option ARMs from 2003 to 2008 was seen as a major factor in the housing bubble experienced by Denmark, and a number of studies have warned that Denmark is on the verge of a major

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COOPERATION AND DEVELOPMENT (OECD), ECONOMIC POLICY REFORMS: GOING FOR GROWTH 18-19 (Box 1.1) (OECD 2010), *available at* http://www.oecd.org/dataoecd/53/48/44680877.pdf. The United States also suffered approximately 9.5 million job losses as a result of the financial crisis. *See* Philip J. Swagel, "The Cost of the Financial Crisis: The Impact of the September 2008 Economic Collapse," *Pew Financial Reform Group Briefing Paper No. 18*, Apr. 28, 2010, p. 11, available at http://www.pewfr.org/admin/project_reports/files/Cost-of-the-Crisis-final.pdf.

[46] It is difficult to know exactly how much of this long-dated demand exists, as discussed above, because most long-dated debt, whether sovereign debt, Agency MBS, or covered bonds, is not held to maturity, but instead is traded in liquid markets and used (and re-used) as collateral in various interbank transactions, such as repo and derivatives deals, and open market transactions. *See* Zoltan Pozsar, et al., *supra* note 41; Kartik Anand, et al., *supra* note 42.

[47] *See* Susanne Walker, *Gross Says Mortgage Yields Would Soar Without Government Aid*, BLOOMBERG, Aug. 24, 2010.

delinquency crisis, as 80 percent of homeowners under the age of 35 are underwater, and more than 100,000 mortgages appear likely to default in the near future, in the absence of governmental intervention.[48]

The relative stability of the 30-year FRM should not be a surprise. It is a more systemically stable product for several reasons. First, it provides cost certainty to borrowers, which means they default less on those loans, particularly during periods of high interest rate volatility. Second, the 30-year FRM leaves interest rate risk with sophisticated market players (lenders and investors) who can plan for and hedge against interest rate fluctuations, rather than with unsophisticated households who have no such expertise or capacity to deal with this risk. Third, as the Miles Report, the landmark 2004 report on mortgage market reform authorized by the United Kingdom, found, the 30-year FRM helps promote housing market stability, as it was generally less sensitive to short-term interest rate fluctuations and thus less likely to trigger high volatility in housing prices.[49]

Comparing the Major Housing Finance Models

As I mentioned at the outset, there are three major vehicles for funding housing around the world: bank deposits, MBS, and covered bonds (with most countries adopting more than one of these, and with many notable wrinkles, such as Canada's mortgage insurance requirement for bank-held loans and Denmark's matching principle for covered bonds). In the United States, we have had extensive experience with deposits and MBS as the primary means for funding residential mortgages, and so American academics are well familiar with the weaknesses of these instruments.

Deposit-based mortgage finance, as we know from our own experience in the period of stagflation that occurred in the 1970s and early 1980s, leaves financial intermediaries vulnerable to large amounts of interest rate risk. Mortgage-backed securitization seems to solve the interest rate risk issue by leaving that risk with investors who are willing and interested in taking it on,[50] but as we have learned, this too may be subject to problems, including numerous frictions (information asymmetries and conflicts of interest) that exist up and down the vertical securitization pipeline.[51]

Given the problems we have experienced with deposits and MBS, it is tempting to look at other models of housing finance, particularly ones centered upon covered bonds, as a panacea for our markets. After all, covered bonds are like MBS but with "skin in the game" to better align the interests of investors and issuers. But covered bonds carry their own set of problems, which should not be ignored as we contemplate how to reform our housing finance system.

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[48] *See* Frances Schwartzkopff, *Denmark Races to Prevent Foreclosures as Home Prices Sink*, BLOOMBERG NEWS (Mar. 19, 2013).

[49] *See* David Miles, *The UK Mortgage Market: Taking a Longer-Term View*, Interim Report, Section 6.

[50] Investors in Agency MBS do carry prepayment risk, the risk that the loans in the MBS pool will all be refinanced or paid off before or after the investors' expected timeframe.

[51] For example, one such friction is the conflict between the originating lender and the MBS issuer, since the former has an incentive to sell its weakest loans to the latter, a classic lemons problem. *See generally* Adam B. Ashcraft and Til Schuermann, *The Seven Deadly Frictions of Subprime Mortgage Credit Securitization*, THE INVESTMENT PROFESSIONAL (Fall 2008).

The first potential problem with covered bonds is their balance sheet intensity, which necessarily limits the amount of covered bonds that can be issued, and requires covered bonds to piggyback off of other sources of funding. As I previously described, covered bonds are overcollateralized with good assets that are ring-fenced against other claims, and if any of these assets deteriorate in quality, they are replaced by more good assets from the issuer's balance sheet. Because of these structural characteristics, covered bonds are capped as a percentage of any issuer's balance sheet, and they must be augmented with other sources of finance. Covered bonds are in this way limited in the amount of funding they can provide, which is probably why they do not account for more than a minority of any country's housing finance, with the exceptions of Denmark and Spain.

The second, and related, problem with covered bonds is that, by their very nature, they increase risk to other creditors, with the largest class of creditors being depositors, who are themselves protected by governmental deposit insurance. As such, the safety of covered bonds comes directly at the expense of taxpayers, who bear greater risks due to the loss of good collateral to cover pools.[52]

Third, because investors in covered bonds look either primarily to or equally to the creditworthiness of the issuer, covered bonds are much more suitable for large issuers with AAA credit ratings and the perceived guarantee of their host government behind their obligations—in short, Too Big To Fail institutions. To the extent that covered bonds are emphasized in U.S. legislation and regulations, this will disproportionately benefit the largest, most complex financial institutions.

These problems with covered bonds might be justified, if these instruments brought significantly more systemic stability. But the fact is that covered bond regimes failed just as miserably as bank deposit regimes and MBS did in the recent crisis. As the minority dissent to the Financial Crisis Inquiry Report noted, the recent housing and financial crisis was a global phenomenon, not confined to the United States.[53] Indeed, the housing bubble that we experienced in the United States, where MBS was the dominant source of housing finance, was actually surpassed by the housing bubbles that took place in the United Kingdom and Ireland, where bank deposits were predominant, and Spain and Denmark, where covered bonds were the main source of housing finance, as Figure 2 below shows.[54]

Figure 2

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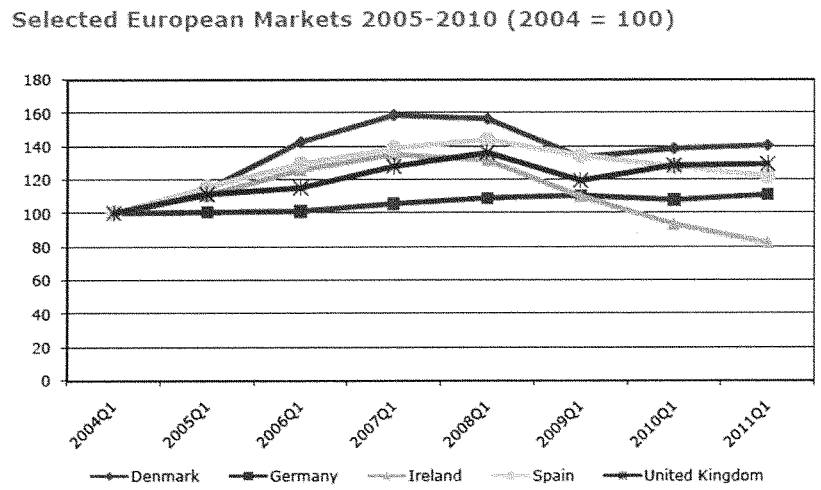
[52] *See, e.g.*, Kartik Anand, *supra* note 42.

[53] *See* Bill Thomas et al., *Dissenting Statement of Keith Hennessey, Douglas Holtz-Eakin, and Bill Thomas*, *in* THE FINANCIAL CRISIS INQUIRY REPORT: FINAL REPORT OF THE NATIONAL COMMISSION ON THE CAUSES OF THE FINANCIAL AND ECONOMIC CRISIS IN THE UNITED STATES 411, 414-416 (2010).

[54] Source: Ashok Bardhan, et al., *A Comparative Context for U.S. Housing Policy: Housing Markets and the Financial Crisis in Europe, Asia, and Beyond*, Bipartisan Policy Center 16 (citing European Mortgage Federation).



Despite the larger peak-to-trough home price declines that have taken place in most European countries, some have argued that European housing finance systems have greatly outperformed the U.S. housing finance system, pointing to the relatively low delinquency rates and foreclosure rates in distressed European housing markets. But this analysis fails to contemplate the effects of European social welfare programs, which are much stronger than in the United States, on mortgage delinquencies.[55] It is well established that greater income volatility significantly increases the likelihood of mortgage delinquency.[56] In the United States, income shocks (such as from a loss of job or death of a household member) are by far the largest cause of mortgage delinquencies.[57] Of course, most European countries enjoy much stronger social safety nets, which tend to mitigate income volatility and reduce the likelihood of delinquencies and foreclosures. An underwater Spanish or Danish homeowner who lost her job would seem less likely to default on her mortgage, due to the social welfare supports in place in those countries, than a similarly situated U.S. homeowner.

Of course, the effects of sharply lower housing prices have severely and negatively affected the macroeconomic outlooks of many of these European countries, and arguably have had a larger effect on the fiscal health of European countries with steep housing downturns, since

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[55] EU countries provide nearly twice as much to income support and safety nets as the United States, as a percentage of GDP. *See generally* Alberto Alesina et al., *Why Doesn't the United States Have a European-Style Welfare State?*, 2 BROOKINGS PAPERS ON ECON. ACTIVITY 1 (2001).

[56] *See generally* Luis Diaz-Serrano, *Income Volatility and Residential Mortgage Delinquency: Evidence from 12 EU Countries* (Forschungsinstitut zur Zukunft der Arbeit, Discussion Paper No. 1396, Nov. 2004).

[57] Frank E. Nothaft, *What's Driving Mortgage Delinquencies?*, Freddie Mac Executive Perspectives Blog, Mar. 22, 2010, *available at* http://www.freddiemac.com/news/blog/frank_nothaft/20100322_what_drives_mortgage_delinquencies.html.

so many of the costs of housing downturns are borne by the government rather than individual households in those countries. We are currently seeing this dynamic occurring in real time in Spain, and given the concerns about the Danish mortgage markets (Denmark has already suffered through a 20% home price decline, 56% of Danish mortgages are interest-only loans, and some 100,000 of these are underwater and due to reset soon),[58] we may soon see similar macroeconomic and fiscal problems in Denmark as well.

A Key Factor in International Housing Bubbles Was Laxly Regulated Mortgage Finance

I have spent a good amount of time analyzing the different sources of funding in international housing finance, with the hopes of convincing you of the following two points: 1) all advanced economies heavily rely upon government guarantees to facilitate housing finance; and 2) the source of housing finance—deposits, MBS, or covered bonds—was not a particularly relevant factor in determining whether a country would experience a housing bubble. That being said, were there structural differences that actually did prove important in determining whether a country experienced a housing bubble or not? This is obviously a very complex question, which has been the topic of much analysis and debate.

That being said, I believe one potential characteristic that has largely been underappreciated has been financial deregulation, as this appears to be a common thread in most, if not all, of the countries that experienced large housing bubbles in the past decade. Three of the more notable countries that experienced housing bubbles were Spain, the United Kingdom, and the United States. Each of these underwent some fairly dramatic financial deregulation in the past several decades. As the FCIC minority stated in their dissent:

> There were housing bubbles in the United Kingdom, Spain, Australia, France and Ireland, some more pronounced than in the United States. Some nations with housing bubbles relied little on American-style mortgage securitization. A good explanation of the U.S. housing bubble should also take into account its parallels in other nations. This leads us to explanations broader than just U.S. housing policy, regulation, or supervision. It also tells us that while failures in U.S. securitization markets may be an essential cause, we must look for other things that went wrong as well.[59]

Of course, we are most familiar with the United States. Beginning in the 1980s, geographic and activity-based restraints on banking were gradually lifted, culminating in the Riegle-Neal Act of 1994, which eliminated restrictions on interstate banking, and the Gramm-Leach-Bliley Act of 1999, which formally ended the activity restrictions put in place under the Glass-Steagall regime. These legislative actions were accompanied by a hands-off approach by financial regulators, who allowed investment banks to engage in activities that might be characterized as banking in previous times. The end result was the rapid rise of very large, universal banks that utilized capital markets to meet many of their financing needs. One of the primary ways in which this liberalization impacted residential mortgage markets in the United States was in the rise of private-label securitization (PLS), which typically utilized unregulated non-bank lenders to originate loans, and unregulated off-balance sheet conduits to pool and

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[58] *See* Schwartzkopff, *supra* note 48

[59] *See* Bill Thomas, et al. 415, *supra* note 53.

securitize these loans. PLS rapidly grew from about 10 percent of the U.S. mortgage market in 2002 to account for nearly 40 percent of mortgages in 2004 and 2005. Of course, PLS have subsequently experienced very high delinquency rates and are generally seen as a major factor in the problems experienced in the U.S. housing and mortgage markets.

Spain went through banking deregulation that was parallel in many ways to the United States. Spanish "cajas"[60] for short, which began as small local community-based savings associations—many were started by local councils, associations, and religious orders—were gradually deregulated so that they could compete in broader markets.[61] Beginning in 1977, activity restrictions on cajas were lifted, allowing them to engage in universal banking. Geographic restrictions that limited cajas to operating in their home regions were removed in 1988. And legal barriers that prevented consolidation among cajas were eliminated in 2002. As with the somewhat parallel U.S. experience, Spain experienced rapid growth and consolidation in response to this deregulation of banking. Cajas' share of deposits grew from 33 percent in 1976 to 52 percent in 2004, while its share of total lending grew 18 percent in 1976 to 45 percent in 2004. Within the residential mortgage market, the cajas grew to command 60% of the market at its peak. Perhaps not surprisingly, the cajas are at the epicenter of the current Spanish banking crisis, and are holding an estimated €180 billion in troubled mortgages.[62]

The United Kingdom had a slightly different, but no less devastating, experience with financial deregulation. Beginning in the late 1990s, the UK's primary financial regulator, the Financial Services Authority (FSA), moved towards a more principles-based (often called "light touch") approach to bank oversight, which relied more heavily on banks' own internal risk management and governance. This in turn allowed British banks to hold less capital, and to engage in more aggressive underwriting, which included the origination of mortgages with very exotic features such as flexible mortgages, capped rates, discounted variable rates, and interest-only loans. Interest-only loans were prevalent in the 2000s and comprised about one-third of all mortgages for first-time home buyers. Low documentation was also fairly common (for example, this was a major cause of the downfall of Northern Rock), as were very high LTVs, up to 120%. Principles-based regulation has been widely blamed for the UK's financial crisis.[63]

Denmark also presents an interesting case, insofar as it allowed a seemingly insignificant regulatory loosening of lending standards, which has seemingly led to large problems with its housing markets. In 2003, Denmark allowed interest-only products to be originated, and these subsequently experienced astronomical growth. By the end of 2005, interest-only mortgages accounted for 25.6 percent of outstanding mortgages. Currently, as aforementioned, they account for 56% of outstanding mortgages. These mortgages have been widely blamed for the problems in the Danish housing and mortgage markets.

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[60] Cajas is short for "cajas de ahorros," which means saving banks in English.

[61] *See generally Spain: Financial Sector Assessment Program—Technical Note—Regulation, Supervision, and Governance of the Spanish Cajas* (Int'l Monetary Fund, Country Report No. 06/215, 2006).

[62] *See* David Böcking, *Bankia Bailout: Spain Struggles to Control Escalating Bank Crisis*

[63] *See, e.g.*, Roger Alford, *Some Help in Understanding Britain's Banking Crisis, 2007-09* (London School of Economics, Financial Markets Group Paper Series, Special Paper 193, Oct. 2010); Julia Black, *The Rise, Fall and Fate of Principles Based Regulation* (London School of Economics, Law Society and Economy Working Paper No. 17/2010, 2010); *United Kingdom: Basel Core Principles for Effective Banking Supervision Detailed Assessment of Compliance* (Int'l Monetary Fund, Country Report No. 11/233, July 2011).

Canada provides us with an important counterfactual. Unlike the United States, the United Kingdom, and Spain, Canada did not undergo any significant deregulation of the banking sector in the past several decades. On the other hand, Canada did have an outsized government role in housing finance that appears to be comparable to or larger than the role of the U.S. government, with 45 percent of Canadian mortgages receiving an explicit guarantee from Canadian mortgage insurance (which is required to be reinsured with the Canadian government), and an additional 29% of mortgages being securitized by the Canada Housing and Mortgage Corporation.[64] If government guarantees were the problem in housing finance, one would expect to see Canada suffering through relatively large housing and mortgage market problems. Conversely, if banking deregulation were the problem in housing finance, one would expect to see Canada with a relatively stable housing and mortgage system. Indeed, as has been well documented, Canada's housing and mortgage markets have been relatively stable, and have not experienced distress on par with the United States, the UK, Spain, or Denmark.[65]

Explicit, Ex Ante Guarantees Are Preferable to Implicit, Ex Post Guarantees

As is clear from even a cursory analysis, there is no major economy that does not have high levels of government guarantees in its housing finance system. The choice, then, is not, as the title of this hearing might be understood, between housing finance models with explicit government guarantees and no government guarantees. Rather, the choice we are presented with is whether government guarantees should be explicit and defined up front, or implicit and defined in the midst of a crisis. As former Treasury Assistant Secretary Phillip Swagel has explained:

> [O]ne clear lesson from the economic meltdown of 2008 [is that] [a]ny future U.S. administration will intervene directly and heavily if faced with a potentially devastating economic crisis. Market purists might not like it, but it is a fact I witnessed firsthand at the Treasury Department during the George W. Bush administration.[66]

There are several reasons why I believe explicit guarantees are preferable to implicit ones. First, the parameters of implicit guarantees are typically defined in the midst of crises, when regulators are frantically trying to stop panics from spreading. As a result, these implicit, *ex post* (after the fact) guarantees may go too far in bailing out classes of creditors that are not systemically important, since the regulators' incentives are to bail out more creditors rather than fewer. This was the reason why Treasury Secretary Henry Paulson wanted a "bazooka" to address the growing problems in the financial markets in 2007 and 2008.

Second, with explicit upfront guarantees, the government can require capital and insurance payments from the beneficiaries of these guarantees, just as it does with federally insured depository institutions. These are not only buffers against taxpayer loss, but can serve as

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[64] If one considers Canadian deposit insurance, virtually all Canadian mortgages are financed with government guarantees.

[65] One other important factor may be that housing finance provided by private capital markets conduits was virtually non-existent in Canada, with private-label securitization accounting for less than 3% of all mortgage debt. *See* David Min, *True North*, *supra* note 10.

[66] Phillip L. Swagel, *Will Free-Marketeers Save Fannie and Freddie?*, BLOOMBERG VIEW, July 17, 2011.

a deterrent against excessive risk-taking.

Third, implicit, *ex post* guarantees are more likely to accrue to larger, more systemically important financial institutions. If the failure of Lehman taught the banking community anything, it was that being big and interconnected was important to securing an implicit government guarantee. Therefore, in the absence of explicit upfront guarantees, we will be strongly incentivizing greater consolidation and asset growth in the financial services industry.

Fixing the Current System, Rather than Importing New Models, is Preferable

As leading policy makers such as yourselves contemplate how best to reform the U.S. housing finance system, it is important that you take into account the specific characteristics of our polity. There are several that I think are particularly notable. First, we do not have a social safety net equivalent to those that exist in most other advanced economies. As such, affordability in housing finance should be a more important policy priority for the United States than it is in other countries. As such, we should seek solutions that facilitate lower costs to mortgage borrowers. All three of the major housing finance options used around the world—government-backed bank deposits, MBS, and covered bonds—provide low cost financing, so all three are suitable in this regard.

Second, the 30-year, fixed-rate, fully self-amortizing mortgage is a critical part of U.S. housing finance, with a long record of proven success. Moreover, this product is politically quite popular, especially among prudent homeowners. However, it carries significant interest rate risk for intermediaries and investors. In the aftermath of the stagflation of the late 1970s and early 1980s, traditional deposit-backed banks have proven unwilling to carry significant amounts of such risk to term. Government-backed MBS and covered bonds both distribute this interest rate risk to investors willing to carry it. If we want to continue to emphasize the 30-year FRM in the United States, it seems to rule out bank deposits as the major source of U.S. housing finance.

Third, the United States has a long record of populist opposition to big banks, hidden subsidies, and bailouts, dating back to the founding of this Republic and the political battles over the First and Second Banks of the United States. Given these strong political dynamics, covered bonds—with the implicit guarantees and hidden subsidies that they carry and their tendency to promote TBTF—seem more appropriate as a major source of funding for the socialist governments of Europe, but more problematic here in the United States.

Collectively, these points lead me to the conclusion that we may be best served by enacting reforms of the current system, rather than trying to impose radical changes or importing European models of housing finance into our country. This appears to be the same conclusion that was reached by the Bipartisan Policy Center, Sens. Bob Corker and Mark Warner, and most other policy groups and academics that have thought about housing finance reform, as they have all proposed some variation of implementing substantial reforms on a government-backed MBS system of funding residential mortgages.[67]

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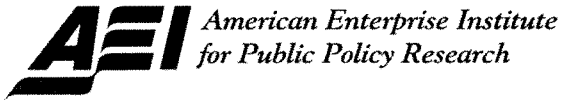
[67] Among these are Donald Marron and Phillip Swagel; the Mortgage Finance Working Group; the Mortgage Bankers Association; Federal Reserve economists Diana Hancock and Wayne Passmore; a leading group of economists at the Federal Reserve Bank of New York; and Moody's Chief Economist (and former Chief Economic

I thank you again for your time, and for the opportunity to testify here today on this critically important topic. I look forward to your questions.

Advisor to Sen. McCain in his 2008 presidential campaign) Mark Zandi. *See* David Min, *How Government Guarantees in Housing Finance Promote Stability* n. 21, *supra* note 39.



Statement before the House Committee on Financial Services
On Beyond GSEs: Examples of Successful Housing Finance Models without Explicit Government Guarantees

We Don't Need GSEs

Alex J. Pollock
Resident Fellow
American Enterprise Institute

June 12, 2013

The views expressed in this testimony are those of the author alone and do not necessarily represent those of the American Enterprise Institute.

Testimony of

Alex J. Pollock
Resident Fellow
American Enterprise Institute

To the Committee on Financial Services
U.S. House of Representatives

Hearing on Learning from Mortgage Finance Systems of Other Countries

June 12, 2013

We Don't Need GSEs

Mr. Chairman, Ranking Member Waters, and Members of the Committee, thank you for the opportunity to be here today. I am Alex Pollock, a resident fellow at the American Enterprise Institute, and these are my personal views. Before joining AEI, I was the President and CEO of the Federal Home Loan Bank of Chicago from 1991 to 2004. From 1999 to 2001, I also served as President of the International Union for Housing Finance (IUHF), a trade association devoted to the international exchange of housing finance ideas and information. In fact, I have just returned to the U.S. from an IUHF conference at which representatives of 42 countries met to share issues and experiences in this sector, which is economically and politically important to all countries.

The American housing finance sector has collapsed twice in the last three decades, once as a government promoted savings and loan-based system, and once as a government promoted GSE-centric system. We should never assume that the particular, highly unusual, historical development of U.S. housing finance should define the limits of our considerations. There is no doubt that there is much to learn of much practical import from examining U.S. housing finance in international perspective, including how experts from other countries view our system from outside.

Comparing our housing finance sector to other countries, the one thing most unusual about it was and is the dominant and disproportionate role played by Fannie Mae and Freddie Mac, as government-sponsored enterprises or GSEs. Fannie and Freddie's role and was and is unique among housing finance systems. The GSEs themselves used to claim that this made U.S. housing finance "the envy of the world," a view not shared by the world. When Fannie and Freddie were the darlings of Washington and the stars of Wall Street, they would come to IUHF meetings and boastfully promote their GSE model. But mortgage professionals from other countries were not convinced.

Let us begin by asking and answering five essential questions from an international perspective:

1. Are GSEs like Fannie and Freddie necessary for effective housing finance?

No. This is obvious from the many countries which achieve similar or higher home ownership than the U.S. without them.

2. Did GSEs get for the U.S. an internationally high home ownership rate?

No.

3. Well, did GSEs get for the U.S. an above-average home ownership rate?

No.

4. Are GSEs necessary to have long-term, fixed rate mortgages?

No.

5. Even if they had a disastrous actual outcome, are GSEs the best model in theory?

No.

Along with incorrectly saying that GSEs made U.S. housing finance "the envy of the world," it was often additionally claimed (without supporting data) that the U.S. had the highest home ownership rate in the world. This seemed plausible to Americans, but was wrong. Interestingly, people in England also claimed that *they* had the highest home ownership. In fact, England, with a completely different housing finance system and no GSEs, has been and is effectively tied with the U.S. in home ownership rate—both now at 65%, and both in the bottom half, as you will see in the ranking below.

Based on the free use of the U.S. Treasury's credit, through the so-called "implicit" but very real (as events made clear) guaranty, massive amounts of Fannie and Freddie's debt securities were sold around the world. The GSEs ran up the leverage of the housing finance sector. As a market distortion which pushed credit at housing, they inflated house prices and escalated systemic risk. Foreign investors helped pump up the housing bubble through the GSEs while being fully protected from the risk, and then were bailed out by the taxes of ordinary Americans. Of course, other countries also made housing finance mistakes, but nobody else made this particular, giant mistake.

The political interest in housing finance begins with what I think is a valid proposition: that in a democracy it is advantageous to have widespread property ownership among the citizens. The experiences of other countries make it obvious that high home ownership levels can be attained without GSEs—and moreover without tax deductions for mortgage interest; without our very unusual practice of making mortgage loans into non-recourse debt; without government orders to make "creative"—that is riskier—mortgage loans, which were part of being a GSE; and with prepayment fees.

The following table, "Comparative Home Ownership Rates," is an update with the most recent available data of a comparison I presented to the Congress in 2010. It displays home ownership in 28 economically advanced countries. The U.S. ranks 20th, just behind England. The median home ownership rate among these countries is 68%, compared to our 65%.

Comparative Home Ownership Rates

Rank	Country	Ownership Rate	Date	Source
1	Singapore	90.1%	2012	Statistics Singapore
3	Spain	85.0%	2011	European Mortgage Federation
3	Norway	85.0%	2011	European Mortgage Federation
4	Poland	81.30%	2011	European Mortgage Federation
5	Italy	80.0%	2011	European Mortgage Federation
6	Belgium	78.0%	2010	European Mortgage Federation
7	Iceland	77.0%	2011	European Mortgage Federation
8	Portugal	74.9%	2011	European Mortgage Federation
9	Ireland	74.5%	2011	European Mortgage Federation
10	Finland	74.1%	2011	European Mortgage Federation
11	Mexico	70.7%	2004	OECD
13	Chile	69.0%	2006	Housing Finance Information Network
13	Australia	69.0%	2010	Australian Bureau of Statistics
14	Israel	68.8%	2008	Global Property Guide
15	Luxembourg	68.1%	2011	European Mortgage Federation
16	Canada	67.0%	2011	Statistics Canada
17	New Zealand	66.9%	2006	Statistics New Zealand
18	Sweden	65.5%	2011	European Mortgage Federation
19	England	65.3%	2012	English Housing Survey
20	UNITED STATES	65.0%	2013	Bloomberg
21	Japan	61.1%	2010	Statistics Japan
22	France	57.8%	2011	European Mortgage Federation
23	Austria	57.4%	2011	European Mortgage Federation
24	Netherlands	55.5%	2011	European Mortgage Federation
25	Denmark	53.5%	2011	European Mortgage Federation
26	Hong Kong	52.0%	2012	Hong Kong Census and Statistics Department
27	Germany	43.2%	2011	European Mortgage Federation
28	Switzerland	40.0%	2011	Swissinfo.ch *estimate

Source: AEI research

How do financial professionals in other countries view the U.S. housing finance sector?

More than a decade ago, when Fannie and Freddie were still riding high, and Fannie in particular was a greatly feared bully boy whom both Washington politicians and Wall Street bankers were afraid to cross or offend, I presented the GSE-centric U.S. housing finance system to the Association of Danish Mortgage Banks in Copenhagen. When I was done, the CEO of one of their principal mortgage lenders memorably summed things up:

"In Denmark we always say that we are the socialists and America is the land of free enterprise. Now I see that when it comes to mortgage finance, it is the opposite!"

He was so right. But now, with Fannie and Freddie continuing to be guaranteed by the U.S. Treasury, able to run with zero capital and infinite leverage, being granted huge loopholes by the Consumer Financial Protection Bureau, and being heavily subsidized by the Federal Reserve's buying up their MBS, they have a bigger market share and more monopoly power than before. The American housing finance sector is more socialized than ever.

Here's a view from Britain, where a senior financial official said recently:

"We don't want a government guaranteed housing finance market like the United States have."

They don't want what we have—and we don't want it either. How do we conceptualize the range of alternate possibilities?

Every housing finance system in the world must address two fundamental questions. The first is how to match the nature of the mortgage loan with an appropriate funding source, so you are not lending long and borrowing short. Different approaches distribute the interest rate risk among the parties involved—lenders, investors, borrowers, governments, taxpayers--in various ways.

Basic sustainable variations observed in different countries include variable rate mortgages funded with short-term deposits; medium term fixed-rate mortgages funded with medium-term fixed rate deposits or bonds; long-term fixed rate mortgages funded with long-term fixed rate bonds or covered bonds. In general, to soundly fund long-term fixed-rate mortgages, you have to have access to the bond market. In an advanced financial system, it does not require a GSE to do this.

The classic example of *not* achieving the needed interest rate match was the collapse of the American savings and loan industry in the 1980s. What broke the savings and loans was the combination of their interest rate mismatch with the soaring interest rates of the great inflation created by the Federal Reserve in the 1970s. While the lenders were crushed, borrowers who had old 30-year fixed rate mortgages in this period of rising interest rates and inflating house prices did very well.

In contrast, the 30-year fixed rate mortgage was terrible for great numbers of borrowers in the U.S. crisis of the 2000s. With the floating rate mortgage system of England, the rapid fall of interest rates in the housing crisis was automatically passed on to the borrowers in the form of lower payments, which helped contain the crisis. American borrowers faced with falling interest rates and house price

deflation, on the other hand, were often locked in to high payments and punished by their 30-year fixed rate mortgages, which thereby made the housing bust worse in this country.

The second fundamental question of housing finance systems is who will bear the credit risk. In most countries, the lender retains the credit risk, which is undoubtedly the superior alignment of incentives. With covered bonds, which are used in many countries, you can simultaneously achieve fixed-rate funding while keeping the lender fully on the hook for the credit performance of the mortgage loans being funded.

The American GSE approach (and also that of private MBS) systematically separates the credit risk from the lender-- so you divest the credit risk of the loans you make to your own customers. This was and is a distinct outlier among countries. It had disastrous results, needless to say.

The most perfect conceptual solution to the two fundamental questions of housing finance, which functions very well in practice in its national setting, is the housing finance system of Denmark. This system has been justifiably admired by many observers. It operates in a small country, but represents big basic ideas.

The Danish mortgage approach to interest rate risk in its funding market is explicitly governed by what it calls the "matching principle." This means that the interest rate and prepayment characteristics of the mortgage loans being funded are passed on entirely to the investor in Danish mortgage covered bonds. This allows long-term fixed rate mortgages, as well as variable rate mortgages.

At the same time, the entire credit risk is retained by the mortgage bank lenders. They have 100% "skin in the game" for credit risk, in exchange for an annual fee, thus insuring alignment of incentives for credit performance. Deficiency judgments, if foreclosure on a house does not cover the mortgage debt, are actively pursued. In other words, mortgage loans are always made with recourse to the borrower's other income and assets. This is true in most countries. The U.S. state laws or practices of non-recourse mortgage lending are again a distinct outlier.

The fundamentals of the Danish mortgage system go back over 200 years, to the 1790s. There are no GSEs. The Danish system can deliver long-term fixed rate loans of up to 30 years with a prepayment option. This is a private housing finance system build on quite robust principles, which claims that no mortgage bond holder has suffered a credit loss in over two centuries. Denmark can and in the last decade did have a housing price bubble and bust, but the housing finance sector performed much better through it than did ours, and its covered bonds were sold throughout 2007-09. We should note that the Danish system generates a home ownership rate of 54%, on the low side.

Another interesting case of the splitting of bond market funding and credit risk is that of Cagamas, or the National Mortgage Company of Malaysia. Cagamas buys mortgage loans from lenders, and then issues bonds to finance them, but the mortgage purchases are with full recourse to the lender, so the lender retains 100% of the credit risk and the alignment of incentives.

Cagamas is 80% owned by the banks and 20% by the Malaysian central bank, so it is a GSE, but not a Fannie and Freddie-style GSE. Instead it functionally resembles the Federal Home Loan Banks (FHLBs). FHLBs provide bond market funding for mortgages through advances to banks, but the banks retain all the credit risk. FHLBs also buy mortgages, but only when the bank credit enhances the mortgages it has

made. (It may be of interest that of all sizeable American GSEs, considering Fannie, Freddie and the Farm Credit Banks, the FHLBs are the only ones which have never gone broke.)

A very stable, sound, and very conservative housing finance market is that of Germany. Some of its banks got into trouble in this cycle by buying U.S. mortgage securities, but their domestic mortgage market did not experience either a housing price boom-bust or a mortgage credit crisis. The problem is that the German system generates a very low home ownership rate, only 43%--as well as a relatively late age at which people are on average able to buy houses. I imagine that neither of these would be politically acceptable in the U.S.

Nevertheless, there are two German ideas worthy of study. One is the German version of mortgage covered bonds ("Pfandbriefe"). With a statutory basis more than one hundred years old (and, it is claimed, a history going back to Frederick the Great in the 18th century), these covered bonds form and large and relatively stable source of bond-based mortgage funding with no GSE. The issuing bank retains all the credit risk of the mortgage loans. Mortgage loans funded with these covered bonds have a maximum LTV of 60%.

Many people have proposed, and I agree, that the U.S. should introduce covered bonds without a government guaranty as a mortgage funding alternative, as part of escaping from the mortgage market's subservience to GSEs.

A second German housing finance idea worth considering is their emphasizing the role of savings as an essential part of sound housing finance. The German building and savings banks ("Bausparkassen") continue to practice the savings contract, which was once also common in this country. By such a contract, the borrower commits to regular savings as part of qualifying for a mortgage loan. This is, in my opinion, a very old-fashioned, very good idea.

Canada makes a pertinent comparison for the U.S., both countries being advanced, stable, financially sophisticated and North American. The Canadian housing finance system, like most in the world, has no GSEs. It is primarily funded on the balance sheets of banks, although Canadian banks are also becoming issuers of covered bonds under new legislation, and it came through the crisis of 2007-09 in much better shape than did we did. Mortgage lending is more conservative and creditor-friendly, and the Canadian system currently produces a higher home ownership rate of 67%.

Although it has no GSEs, Canada does have a very important government body to promote housing finance, which plays a substantial role in the mortgage sector. This is the Canada Mortgage and Housing Corporation (CMHC). Its principal activity is insuring (i.e. guaranteeing) mortgage loans—and it guarantees approximately half of all Canadian mortgages. This is about the same proportion as the combined Fannie and Freddie have of outstanding the U.S. mortgage credit exposure.

But in contrast to the game the U.S. played of pretending that Fannie and Freddie were "private," and that the government exposure was not really there (it was only "implicit"), CMHC's status is refreshingly clear and honest. It is a 100% government-owned and controlled corporation. It has an explicit guaranty from the government. It also provides housing subsidies which are on budget and must be appropriated by Parliament. So Canada, while having this large government intervention in the mortgage market, is definitely superior to us in candor and clarity about it.

This exemplifies what I believe to be a core principle: You can be a private company. Or you can be part of the government. But you should never be allowed to pretend you are both. In other words, Fannie and Freddie should cease to be GSEs. Considering the international anomaly and the disastrous government experiment they represent, we should all be able to agree on this.

Thank you again for the opportunity to share these views.

TESTIMONY

Lawrence J. White
Professor of Economics
Stern School of Business
New York University

Before the
Committee on Financial Services
United States House of Representatives
Hearing on
"Beyond GSEs: Examples of Successful Housing Finance Models
without Explicit Government Guarantees"
June 12, 2013

Chairman Hensarling, Ranking Member Waters, and members of the Subcommittee: My name is Lawrence J. White. I am a Professor of Economics at the NYU Stern School of Business. During 1986-1989 I served as a Board Member of the Federal Home Loan Bank Board; in that capacity I was also one of the three Board Members of Freddie Mac. I have written extensively on the subject of the government-sponsored enterprises (GSEs) and on residential mortgage finance more generally; a chronological list of these writings is at the end of this statement, as is my short biographical summary and the "Truth in Testimony" disclosure form. I represent solely myself at this hearing.

Thank you for the opportunity to testify today on this important topic. Housing, and housing finance, continues to occupy an important place in the American policy conversation. Housing costs are a significant fraction – approximately 20% – of most families' budgets, and even more so for many lower-income households; and a family's residence is the environment in which the family members spend most of their hours in a week. It is therefore not surprising that

public policy has shown a distinct bias toward subsidizing housing, often through subsidizing mortgage finance.[1]

However, along with the benefits of subsidy come costs; rarely are there "free lunches". The housing boom and bust of the decade of the 2000s and the financial crisis of 2008-2009, which was triggered by the housing bust, are fresh reminders of how costly such policies can be.

In the remainder of this Testimony I will outline the wide extent of government policies that encourage/subsidize housing construction and consumption, summarize their consequences – including an international comparison – and discuss a sensible way forward for housing policy and for residential mortgage finance in particular, which would involve reduced levels of subsidy for housing generally and less government involvement in housing finance.

Government policies that encourage housing production and consumption.

Government policies that encourage the construction and consumption of housing have been and continue to be widespread in the United States and occur at the federal, state, and local levels. Included (past and present) are:

- Income tax deductions for residential mortgage interest and for local property taxes;
- Government-sponsored enterprises (GSEs) that are focused on housing finance – primarily Fannie Mae and Freddie Mac, but also including the Federal Home Loan Bank System (FHLBS);[2]
- The Federal Housing Administration (FHA) and its mortgage insurance programs, as well as mortgage insurance that is provided by the U.S. Department of Veterans Affairs (VA) and the

[1] Another factor that surely encourages subsidy is the employment of millions of people by the tens of thousands of enterprises that are in housing construction and its related businesses.

[2] The FHLBS was created in 1932, primarily as a vehicle to provide low-cost wholesale funding to savings institutions, which in turn were expected to be housing lenders. After 1989, the FHLBS's mandate was broadened to community development, and its membership was broadened to encompass other categories of depository institutions, such as commercial banks and credit unions. For the remainder of this Testimony, unless otherwise indicated, my references to GSEs will mean Fannie Mae and/or Freddie Mac.

U.S. Department of Agriculture (USDA), and the Government National Mortgage Association (Ginnie Mae) to securitize these insured mortgages;

- A category of depository institutions (savings & loan associations) that were expected to specialize on residential mortgage finance;
- Subsidies for home builders;
- Subsidies for low-income renters; and
- Direct provision of rental housing ("public housing").

The consequences.

a. Domestic consequences. A basic tenet of economics is that if something is reduced in price (e.g., through a subsidy), people generally will buy more of it. Housing is no exception. As housing has been reduced in price through many of the programs that were outlined above, households have often bought "more house": They have bought larger and better appointed houses on larger lots.[3]

In turn, this "more house" (including more rental housing) has meant that more of the U.S. economy's resources have been devoted to housing and less to other investments that would have been more productive – such as business investments in plant, equipment, and inventories; government investments in schools, roads, bridges, hospitals, airports, etc.; and individuals' investments in more and better education and training. One set of studies from approximately 25 years ago estimated that the U.S. housing stock was 30% larger than it would otherwise have been in the absence of the widespread subsidies and that U.S. GDP was 10% smaller than it

[3] In addition to this "price effect", there has also been an "income effect", since U.S. households have generally had progressively higher incomes through the period since the Second World War.

would otherwise have been.[4] More recent studies have generally been supportive of these earlier findings.[5]

Further, much of these subsidies – especially those that are connected with home ownership – have tended to benefit upper-income households. This has especially been true for the mortgage interest and local property tax deductions, since upper-income households are more likely to itemize on their income tax returns (which is the only way that a household can take advantage of the deduction) and to buy (and finance) more expensive houses (which would mean larger deductions). The subsidies that are embedded in the GSEs' mortgage activities have tended to favor upper-income households as well, at least through the late 1990s.[6] And, more recently, even FHA activities have been more focused on upper-income households, as the limit on mortgages that the FHA could insure has been raised (starting in 2008) to $729,750 in high-housing-cost areas.

And, although increases in the rate of home ownership was an avowed goal of many presidential administrations, the subsidy programs tended to have, at best, only marginal effects on home ownership rates (and, of course, rental subsidy programs would tend to have the opposite effects). In essence, the subsidy programs tended to provide subsidies mostly for upper-income households who would likely buy anyway and thus who used the subsidy primarily to

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[4] See Edwin S. Mills, "Has the United States Overinvested in Housing?" AREUEA Journal, 15 (Spring 1987); and Edwin S. Mills, "Dividing Up the Investment Pie: Have We Overinvested in Housing?" Business Review, Federal Reserve Bank of Philadelphia, (March-April 1987).

[5] A summary of some of these more recent studies can be found in Viral V. Acharya, Matthew Richardson, and Stijn Van Nieuweburgh, Guaranteed to Fail: Fannie Mae, Freddie Mac and the Debacle of Mortgage Finance, Princeton University Press, 2011.

[6] See, for example, Jonathan Brown, "Reform of GSE Housing Goals," in Peter J. Wallison, ed., Serving Two Masters, Yet Out of Control: Fannie Mae and Freddie Mac, Washington, DC: AEI Press, 2001. The increase in the GSEs' conforming loan limit in 2008 for high-housing-cost areas to $729,750 (from $417,000) certainly expanded the GSEs' reach into upper-income housing areas. The maximum allowable amount was lowered in 2011 to $625,500, where it stands today.

borrow more – to leverage themselves more – than they otherwise would (since much of the subsidy came in the form lower-cost borrowing) and to buy "more house".

Another consequence has been the necessity for the U.S. Government to put Fannie Mae and Freddie Mac into conservatorships in September 2008 and to decide to honor all of the debt obligations of these GSEs; thus far, the required capital contributions by the Treasury to the GSEs have been approximately $188 billion.

b. International comparisons. Loose discussions of American housing policy have often claimed that these housing (and housing finance) policies have yielded superior outcomes, especially in comparison with the policies of other countries. The discussion above has shown some of the weaknesses in these claims with respect to superior outcomes. And the writings of Dwight Jaffee, Michael Lea, Alex Pollock, and others have shown that American housing outcomes have not been especially favorable in international comparisons.

For example, Table 1 reproduces data that were compiled by Alex Pollock that show that the U.S. does not rank especially high in an international comparison of home ownership rates, despite all of the subsidies described above (and much less emphasis on subsidizing housing in other countries).[7] Similarly, Table 2 reproduces data that have been compiled by Dwight Jaffee, which show that the U.S. ranks relatively unfavorably in an international comparison with 15 European countries as to the differential between the average interest rates that mortgage borrowers have paid and the average interest rates on short-term Treasury Bills of their

[7] However, as will be discussed below, a de-emphasis of the home ownership rate as a goal of public policy would serve the U.S. economy better for the future.

respective countries; Jaffee has also shown that the U.S. does not rank favorably in a number of other comparative measures.[8]

The way forward.

For overall housing policy, the most important policy measures would be cutbacks in the overall levels of subsidy for housing and for mortgage borrowing. A good place to start would be to phase out the income tax deduction for mortgage interest (and, along the way, convert it into a tax credit instead of a tax deduction), which would also have the benefit of improving the budgetary position of the federal government. Phasing out the GSEs and replacing them with a housing system that is largely privately supported, as is discussed below, would also be important.

Although there do appear to be modest societal benefits from the phenomenon of home ownership (which would justify a modest program to help low- and moderate-income first-time home buyers), the large-scale emphasis on the goal of expanding the rate of home ownership ought to become a relic of the past. Rental arrangements are appropriate for many households. After all, houses are large, risky assets that involve sizable transactions costs when buying and selling and that thereby impede geographic mobility; under most circumstances the financing of home ownership requires a steady income and budgetary discipline. Home ownership works for many households; but it is clearly not for everyone – especially when one remembers that housing prices do not always go up.

With respect to mortgage finance, approximately 90% of newly originated residential mortgages involve a federal government guarantee (through the GSEs, FHA, VA, or USDA) with respect to the credit risk on those mortgages. This historically very high percentage is the

[8] See Dwight M. Jaffee, "Reforming the U.S. Mortgage Market through Private Market Incentives," in Satya Thallam, ed., House of Cards: Reforming America's Housing Finance System, Mercatus Center, George Mason University, 2012.

consequence of the implosion of the housing markets after 2006 and the concurrent collapse of "private label" securitization, and the expansion of the GSEs and FHA to fill the financing void.

However, this absorption of 90% of the credit risk for residential mortgages by the federal government – and ultimately by taxpayers – is not a sensible long-run position for the federal government in a markets-oriented economy. Instead, residential mortgage financing should be primarily a private-sector activity; federal guarantees (and the subsidy that they carry) should be better targeted and should be restricted to helping (suitably screened) low- and moderate-income first-time home buyers obtain housing finance, through the FHA in on-budget, transparent subsidy programs.[9]

There are a number of questions and issues that are repeatedly raised in the context of a mortgage finance system that is largely devoid of government guarantees. One of the most prominent is whether the 30-year fixed-rate mortgage (FRM) would still be available to borrowers under a system of private finance. The answer to this question is a highly likely "yes". It is important to remember that 30-year FRMs were offered to borrowers for "jumbo" loans (i.e., for mortgages that exceed the GSEs' conforming loan limit) prior to the financial crisis and have continued to be available in the years since the financial crisis; this availability of 30-year FRMs – for all sizes of mortgages – should continue to be the case in a largely privatized mortgage market.

Further, 30-year FRMs pose interest-rate risks for investors, as compared with adjustable-rate mortgages (ARMs); but the federal guarantees cover only credit risk. *Consequently, for the issue of whether 30-year FRMs would continue to be available to borrowers (as compared with ARMs), the presence or absence of federal guarantees should be irrelevant.*

[9] This was Option #1 of the Obama Administration's "Reforming America's Housing Finance Market: A Report to Congress," February 11, 2011. In addition, over the longer run the subsidy programs should be transitioned from subsidies for borrowing (which encourage greater household leveraging) to down-payment assistance.

The interest-rate differential between jumbo loans and otherwise similar conforming loans prior to 2007 was approximately ¼ of a percentage point – a relatively modest amount. After the mortgage markets return to normalcy (see below), this differential could well represent the additional cost to borrowers from the absence of widespread government guarantees. Even if the differential were twice this size, the additional cost to borrowers would still be relatively modest.

A second widespread question is where the funding for the largely privatized mortgage market would come from. Partly the funding would come from depository institutions. As late as 2007, despite the competition from the GSEs and all of the advantages that the latter enjoyed, depositories held (as "whole loans" – i.e., not as mortgage-backed securities) 30% of outstanding mortgages. In the absence of the GSEs and their advantages, the depositories' share would likely increase. If covered bonds – bonds that represent a claim on a depository institution but that also have specific mortgages as collateral – become more prevalent in the U.S., this would be a factor that would likely help depositories enlarge their share yet further.

The remainder of mortgage financing would come through private-label securitization, which should revive if the advantages of the GSEs are curtailed and when the final rules with respect to "qualified residential mortgages" (QRMs) are promulgated. Given the failed experience of the 2000s, the securitization tranche structures would likely be simpler, with more information being provided to investors.[10]

Among the natural buyers of the senior, relatively safe tranches of the 30-year FRMs that would be securitized would be life insurance companies and pension funds – both of which have long-lived obligations that would be readily balanced by the long-lived assets of the 30-year FRMs. As of the first quarter of 2013, however, these two categories of financial institution held

[10] Also, bond insurers and/or the credit-default swap (CDS) market could help bond investors deal with the risks.

almost $16 trillion in assets but held only $764 billion in residential mortgage-backed securities (RMBS) – less than 5% of their assets. It appears that the heightened interest-rate risk that is embodied in the "free" prepayment option[11] that accompanies most 30-year FRMs has been a deterrent to these institutions' wider investment in RMBS. Consequently, suitable fees for the exercise of the pre-pay option are an important part of a largely private mortgage finance system. The higher-risk junior tranches would likely be bought by hedge funds and by high-risk bond mutual funds.

Additional policy measures that would help provide a more robust privately oriented mortgage financing system would include making lender recourse the norm for mortgage borrowing (which would reduce strategic defaults and reduce over-leveraging), as is the norm in many other countries, and giving the primary lender the power to approve whether the borrower can take out a second lien (which is the norm in commercial lending generally).

Conclusion.

The reform of housing policy generally – to end widespread subsidies for the construction and consumption of housing – and the reform of mortgage finance to allow a largely private-sector markets-oriented structure would be worthwhile policy actions for the U.S. economy. The sooner that such policy actions are taken, the sooner will the U.S. economy benefit.

Thank you again for the opportunity to testify at this important hearing. I would be happy to answer any questions from the Committee.

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[11] However, although the exercise of the pre-payment option may be free to those choose to exercise it, the availability of this costly option adds about ½ percentage point to the interest costs on 30-year FRMs; see Jaffee, op. cit.

Table 1: An International Comparison of Home Ownership Rates in the 2000s

Rank	Country	Ownership rate
1	Singapore	89%
2	Spain	85%
3	Iceland	83%
4	Belgium	78%
5	Norway	77%
6	Portugal	76%
7	Luxembourg	75%
8	Ireland	75%
9	Chile	73%
10	Italy	72%
11	Israel	71%
12	Australia	70%
13	England	68%
14	Canada	68%
15	Sweden	68%
16	New Zealand	68%
17	**United States**	**67%**
18	Japan	61%
19	Finland	59%
20	Czech Republic	59%
21	France	57%
22	Netherlands	57%
23	Austria	56%
24	Denmark	54%
25	Germany	46%

Source: Alex J. Pollock, Testimony before the Subcommittee on Security and International Trade and Finance, Committee on Banking, Housing and Urban Affairs, U.S. Senate, September 29, 2010.

Table 2: An International Comparison of Average Interest-Rate Spreads between Mortgage Interest Rates and Three-Month Treasury Bills, 1998-2010

Rank	Country	Spread
1	Sweden	0.91%
2	United Kingdom	0.93%
3	Luxembourg	1.05%
4	Spain	1.08%
5	Finland	1.09%
6	Ireland	1.15%
7	Portugal	1.35%
8	Norway	1.44%
9	Italy	1.56%
10	Austria	1.79%
11	France	1.80%
12	Germany	2.05%
13	Netherlands	2.06%
14	**United States**	**2.26%**
15	Belgium	2.58%
16	Denmark	2.58%

Source: Dwight M. Jaffee, "Reforming the U.S. Mortgage Market through Private Market Incentives," in Satya Thallam, ed., House of Cards: Reforming America's Housing Finance System, Mercatus Center, George Mason University, 2012.

Publications by Lawrence J. White on the GSEs and on Residential Mortgage Finance

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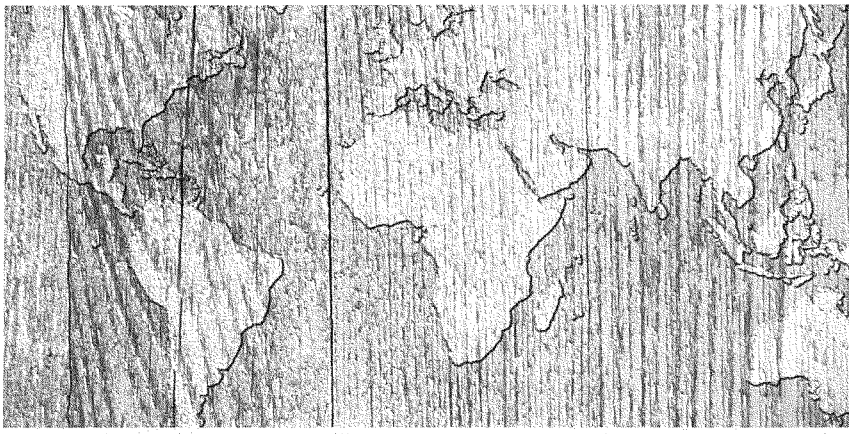
SPECIAL REPORT

International Comparison of Mortgage Product Offerings

Dr. Michael Lea



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International Comparison of Mortgage Product Offerings

Dr. Michael Lea
Director, Corky McMillin Center for Real Estate
San Diego State University
San Diego State University Research Foundation

September 2010

Table of Contents

Executive Summary

The recently passed Dodd-Frank Financial Reform Bill has significant implications for the provision of mortgage credit in the United States. The bill stipulates the characteristics of qualified mortgages, which are likely to become the standard instruments in the market going forward. The bill bans or restricts the use of pre-payment penalties, balloon payments, interest-only payments and other features commonly offered in the mortgage choice set. A likely outcome of the bill is to perpetuate the use of the long-term fixed rate pre-payable mortgage (FRM) with implications for the future of the mortgage GSEs.

This study examines the issue of mortgage product design from the viewpoint of international experience. What mortgage designs and characteristics exist in different markets and why? How have they performed prior to and during the crisis? The study will focus on five important aspects of mortgage design:

- Interest rate determination: fixed versus adjustable-rate mortgages;
- Pre-payment penalties and restrictions;
- Loan-term and amortization limits;
- Mortgage default and foreclosure; and
- Consumer protection regulation

This comparison of mortgage product offerings in developed countries has revealed significant differences in the dominant product offerings. Countries differ in terms of the market share of adjustable versus fixed-rate mortgages, the use of pre-payment penalties, maximum term and the offering of features such as interest-only payments and assumability. Our findings suggest that the United States is internationally unusual in several respects:

- The United States has an unusually high proportion of long-term fixed-rate mortgages as well as use of securitization in the finance of housing. The dominance of the FRM and

securitization is driven in part by the presence of government-backed secondary mortgage market institutions that lower the relative price of this type of mortgage.

- The United States is unusual in the banning or restriction of pre-payment penalties on fixed-rate mortgages. Most countries in the survey allow such penalties to compensate lenders for loss associated with the financing of the instruments. As a result, mortgage rates do not include a significant pre-payment option premium and other financing techniques, such as covered bonds, are more common.
- The only other country that utilizes the FRM is Denmark. The Danish system offers a superior alternative in the form of the "Principal of Balance" that equates individual mortgages and bonds. This system allows borrowers to pre-pay their loans when rates fall, as in the United States, and allows them to buy back their bond when rates rise. This feature allows the borrower to benefit from interest rate increases and decreases and facilitates de-leveraging when rates rise, reducing the incidence of negative equity.
- Features that are restricted in the Dodd-Frank Bill such as longer terms, interest-only periods and flexible payment designs are quite common in other countries and do not appear to have been associated with higher rates of default.
- Mortgage default rates have been far lower in other countries than in the United States, despite the fact that several countries had greater house price volatility. The lack of subprime lending (outside of the United Kingdom) and less use of limited or no documentation lending were major factors. Mortgage products did not play a role in mortgage default -- in fact the dominance of ARMs in several countries was noted as a reason for lower default rates.
- Mortgage foreclosure and repossession regimes are varied, with some more efficient and some less efficient than in the United States. However all other countries in the survey have recourse mortgages and lenders routinely pursue deficiencies. Research in Europe and the United States has found that recourse reduces the incidence of default.
- Consumer protection regulation has advanced in a number of countries. The focus has been on borrower qualification and suitability standards and for the most part has not constrained mortgage product design.

Introduction

In the aftermath of the U.S. mortgage-market crisis there have been numerous actions and proposals to restrict mortgage product design. The Federal Reserve Board created guidelines for high cost loans in 2008 that restrict or prohibit the use of certain features such as pre-payment penalties on high cost loans.[1] The trend continued with the passage of the Dodd-Frank Financial Reform Bill [2010] in July 2010, which contains a section entitled the "Mortgage Reform and Anti-Predatory Lending Act," that is likely to substantially change the mix of product offerings available in the U.S. market.

The bill introduces the concept of a "qualified" mortgage that seriously constrains the characteristics of mortgages. The qualified mortgage is basically an instrument with low-risk characteristics such as fully amortizing payments and a term no longer than 30 years. Qualifying loans can be fixed rate or adjustable rate but qualification on the former has to be on a fully amortizing payment and on the latter is based on the highest possible rate in the first five years with full amortization. Pre-payment penalties on qualified fixed-rate mortgages are capped and not allowed on adjustable-rate mortgages. The law also allows regulators to prohibit or further restrict "...the use of balloon payments, negative amortization, pre-payment penalties, interest-only payments, and other features that have been demonstrated to exhibit a higher risk of borrower default." (p. 533).

Although the law allows lenders to make non-qualified mortgages, they too have constraints. For example pre-payment penalties are not allowed on non-qualified mortgages. More importantly, lenders that make qualified mortgages enjoy a safe harbor where they are not subject to certain restrictions — in particular, that they must retain at least five percent of the credit risk on the loans. If a mortgage is qualified the lender is not obliged to retain any of the risk of loss. Furthermore, lenders that make loans that are not qualified or are later found to have violated qualification provisions may find themselves subject to penalties and loss of the ability to pursue deficiency judgments in foreclosure.

The likely effect of these regulations will be to limit the offering of products that are not deemed to be qualified. Those that are offered will have a higher price, reflecting the required risk retention, greater risk of rules violations and greater cost of documenting affordability and compliance. In particular the law may result in a greater proportion of long-term FRMs that enjoy favored status as qualified mortgages.

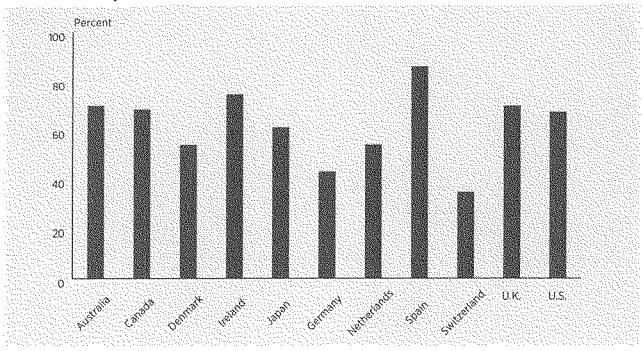
Is it a good idea to place restrictions on loan design? While many borrowers were offered inappropriate or highly risky products during the mortgage market boom, proposals to limit mortgage product offerings, either explicitly or implicitly, run the risk of eliminating valuable features from the mortgage marketplace and stifling mortgage product innovation.[2] For example, pre-payment penalties can be an efficient mechanism to lower mortgage rates and facilitate interest rate risk management for lenders and investors. Negative amortization can cushion the payment shock potential of adjustable-rate mortgages (ARMs). Lower start rates due to discounts, interest-only periods or graduated payments can reduce affordability constraints for borrowers. Arguably the problem with loan design during the crisis was one of a mismatch between borrowers and particular loan designs — not the existence of the loan features themselves. Furthermore steering the market further towards FRMs has implications for the finance of mortgages, market structure and stability.

In this study we examine 12 major developed countries with distinctly different mortgage market and product configurations. The countries chosen have relatively large and well developed mortgage markets with a variety of instruments and funding mechanisms. They all have relatively high homeownership rates and mortgage indebtedness. The purpose of the study is to inform U.S. market participants and policy makers about the range of product offerings available in other countries and identify potential features or products that could safely expand market offerings in the United States.

Country Background

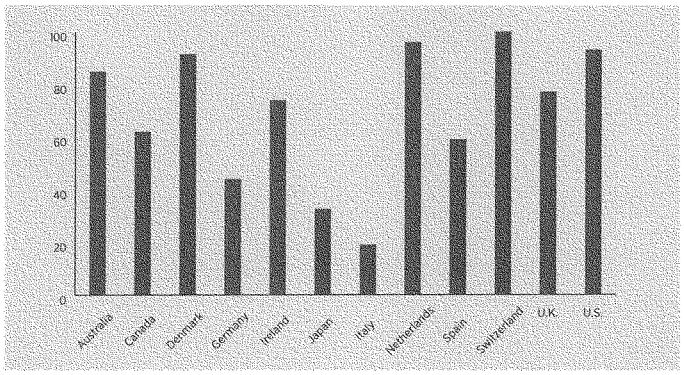
With the exception of Germany and Switzerland, the countries in this study have similar rates of homeownership (Figure 1). Australia, Ireland, Spain and the U.K. all have higher rates of homeownership and Canada's rate is comparable to that of the United States. This is noteworthy as these countries provide far less government support for homeownership than the United States does. Most western European countries have lower rates of homeownership, in part due to strong social rental systems. Germany provides incentives for rental investment but not for homeownership. Switzerland has historically had a low homeownership rate, reflecting a high cost of housing and a large foreign-born (often transient) population. Southern European countries like Italy, Greece and Spain have higher rates of homeownership, reflecting cultural values, discriminatory policies towards private rental

Figure 1
Homeownership Rate



Source: ABS, CHMC, Delft University, EMF, Bureau of the Census.

Figure 2
Mortgage Debt Outstanding-to-GDP, 2008



Source: Central Banks, World Bank 2008 except Japan 2006.

housing and weaker support of social rental housing.

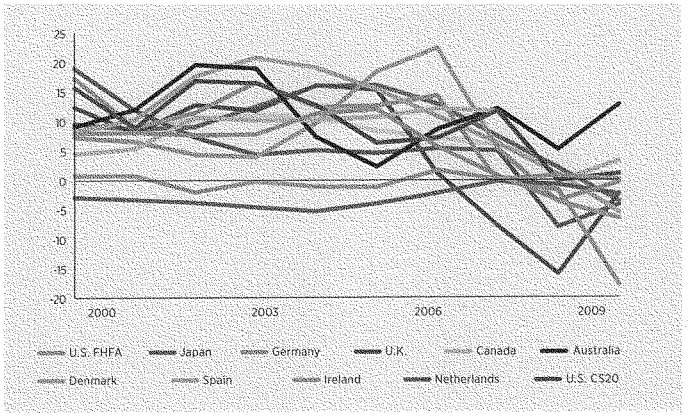
Mortgage indebtedness, as measured by mortgage debt outstanding relative to GDP, is also high in most countries — ranging from 38 percent in Japan to 100 percent in Switzerland (Figure 2). The ratios are low in Germany and Japan, reflecting more than a decade of stagnant house prices and mortgage lending. Many countries, including Australia, Ireland, the Netherlands and Spain had more rapid growth in mortgage indebtedness than the United States during the past decade.

Although the United States had an unprecedented run-up of house prices during the decade, it was not alone, as shown in Figure 3. Many OECD countries had greater house price increases between 2000 and 2006 than did the United States. Australia and the United States were the first of the bubble countries in which house prices fell (the Australian housing market has since recovered). The magnitude of the U.S. house price fall as measured by the S&P Case Shiller 20 Metro Area Index has been greater than that of other countries.

Mortgage interest rates in most countries declined during the decade except in Australia (Figure 4). The Reserve Bank of Australia increased interest rates in 2003, in part to head off a housing price bubble. The rates are specific to the dominant instrument. Australia, Ireland, Spain and the U.K. are predominately short-term variable-rate markets. Their mortgage rates declined more sharply than those in other countries during the crisis.

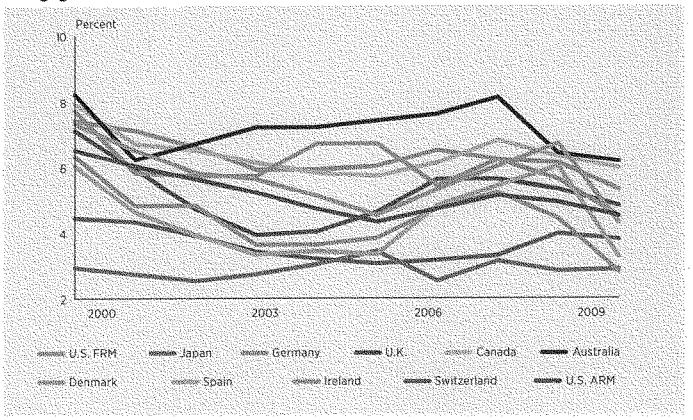
There are significant differences among countries in the presence of government-owned or -sponsored mortgage institutions. Table 1 compares select countries in this dimension. The United

Figure 3
House Price Change



Source: CMHC, EMF, FHFA, S&P.

Figure 4
Mortgage Interest Rates



Source: Central Banks, EMF, MBA.

States is unusual in its use of all three types of government-supported mortgage institutions or guarantee programs: mortgage insurance, mortgage guarantees and government-sponsored mortgage enterprises. Canada and Japan have government guarantee programs and Canada and the Netherlands have government-backed mortgage insurance programs. Korea has a GSE modeled after those in the United States. The market share of government-backed institutions in Canada, Japan and Korea is significantly less than that of the United States.

Table 1
Government Mortgage Market Support

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

Mortgage Characteristics

A mortgage is a complex mix of different features.[3] There are terms that dictate how the interest rate is determined, how the loan is amortized, its final maturity and the options for and requirements of the lender and borrower.

What are the desirable features in a mortgage instrument? The answer to this question is not straightforward as it depends on whether viewed from the borrower or the lender/investor perspective. Features attractive to borrowers may be costly or impossible for lenders to provide. Features attractive to lenders may not be acceptable to borrowers. A borrower is interested in the affordability of the loan, both at inception and over its life. The lender is interested in getting an acceptable risk-adjusted rate of return over the life of the loan. This presents a conundrum — often an attempt to improve the attractiveness of the loan for one party creates a problem for the other. For example, an interest rate cap on an ARM reduces potential payment shock and default risk for borrowers but can reduce yield for lenders.

There is no perfect mortgage — the dominant instrument in any country represents a balance between borrower and lender/investor needs. Regulation may have an important influence if it bans or dictates certain features. History too may play a role — an instrument that has been dominant in a market for a long period of time is familiar to both borrowers and lenders and may be difficult to dislodge.

In general there is no one ideal mortgage instrument for a market. A wide variety of mortgage instrument designs have been created to meet the varying needs of borrowers and lenders. A robust mortgage market will have a several different instruments that can be tailored to the varying needs of borrowers and lenders with the mix determined by market forces rather than prescriptive regulation.

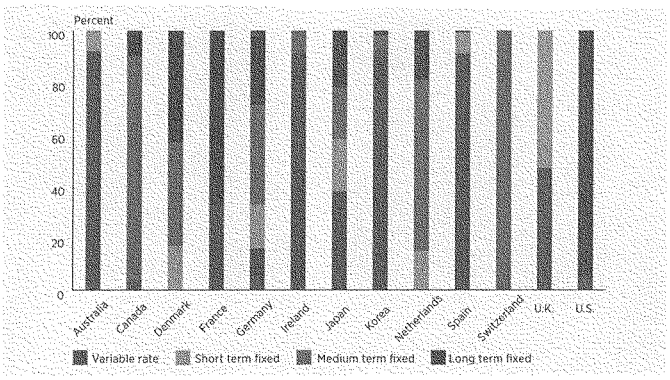
Interest Rate Determination: Fixed Versus Adjustable Rate

Perhaps the most important parameter in mortgage instrument design is the determination of the periodic interest rate. There is a wide range of possibilities for setting interest rates. Table 2, adapted from a 2006 study by the European Mortgage Federation (EMF), defines the different types.

Table 2
Types of Interest Rates

Type of interest rate	Description	Length of initial period of fixation	Definition
Fixed interest rate	Remains unchanged through the entire duration of the loan		
Initial period fixed rate	Starts with a period during which the interest rate is fixed. After the initial period, the interest rate can either be fixed for another period or vary	The initial fixed rate period is smaller than the loan maturity and can be broken into different maturity categories: <1≤5 years 5≤10 years >10 years	*Rollover/Renegotiable* refers to a series of fixed rate terms *Hybrid* refers to loans with an initial fixed rate period greater than 1 year that revert to a variable rate after the fixed term
Variable or adjustable rate	In a variable rate contract the interest rate can vary periodically (daily, weekly, monthly, quarterly) or remain fixed up to 1 year, varying thereafter	≤1 year	*Reviewable* — rate determined by the lender *Indexed/Referenced* — rate adjustment determined by index value
Convertible	Loan can have initial fixed or variable rate with the borrower having an option to change either at a particular date or at the borrower's option	Can be variable, initial fixed rate	*Convertible*

Figure 5
Mortgage Product Interest Variability



Source: RBA, CHMC, KHFC, EMF,GPG, MBA and S&P.

Figure 5 shows market shares by interest rate variability for the subject countries as of 2009. The data reported in Figure 5 refer to new loans made during different parts of 2009.

There is considerable difference in interest determination across countries. Australia, Ireland, Korea, Spain and the United Kingdom (U.K.) are dominated by variable-rate mortgages often with a short-term initial fixed rate. Designs vary — in Australia, Ireland and the U.K. the standard variable-rate mortgage has a rate set by the lender at its discretion (a reviewable-rate loan).[4] Rates on these loans are changed for all borrowers at the same time. Spain, Korea and the United States have indexed ARMs with rate changes determined by changes in the underlying index.[5] Recently, "tracker" mortgages, which are indexed ARMs, have become common in the U.K. Initial fixed-rate discounts are prevalent in Australia and the U.K. The magnitudes of the discounts are less than those in the U.S. ARMs were during the boom — typically around 100 basis points, lasting one to two years.

Short- to medium-term fixed-rate mortgages are the dominant instrument in a number of countries, including Canada, Denmark (recently), Germany, the Netherlands and Switzerland. These instruments are rollover or renegotiable rate loans in which the rate is fixed typically for a period of one to five years with a longer amortization period (25 to 35 years — briefly up to 40 years in Canada).[6] The rate is reset to the market rate at rollover. There is a substantial (as high as yield maintenance) pre-payment penalty during the fixed-rate period (discussed below).

The United States is unusual in the high proportion of long-term fixed-rate mortgages. Long-term fixed-rate pre-payable mortgages used to be the dominant product in Denmark, but low and falling short-

term rates have led Danish borrowers to shift to medium-term (one- to five-year) rollover mortgages in recent years.[7] France is the only other country with a majority of fixed-rate mortgages. Unlike the penalty-free pre-payable Danish and U.S. FRMs, French fixed-rate loans have pre-payment penalties (maximum three percent of outstanding balance or three months' interest). German mortgages can be fixed up to 15 years with a 30-year amortization. The loans are subject to a yield maintenance pre-payment penalty during the time the rate is fixed, up to 10 years.

Box 1
Foreign Currency Loans

Loans denominated in a foreign currency have been quite popular in the transition countries of Central and Eastern Europe as well as Austria. The loans either require payments in the foreign currency or index amounts in domestic currency to the exchange rate. The most common indices have been the Euro and the Swiss franc. Use of these instruments typically arises as the result of domestic inflation. The appeal of the loans is a lower initial rate that spreads the payment burden more evenly over the life of the loan. Such loans carry significant default risk, however, as the income of most borrowers is not in the same currency as the mortgage. Regulatory response as ranged from information campaigns (Latvia), to LTV restrictions (Hungary), debt service stress tests (Poland) and outright product bans (Austria, Ukraine) [Dübel and Walley, 2010].

The dominant mortgage product in a country can change over time. During 2004–2006 between 30 and 35 percent of U.S. mortgages were hybrid ARMs with short- to medium-term initial fixed rates reverting to variable rates after the end of the fixed-rate period. These loans were designed to improve affordability compared to the FRM. The shift back to FRMs reflects their historically low rates (brought about in part by Federal Reserve purchases of mortgage-backed securities), the poor experience of subprime ARMs and possibly fears of future rate increases. In 2005, 50 percent of Danish mortgages were FRMs and another 20 percent were medium-term fixed-rate loans. The market shifted towards variable-rate and short-term fixed-rate loans as interest rates declined, with 80 percent of Danish borrowers taking such loans in 2009 [Realkreditrådet 2010]. Spanish mortgages shifted from fixed to variable after the government restricted the ability of lenders to charge pre-payment penalties in the mid-1990s. A declining interest rate environment after Spain moved to the Euro also contributed to the shift.

Indexed adjustable-rate loans in many countries have caps and floors (Appendix, Table A-1). The specific cap amounts are fixed by contract. In most cases loans will have both a cap and a floor. In Germany, borrowers can purchase interest rate risk insurance that will cap the loan rate at adjustment. Alternatively the borrower can execute a forward mortgage rate contract to lock in their rate up to three years prior to adjustment. In Switzerland lenders sell interest rate caps as separate contracts.

Small (one percentage point or less) initial rate discounts are common on ARMs, taking the form of initial fixed rates that are less than the fully indexed rate or standard variable rates (SVR) on

reviewable-rate ARMs. For reviewable-rate loans the rate may be fixed for a set period (one-three years) or variable when the SVR is changed.

Adjustable-rate mortgages in other countries have a number of interesting features. About half of Japanese loans are convertible (after the end of the fixed-rate term the borrower can select another fixed-rate period or switch to a variable rate) [Standard and Poors 2009]. Japanese floating-rate loans have fixed payments for five years with potential deferral and negative amortization. Conversion options (variable to fixed) are available in a number of countries. Several countries, including Australia, Canada, the Netherlands and Spain allow loans that are part fixed rate (short- to medium-term) and part variable rate. Borrowers can also manage interest rate risk by taking out multiple loans with varying short- to medium-term fixed rates (Canada, Germany and Switzerland) or fixed- and variable-rate loans (Australia, U.K.) secured by the same property. Canada, France and Japan offer flexible-term loans in which the payment remains constant but the term adjusts with interest rate changes. Flexible-term loans are subject to maximum term constraints (e.g., 35 years in Canada).

Early Repayment

Other than Denmark (FRM), Japan and the United States, fixed-rate mortgages are typically subject to an early repayment penalty.[8] Table 3 shows the treatment of early repayment in different countries. In a number of countries early repayment is restricted to certain conditions (e.g., in Germany if the borrower is moving or the lender refuses a request to increase the mortgage). In Australia, Canada, Denmark, Germany, the Netherlands and Switzerland the penalties are designed to compensate the lender for lost interest over the remaining term of the fixed rate (yield maintenance). The specific

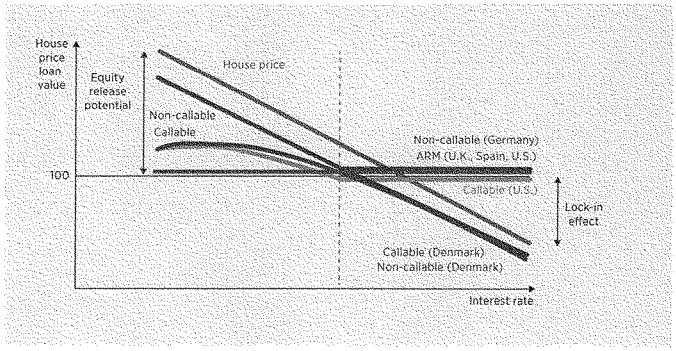
Table 3
Prepayment Penalties

Country	Amount	Applicability	Penalty Free Payment
Denmark	Yield maintenance	ST fixed: loans with non-callable bonds	
Germany	Interest margin damage and reinvestment loss	All fixed rate; no penalty on variable rate; maximum 10 year	No penalty if property sold
Spain	2.5% up to yield maintenance	Fixed rate	Maximum 10% per year
	0.5%	Variable rate	
France	Maximum 6 months interest or 3% of outstanding balance	Variable or fixed rate	No fee if unemployed, death, or job change
Netherlands	Yield maintenance	Fixed rate	10% per year; hardship or relocation with no penalty
U.K.	2–5% of amount repaid	Discounts and fixed rates; in contract roughly 3 monthly payments	
Canada	Higher of lost interest or 3 months	Lender may wiave for own customer	up to 20% per year
Australia	Change in cost of funds	Discounts and fixed rates; in contract	
U.S.	Up to 5%; more typically 3%	ARMs only. Typically declining over 5 years	20%
Korea	Declining over 3 years: 1.5%, 1%, 0.5%	ARMs	
Switzerland	Yield maintenance	Fixed rate	
Japan	None	Borrowers make semi-annual bonus payments	

penalty calculations differ and are typically set by contract as opposed to regulation. Lenders may also charge borrowers for the cost of processing the repayment (Denmark, Germany). Pre-payment penalties are capped by law in France and Spain (although the Spanish law was recently changed to allow lenders to charge yield maintenance penalties on fixed-rate mortgages). In some countries borrowers must give advance notice of early repayment (two months in Denmark, six months in Germany). Partial pre-payment is quite common in Japan, in part reflecting the practice of paying employees semi-annual bonuses.

Denmark has the most unique system with respect to early repayment. The Danish system is based on the Principle of Balance (POB) [Realkreditrådet 2009]. When the borrower obtains a mortgage loan, the mortgage credit institution (MCI) issues a bond into an existing bond series. Thus there is a 1:1 equivalence between the loan and the bond.[9] The Danish mortgage is cancelable at the lower of the market price or par. As in the U.S., the borrower can refinance the loan at par if rates fall. But in the Danish system, if rates rise the borrower can buy her loan out of the mortgage bond at a discount and present to the MCI to repay the mortgage. This feature has several important benefits. For example, it allows automatic de-leveraging as rates rise and reduces the probability of negative equity. Figure 6 from Boyce (2010) illustrates the difference between different mortgages as rates change. A non-callable mortgage (i.e., one with a pre-payment lock out or yield maintenance penalty) or a short-term ARM locks the borrower into the par (book) value of the loan when rates rise. This can create negative equity if house prices fall with a rate increase. In the Danish system the borrower buys back the bond at a discount and cancels the mortgage, allowing the mortgage balance to fall along with house prices.

Figure 6
Price/Yield Graph of Various Mortgage Risk Transfer Structures



Source: Boyce 2010.

Danish lenders also offer mortgages with pre-payment penalties. Loans with fixed-interest periods of one and five years are funded by bullet bonds with corresponding maturity.[10] The loans may have terms up to 30 years and initial interest-only periods of up to 10 or 30 years. In the event of an early repayment the lender would charge a yield-maintenance penalty plus processing cost.

Although the United States does not allow pre-payment penalties on most FRMs, it has been pointed out that points paid by the borrower can have an effect similar to a pre-payment penalty [Colwell and Dehring 1997]. Pre-payment penalties on FRMs are not allowed in a number of states, but Fannie Mae and Freddie Mac have historically not enforced such penalties. Points are unique to the United States, arising in the 1970s in response to interest rate regulation. As mortgages in other countries are typically not subject to usury caps and lenders can charge early repayment penalties, there has been no apparent need to charge points.[11] Kiff [2009] points out that the transactions cost of mortgage refinance is more expensive in the United States than in Canada, which substantially offsets the cost of the pre-payment penalty.[12]

Amortization and Term

Mortgages in most countries are annuity loans with a level payment. Terms typically range between 20 and 40 years. The European Central Bank (ECB) reports that in 2007 the typical maturity in the Euro area was between 20 and 30 years. Longer maturity products exist in several countries – up to 50 years in Spain and France and up to 60 years in Finland, although they have a very low market share. The maximum maturity granted is often linked to the retirement age. Japan and Switzerland have 100-year (inter-generational) mortgages. Scanlon et. al. [2009] note that the maximum maturity was shortened in several countries, including France and Spain, during the crisis.

Interest-only loans are common in a number of countries. Scanlon et. al. [2008] reported that interest-only mortgages were available in at least 10 European countries as well as Australia and Korea. Table 4 provides data on the incidence of interest-only mortgages in a number of countries in 2005 and 2009.[13]

There are several factors in the rising importance of this feature. First are tax benefits. Mortgage interest is fully tax deductible in Denmark, Korea, the Netherlands and Switzerland.[14] Even in countries like the Australia and the U.K. where there is no deductibility of mortgage interest, there can be a tax angle associated with interest-only loans. If mortgage repayment comes from a tax-advantaged insurance or savings account it may be preferable to de-link the mortgage and repayment vehicle. For example,

Table 4
Interest-Only Mortgages

Country	2005–2006	2009–2010
Australia	15%	27%
Denmark	32%	50%
Ireland	13%	10%
Korea	48%	43%
The Netherlands	88%	79%
U.K.	24%	43%

interest on a companion investment or savings account can accumulate free of tax during the term of the mortgage.

A second reason for interest-only mortgages is low interest rates. The repayment of principal accounts for a higher percentage of the monthly payment when interest rates are low. Thus, borrower ability to reduce mortgage payments through interest-only loans is greatest with low interest rates.

Interest-only loans vary across countries.[15] In Denmark, the Netherlands and the U.K., the loan can be interest only to maturity (maximum 30 years).[16] Switzerland has a unique instrument -- the "infinite" mortgage, which does not have a maturity date and can be passed down through generations. The maximum LTV on an interest-only loan is 65 percent. This loan can be combined with an amortizing second loan of an additional 15 percent.

There are a number of different repayment options with interest-only loans. According to Scanlon et. al. [2008] in 2005, 20 percent of U.K. loans and 44 percent of Dutch interest-only loans had no identified repayment vehicle. In these cases it is assumed that the borrower will refinance or pay off the mortgage through sale of the house, business or through an inheritance. More commonly there is a companion repayment vehicle. The dominant instrument in the U.K. through the mid-1990s was the "endowment" mortgage. The borrower took out an interest-only mortgage to term and repaid with the proceeds of a life insurance policy on which she paid premiums throughout the life of the loan. Until 1984, endowment mortgages enjoyed a tax advantage through interest deductibility on the life insurance premiums.[17] In addition, mortgage interest was tax deductible until the late 1990s. Endowment mortgages remained popular until hit by scandals and charges of mis-selling in the late 1990s. Many borrowers were lured into endowment mortgages by promises of high returns on invested premiums. When those high returns failed to materialize, borrowers reached the end of term with insufficient funds to repay the mortgage.

Despite the problems with U.K. endowment mortgages, interest-only loans with companion savings vehicles remain popular in the U.K., the Netherlands and Switzerland. In the U.K., the individual savings account (ISA) mortgage is linked with an account invested tax-free in equities. However, like the endowment mortgage, there is no guarantee that there will be sufficient funds to fully repay the mortgage at term. Investment and pension-linked mortgages are significant in the Netherlands. According to the Netherlands Housing Survey (VROM 2009) approximately 35 percent of Dutch interest-only mortgages were linked to a savings or investment account.

"Flexible" mortgages that allow non-constant amortization are quite common outside the United States. Flexible mortgages allow borrowers to skip payments or take payment holidays. The flexible mortgage arose in Australia and the U.K. in the 1990s as a measure to deal with payment fluctuations arising from short-term unemployment or variable income. In both countries it has become a common feature whereby borrowers can underpay, take payment holidays, overpay and borrow back without taking a second mortgage. The number of missed payments per year is restricted and unpaid interest is capitalized

into the loan balance.[18] A survey of major lenders in the subject countries found flexible mortgage options available in Canada, France, Germany, the Netherlands and Spain, as well as Australia and the U.K. According to the Council of Mortgage Lenders in the U.K. most U.K. mortgages have a flexible option.

A more recent and sophisticated variant of the flexible mortgage is the "offset" or "current account" mortgage (Australia, U.K.), which allows the borrower to control mortgage borrowing through a current account. Salary is deposited into the current account, lowering the balance outstanding by the salary amount. As debits come through on the current account, the balance rises. An attraction of this instrument is the interest savings that arise from paying down the debt, as interest is charged daily. An offset mortgage allows the borrower to keep balances on mortgage, savings and current account in separate accounts but all balances are offset against each other, allowing the possibility of reducing the interest paid and the mortgage being repaid early. Offset mortgage rates can be fixed or variable and there is a maximum LTV.

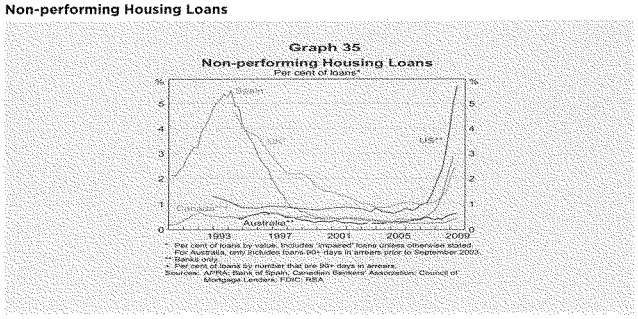
Loans with pre-programmed negative amortization (e.g., graduated payment mortgages or pay-option ARMs) are not common outside the United States. Flexible mortgages have a maximum number of missed payments and LTV caps. Japanese loans have payments fixed for five years regardless of whether the interest rate changes. Unpaid interest is deferred and capitalized into the loan balance. At the end of five years the payment will change to amortize the balance over the remaining term, subject to a cap of 125 percent of the current payment.

Mortgage Default and Foreclosure

Mortgage default rates are far lower outside the United States (Figure 7) for bank loans. Of the countries in this survey only Spain and the U.K. have seen a significant increase in mortgage default during the crisis. Despite greater house price volatility than the United States on average, the incidence of default and prevalence of negative equity in other nations remains far below that of the United States.

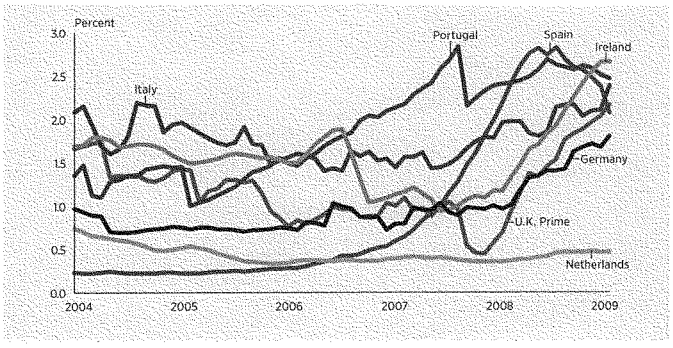
Delinquencies on European securitized loans have increased during the crisis but remain well below those in the United States (Figure 8). Default rates on Australian securitized loans are less than 1.5 percent and in Canada less than 1 percent. These results reflect the fact that subprime lending was rare or non-existent outside of the United States. The only country with a significant subprime share was the U.K. (a peak of eight percent of mortgages in 2006). Subprime accounted for five percent of mortgages in Canada, less than two percent in Australia and negligible proportions elsewhere. Subprime loans in Australia and Canada were more similar to U.S. Alt-A (limited documentation) than true subprime loans.

Figure 7
Non-performing Housing Loans



Source: Reserve Bank of Australia 2009.

Figure 8
European Mortgage Arrears Rates, 30 or more days

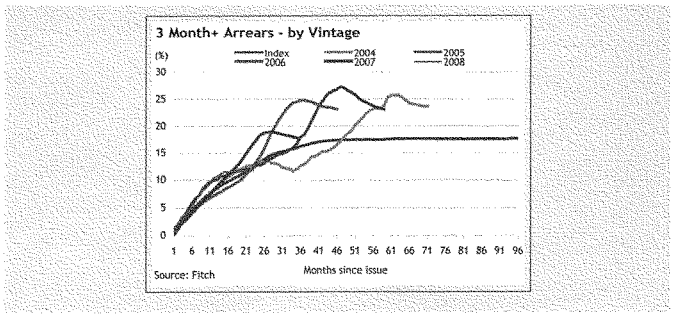


Source: Fitch Ratings 2010.

The only comparable performance experience to the United States is in U.K. non-conforming mortgages. U.K. lenders provided loans to borrowers with both adverse credit and low documentation. U.K. non-conforming securitized loans have high delinquency rates (Figure 9) but their foreclosure rate is far less than in the U.S.[19]

In the United States, mortgage product design has been linked to high rates of mortgage default, though underwriting variables appear to be the dominant factor.[20] To date, mortgage product design

Figure 9
Three Months or more in Arrears, by Vintage



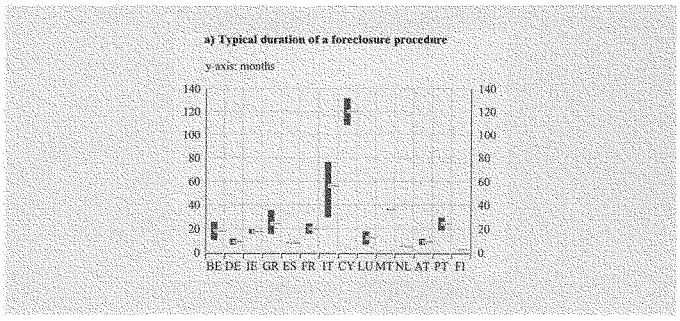
Source: Fitch Ratings 2010.

has not been implicated as a cause of mortgage default outside the United States.[21] In fact the use of ARMs has been cited as a cause in lower than expected default rates in Spain and the U.K. In the U.K., borrowers have been helped by the high incidence of ARMs linked to the U.K. base rate (equivalent to the Fed Funds rate in the United States), which have kept rates low [CML 2009b]. In Spain, the decline in rates and dominance of variable-rate loans has reduced the proportion of income used to service a loan from 46 percent in 2006–2008 to 38.6 percent in 2009 [Hugh 2009]. Both sources note the vulnerability of borrowers to potential future rate increases and the systemic risk of an ARM-dominated market. Australian interest rates have been higher than those in other countries and have impacted default rates [RBA 2009]. The Reserve Bank of Australia notes: "Arrears rates are also likely to have been affected by movements in interest rates. The arrears rate on (securitised) variable-rate loans increased 35 basis points over the 12 months to December 2008, and has since declined by 20 basis points; this compares to an increase of 10 basis points for fixed-rate loan arrears over the same period, with no subsequent decline."

An important factor in lower default rates in other countries is the foreclosure process and the possibility of deficiency judgments. The ECB [2009] reports that the duration of the foreclosure process in the Euro area has significant variation ranging between two months in Finland to 132 months in Italy (Figure 10). The average time frame is close to two years. In the U.K. the average time is 8–12 months [EMF 2008]. The cost of the enforcement procedure also varies across countries. The average cost (not including the loss on the mortgage after sale of the property) in 2007 was nine percent. In the U.K. the cost varied from 2.5 to 7 percent.

The mortgage arrears and foreclosure methods in Australia and Canada are very efficient. Both countries have judicial foreclosure processes, which are procedural unless the borrower mounts a

Figure 10
Typical Duration of a Foreclosure Procedure



Source: ECB.

defense. In both countries the lender or insurer can go after the borrower for a deficiency judgment. Per Canada Mortgage and Housing Corp. (CMHC), the time frame between reporting of arrears (three months in Canada) to possession of collateral is seven to nine months. In Australia the process appears shorter (Hicksons 2010). Once a notice of default is filed there are 21 days to serve and 28 days for the borrower to determine whether to mount a defense. If there is no defense, the court process for judgment takes two to four weeks with an additional two to four weeks to obtain a writ of possession. Eviction takes place seven to 30 days later. The typical loss per default in Australia is 20 to 25 percent of the initial loan balance. In Canada, CMHC claims appear to be somewhat lower – 18 to 20 percent of initial balance.[22]

An important difference between much of the United States and the subject countries is the possibility of recourse, or allowing lenders to pursue deficiency judgments. Research in the United States has shown that recourse decreases the probability of default [Ghent and Kudylak 2009]. Research by Duygan-Bump and Grant [2008] find a similar result in Europe. *Mortgage loans in all the survey countries are recourse.* The EMF study on the efficiency of mortgage collateral [EMF 2007] found that borrowers remain liable for deficiencies in Belgium, Germany, Greece, the Netherlands, Spain, France, Ireland, Portugal and the U.K. The duration of debtor liability was without limit in Belgium, Germany, France and the Netherlands; 20 years in Greece; 15 years in Spain; and 12 years by law, six years in practice following voluntary industry agreement in the U.K. Loans are recourse in Australia, Canada, Japan and Korea as well.

The Reserve Bank of Australia [2009] sums up the difference in delinquency experience between Australia and the United States as follows:

- Lending standards were not eased to the same extent as elsewhere. For example, riskier types of mortgages, such as non-conforming and negative amortisation loans, that became common in the United States, were not features of Australian banks' lending.
- The level of interest rates in Australia did not reach the very low levels that had made it temporarily possible for many borrowers with limited repayment ability to obtain loans, as in some other countries.
- All Australian mortgages are "full recourse" following a court repossession action, and households generally understand that they cannot just hand the keys to the lender to extinguish the debt.
- The legal environment in Australia places a stronger obligation on lenders to make responsible lending decisions than is the case in the United States.
- The Australian Prudential Regulation Authority (APRA) has been relatively proactive in its approach to prudential supervision, conducting several stress tests of ADIs' housing loan portfolios and strengthening the capital requirements for higher-risk housing loans.

What Determines Mortgage Instrument Design?

The set of mortgage instruments offered in a country reflect demand and supply considerations as well as the legal and regulatory environment. Borrower mortgage choice literature is based on a framework wherein a risk-adverse borrower decides which type of debt to hold against the collateral of her house based on the trade-off she makes between current and future consumption, given uncertainty about future income, interest rates and house prices [Campbell and Cocco, 2002; Miles 2004]. Miles develops a simple numerical model to simulate borrower choice under different assumptions about the trend and volatility of interest rates and house prices. He finds that borrowers will prefer long-term fixed-rate mortgages when there is a significant positive correlation between inflation shocks and real interest rates and the borrower has a relatively high debt-to-income ratio. When the income risks are less extreme and inflation and real interest rates are not positively correlated, mortgages with a series of short fixed-rate periods are more favorable contracts. He also finds that households that are older, more indebted or with higher degree of unemployment certainty are more likely to prefer longer-term fixed-rate mortgages. Although his results apply only to the comparison between mortgages with rates fixed for two years versus those with rates fixed for the life of the contract, he infers that similar results would be obtained if comparing a variable-rate loan with a long-term fixed-rate loan.

Svenstrup [2002] analyzes the choice between capped ARMs (short-term fixed-rate loans) and the FRM in Denmark. ARMs are popular because of their low start rate, but he suggests that it is dangerous to qualify borrowers for a 30-year obligation based on the first-year payment, as is standard in short-term variable-rate mortgages. Conversely a long-term FRM has a substantial inflation risk premium built into the rate, reducing initial affordability. Furthermore, the FRM requires payment of transactions costs and a pre-payment risk premium by the borrower to manage interest rate risk. With the shorter term (one- to five-year) fixed rate and an out-of-the-money interest rate cap, the borrower can get interest rate risk protection at a modest cost. Svenstrup also finds that the delivery option (ability to buy back the bonds at a discount and cancel the mortgage) in the Danish model is an efficient means to ensure a tighter match between assets and liabilities in a household portfolio and can increase the mobility of the labor force as a whole.

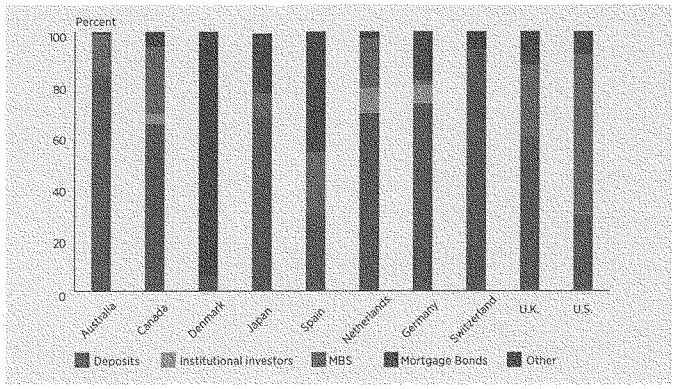
If the theoretical literature suggests that borrowers are better off with fixed-rate mortgages why do we see so many countries with ARMs as the dominant instrument and so few with long-term fixed-rate mortgages?

Miles points to several reasons for the dominance of ARMs in the U.K. These include relatively low debt-to-income ratios (at the time in 2003) for U.K. borrowers, belief by borrowers in their ability to manage interest rate and payment change and, most importantly, the greater attention borrowers pay to the initial mortgage payment than to any other factor in mortgage choice. The U.K. also was in the midst of an extended period of interest rate stability (since the early 1990s).

The dominance of ARMs in many countries has supply-side explanations as well. Banks (commercial, savings, cooperative) in most countries dominate mortgage lending. These institutions rely significantly on deposit funding (Figure 11). ARMs are a natural product for banks that hold loans on balance sheet funded with deposits, as they minimize interest rate risk. Of the ARM countries in this survey, only Spain relies on the capital markets for a majority of funding (over 70 percent of funding comes from covered bonds and securitization). The high use of the capital markets reflects the rapid growth in mortgage lending in Spain in the 2000 decade and the acceptance of AAA-rated security tranches and covered bonds as repo collateral at the ECB.

Funding availability and characteristics are also major factors in the dominance of short- to medium-term fixed-rate mortgages in many countries. In developed markets, such instruments are easy for banks to fund on balance sheet. The bank can swap its short-term deposits for medium maturity

Figure 11
Developed Country Mortgage Funding



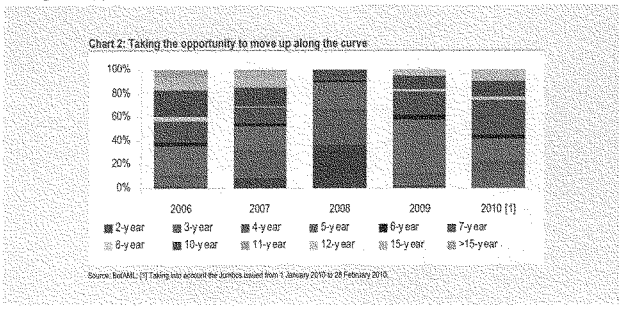
Source: ABS, CMHC, EMF, ESF, FRB, Merrill Lynch Europe, AU, CA, U.S. 2008, Japan 2006.

fixed-rate liabilities. Or it can use corporate or covered bond markets to issue medium-term fixed-rate debt (see Figure 12 on maturities of covered bond debt, which shows a significant proportion of issuance in three- to five-year maturity until early 2010 when issuers took advantage of low rates to extend maturities). This funding approach has implications for mortgage design as well. Outside the United States almost all corporate debt is non-callable. Thus, a lender using covered bond or non-callable corporate debt will incorporate a pre-payment penalty in order to maintain a relative match with its funding. The importance of pre-payment penalties has increased with the strengthening of asset-liability matching requirements in European covered bond legislation. Nearly all such legislation requires strict matching with requirements to match balances, coupons and cash flows between the cover pool and bonds.[23] In addition to matching requirements, covered bond legislation also restricts LTV ratios and loan purpose for cover pool assets.

Mortgage pricing has a major impact on the dominant instruments offered in various countries. Miles points to the relative expense of long-term finance as a significant factor in the U.K. preference for ARMs. He notes that the practice of offering initial period discounts on variable-rate mortgages offered to new borrowers, subsidized by the (above market) rates paid by existing borrowers (the back book) for whom the discounts had expired, also contributes to the dominance of ARMs. Specifically:

The two-year discounted deals are likely to be very attractive to borrowers focusing on the scale of their initial repayments on mortgages. The two-year discounted deals are probably only feasible because a substantial gap exists between such rates and the Standard Variable Rate — a gap of over 180 basis points for many lenders. The substantial number of borrowers paying Standard Variable Rates — a group that may currently constitute more than a third of all borrowers and a little over 20

Figure 12
Taking the Opportunity to Move Up Along the Curve



Source: Bank of America Merrill Lynch [2010].

per cent of all mortgage loans outstanding -- allows pricing of this sort to be feasible... This apparent cross-subsidisation, which in itself is undesirable, has as a side effect that longer-term fixed-rate mortgages with flat repayment schedules -- where sustainable margins over the marginal cost of funds are unlikely to be under 50 basis -- appear expensive. Miles (p. 47.)

Despite Miles' view of the unsustainability of such pricing, it remains a major factor in U.K. mortgage pricing to this day. The prevalence of initial period discounts on reviewable-rate mortgages in Australia also likely explains the dominance of this instrument there.

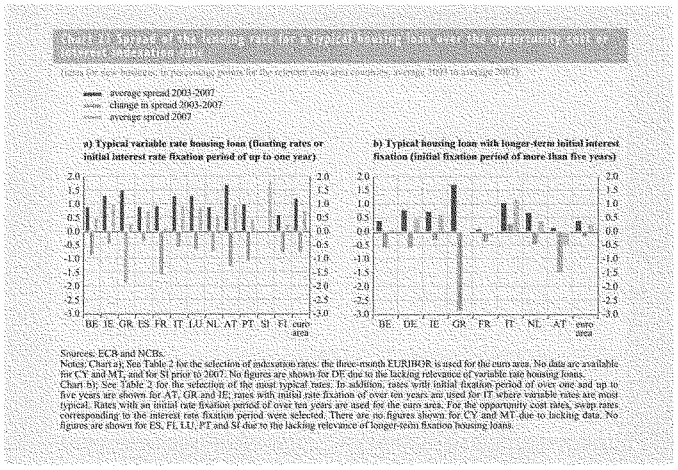
The pricing and availability of capital market funding is a significant factor in the dominance of FRMs in Denmark and the U.S. The deep and liquid Danish mortgage bond market provides efficient pricing and risk allocation for Danish lenders, allowing them to offer FRMs. The Danish POB has created a system where banks do not offer mortgages funded by deposits for competitive reasons. In the POB the mortgage rate is the same as the security coupon. The mortgage lender adds a small margin (50 basis points) to cover its administrative costs, credit risk and profit. Thus, even for short-term fixed-rate or indexed variable-rate mortgages the bond-funded loan is cheaper than that offered by a commercial bank with deposit funding.

Recent research in the United States points to the support of FRMs by the GSEs as a significant factor in the predominance of the FRM.[24] Vickery [2007] analyzes the FRM/ARM market share as a function of the relative price of the instruments, controlling for the term structure of interest rates and other time-series factors. He finds that a 20 basis-point increase in the retail FRM interest rate is estimated to cause a 17 percentage-point decline in the FRM market share. He compares the U.K. and U.S. markets in terms of mortgage product. His estimates imply that if U.S. mortgages were priced by lenders at the same margins to the risk-free rate as in the U.K., the average U.S. FRM share in the non-jumbo market would decline from 76 percent to only 37 percent. In his view, differences in secondary market liquidity are the most plausible explanation for these pricing differences. Although the GSEs purchase ARMs and have issued ARM securities, their pricing has not been attractive to depository institutions and the securities are not liquid.

Krainer [2010] finds more recently that the Federal Reserve policy of buying agency MBS has lowered FRM rates and the FRM-ARM spread and contributed to the declining share of ARMs. Krainer's research finds that the FRM-ARM spread is the most important explanatory variable in an estimation of the ARM share. This spread is typically highly related to the Treasury term spread (10 year to one year).[25] This latter relationship broke down in 2009 due to heavy Federal Reserve purchasing of FRM-backed securities. The FRM-ARM spread declined to near zero in early 2009 and has remained depressed (50 basis points or less) ever since. The decline in spread reflects a widening ARM to one-year Treasury spread and a narrowing FRM to 10-year Treasury spread.

Pre-crisis mortgage spreads in Europe appear lower than those in the United States Figure 13 shows spreads on variable and fixed-rate mortgages relative to an index or benchmark rate. Spreads declined in most countries between 2003 and 2007. Fixed-rate spreads are lower in Europe than in the United

Figure 13
Spread of the Lending Rate for a Typical Housing Loan over the Opportunity Cost or Interest Indexation Rate



Sources: ECB and NCBs.
Notes: Chart a): See Table 2 for the selection of indexation rates: the three-month EURIBOR is used for the euro area. No data are available for CY and MT, and for SI prior to 2007. No figures are shown for DE due to the lacking relevance of variable rate housing loans.
Chart b): See Table 2 for the selection of the most typical rates. In addition, rates with initial fixation period of over one and up to five years are shown for AT, GR and IE; rates with initial rate fixation of over ten years are used for IT where variable rates are most typical. Rates with an initial rate fixation period of over ten years are used for the euro area. For the opportunity cost rates, swap rates corresponding to the interest rate fixation period were selected. There are no figures shown for CY and MT due to lacking data. No figures are shown for ES, FI, LU, PT and SI due to the lacking relevance of longer-term fixation housing loans.

Source: ECB and NCBs.

States due to the widespread use of pre-payment penalties. Thus the value of the pre-payment option is not reflected in mortgage rates.

As shown in Table A-1, U.S. ARM margins are higher than those in most other countries. European indexed ARM margins are typically in the one-two percentage point range. U.S. ARM margins have been constant at 275 basis points since 1990 [Freddie Mac 2010].[26] Spreads between reviewable ARMs and lender cost of funds in Australia and the U.K. were in the 100-150 basis point range pre-crisis. Recently U.K. tracker margins have risen to 300 basis points reflecting the historically low level of the base rate (50 basis points).

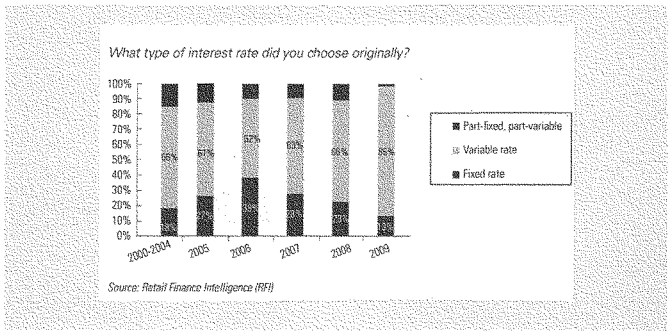
The U.K. Council of Mortgage Lenders [2009] analyzed margins in the summer of 2009. They note several reasons for the widening of margins. For example, lenders are under greater pressure from the Financial Services Authority (FSA) to have a better match between the duration of their sources of funding and their mortgage assets. As more borrowers have taken short-term fixed-rate loans, lenders have had to respond to the regulatory requirement by raising more medium-term funding — at greater expense (relative to deposits).

Rising rates of arrears have added to the costs of mortgage lending, putting pressure on margins. The impact of the Basel 2 regime also means that the cost of capital is greater for loans with higher LTVs.

Thus there has been both a tightening of lending criteria and higher borrowing costs. Investors providing equity for lenders now expect higher returns, which is exerting upward pressure on mortgage pricing.

A similar pricing change has developed in Australia [2010]. The Reserve Bank of Australia reports that mortgage rates have risen by 110 basis points relative to the cash rate. However margins in Australia have been squeezed as funding costs have risen by 130 to 140 basis points. Part of the margin squeeze has been funded by cross-subsidization from the back book, similar to that in the U.K. Australian mortgage rates were declining through most of 2009 and borrowers shifted from short-term fixed to variable-rate loans [Figure 14, Genworth 2009]. Fixed-rate loans declined from 28 percent to 13 percent and mixed (part fixed, part variable) loans declined from 10 percent to one percent.

Figure 14
What Type of Interest Rate Did You Choose Originally?



Source: Genworth 2009.

The Role of Regulation

Both consumer protection and financial safety and soundness regulation can have an impact on mortgage design. The virtual absence of pre-payment penalties on FRMs in the United States is an example of such an impact. The borrower preference for FRMs in the United States also has its origins in the preclusion of ARMs for most lenders prior to 1981.

The treatment of pre-payment penalties has been a contentious issue and a major influence on European mortgage design. The European Commission (EC) has been pushing for a market-wide Mortgage Directive for more than 15 years to harmonize mortgage product offerings and encourage more cross-border lending [Dübel et. al 1997]. One of the Commission's key objectives is to establish a right of early repayment for borrowers, with limits on pre-payment penalties.[27] To date such limits have been passed in several countries, notably France, Italy and Spain.[28] French law caps the pre-payment penalty at [the greater of] six months' interest or 3 percent of the outstanding balance. The penalty cap does not appear to have deterred French lenders from offering long-term FRMs.[29] Legislation in Spain has had a more significant effect on product offerings. Prior to Spain's adoption of the Euro, lenders offered long-term fixed-rate loans with refinance penalties and restrictions. In order to allow borrowers to benefit from falling interest rates prior to and after introduction of the Euro, the government allowed borrowers the right to refinance existing mortgages and capped the pre-payment penalties [specific reference]. More recently there has been concern about the high proportion of Spanish mortgages that are variable rate (in terms of the ability of borrowers to manage interest rate risk). The government has raised the cap on fixed-rate pre-payment penalties — first to 2.5 percent and now to yield maintenance — in an effort to stimulate the offering of such loans. Italy (as of 2007) and Latvia are the only countries in Europe that ban pre-payment penalties on mortgages.

A European Commission Staff White Paper [2007] has suggested the need to restrict certain product offerings. They recommended allowing early repayment in certain circumstances (mobility, hardship) and capping the penalty. Commission staff also recommended standardization of borrower qualification, requiring suitability standards or tests of borrower ability to repay.

European legislation and regulation also impacts adjustable-rate mortgage design. Several countries (Denmark, France, Spain, Switzerland) require ARMs to be indexed. Other countries (particularly those with reviewable-rate mortgages) have no such requirements.

European consumer protection legislation has been blamed for a lack of product competition in the EU [Dübel 2008]. For example, France rejects the German yield maintenance pre-payment indemnity protecting fixed-rate lenders against reinvestment loss upon pre-payment, Spain rejects British practices of reviewable-rate mortgages (standard variable rate) and Germany rejects indexed contracts dominant in the Spanish market. Dübel states:

- National legal-regulatory regimes tend to be biased "in favour" of lenders providing national core products, which draw the greatest lobbyist pressure. Consider again the cases of Spain and Germany when dealing with early repayment, which is a focus of the Commission's White Paper.
- In Spain, adjustable-rate mortgages may fetch a 1 percent early repayment fee to stem the loss of servicing profit. Fees on adjustable-rate loans are strictly prohibited by German law, a legal relic of two periods of hyperinflation in the 20th century.
- In striking contrast, under German law, a consumer willing to prepay a fixed-rate mortgage has to pay a yield maintenance indemnity that not only compensates the lender for reinvestment loss but also includes a considerable element of lost servicing profit. In Spain, until a very recent reform, pre-payment fees for fixed-rate loans were capped at 2.5 percent, which did not even cover reinvestment loss.

As a result of the crisis, lenders are tightening guidelines in many countries.[30] Scanlon et. al. conducted a survey in early 2009 to assess the types of mortgage tightening taking place. As shown in Table 5, mortgage product availability was lessened in a number of the countries surveyed. The maximum mortgage term was reduced in four countries (also Canada) and the availability of interest-only mortgages was reduced or constrained in five countries (including the United States).

New or forthcoming consumer protection legislation may have a significant impact on mortgage product design in the future. Canada made several regulatory changes in response to the crisis in late 2007 including reductions in the maximum amortization period (from 40 to 35 years), an increase in the minimum downpayment (with mortgage insurance) from zero to 5 percent. More recently (February 2010) the Ministry of Finance lowered the maximum LTV on refinance loans to 90 percent and on insured non-owner occupied loans to 20 percent [CMHC Observer 2010]. More significantly they now require borrowers taking out mortgages with variable rates or fixed-rate terms less than five years to be qualified at the average major lender-posted five-year rate. This change is likely to reduce demand for variable-rate mortgages reflecting both the use of a longer-term interest rate and the posted rate for qualification.

Table 5
Change in Mortgage Product Characteristics, Late 2007–Late 2008

Country	Lower Loan-to-Value Ratios	100% Mortgages Less Available	Loan-to-Income Criteria Tightened	Maximum Mortgage Term Shortened	Reduction in Interest Only Loan Availability	Introduction of New Loan Types to Deal with the Crisis
Australia	x	x	x			
Denmark	x					
France	x	x		x		
Iceland						
Ireland	x	x	x		x	x
Netherlands		x	x		x	
Norway	x					
Poland				x		
Portugal						x
Russia	x	x	x	x		
Spain	x		x	x		
Sweden	x	x			Lower Maximum LTV	
U.K.	x	x	x		x	
U.S.	x	x	x		x	

Source: Scanlon et. al. 2009.

The FSA in the U.K. has gone the furthest in Europe in contemplating tightened mortgage regulation. Their Mortgage Market Review of October 2009 lays out a number of proposals under consideration. In the area of product regulation, however, the FSA notes that LTV or debt-to-income (DTI) caps are not yet warranted by the evidence. They recommend restrictions on risk layering (prohibiting loans that are a mix of high-risk factors, for example, prohibiting high LTV loans to credit-impaired borrowers who have an unstable income or other similar "toxic" mixes) and requiring income verification on all mortgages. Requirements to fully document borrower income will result in the disappearance of "self-certification" mortgages. Affordability must be based on a repayment mortgage, rather than an interest-only one, while it must take account of future interest rate rises and be based on a 25-year mortgage term, even if the loan is being taken out over a longer period [CML 2010].

The FSA has promulgated suitability standards for mortgage lenders. Specifically, a product will be suitable if there are reasonable grounds to conclude that:

- The client can afford it over the repayment term.
- It is appropriate to the client's needs and circumstances.
- It is the most suitable of those available within the scope of service provided to the client.
- The lender cannot recommend the "least worst" product if it does not have access to a product that is appropriate to the client's needs and circumstances.

Australia also has suitability standards. The new National Consumer Bill requires licensees to assess each consumer's capacity to repay credit to ensure that the credit contract is not unsuitable for the consumer's objectives, needs and financial circumstances [ASIC 2010].

The EC [2009] is looking at additional mortgage regulation in response to the crisis.[31,32] The EC has suggested restricting the use of teaser rates to "induce" borrowers to move to "higher repayment levels or different foreign currency exposures."

Conclusions

This comparison of mortgage product offerings in developed countries has revealed significant differences in the dominant product offerings across countries. Countries differ in terms of the market share of adjustable versus fixed-rate mortgages, the use of pre-payment penalties, maximum term and the offering of features such as interest-only payments and assumability. Our findings suggest that the United States is internationally unusual in several respects:

- The United States has an unusually high proportion of long-term fixed-rate mortgages as well as an usually high use of securitization in the financing of housing. The dominance of the FRM and securitization is driven in part by the presence of government-backed secondary mortgage market institutions that lower the relative price of this type of mortgage.
- The United States is unusual in the banning or restriction of pre-payment penalties on fixed-rate mortgages. Most countries in the survey allow such penalties to compensate lenders for loss associated with the financing of mortgages. As a result, mortgage rates do not include a significant pre-payment option premium and other financing techniques, such as covered bonds, are more common.
- The only other country that utilizes the FRM is Denmark. The Danish system offers a superior alternative in the form of the POB that equates individual mortgages and bonds. This system allows borrowers to prepay their loans when rates fall, as in the United States, and allows them to buy back their bond when rates rise. This feature allows the borrower to benefit from interest rate increases and decreases and facilitates de-leveraging when rates rise, reducing the incidence of negative equity. Features that are restricted in the Dodd-Frank Bill such as longer terms, interest-only periods and flexible payment designs are quite common in other countries and do not appear to have been associated with higher rates of default.
- Mortgage default rates have been far lower in other countries than in the United States, despite the fact that several countries had greater house price volatility. The lack of subprime lending

(outside of the U.K.) and less use of limited or no documentation lending were major factors. Mortgage products did not play a role in mortgage default – in fact the dominance of ARMs in several countries was noted as a reason for lower default rates.

- Mortgage foreclosure and repossession regimes are varied, with some more efficient and some less efficient than those in the United States. However all other countries in the survey have recourse mortgages, and lenders routinely pursue deficiencies. Research in Europe and the United States has found that recourse reduces the incidence of default.
- Consumer protection regulation has advanced in a number of countries. The focus has been on borrower qualification and suitability standards, and for the most part has not constrained mortgage product design.

What are the likely effects of Dodd-Frank on mortgage product design? Prior to the crisis the United States had one of the richest sets of product offerings among the subject countries, offering a wide variety of ARMs, amortization choices and terms, along with long-term fixed-rate mortgages. As a result of the crisis the market has seen a decided shift to FRMs, driven in large part by historically low FRM rates. Rates are low in part because of low long-term Treasury rates, but their levels also reflect the impact of government policy in which almost all financing is from government-backed institutions, bolstered by unprecedented purchases of mortgage securities by the Federal Reserve.

Dodd-Frank is likely to perpetuate this trend. The market is likely to gravitate towards vanilla, qualified mortgages. Limiting or banning pre-payment penalties constrains the ability of lenders to match fund medium-term fixed-rate mortgages like the Canadian rollover. This provision will reduce the effectiveness of covered bonds as a financing technique for lenders. Qualifying ARM borrowers at a fully amortizing payment at the highest possible rate over a five-year period is likely to reduce ARM qualification and volume.

Is this state of the world sustainable or desirable? International experience suggests that comparable rates of homeownership and mortgage indebtedness can be achieved with different products and funding structures. While it is widely believed that the FRM is an ideal consumer mortgage instrument, its use does have significant drawbacks. In effect, the cost of the pre-payment option is socialized, with everyone paying a premium in the mortgage rate for the option. This contrasts with the European view that only borrowers who exercise the option for financial advantage should pay the cost (loss to the lender). As a result, European fixed-rate mortgages have lower spreads-to-benchmark rates. If the FRM is the instrument of choice, then the Danish option should be explored, as it provides benefits to borrowers throughout the interest rate cycle and reduces systemic risk that accompanies an interest rate increase.

Refinancing of FRMs creates significant volatility in the mortgage market as evidenced by the dramatic expansion and subsequent contraction in origination volume accompanying the 2003 refinance boom.

Such volatility has implications for operational costs and profitability of lenders (e.g., in hedging mortgage servicing rights). The pre-payment option has spawned an industry of traders in mortgage-backed securities (MBS). The turnover of MBS has little to do with the availability of housing or mortgage finance, but rather reflects speculation regarding the risky and uncertain embedded pre-payment option.

Transferring interest rate risk to borrowers through ARMs may not be good policy either. Excessive dependence on ARMs as in Australia, Spain and the U.K. runs the risk of significant credit deterioration when interest rates rise and may constrain monetary policy. Use of rolling short-term fixed-rate instruments, as in Canada and several countries in Europe, offers a trade off. Borrowers can adjust the fixed-rate term according to the level and expected direction of interest rates — shortening the term when rates are high and expected to fall, and lengthening when rates are low and expected to rise — allowing them to manage interest rate risk.

Legislative and regulatory restrictions on features like interest-only payments, low start rates and negative amortization will reduce credit availability for many households who need lower payments in the earlier years to afford a mortgage. The lack of such mortgages means there is less ability to offset the tilt effect of the FRM in which the real burden of the mortgage is higher in the early years.[33] Putting product restrictions and prohibitions into law will make it much more difficult to be flexible in underwriting borrowers in the future.

Mortgage products outside the United States do not appear to have had a role in the financial crisis. However, evidence suggests that it was the lack of underwriting and the mis-match between borrower ability to pay and loan characteristics that led to the mortgage meltdown, not the loan features in and of themselves. The predominance of ARMs in other countries may, in fact have reduced mortgage default rates. However, borrowers in these countries have significant vulnerability to rate increases that may cause problems in the years to come.

Finally, lower default rates in countries outside the United States, even in the presence of more volatile housing markets, may reflect stricter enforcement of lender rights. All countries in the survey have recourse lending, and anecdotal questioning by the author suggests it is enforced. Lenders with a greater certainty of recovering loan proceeds are more likely to extend credit and loan rates are likely to have lower credit risk premiums.

Appendix: Details of Variable-Rate Mortgages

Adjustable-Rate Loan Characteristics: In most countries the dominant ARM is an indexed instrument (Table A-1). The index is typically a money market rate (LIBOR, CIBOR, EURIBOR). Canada and Japan use the prime rate and Korea uses either a CD or cost of funds index. The adjustment period is one year or less. Initial rate discounts are common but modest — typically no more than 1 percent.

Table A-1
Variable-Rate Loan Characteristics

Country	Type	Caps	Margin	Period	Options	Discount
Denmark	Indexed CIBOR	Life of loan by contract (5%)	0.5%	6 months	5 year max.	No
Germany	Reviewable	Rate of insurance policy available	N/A	Lender discretion	Mixed	
Spain	Indexed Euribor	Caps and floors ~30% of lenders	~2%	6–12 months		Slight
France	Indexed Euribor	2–3%	1–3%	3–12 months	Flex term; conversion; mixed	up to 1%
Netherlands	Indexed Euribor		~2.5%	1–6 months	Conversion	0.4%
U.K.	Reviewable; indexed (tracker)	Caps and collars available (tracker)	0.5–1.5% to base rate	Monthly		Up to 1%
Canada	Indexed; prime rate	Yes; term of mortgage	~0.5%	With prime change	Mixed; conversion	Yes
Australia	Reviewable	None	1.2–2.2% average spread-to-cash rate	Lender discretion		~1%
U.S.	Indexed; hybrid	Yes; periodic, life of loan	2.5%	1 year; 3:1, 5:1	Conversion	Yes
Korea	Indexed CD rate of COF	None	~2%	3 months		
Switzerland	Indexed CHF Libor	Optional caps separate from mortgage	0.5%	3–6 months	Conversion; mixed fix/float	
Japan	Indexed; prime rate	Payment cap associated with flex term		6 months	Flex term; conversion; mixed	On rollover 1–2%

End Notes

1. The final "HOEPA Rule," amending Truth in Lending Rules, Regulation Z was adopted by the Federal Reserve on July 14, 2008. HOEPA rules restrict product characteristics and underwriting on high-cost loans.

2. See for example Bostic et. al., [2009]

3. We will not address the legal aspects of the mortgage in this study. Rather our focus is on the financial characteristics.

4. Rates on reviewable mortgages are typically adjusted after a change in the central bank target rate (base rate in U.K., cash rate in Australia).

5. See Table A-1 in Appendix 2 for details on indices.

6. Longer fixed rate periods are available in some countries (up to 10 years in Canada and the Netherlands and 15 years in Germany). Infinite life mortgages are common in Switzerland and are discussed below.

7. These loans are referred to as adjustable-rate loans in Denmark. They differ from variable-rate loans which are indexed to the Copenhagen interbank lending rate. Realkreditrådet [2010].

8. Mortgage contracts can contain a several options including assumability (the right of a new borrower to assume an existing mortgage on the same property) and portability (the right of a borrower to keep his mortgage when moving and have it secured by a new property). Mortgages in most European countries and Canada are assumable subject to lender review. Countries that allow assumability also restrict or penalize early repayment. Allowing assumption (subject to qualification) enables the lender to maintain an asset liability match that is required for covered bond financing. Only Ireland and the U.K. do not allow assumption and the Netherlands restricts it. Although portable mortgages exist in several countries (Australia, Canada, Germany, U.K.) there appears to be no data on their volume of use.

9. Typically the borrower takes out a new mortgage for the lower balance — pocketing the gain. For a more detailed description of the buyback option see Svenstrup and Willeman [2006].

10. Bullet bonds pay period interest with the principal repaid at maturity.

11. A number of European countries have theoretical usury limits but they are set much higher than recent historical mortgage rates. See [EMF 2007].

12. U.S. origination costs are higher than in many other countries. An EMF survey found average mortgage origination costs of 1.1 percent in Europe [EMF 2010]. U.S. loan origination fees are higher in part because they are a function of the loan amount. In many other countries, including Canada, origination charges are a flat typically low fee. Also most other countries do not have title insurance and the cost of title search is less than in the U.S. Some countries, including Denmark and Spain, have taxes on mortgage registration that raise their total costs to 2-2.5 percent.

13. Scanlon et. al [2009] report that the use of interest-only mortgages has fallen in several countries, including Ireland and the Netherlands, as both borrowers and lenders gravitate to less risky mortgages. 2005–2006 data from Scanlon et. al. 2009–2010 data from Scanlon 2009, Reserve Bank of Australia, Council of Mortgage Lenders, Korea Housing Finance Agency.

14. Korea interest is deductible if mortgage term is 10 years or more subject to maximum income limit.

15. In Germany, the lender can immediately cancel the loan if the borrower goes into negative equity, even if the borrower's payments are up to date, although the facility is little used in practice.

16. Interest-only mortgages in the Netherlands have a maximum 75 percent LTV. Amortizing mortgages can be as high as 100 percent LTV where value is defined as "foreclosure value," the likely proceeds from a foreclosure sale.

17. Another quirk that favored endowments over repayment mortgages was the fact that U.K. lenders charged interest on an annual basis. Thus the borrower with an amortizing loan did not get benefit of the principal reduction during the year, raising the effective interest rate. Life insurance premiums could be invested during the year, effectively lowering the amount of premiums necessary to repay the loan relative to the interest-only repayment loan. This practice was phased out in the 1990s.

18. For example on the Nationwide Building Society website a payment holiday of between three and twelve months can be taken if the mortgage for more than one year old and is less than 80% of the value of the home at the end of the payment holiday. The borrow back feature allows a drawdown of past overpayments subject to the LTV constraint.

19. The U.K. Homeowners Mortgage Support Program assists with mortgage payments for unemployed borrowers for up to two years, which may contribute to lower foreclosures. As in the U.S., lenders have been slow in repossessing houses — in part because house prices began rising at the end of 2009.

20. Subprime ARMS, balloons and interest-only mortgages have significantly higher default rates than prime fixed rates [Chomsisengphet and Pennington-Cross 2008]. However when controlling for other factors such as LTV, FICO score and geographic area, mortgage product variables appear less important. Demyanyk and Van Hemert [2008] find that ARM and hybrid loan variables were insignificant in explaining the probability of default. Loan margin and a pre-payment penalty were significant but had small effect.

21. There tends to less product variety in most countries as compared to the U.S. Thus there are no statistics relating product characteristics to default. Rather the focus is on underwriting variables such as LTV, adverse credit and low documentation.

22. Australian estimate from Genworth July 2010. Canadian estimate from CMHC and based on average loan size from Canequity.com.

23. Covered bonds are corporate obligations of the lender. Investors have priority rights to the pool of mortgages ("the cover" pledged to the bondholders). For detail on covered bond requirements see ECBC [2009].

24. Among the subject countries only Canada and Japan have government-supported secondary market institutions. The Canada Mortgage and Housing Corporation and Japan Housing Finance Agency play a similar role to Ginnie Mae in the U.S. See Lea [2010] for a more in-depth discussion.

25. Koijen et. al. [2009] find that the long-term bond risk premium is a more powerful determinant of mortgage choice than the simple spread.

26. Effective margins are less due to the widespread use of initial period discounts or "teaser rates."

27. Most recently in the European Commission White Paper [2008]. The European Mortgage Federation response [2008] recommends keeping the right of early repayment as a contractual option. They note

"As a general rule, individual consumers should bear the consequences of the choice they make, i.e. borrowers not choosing an option to repay early should not pay for the costs of this option on an individual basis. The EMF considers that a cross-subsidisation/mutualisation model, under which all customers

would have to foot the bill for the pre-payment option whether they opt for it or not, is not a proportionate solution."

28. For a survey of European national legislation regarding early repayment see EMF [2007].

29. French banks have a large pool of long-term funds dedicated to real estate through the l'Épargne Logement system of contract savings. This source of funds effects the pricing of mortgages (interest is tax exempt and thus lower than market rates on a pre-tax basis) as well as the ability to match fund longer-term FRMs. See Diamond and Lea [1992].

30. Scanlon et. al. (2009). Japan went the opposite direction by loosening underwriting in the crisis. The loan-to-cost ratio was allowed to increase to 100 percent from 90 percent Standard and Poors (2010).

31. The EC is looking into suitability standards for EC lenders [EC 2009]. They note: The requirement to assess the suitability of mortgage products to the personal circumstances of the consumer is set out in the national law of Austria, Belgium, Hungary, Ireland, Malta and the Netherlands. In the U.K. the requirement to assess the suitability of the product for the borrower is only relevant where advice is given.

32. DG MARKT (EC financial markets committee) is conducting a research study on interest rate restrictions in "consumer credit" — understood to include mortgage credit — in the EU. The study aims to identify the different types of interest rate restrictions, e.g. rate ceilings/caps, limits on interest rate variability, restrictions on the use of compound interest rates etc. and identify the Member States applying these and their reasons for doing so. The study also analyzes the economic, financial and social impacts of such restrictions on various stakeholders.

33. The tilt effect is created when markets incorporate inflationary expectations into nominal interest rates, increasing their level reducing affordability.

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Korea Housing Finance Corporation (Korea)

Realkreditrådet (Denmark)

Australia Prudential Regulation Authority (Australia)

Dr. Michael Lea

The Corky McMillin Center for Real Estate, College of Business Administration, San Diego State University

Dr. Michael Lea is the Director of the Corky McMillin Center for Real Estate at San Diego State University. In that capacity he is responsible for improving real estate education, industry outreach and research. Dr. Lea is also a principal of Cardiff Economic Consulting, with a focus on the analysis of domestic and international mortgage markets and institutions. He has over 25 years of financial services industry experience, including more than 20 years of international advisory work in 30 countries spanning six continents. He has provided advice on a wide variety of mortgage and securitization topics as a consultant to international development agencies, government-sponsored enterprises, trade groups, regulatory agencies and major private and public sector financial institutions.

From 2000 through 2004, Dr. Lea served as Executive Vice President for Global Market Development at Countrywide Financial Corporation. He was responsible for developing global strategy, analyzing market opportunities and creating proposals and business plans for new international initiatives. Dr. Lea was also President of Countrywide International Consulting Services LLC, which conducted analysis of and provided technical assistance to primary and secondary mortgage market institutions worldwide. From 1991 through 1999, Dr. Lea was President of Cardiff Consulting Services, a firm specializing in the analysis of housing finance markets and institutions in the US and abroad.

Dr. Lea has a unique combination of research experience, senior operational responsibility in major financial institutions and high-level participation in public policy formulation. He was Senior Vice President of Finance and Capital Markets at the Imperial Corporation of America from 1987 to 1991. In this capacity he was responsible for the corporate finance, portfolio management and strategic planning functions of a $12 billion diversified financial institution and managed a staff of 40 professionals.

Dr. Lea was Chief Economist at the Federal Home Loan Mortgage Corporation (Freddie Mac) from 1983 to 1987 with responsibilities for primary and secondary mortgage market analysis and forecasting. He also served as a staff member for the President's Commission on Housing and was a Brookings Institution economic policy fellow at the U.S. Department of Housing and Urban Development in 1980 and 1981.

Dr. Lea is an internationally known authority on housing and mortgage finance. He has published over 75 articles and book chapters, organized several conferences and made numerous presentations to government agencies, legislative committees, multi-lateral institutions, corporate boards and management, trade groups and academic and professional organizations. He has taught at Cornell University, San Diego State University, the University of California, San Diego and the Wharton International Housing Finance Program at the University of Pennsylvania. He received his Ph.D. in economics from the University of North Carolina, Chapel Hill.

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Alternative Forms of Mortgage Finance: What Can We Learn from Other Countries?

MICHAEL LEA

The U.S. mortgage finance system has gone from the envy of the world to a case study of failure in two short years. As recently as the 2003–05 period, the system generated an enormous volume of originations (nearly $4 trillion) that contributed to a record level of homeownership (69.3 percent).[1] Impressive gains were made in low-income and minority rates of homeownership. The system was characterized by low mortgage interest rates, robust competition, particularly from nonbank lenders, buoyant house prices, and low default rates. While the government role was significant, the major government-supported institutions were losing market share. There were, however, ample warning signals that this rosy picture was about to end. Affordability was falling, concerns about predatory lending abounded, delinquencies in subprime lending were rising, and numerous commentators warned of unsustainable house prices.

Fast forward to the 2007–10 time period. The homeownership rate has fallen to 67.4 percent, erasing all of the gains since 2000. House prices have been falling for three years and are off more than 30 percent nationwide. Mortgage originations are down significantly, and only prime borrowers can obtain loans. Conforming mortgage rates are historically low, but the volume of refinancing is muted. And nonconforming rates are much higher. There is reduced competition, as most nonbank lenders have failed and the large banks dominate the market. The country is experiencing record postwar default and foreclosure rates. The role

1. Joint Center for Housing Studies (2009).

of government has expanded considerably; in fact, the government backs nearly all mortgage lending. There is considerable uncertainty about when the recovery in the housing and mortgage markets will begin.

The economic recession that was sparked by the implosion of the U.S. subprime mortgage market has been global in dimension. As such, it has affected the housing and mortgage markets of many countries. Most developed countries also experienced robust growth in their housing and mortgage markets during the first half of the decade. Many countries experienced record levels of house price inflation, increased competition, and relaxed mortgage underwriting. But no major developed market has experienced the severe decline in house prices, the high rate of mortgage default and foreclosure, and the change in the mortgage finance system as have been experienced by the United States. What have these other countries done differently?

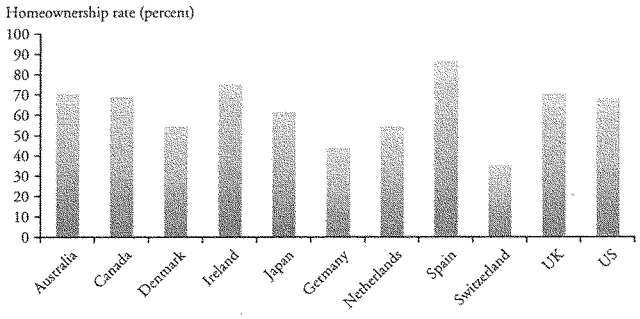
This chapter reviews the major characteristics and performance of various developed-country mortgage markets, comparing and contrasting the structure, principal features, and performance of the primary and secondary markets with those in the United States. The comparison includes the types of lender and mortgage instruments in the primary market, institutions and instruments involved in the capital market, funding of mortgages, and management of major mortgage risks (default and prepayment). The chapter then compares and contrasts the role of government in mortgage market regulation, consumer protection, and the backing of institutions and instruments through guarantees and ownership in the primary and secondary markets. Finally, it seeks to extract ideas about how the U.S. system can be reformed to improve performance and restore private capital market finance.

International Comparisons

This chapter focuses on the finance of owner-occupied housing. Figure 4-1 shows recent rates of homeownership among several Organization for Economic Cooperation and Development (OECD) countries. The United States has a relatively high rate of homeownership, but it is not the highest among major developed markets. Australia, Ireland, Spain, and the United Kingdom all have higher rates of homeownership, and Canada's rate is comparable to that of the United States. This is noteworthy because these countries provide far less government support for homeownership than the United States. Most Western European countries have lower rates of homeownership in part due to strong social rental systems. Southern European countries like Italy, Greece, and Spain have higher rates of homeownership, reflecting cultural values, discriminatory policies toward private rental housing, and relatively weak support of social rental housing.

Homeownership rates in most countries were stable in the 1999–2008 period. Canada had the largest increase in homeownership, growing from 64 to 68 percent.

Figure 4-1. *Rates of Homeownership in Select Countries, 2008, except 2006 for Japan*



Source: Australian Bureau of Statistics, Canada Housing and Mortgage Corporation, Delft University, European Mortgage Federation, U.S. Bureau of the Census.

Homeownership in Spain, the United Kingdom, and the United States each grew 2 to 3 percentage points.

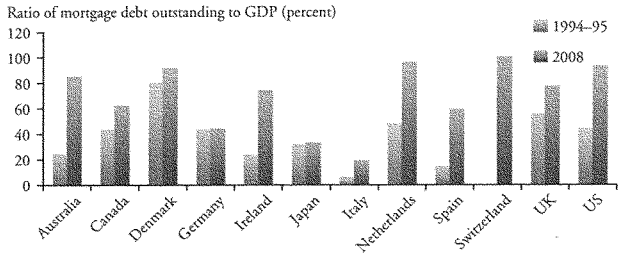
The housing boom was characterized by higher rates of housing construction in many countries. Several countries—notably Australia, Canada, Ireland, and Spain—had higher real residential investment to GDP in 2002–07.[2] Ellis points out that a major difference between the United States and other countries is that the increase in dwellings in the United States was significantly greater than the increase in households or population, which created an excess supply of houses.[3]

Figure 4-2 shows the growth in the ratio of residential mortgage debt outstanding to GDP between 1994–95 and 2008. The U.S. ratio grew from 44 to 93 percent, an impressive performance. But several other countries had a similar performance. Australia, Ireland, and Spain had greater growth, and the Netherlands had a higher ratio. All countries except Germany and Japan had significant growth in their mortgage markets.

Although the United States had an unprecedented run-up of house prices during the decade, it was not alone, as shown in table 4-1. Many OECD countries had greater house price increases between 2000 and 2006 than did the United States. Australia and the United States were the first of the bubble countries in which house prices fell; the Australian housing market has since recovered. The magnitude of the fall in U.S. house prices, as measured by the Standard and Poor's

2. IMF (2009).
3. Ellis (2008).

Figure 4-2. *Ratio of Mortgage Debt to GDP in Select Countries, 1994–2008*



Source: Australian Bureau of Statistics, Canada Housing and Mortgage Corporation, European Mortgage Federation (various years), Federal Reserve Board, and the World Bank. Data for 1994–95 not available for Switzerland.

Case Shiller 20 metro area index, has been greater than in other countries. Research by the International Monetary Fund suggests that the housing market is more elastic in the United States than in other countries, as evidenced by a higher share of real residential investment and real variation in house prices as a result of housing demand shocks.

Mortgage interest rates in most countries declined during the decade, except in Australia (see table 4-2). The Reserve Bank of Australia raised interest rates in 2003 in part to head off a house price bubble. The rates are specific to the dominant instrument. Australia, Ireland, Spain, and the United Kingdom are predominately short-term variable-rate markets. Their mortgage rates declined more sharply than those in other countries during the crisis.

Figure 4-3 compares dominant mortgage product offerings by country in terms of interest rate variability. There is considerable difference in the types of products offered. Australia, Ireland, Spain, and the United Kingdom are dominated by variable-rate or short-term (typically one- to three-year) fixed-rate mortgages. The design of adjustable-rate mortgages (ARMs) varies. In Australia and the United Kingdom, the standard variable-rate mortgage has a rate set by the lender at its discretion. Rates are changed for all borrowers at the same time. Canada, Spain, and the United States have indexed ARMs. Recently tracker mortgages, which are indexed ARMs, have become dominant in the United Kingdom. Initial fixed-rate discounts are prevalent in Australia and the United Kingdom. The magnitudes of the discounts are less than those in the United States during the boom—typically around 100 basis points, lasting one to two years.

The United States is unusual in the high proportion of long-term fixed-rate mortgages (figure 4-3). The ARM and short-term fixed (hybrid) share in the United States grew during the boom—accounting for 30–35 percent of loans in

Table 4-1. *House Prices in Select Countries, 2000–09*

Nominal change in house price year-on-year

Country/entity	*2000*	*2001*	*2002*	*2003*	*2004*	*2005*	*2006*	*2007*	*2008*	*2009*
U.S. Federal Housing Finance Agency	7.20	7.30	6.90	7.00	10.50	11.20	4.90	−0.04	−4.30	−1.20
Japan	−3.7	−4.1	−4.6	−5.4	−6.1	−4.8	−3.0	−1.0	−1.6	−3.2
Germany	0.0	0.0	−2.8	−1.0	−1.9	−2.0	0.9	−0.7	0.0	−0.7
United Kingdom	14.9	8.1	16.1	15.7	11.9	5.5	6.3	10.9	−0.9	0.3
Canada	3.7	4.6	9.9	9.4	9.4	9.9	11.3	10.8	−1.1	2.5
Australia	8.3	11.2	18.8	18.2	6.5	1.5	7.8	11.3	4.4	12.0
Denmark	6.5	5.8	3.6	3.2	8.9	17.6	21.6	4.6	−4.5	−7.3
Spain	7.5	9.5	16.9	20.0	18.3	14.6	10.0	5.5	0.2	−6.3
Ireland	16.5	8.2	10.7	15.8	11.6	11.8	13.5	−1.0	−2.5	−18.5
Netherlands	18.2	11.1	6.5	3.6	4.3	3.8	4.6	4.2	−8.8	−5.0
U.S. CS20[a]	11.6	7.2	12.0	11.0	15.3	14.5	0.4	−8.6	−16.7	−3.1
France	8.8	7.9	8.3	11.7	15.2	15.3	12.1	6.6	1.3	−4.4
Italy	8.3	8.2	9.6	10.3	9.9	7.5	6.4	5.2	1.7	. . .

Source: Canada Housing and Mortgage Corporation, European Mortgage Federation, Federal Housing Finance Agency, Standard and Poor's.

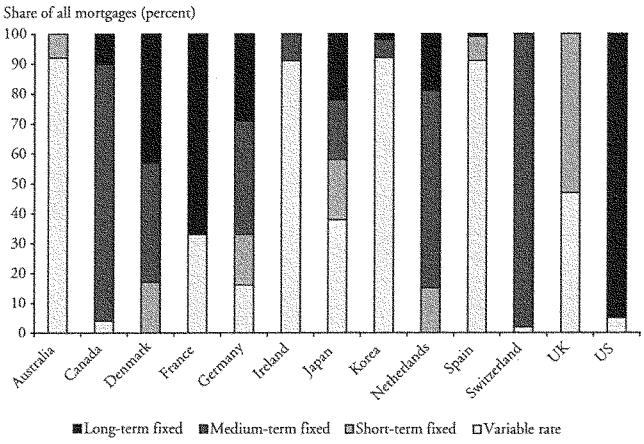
a. Standard and Poor's Case-Shiller 20 metro area index.

Table 4-2. *Mortgage Interest Rates in Select Countries, 2000–09*
Percent

Country	*2000*	*2001*	*2002*	*2003*	*2004*	*2005*	*2006*	*2007*	*2008*	*2009*
Germany	6.4	5.9	5.5	5.1	4.6	4.2	4.6	5.0	4.8	4.39
Denmark	7.2	6.4	5.7	5.5	5.0	4.4	5.2	5.9	6.6	4.18
Spain	5.9	4.5	3.8	3.2	3.3	3.2	4.7	5.3	5.9	3.14
UK	7.6	5.7	5.6	5.6	6.6	6.6	5.3	6.1	5.5	4.38
Ireland	6.2	4.7	4.7	3.5	3.5	3.7	4.6	5.1	4.3	2.68
Australia	8.1	6.1	6.6	7.1	7.1	7.3	7.5	8.0	6.3	6.05
Canada	7.8	6.6	6.4	6.0	5.7	5.6	6.0	6.7	6.2	5.85
Japan	2.8	2.6	2.4	2.6	2.9	3.3	2.4	3.0	2.7	2.75
U.S. fixed rate mortgage	7.3	7.0	6.5	5.8	5.8	5.9	6.4	6.1	6.0	5.20
U.S. adjustable rate mortgage	7.0	5.8	4.6	3.8	3.9	4.5	5.5	5.5	5.2	4.70
Switzerland	4.32	4.20	3.78	3.28	3.07	2.92	3.03	3.17	3.84	3.67

Source: Central banks, European Mortgage Federation, Mortgage Bankers Association.

Figure 4-3. *Mortgage Products in Select Countries, 2009*



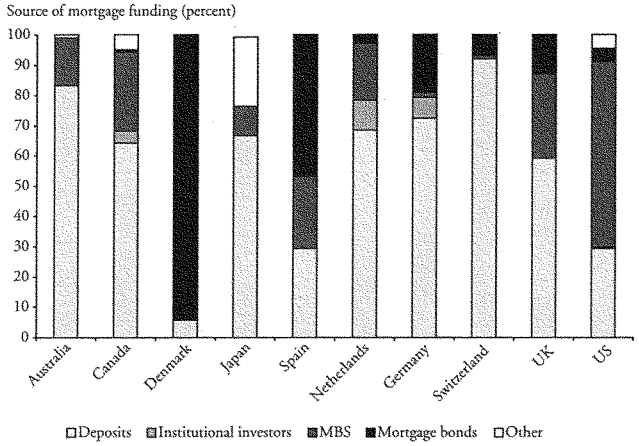
Source: Canadian Association of Accredited Mortgage Professionals, European Mortgage Federation (various years), Genworth, Mortgage Bankers Association, Standard and Poor's.

the 2004–06 period—but the market has reverted to fixed-rate mortgages in the crisis.[4] Long-term fixed-rate mortgages used to be the dominant product in Denmark, but relatively low and falling short-term rates have led Danish borrowers to shift to medium-term (one- to five-year) fixed-rate loans in recent years. Rollover mortgages are the dominant product in Canada, Germany, and the Netherlands. These loans have a fixed rate for up to five years (ten years in Germany), with a twenty-five- to thirty-year amortization period (thirty-five years in Canada). At the end of the fixed-rate period, the rate adjusts to the new market rate. There is a substantial (as high as yield maintenance) prepayment penalty during the fixed-rate period. Canadian borrowers have responded to low short-term interest rates with a larger proportion of variable-rate loans. A high proportion of Dutch loans are interest only to maximize tax benefits. About half of Japanese loans are convertible (after the end of the fixed-rate term the borrower can select another fixed-rate period or switch to a variable rate).[5] Japanese floating-rate loans have fixed payments for five years with potential deferral and negative amortization. Some Spanish loans are part fixed and part variable rate.

4. Despite the fact that a one-year ARM is 120 basis points lower than a thirty-year fixed rate mortgage, and a 3/1 ARM is 81 basis points lower, as of September 10, 2010, according to the *Wall Street Journal*. See "Market Data," *Wall Street Journal*, September 10, 2010.

5. For more detail on Japanese mortgages, see Standard and Poor's (2009).

Figure 4-4. *Mortgage Funding in Select Countries, 2008*



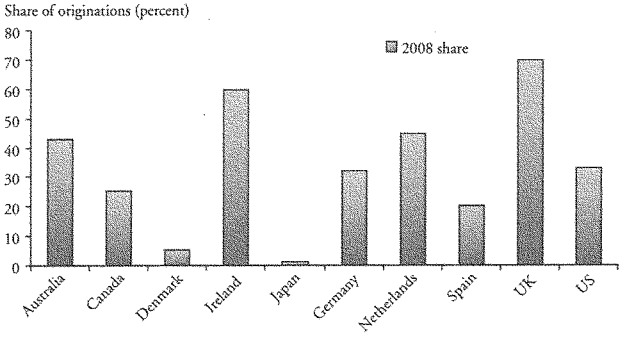
Source: Central banks, Canadian Association of Accredited Mortgage Professionals, European Mortgage Federation, Federal Reserve Board, Merrill Lynch.

Mortgage funding comparisons reveal interesting differences. As shown in figure 4-4, deposit funding dominates in most countries. The United States is unique with regard to the importance of securitization. More than 60 percent of U.S. residential mortgages have been securitized; the next closest countries are Canada, Spain, and the United Kingdom, with 24–28 percent securitized. Covered bonds are a more common funding mechanism in Europe: 94 percent of Danish funding and 47 percent of Spanish funding come from this source. We comment later on the role of covered bonds and the reason for their dominance in Denmark and significance in Europe.

Mortgage lending tends to be dominated by banks and highly concentrated in most countries. The top five lenders have more than a 50 percent market share in Australia, Canada, Denmark, the Netherlands, and the United Kingdom. The top five are commercial banks, except in Denmark where they are specialist mortgage companies (which are owned by or own commercial banks).[6] Banks are the largest class of lender in Germany and Spain, but the market share of individual institutions is much smaller. Savings banks (owned by the state governments) are the largest lenders in these countries, followed by commercial banks in Spain and mortgage banks in Germany. In Europe all mortgage lenders must have a bank

6. The Nationwide Building Society is a top five lender in the United Kingdom.

Figure 4-5. *Broker Share of Originations in Select Countries, 2008*



Source: Canadian Association of Accredited Mortgage Professionals, Europe Economics, Inside Mortgage Finance, National Australia Bank.

charter (which can be commercial, savings, cooperative, and mortgage, among others). The market in Japan is rather fragmented, but large city banks have the largest market share. As a result of the crisis, the U.S. mortgage market is beginning to look more like those in the other countries, with origination dominated by large commercial banks.

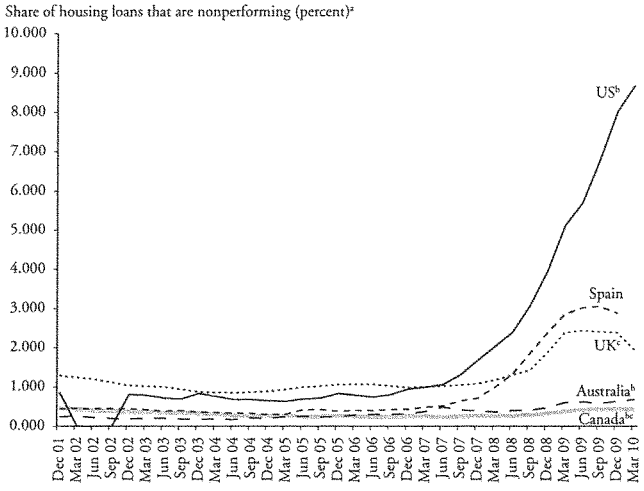
Mortgage brokers play a significant distribution role in many countries. As figure 4-5 shows, the broker share of originations varies widely across countries, from as high as 60–70 percent in Ireland and the United Kingdom to as low as 1–5 percent in Denmark and Japan. The U.S. number does not reflect correspondent lending, which accounted for 31 percent of 2008 originations. Australia and the United Kingdom have a small amount of correspondent lending as well. The broker share has fallen in the United States as a result of the crisis.

The recession has taken its toll on all mortgage markets, but more so in the United States than anywhere else. Figure 4-6 shows comparative mortgage default rates for bank portfolios in several countries. Mortgage default rates have risen but remain low in other countries.[7] The performance of bank mortgage portfolios in the United States is worse than in other countries.

Mortgage performance has been worse for securitized mortgages in those countries with significant securitization. In large part this is due to the fact that subprime or nonconforming mortgages were the collateral for these securities. Figure 4-7 shows the performance of private-label securitized loans in the United

7. Danish arrears (not shown) were less than 2 percent and foreclosures were 0.4 percent in 2008 (Boyce 2010). German and Japanese default rates are also quite low. Serious default rates on loans held or guaranteed by Fannie Mae and Freddie Mac were over 5.5 percent in early 2010.

Figure 4-6. *Nonperforming Loans as a Share of Housing Loans in Select Countries, 1993–2009*



Sources: Bank of Spain; Canadian Bankers' Association; Council of Mortgage Lenders; FDIC; Reserve Bank of Australia; Australia Prudential Regulatory Authority.

a. Percent of loans by value. Includes impaired loans unless otherwise stated. For Australia, only includes ninety or more days in arrears prior to September 2003.

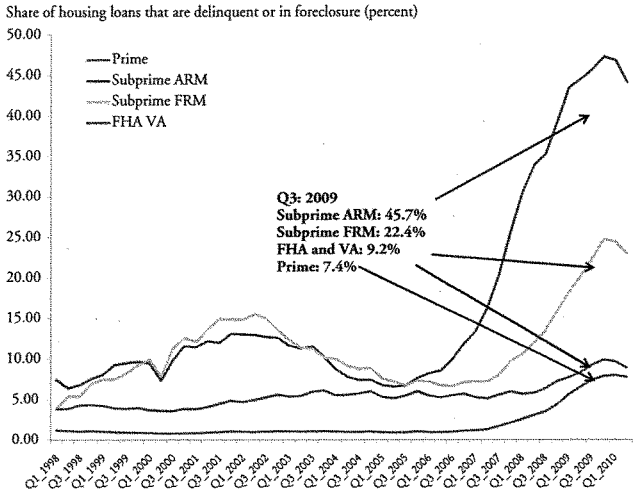
b. Banks only.

c. Percent of loans by number that are ninety or more days in arrears.

States. Subprime loans have extraordinarily high default rates, reflecting the decline in underwriting standards and risk layering. The recent increase in prime defaults reflects rising unemployment and falling house prices.

Figure 4-8 shows the performance of prime residential mortgage-backed securities (RMBSs) in Europe. Delinquencies on European securitized loans have increased during the crisis but remain well below those in the United States. Default rates on securitized loans are less than 1.5 percent in Australia and less than 1 percent in Canada. These results reflect the fact that subprime lending was rare or nonexistent outside of the United States. The only country with a significant share of subprime lending was the United Kingdom (a peak of 8 percent of mortgages in 2006). Subprime loans accounted for 5 percent of mortgages in Canada, less than 2 percent in Australia, and negligible proportions elsewhere. Subprime loans in Australia and Canada were more similar to U.S. Alt-A loans than to true subprime loans.

Figure 4-7. *Performance of Private-Label Securitized Mortgage Loans in the United States, 1998–2009*[a]



Source: Amherst Securities (2009).

a. In the third quarter of 2009, the share of loans that were delinquent or in foreclosure is the following: subprime adjustable-rate mortgages, 45.7 percent; subprime fixed-rate mortgages, 22.4 percent; Federal Housing Administration and Veterans Benefits Administration loans, 9.1 percent; and prime mortgages, 5.9 percent.

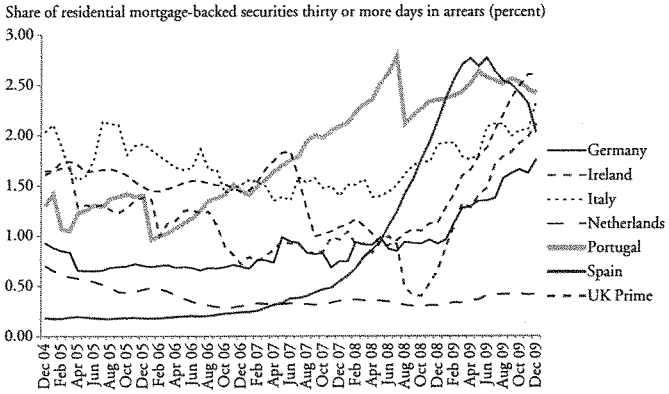
The only performance comparable to that of the United States is in U.K. nonconforming mortgages. U.K. lenders provided loans to borrowers who had both adverse credit and low documentation. Nonconforming securitized loans have high delinquency rates in the United Kingdom (see figure 4-9), but foreclosure rates are far lower than in the United States.[8]

Role of Government

Government is involved in all of the surveyed mortgage markets to varying degrees. Government involvement includes tax incentives, guarantees, government-sponsored enterprises, and regulation.

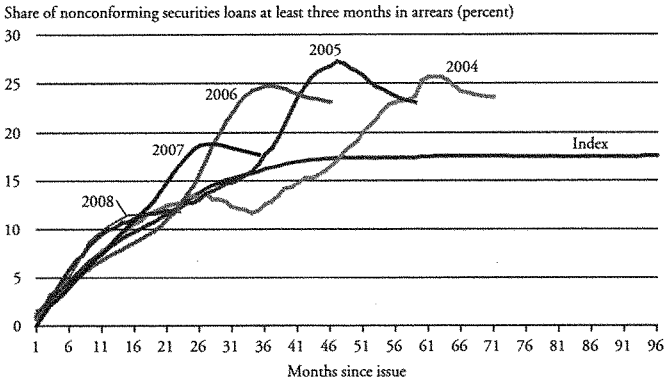
8. The U.K. Homeowners Mortgage Support Program assists unemployed borrowers with mortgage payments for up to two years, which may contribute to lower foreclosures. As in the United States, lenders have been slow to repossess houses, in part because house prices began rising at the end of 2009.

Figure 4-8. *Performance of RMBS in Select European Countries, 2000–09*



Source: Fitch Ratings.

Figure 4-9. *Performance of Nonconforming Securitized Loans in the United Kingdom at the End of 2009, by Year of Origination*



Source: Fitch Ratings.

Tax Treatment of Homeownership

Government can provide incentives for owner-occupied housing in many ways. Perhaps the best known is favorable tax treatment. Table 4-3 compares the tax treatment of owner-occupied housing for select OECD countries.

The tax treatment of mortgage interest is varied. Most OECD countries do not allow a deduction, and several that do cap it at low marginal tax rates. Denmark and the Netherlands have full or nearly full deductibility, although both countries tax imputed rent (albeit at low rates). Only the United States allows nearly full deductibility without taxing imputed rent. In recent years those countries with deductibility have exhibited faster mortgage growth. Ireland, the Netherlands, and the United States had the highest rates of growth in mortgage

Table 4-3. *Tax Treatment of Owner-Occupied Housing in Select Countries*

Country	*Mortgage interest*	*Capital gains*	*Other*
Denmark	Deductible at 33 percent maximum tax rate	Exempt if primary residence of less than 1,400 square meters	
Germany	Nondeductible	Exempt if held more than ten years	
Ireland	Deductible for seven years at 25 percent of the maximum tax rate, falling to 20 percent	Exempt	
Netherlands	Fully deductible	Exempt	Imputed income taxed
Spain	At €9,015, capped at 15 percent rate	Exempt if reinvested or sold after age sixty-five	
United Kingdom	Nondeductible	Exempt	
Australia	Nondeductible	Taxable with indexed cost base	First-time homebuyer tax credit
Canada	Nondeductible	Exempt	
Japan	Nondeductible	Taxed at 30 percent if five years or less; 15 percent if more than five years	Deduction of 1 percent of principal per year for ten years
United States	Deductible limit $1 million	Exemption of $250,000/ $500,000 for a principal residence in two out of the last five years	Temporary tax credit in 2009–10

Source: CMHC, European Mortgage Federation, Global Property Guide.

Table 4-4. *Government-Backed Mortgage Institutions in Select Countries*

Country	*Government mortgage insurer*	*Government security guarantees*	*Government-sponsored enterprise*
Denmark	No	No	No
Germany	No	No	No
Ireland	No	No	No
Netherlands	NHG	No	No
Spain	No	No	No
United Kingdom	No	No	No
Australia	No	No	No
Canada	CMHC	CMHC	No
Japan	No	JHF	Possible
United States	Federal Housing Administration	Ginnie Mae	Fannie Mae, Freddie Mac, Federal Home Loan Banks

Source: Author.

debt outstanding over the past fifteen years, and the Netherlands and the United States have the highest levels of indebtedness today. Countries that do not allow deductibility (Australia, Canada, the United Kingdom) or cap it (Ireland, Spain) have equivalent or higher rates of homeownership than the United States. Most countries exempt or limit the tax on capital gains on owner-occupied housing. Ellis points out that interest deductibility combined with a lack of prepayment penalties in the United States may have contributed to the growth in household leverage and mortgage indebtedness through cash-out refinance and second mortgages.[9]

Mortgage Guarantees and Institutions

The differences among countries in the presence of government-owned or -sponsored mortgage institutions are more striking. Table 4-4 compares select countries in this dimension. The United States is unusual in its use of all three types of government-supported mortgage institutions or guarantee programs: mortgage insurance, mortgage guarantees, and government-sponsored mortgage enterprises. Canada and Japan have government guarantee programs, and Canada and the Netherlands have government-backed mortgage insurance programs.[10]

9. Second-mortgage home equity lines of credit exist in other countries (for example, Australia, Canada, the United Kingdom), but in far less volume, perhaps reflecting the lack of interest deductibility. The Netherlands has a relatively high incidence of second mortgages (13 percent of borrowers in 2002), reflecting full deductibility and high marginal tax rates.

10. Australia had a government-owned mortgage insurer from 1965 to 1997, when it was sold to Genworth. For an analysis, see Lea (2009).

The market share of government-backed institutions is smaller in Canada and Japan than in the United States.[11]

The role of government in Canada is more similar to its role in the United States than in any other country. The Canada Mortgage and Housing Corporation (CMHC) is 100 percent owned by the government and enjoys an explicit guarantee of the Canadian government.[12] It provides 100 percent mortgage default insurance through its National Housing Act Program (similar to the Federal Housing Administration in the United States).[13] The CMHC also provides timely payment guarantees on securities backed by National Housing Act loans (similar to Ginnie Mae in the United States). The CMHC administers the Canada Mortgage Bond purchase program, which is a trust set up to purchase CMHC-guaranteed mortgage securities funded by the issuance of mortgage bonds. The program eliminates the cash flow uncertainty caused by mortgage amortization and prepayment through cash flow swaps executed with investment banks. The CMHC does not lend to primary mortgage institutions or invest in mortgages.

The Japan Housing Finance Agency (JHF) is a government-incorporated administrative agency.[14] It operates in a manner similar to the guarantee functions of Fannie Mae and Freddie Mac, purchasing mortgages and issuing mortgage-backed securities with its timely payment guarantee. It does not purchase loans for portfolio, although it could do so within its charter. The JHF replaced the former Government Housing Loan Corporation (GHLC) in 2007, which mainly provided loans to the public with funding from the Ministry of Finance and also securitized some of these loans. The JHF was created after the GHLC ran into asset-liability mismatch problems.

The Netherlands has a government-owned mortgage insurer, the Homeownership Guarantee Fund (the Nationale Hypotheek Garantie, NHG).[15] The NHG provides 100 percent mortgage default insurance and a temporary mortgage payment facility. The fund is a private institution with fallback agreements with the national and municipal governments. These agreements form the basis for interest-free loans to the fund from the national and municipal governments at times when its assets are no longer sufficient to meet claims. This means that the fund is able to comply with its payment obligations at all times. As a result, the Netherlands Central Bank (Dutch De Nederlandsche Bank) considers the NHG as a government guarantee.

11. About 25 percent of Canadian mortgages are securitized through Canada Mortgage and Housing Corporation guarantees. The CMHC insures about half of mortgages through the National Housing Act program. Japan Housing Finance Agency guarantees approximately 25 percent of Japanese mortgages. Its charter allows it to purchase mortgages, but to date it has focused on guarantees.

12. See www.cmhc-schl.gc.ca/en.

13. The Canadian government also provides a 90 percent backstop guarantee for two private mortgage insurers: Genworth and United Guaranty.

14. See www.jhf.go.jp/english/about/pdf/main_1.pdf.

15. Netherlands, Ministry of Housing, Spatial Planning, and the Environment (n.d.).

Unlike Fannie Mae and Freddie Mac, none of the international, government-backed institutions has experienced exceptional loss or required government capital injections. None of these institutions has a formal affordable housing policy mandate. Also none of these institutions takes on much interest rate risk, as they have limited or no portfolio accumulation.

Regulation

Government is heavily involved in regulating the mortgage market through both consumer protection and safety and soundness regulations in all countries. A major difference between the United States and other countries is that the United States is the only country with specialized housing finance safety and soundness regulators.

Historically, building societies in Australia, Ireland, and the United Kingdom operated in a similar fashion to savings and loans in the United States. These institutions had a specialist regulator. Regulatory reform led to the creation of a single financial regulator: the Australia Prudential Regulatory Authority (1999), the Financial Services Authority (FSA) in the United Kingdom (2001), and the Financial Regulator in Ireland (2003). The building societies are regulated the same as banks in these countries. The mortgage credit institutions dominate housing finance in Denmark, regulated by the Danish Financial Services Authority. Mortgage banks are significant residential mortgage lenders in Germany. They too are regulated by the single financial regulatory agency, the Bundesanstalt für Finanzdienstleistungsaufsicht. Commercial banks dominate mortgage finance in the other countries in this survey. Thus mortgage lending is not subject to specialist regulation.[16] The United States is unique in having a fragmented regulatory structure with numerous specialized regulatory agencies.

The specialist mortgage guarantee and insurance institutions in this survey do not have specialist regulators. The Ministry of Finance in their respective countries regulates the CMHC and the JHF. The Netherlands Ministry of Housing and the Association of Netherlands Municipalities supervise the NHG. An advantage to having a single financial sector regulator is the lower likelihood of regulatory capture or regulatory arbitrage, but a disadvantage may be the lack of sector-specific expertise.

Consumer protection regulation is less clear-cut and in flux. There was significant product innovation and loosening of underwriting in most subject countries during the housing boom. Moderate versions of subprime lending appeared in Australia, Canada, and the United Kingdom during the 2000s. Documentation requirements were relaxed in those countries, creating a version of the Alt-A market. However, the extent of product innovation and underwriting relaxation

16. The mortgage managers and centralized lenders are wholesale lenders funded by securitization in Australia and the United Kingdom, respectively. They are not subject to bank safety and soundness regulation but are subject to consumer protection and business conduct regulation. Their market share has dropped significantly during the crisis.

Table 4-5. *Change in Mortgage Underwriting in Select Countries, 2007–08*

Country	*Lower loan-to-value ratios*	*100 percent mortgages less available*	*Tighter loan-to-income criteria*	*Shorter maximum mortgage term*	*Interest-only loans less available*	*Introduction of new loan types to deal with crisis*
Australia	X	X	X			
Denmark	X					
France	X	X		X		
Iceland						
Ireland	X	X	X		X	X
Netherlands		X	X		X	
Norway	X					
Poland				X		
Portugal	X		X			X
Russia	X	X	X	X		
Spain	X		X	X		
Sweden	X	X			Lower maximum LTV	
United Kingdom	X	X	X		X	
United States	X	X	X		X	

Source: Lunde, Scanlon, and Whitehead (2009).

did not approach the extent prevalent in the United States. A study by the Australian Treasury Department in 2008 notes, "The lax lending behaviour which gave rise to the sub-prime problem in the United States did not occur in Australia in part because the regulatory environment encourages a more cautious lending culture."[17]

In the current market environment, both lenders and regulators are tightening guidelines, contributing to a fall in new lending of 40–50 percent in many countries.[18] Lunde, Scanlon, and Whitehead conducted a survey in early 2009 to assess the types of mortgage tightening taking place. As shown in table 4-5, underwriting criteria have tightened in thirteen of the fourteen countries surveyed.

In light of falling house prices in most countries, lenders are requiring larger down payments, and 100 percent loan-to-value (LTV) loans, common in various countries before the crisis, have disappeared. Swedish maximum LTVs have declined from 95 percent to 85–90 percent, and the average LTV in the United Kingdom has fallen from 80 to 75 percent. Lender surveys also reveal tightening: the Netherlands reported 80 percent of lenders tightening in early 2009, and the

17. Australian Treasury Department (2008, p. 19).
18. Lunde, Scanlon, and Whitehead (2009).

United States reported 65 percent. Affordability criteria have been tightened, and all loans are now fully documented.

Most of these changes appear to be at the volition of the lenders. According to the European Mortgage Federation, regulators in several countries are mooting restrictions on products and maximum LTVs.[19] However, no new regulations have been promulgated. There is no Europe-wide mortgage regulation. The merits of a mortgage directive that would create minimum standards for all countries have been debated for several years. However, the industry has steadfastly opposed this approach and developed an industry-wide code of conduct to police transactions.[20]

The FSA in the United Kingdom has gone the furthest in Europe in contemplating tighter mortgage regulation. Its *Mortgage Market Review* of October 2009 lays out various proposals under consideration, including higher capital requirements for lenders, new quantitative liquidity standards, increased regulation of nonbank ("high-risk") lenders, and product regulation.[21] The FSA notes, however, that LTV or debt-to-income (DTI) caps are not yet warranted, pointing out that LTV or DTI caps are "a blunt approach to achieving the outcomes we want." The FSA does recommend placing restrictions on risk layering (prohibiting loans that are a mix of high-risk factors, for example, prohibiting high LTV loans to credit-impaired borrowers who have an unstable income or other similar "toxic" mixes) and requiring income verification on all mortgages. It should be noted that mortgage brokers (intermediaries) are subject to FSA regulation.

The FSA has promulgated suitability standards for mortgage lenders. Specifically, a product is considered suitable if there are reasonable grounds to conclude the following:

—The client can afford it over the repayment term.

—It is appropriate to the client's needs and circumstances.

—It is the most suitable of those available within the scope of service provided to the client.

Moreover, the lender cannot recommend the "least worst" product if it does not have access to a product that is appropriate to the client's needs and circumstances.[22] The FSA stresses that it expects a "commonsense" approach. The lender or broker is expected to document thoroughly the research on and advice given to the client.

The FSA is considering changing consumer disclosure requirements as well. Notably its October discussion paper states, "Our policy approach to date has been underpinned by a view that mortgage consumers will act rationally to protect their own interests. We believe that we need to change that approach, recognise

19. Conversation with European Monetary Fund officials earlier this year.
20. See www.hypo.org/Content/default.asp?PageID=449.
21. Financial Services Authority (2009).
22. See www.fsa.gov.uk.

the behavioural biases of consumers, and be more interventionist to help protect consumers from themselves. . . . Overall, we think that our regulatory strategy needs to change to one that relies less on disclosure as a regulatory tool and looks to influence consumer behaviour in a more sophisticated way." The FSA is signaling that consumer protection can be improved, "for example, through banning products or prohibiting sales to those consumers exhibiting multiple high-risk characteristics or limiting the amount of equity that can be withdrawn."

The FSA is not alone in contemplating fundamental consumer protection reform. Australia is also in the process of strengthening its consumer protections.[23] The Australian Uniform Consumer Credit Code has been in existence since the mid-1990s at the state level. The code empowers the courts to set aside mortgage agreements where the lender could reasonably have known that the borrower would not be able to repay the loan without causing substantial hardship. Numerous cases highlight the circumstances in which the courts have taken action to protect the interests of the borrower.

The National Consumer Protection Bill of 2009 was promulgated to create uniform nationwide legislation to replace existing (but varied) state legislation. The Australian Securities and Investment Commission was tapped to be the sole regulator of the new national credit framework and given enhanced enforcement powers. The code requires all providers of consumer credit and credit-related brokering services and advice to obtain a license from the commission. It extends the scope of credit products covered by the code to regulate the provision of consumer mortgages over residential investment properties. The bill requires licensees to assess each consumer's capacity to repay credit to ensure that the credit contract is not unsuitable for the consumer's objectives, needs, and financial circumstances. A second phase planned for 2010 will reform existing disclosures.

The Financial Consumer Agency of Canada is an independent regulatory body working to protect and inform consumers of financial services.[24] It was established in 2001 by the federal government to strengthen oversight of consumer issues and expand consumer education in the financial sector. As a federal regulatory agency, the Financial Consumer Agency of Canada is responsible for the following:

—Ensuring that federally regulated financial institutions comply with federal consumer protection laws and regulations

—Monitoring financial institutions' compliance with voluntary codes of conduct and their own public commitments

—Informing consumers about their rights and responsibilities when dealing with financial institutions

—Providing timely and objective information and tools to help consumers to understand and shop around for a variety of financial products and services.

23. See www.treasury.gov.au/consumercredit/content/publications.asp.

24. See www.fcac-acfc.gc.ca/eng/about/default.asp.

The recently passed Dodd-Frank financial reform legislation in the United States imposes significant restrictions on mortgage product design that are not present in other countries.[25] The bill bans or restricts the use of prepayment penalties, balloon payments, interest-only payments, and other features commonly offered in other countries. The bill stipulates the characteristics of qualified mortgages, which is likely to result in a greater predominance of long-term fixed-rate mortgages.

What Can the United States Learn from Other Countries?

This brief survey has shown that mortgage finance systems differ significantly across countries in structure, funding, role of government, and performance. The United States is unique, however, in several respects. It has the highest level of government involvement, the greatest use of securitization, and a product mix dominated by the long-term fixed-rate mortgage. These attributes are related. The long-term fixed-rate mortgage has been the dominant instrument in the United States since the Great Depression. Its dominance reflects consumer preferences, the ease of prepayment, past restrictions on ARMs, and emergence of the secondary mortgage market. However, it results in the federal government absorbing most or all of the mortgage credit risk, allowing investors to focus on managing and pricing the prepayment risk.

Despite the high level of government support, the mortgage finance system in the United States has performed much worse than those in other countries during the crisis. Furthermore, it does not produce higher rates of homeownership or levels of mortgage indebtedness than many other countries. It is fair to ask whether this unique system is sustainable and whether the U.S. market would be more stable and effective in meeting the needs of borrowers and lenders with a different configuration.

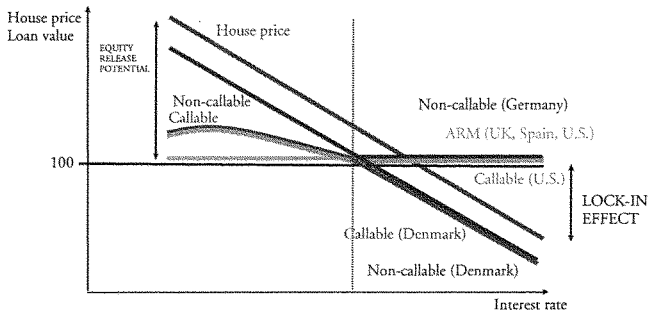
Four interrelated factors should be considered in evaluating a housing finance system: the product, the underwriting, the funding, and the role of government. These characteristics are so intertwined that it is difficult to evaluate them in isolation. Thus we assess the merits of four different systems: the Danish principle of balance model, the European covered bond model, the Canadian and Japanese guarantee model, and the Australian and U.K. depository model. Each of these systems has strengths and weaknesses and relevance for the United States.

The Danish Model

Denmark is the only country in the world other than the United States in which the dominant product is the long-term fixed-rate mortgage that can be prepaid without penalty. Like the United States, most of Denmark's mortgage market is funded through the capital markets. The Danish system adds several important attributes that are relevant for the United States.

25. Lea (2010).

Figure 4-10. *Ratio of Price to Yield for Various Structures of Mortgage Risk Transfer*



Source: Dübel (2005) as presented in Boyce (2010).

The Danish system is based on the principle of balance. When the borrower obtains a mortgage loan, the mortgage credit institution issues a bond into an existing bond series. Thus there is a one-to-one equivalence between the loan and the bond. The Danish mortgage can be canceled at the lower of the market price or par. Like borrowers in the United States, the borrower can refinance the loan at par if rates fall. But in the Danish system if rates rise, the borrower can buy the mortgage bond funding her loan at a discount and present it to the mortgage credit institution to repay the mortgage. This feature has several important benefits. It allows automatic deleveraging as rates rise and reduces the probability of negative equity. Figure 4-10 demonstrates the difference between different mortgages as rates change.

In the United States, most mortgage loans can be called at par. However, loans may not be redeemed at the market price when trading at a discount. This allows for equity release in the event of lower rates but subjects the borrower to a lock-in effect when rates rise. The Danish mortgage loan can be prepaid at par or redeemed by purchasing the bond at the market price, thus eliminating the lock-in effect. For example, if the borrower has an outstanding balance of $200,000 and rates rise, the value of the bond may fall to $180,000.[26] The borrower can go to the bond market (through the mortgage credit institution) and buy back the bond and cancel the loan. Thus the borrower saves $20,000 relative to the U.S. case.[27] Danish borrowers exercised this option in significant numbers in 2006 and

26. Svenstrup and Willeman (2006).

27. In most cases the borrower will finance the purchase with a new loan at a higher rate. If rates fall, the borrower can refinance at a lower rate, as in the United States.

2007 when interest rates were rising, which may have reduced the likelihood of negative equity when house prices fell in 2008 and 2009.

The underwriting of mortgages is more strict in Denmark than in the United States. The maximum ratio of loan to value is 80 percent, and the borrower's income is fully documented. Danish loans are recourse: in the event of a deficiency, the lender has recourse to the borrower's income and other assets. Danish borrowers have in the past been able to obtain loans over 80 percent LTV through a top-up loan system, whereby commercial banks provide unsecured loans for the amount over the mortgage.

Mortgage credit institutions in Denmark specialize in residential, commercial, and agricultural mortgage lending. The market is highly concentrated, with four institutions providing more than 80 percent of the market. There is no explicit government backing of the institutions or the bonds they issue. The mortgage credit institutions bear all of the credit risk of the mortgages they originate. However, they bear no interest rate risk due to their unique funding structure. They are required to maintain a minimum, risk-weighted capital-to-assets ratio of 8 percent. The combination of a low-risk structure and Danish Financial Services Agency and covered bond regulation results in low-risk institutions.[28]

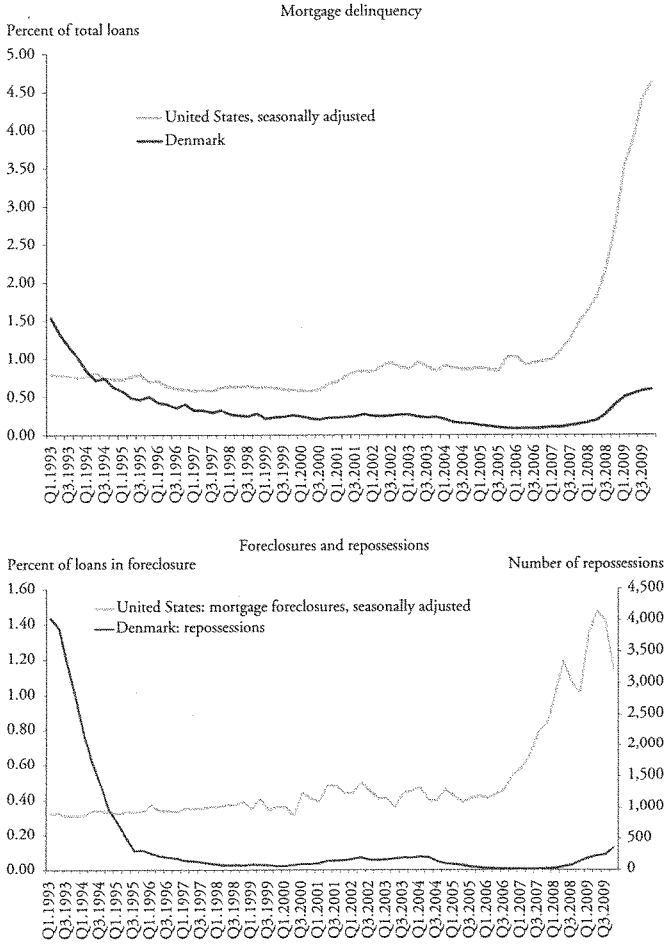
Danish mortgages are funded through the issuance of covered bonds. Individual loans are funded by selling the loan into a larger bond series. The bond market is deep, liquid, and very efficient. The direct link established between the borrower and the bond market facilitates redemption of the bond in the future. The mortgage credit institution acts as a liability adviser, helping the borrower to obtain the lowest-cost financing. Incentives are aligned in this system in that the borrower and lender have "skin in the game" and the lender serves the needs of the borrower. Prepayments are less cyclical, as borrowers can exercise the option when rates rise or fall.

The Danish system has performed well throughout the crisis. Despite having a larger house price bubble (table 4-1), the Danish system has had far fewer defaults and foreclosures (see figure 4-11). This can be attributed to less negative equity, absence of subprime lending, borrower recourse, and strong regulation. The International Monetary Fund notes that the Danish banking system, including the mortgage credit institutions, has fared well despite a housing boom. They attribute this to conservative investments and sound regulation—in particular, tight standards of credit risk management and limited market risk.[29]

The Danish mortgage bond market has performed well. There has never been a mortgage bond default in its more than 200-year history, and the market remained open without government assistance during the liquidity crisis of October 2008. The strengths of the Danish system are incentive compatibility, efficient

28. Realkreditradet (2009).
29. IMF (2008b).

Figure 4-11. *Mortgage Delinquency and Foreclosures in Denmark and the United States, 1993–2009*



Sources: Danish Association of Mortgage Bankers; U.S. Mortgage Bankers Association.

risk allocation without government guarantees, and the potential for automatic deleveraging. The weaknesses are the need for scale to ensure efficient execution: multiple-lender issuers can create scale for smaller lenders.[30]

The European Covered Bond Model

Covered bonds in other European countries differ from those in the traditional Danish model. Mortgage covered bonds are full-recourse debt obligations of the issuing financial institution, secured by a pool of performing eligible mortgage assets (the cover pool) that remain on the balance sheet of the issuer.[31] Covered bonds are dual-recourse instruments. Investors have a priority claim on the cover pool assets in the event of an issuer default as well as a general claim on the assets of the institution. Thus the lender bears the credit risk of the mortgage. The main difference is the collateral. In the Danish model there is a one-to-one correspondence between the loan and the bond, whereas in the European model a dynamic portfolio of mortgage loans backs the bonds.

Underwriting requirements are strict in the covered bond model. The maximum LTV varies by country but does not exceed 80 percent. There are no legislative documentation requirements or debt service restrictions. As noted earlier, in most covered bond issuance countries, default rates have been low and mortgage loans are recourse obligations.

In the European covered bond model, borrowers bear potentially significant interest rate risk. Covered bonds can be backed by variable-rate mortgages (Spain, the United Kingdom) or rollover mortgages (Germany, the Netherlands, Sweden). European rollover mortgages have prepayment penalties during the fixed-rate period. For example, a common form of rollover mortgage has a twenty-five- to thirty-year amortization with a five-year fixed-rate period. During the fixed-rate period, there is a hefty penalty (typically yield maintenance) for substantial or total prepayment. Thus the borrower cannot release equity if rates fall and is locked in if rates rise (the German example in figure 4-10).

Most countries allow a partial prepayment (for example, 20 percent) without penalty. At the end of the fixed-rate period, the loan rate adjusts to the current market rate (negotiated with the lender). The borrower can manage the interest rate risk to a degree by adjusting the term of the new fixed-rate period (for example, switching from a five-year to a one-year period if rates are expected to fall).

Lenders are also exposed to portfolio interest rate risk in the European model, as outside Denmark there is not a one-to-one match. Covered bond legislation stipulates asset-liability matching requirements such as nominal balance, yield, or net present value matching. Most European covered bonds also require some over-

30. A weakness in non-U.S. models is the absence of forward-rate locks and a market for to-be-announced trades that allows efficient management of pipeline risk.

31. See European Covered Bond Council (2009) for a detailed explanation of general and country-specific frameworks.

collateralization. However, these requirements have not stopped lender failure due to asset-liability mismatch. Realkreditradet notes that the Irish, German, and Belgian governments had to step in and rescue covered bond issuers that suffered losses due to an interest rate mismatch between their mortgage loans and bonds.

By legislation, covered bond issuers must be regulated banks—commercial, savings, cooperative, or mortgage. There has been a decline in specialist mortgage banks, and in most countries covered bond issuers are lenders with a diversified mix of funding.

The European covered bond markets were stressed during the crisis. Issuance of jumbo covered bonds (minimum €1 billion) dropped to near zero in the aftermath of the Lehman bankruptcy. It was only restarted in the first quarter of 2009, after the European Central Bank announced a purchase program of up to €65 billion. One reason for the decline in issuance has been the widespread government guarantees of bank debt that have crowded out covered bonds in most countries during the crisis.[32] Unlike the U.S. Federal Reserve purchase program, which purchased more than the net new supply of agency mortgage-backed securities (MBSs) in 2009, the European Central Bank program has been limited, and private investors have returned to the market.

Secondary spreads widened dramatically during the crisis and are still well above recent historical averages (see figure 4-12). Investors differentiate among covered bond countries. Spreads are much wider in countries with weaker legislation and greater housing market turmoil (Ireland, Spain, the United Kingdom).

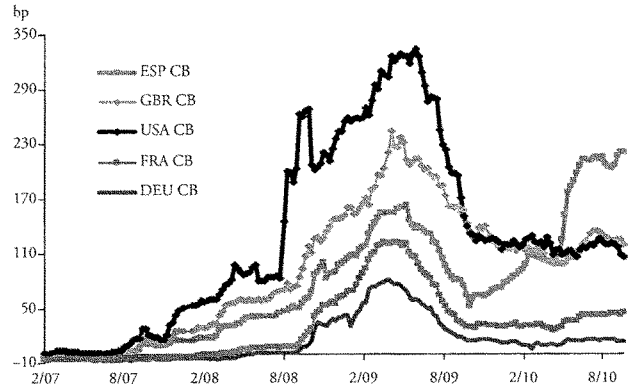
The strengths of the covered bond model are incentive alignment (for borrowers and lenders) and achievement of capital market access without government guarantees. The weakness is in the allocation of interest rate risk. Borrowers have substantial interest rate risk as they face unlimited interest rate change at rollover and are locked in during the fixed-rate term. The longest term is typically ten years, although there are fifteen-year fixed-rate periods in France and Germany. Lenders have suffered losses from interest rate risk, and legislative and regulatory asset-liability matching requirements have been tightened.

The Australian and U.K. Depository Model

The dominant Australian and U.K. mortgage lenders are large diversified banks that fund with deposits and MBS issuance. In recent years U.K. lenders have also used covered bonds. The dominant mortgage products in these countries are discretionary ARMs, typically with a one- to two-year initial discounted fixed-rate period. This product is ideal for depository lenders, allowing them to match assets and liabilities effectively. In the past discretionary ARMs performed in a manner

32. The RMBS market has been closed to new issuance, with new issues retained by lenders and repo'd with central banks. Secondary spreads have declined but remain historically high—much higher than on covered bonds.

Figure 4-12. *Covered Bond Spreads in Select Countries, 2008–10*



Source: BofA Merrill Lynch Global Research; our spread calculations are based on Reuters' prices. The spreads are generic spreads of 5-year Jumbos from the respective jurisdictions. Our calculation for Germany takes into account mortgage and public covered bonds.

similar to U.S. cost-of-funds–indexed loans, as lenders price mortgages at a margin over their average cost of funds. Basing interest rate changes on lenders' costs of funds does shield the borrower from some interest rate risk (relative to ARMs indexed to short-term government or money market rates), as the cost of funds is not as volatile as these rates. In recent years rate changes have followed central bank policy rate changes. Lenders in the United Kingdom have been moving to indexed or tracker ARMs, in part due to consumer complaints about the differential treatment of new versus existing borrowers. Both countries are notable in the absence of medium- to long-term fixed-rate mortgages.[33]

Although borrowers bear interest risk in this model, the use of ARMs has cushioned the downturn. Both the British Building Society Association and the Council of Mortgage Lenders attribute low rates of mortgage default to the exceptionally low mortgage interest rates. The question is how borrowers will respond to the inevitable tightening of credit and rise in interest rates. Australia has some experience, as it was the first major country to begin raising rates coming out of the crisis. House prices have been rising in Australia, and default rates remain low.

Mortgage loans predominately remain on the balance sheet of lenders in this model. Although there is no government guarantee or insurance in this model,

33. See Miles (2004).

pre-crisis securitization accounted for as much as 25 percent of mortgage debt outstanding. In Australia about one-third of mortgages have 100 percent default insurance from private mortgage insurers. Almost all Australian securitization transactions have credit enhancement (loan or pool) from a mortgage insurer. Private mortgage insurance is available, but not widely used in the United Kingdom, and credit enhancement comes primarily from structuring.

Underwriting of mortgages was more liberal in Australia and the United Kingdom than in continental Europe, but more strict than in the United States. Nonconforming loans in Australia were low-documentation or high LTV loans—very few true subprime loans were granted. The U.K. lenders provided loans to borrowers with adverse credit as well as low documentation and high ratios of loan to value. As noted earlier, default rates on nonconforming products were much higher than on bank-originated conforming loans.

The regulatory performance in these two countries has been mixed. The Australia Prudential Regulatory Authority and the Reserve Bank of Australia have been credited with cooling a house price boom in the mid-2000s. The U.K. FSA has been criticized for its oversight and resolution of mortgage lenders such as Northern Rock and Halifax Bank of Scotland.[34]

Both governments supported the market during the crisis with mortgage security purchase programs. In September 2008 the Australian government announced that it would invest A$4 billion, which was then increased to A$8 billion in October via its asset management arm—the Australian Office of Financial Management—to purchase AAA-rated RMBSs to shore up investor confidence in the sector and revive competition in the mortgage market.[35] The securitization market reopened in September 2009, and more than A$6 billion in securities have been purchased by private investors since that time. The U.K. government has broadened the eligibility guidelines for central bank repurchases to include most AAA mortgage securities. Four RMBSs were issued in late 2009 and early 2010 with wider margins, significantly greater credit enhancement, and puts to the issuer.[36]

Although mortgage markets have performed better in Australia and the United Kingdom than in the United States during the crisis, it is unlikely that U.S. mortgage borrowers are going to accept adjustable-rate mortgages in high proportions. But the U.S. market may move in this direction as large banks have increasing market share. A strength of this model during the crisis was the reduction in borrower repayment burdens as interest rates fell, but a weakness is the risk of higher defaults when and if interest rates rise.

34. House of Commons (2008).
35. Bank of America Merrill Lynch (2009b).
36. Bank of America Merrill Lynch (2010).

The Canadian and Japanese Guarantee Model

The Canadian and Japanese mortgage markets have had less dislocation than the markets in most other developed countries. They have avoided the high rates of default, lender failures, and large house price declines evident in other countries. Commentators attribute this performance to more conservative lending practices, tighter regulation, and government guarantees.[37] Of course, Japan has never truly recovered from the property boom and bust of the late 1980s and has had anemic economic performance since.

The Canadian model mixes attributes of the European and U.S. models. The dominant instrument is the rollover mortgage, similar to that found in continental Europe. The maximum interest rate fixed period is five years, although a few ten-year fixed terms were offered prior to the crisis. As in Europe there are significant penalties for early repayment. Thus most interest rate risk is borne by borrowers. Japanese borrowers have somewhat greater ability to manage interest rate risk through the use of convertible and flexible-term mortgages.

Canadian borrowers have responded to falling and low short-term interest rates by switching to variable-rate mortgages. More than 45 percent of new mortgages taken out in the first three quarters of 2008 were variable rate, increasing the stock of such loans to 25 percent of the total.[38] The ability to switch between variable-rate and medium-term fixed-rate loans affords Canadian borrowers some ability to manage interest rate risk. The Canadian government did offer interest rate insurance from 1984 to 1997, but it had a very low take-up.

Lenders and the government hold credit risk in Canada. The government supports mortgage lending and funding through mortgage insurance and security guarantees, similar to the Federal Housing Authority and Ginnie Mae in the United States. Canada is unique in requiring mortgage insurance on all bank-originated mortgages with LTV greater than 80 percent. Approximately 50 percent of all bank-owned mortgages are insured, and almost all securitized loans are insured.[39] Requiring mortgage insurance has two benefits: it provides an outside review of lender practices and ensures risk capital in the origination process. CMHC guarantees have kept the MBS market functioning during the crisis. The CMHC has no quantitative affordable housing goals comparable to those of the government-sponsored entities (GSEs) in the United States. The Japan Housing Finance Agency retains credit risk on loans it purchases and securitizes (approximately 25 percent of the market).

Canadian lenders and insurers are relatively conservative in underwriting. Payment affordability criteria are similar to those in the U.S. prime market. A small

37. See Kiff (2009) for a Canadian discussion.

38. CMHC (2009).

39. There are private mortgage insurers in Canada. The government provides a 90 percent backstop on their liabilities.

Alt-A market is aimed at self-employed borrowers with difficulty documenting income. The maximum LTV is 95 percent, and all bank-owned loans with LTV greater than 80 percent are required to have mortgage insurance. Mortgages are recourse obligations. Kiff notes the differences in the relative treatment of prepayment in Canada and the United States.[40] Although Canadian lenders impose prepayment penalties, the origination (transaction) cost to the borrower is lower. His calculations suggest that the cost to refinance (penalty plus transaction cost) is comparable between the two countries. Prepayment penalties are not common in Japan, and borrowers frequently make partial prepayments.

The Canadian financial regulatory structure is widely credited with enhancing the stability of the system. The International Monetary Fund has commended the Canadians for their highly effective and nearly unified regulatory and supervisory framework.[41] Freeland notes that conservative mortgage market regulation, including the requirement that all loans over 80 percent LTV have mortgage insurance, has contributed to Canada's stable mortgage market.[42]

The government acted to support the MBS market during the crisis by committing to purchase C$125 billion of CMHC-guaranteed securities in October 2008. Issuance of CMHC-guaranteed MBSs and Canada bonds rose sharply in 2008 and 2009, reflecting the value of the guarantee and the Bank of Canada purchase program.

Conclusion

There is no ideal housing finance system. Arrangements in an individual country reflect the country's history, market structure, and government policy. However, the housing finance systems in almost all countries performed better during the crisis than the system in the United States. In examining the different systems, we can make several observations about what worked and whether it is applicable to the United States.

The Danish system offers the prospect of real improvement for the U.S. system. It retains the core long-term fixed-rate mortgage product but makes it more consumer and investor friendly by adding the option to repay the loan through the bond market if rates rise. This feature would have reduced some of the negative equity built up in the U.S. system during the crisis and the significant extension risk faced by mortgage security investors today. As discussed by Boyce, the Danish system could be implemented in the United States through the GSE cash purchase programs, which were significant during the 1980s before being largely phased out in favor of swaps and bulk purchases from individual lenders.

40. Kiff (2009).
41. IMF (2008a).
42. Freeland (2010).

The Danish model is also better at aligning incentives, as the credit risk remains on the balance sheet of the lender, with substantial capital requirements. In theory a Danish-style covered bond model could replace the GSE funding model. Although dropping government guarantees at the current time would be unwise and infeasible, as the crisis dissipates, the United States could move to a hybrid model in which Danish-style mortgage bonds have a backup government guarantee (for example, a Ginnie Mae wrap).[43] A model in which a private guarantor or issuer holds significant capital, combined with private mortgage insurance, would come close to achieving a similar allocation of credit risk as in the Danish system. Restricting the government role to guarantees without portfolio accumulation of mortgages would reduce the systemic risk of the U.S. housing finance system in line with the more targeted and stable Canadian system.

If the United States wants to reduce the role of government in the funding of mortgages, it could move toward a European-style covered bond model. Although less desirable than the Danish model from the perspective of interest rate risk allocation, it does align incentives and creates a liquid, simple, and low-risk security with which to fund housing. As noted, there is some flexibility for borrowers to manage interest rate risk, and insurance products could be offered to reduce the exposure of borrowers to interest rate risk even further. The rollover mortgage is a much simpler instrument than the U.S. ARM with the prospect for improved consumer disclosure and less short-term interest rate and payment volatility than a traditional U.S. ARM.

Recourse is an important feature of most developed-country housing finance systems that would reduce credit risk for lenders, investors, and the government. Research in Europe has found that the propensity to default in the face of an adverse income shock is closely related to the punishment incurred by doing so, which depends on the legal framework.[44] Recent U.S. research suggests that recourse decreases the probability of default when a borrower has negative home equity.[45]

Government policy supporting homeownership could be adjusted to focus less on mortgage debt and leverage. Many developed countries achieve similar or higher rates of homeownership than the United States without a mortgage interest deduction or government subsidies for mortgage debt (GSE support). The U.S. tax system has contributed to excessive borrower leverage and a high degree of negative equity. The First Time Homeownership Tax Credit Program of 2009 could be expanded to replace the mortgage interest deduction (which could be phased out over time through lowered maximum tax rates or deduction amounts, as was the case in the United Kingdom during the 1990s).

43. Jaffee (2010).
44. Duygan and Grant (2008).
45. Ghent and Kudlyak (2009).

The decline in underwriting standards inherent in subprime lending clearly was responsible for extending and accentuating the housing boom in the United States, worsening the housing bust, and creating the spark that triggered the financial crisis. No other country experienced a similar decline in standards. Several countries started down this road, but none created a market with as poor-quality loans as the United States. Several factors appear to be responsible. First no other country had a shadow banking system as significant as that of the United States. In all other countries there was greater regulatory oversight of mortgage lending, which may have slowed the move to lower standards. Having one financial regulator with responsibility for nonbank as well as bank lenders is an important attribute of regulation. Second, mortgage lending in most markets is dominated by large commercial banks. There is some evidence (for example, in Australia) that large lenders avoided the excesses of nonconforming lending due to concerns about reputation risk. Third, governments in other countries placed less policy emphasis on homeownership, an emphasis that many commentators suggested was responsible for part of the subprime problem in the United States. Finally, requiring lenders explicitly to consider borrower affordability, as is the case in many other countries, would have reduced the prevalence of stated-income loans and teaser ARMs.

Unlike most developed countries, the United States is still mired in a housing and mortgage crisis. Continued and expanded government support of the mortgage market is essential to its current survival. But when the recovery begins, U.S. policymakers should ask themselves whether it is desirable that most, if not all, of the U.S. mortgage market is guaranteed by the taxpayer, whether it is necessary that a majority of U.S. mortgages are securitized, and whether homeownership should receive as much emphasis and policy support as it did before the crisis. Examination of the finance of housing from other developed countries suggests that alternative arrangements with far less support from the government can achieve outcomes that are more robust than the arrangements in the United States.

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Government Policy and the Fixed Rate Mortgage

Michael Lea[1] and Anthony B. Sanders[2]

[1]The Corky McMillin Center for Real Estate, San Diego State University, San Diego, California 92123; email: mlea@mail.sdsu.edu

[2]Mercatus Center, George Mason University, Fairfax, Virginia 22030; email: asander7@gmu.edu

Annu. Rev. Financ. Econ. 2011. 3:13.1–13.12

The *Annual Review of Financial Economics* is online at financial.annualreviews.org

This article's doi: 10.1146/annurev-financial-102710-144920

JEL: G2

1941-1367/11/1205-0001$20.00

Keywords

Fannie Mae, prepayment, negative equity, mortgage rates

Abstract

A central argument in the ongoing discussion about the fates of Fannie Mae and Freddie Mac is the importance of the 30-year, fixed-rate, prepayable mortgage (FRM). The FRM has been held up as the gold standard in mortgage instrument design and as an essential element of the U.S. housing-finance system. Supporters of Fannie Mae and Freddie Mac argue that a government guarantee eliminating credit risk is essential to ensuring the FRM remains the main instrument for housing finance. The FRM has benefits for the consumer through payment stability and the right to prepay the mortgage without penalty. But these benefits come at significant cost. The interest rate and prepayment risk in the FRM are costly and difficult for investors to manage. There is a premium for both the long-term and the prepayment options that are paid by all users of the mortgage. The FRM causes instability in the mortgage market through periodic refinancing waves. The FRM can create negative equity in an environment of falling house prices. And the taxpayers are on the hook for hundreds of billions of dollars in losses backing the credit risk guarantees provided by Fannie Mae and Freddie Mac to support securities backed by the FRM. International experience suggests that mortgage markets work fine without an FRM (only Denmark has an equivalent instrument). Borrowers rarely stay with the same mortgage for 15–30. Shorter-term fixed-rate mortgages would be less expensive than the FRM in most interest rate environments, particularly if lenders were allowed to charge prepayment penalties. The taxpayer is exposed to too much risk in supporting Fannie Mae and Freddie Mac to justify continued government support for a product for which the costs outweigh the benefits.

INTRODUCTION

A central argument in the ongoing discussion about the fates of Fannie Mae and Freddie Mac is the importance of the 30-year, fixed-rate, prepayable mortgage (hereafter referred to as the FRM). David Min (2010) of the Center for American Progress asserts that the FRM is an essential part of the U.S. housing-finance system. Susan Woodard (2010, p. 6) emphasizes the special role of the FRM, stating, "Americans now seem to regard the availability of long-term fixed-rate mortgages as part of their civil rights." Adam Levitin and Susan Wachter assert that the FRM is critical for sustainable homeownership (Levitin & Wachter 2010). All four analysts advocate continued government support of Fannie Mae and Freddie Mac to preserve the FRM.

The FRM occupies a central role in the U.S. housing-finance system. The dominant instrument since the Great Depression, the FRM currently accounts for more than 90% of mortgage originations. One reason why it enjoys enduring popularity is that the FRM is a consumer-friendly instrument. Not only does the FRM offer payment stability, but also the instrument provides a one-sided bet in the borrower's favor. If rates rise, the borrower benefits from a below-market interest rate. If rates fall, the borrower can benefit from exercising the prepayment option in the FRM to lower their mortgage interest rate.

But these consumer benefits have costs. It is costly to provide a fixed nominal interest rate for as long as 30 years. And the prepayment option creates significant costs. If rates rise, the lender has a below-market rate asset on its books. If rates fall, the lender again loses as the mortgage is replaced by another with a lower interest rate. To compensate for this risk, lenders incorporate a premium in mortgage rates that all borrowers pay regardless of whether they benefit from refinance. Exercise of the prepayment option in the contract also has significant transactions costs for the borrower and imposes additional operating costs on the mortgage industry.

Another major reason for the FRM's dominance is government support and regulatory favoritism. The FRM is subsidized through the securitization activities of Fannie Mae, Freddie Mac, and Ginnie Mae. Their securities benefit from a government guarantee that lowers the relative cost of the instrument, which is their core product. These guarantees have a significant cost, as the government backing of Fannie Mae and Freddie Mac has exposed taxpayers to large losses.

Are the FRM's benefits worth its costs? Would the FRM disappear if Fannie and Freddie stopped financing it? Are there mortgage alternatives that balance the needs of consumers and investors without exposing the taxpayer to inordinate risk? This review seeks to answer these questions, starting with a brief history of the FRM and emphasizing the government's ongoing role in enhancing its presence. The review then discusses the FRM's benefits and costs to consumers, investors, taxpayers, and the economy and ends with a depiction of a world in which Fannie Mae and Freddie Mac no longer support the FRM.

THE FIXED-RATE, PREPAYABLE MORTGAGE: A BRIEF HISTORY

The FRM has been the dominant instrument throughout the post-Depression period. Prior to the Depression, the standard mortgage instrument was a five- to 10-year, fixed-rate, non-amortizing loan that required borrowers to refinance or repay the loan at the end of its term. Then, in 1934, the Federal Housing Administration (FHA) effectively created the

FRM with the National Housing Act, which authorized the FHA as a mutual insurance company providing mortgage insurance on specific mortgage types.[1] The original FHA mortgage had the following features:

- It was fully amortizing with a fixed, annual-contract interest rate of 5.5%.
- It required a minimum down payment of 20% of the property's appraised value.
- Its maximum term was 20 years.
- Its maximum loan amount was $16,000.
- It was freely assumable.
- It had no prepayment penalty.[2]

Over time the maximum term and loan amounts have increased, and FRMs have become due on sale.

Government policy supported the FRM from its inception. Fannie Mae (initially the Federal National Mortgage Association) was created as a government agency in 1938 to purchase FHA mortgages. FHA- and later Veteran Affairs–insured mortgages were the dominant instruments until the 1960s. The government insurers set rates administratively that made it difficult for noninsured loans to compete with government-insured instruments. (See Bodfish & Theobold 1940 for savings and loan complaints about FHA pricing.) Federally insured savings and loan institutions (S&Ls) were restricted to offering only fixed-rate mortgages until 1981.[3]

Ginnie Mae, also a government agency, was created in 1968 to liquidate the subsidized portfolio held by Fannie Mae, which was privatized in that year. Ginnie Mae developed the mortgage-backed security to facilitate liquidation. Ginnie Mae began guaranteeing securitized pools of FHA- and Veteran Affairs–insured loans in 1970, providing a full faith and credit, timely payment guarantee facilitating their sale.

The government created Freddie Mac in 1970 to assist S&Ls in managing the interest-rate and liquidity risk inherent to the FRM. Accounting and tax policies in the 1980s that made it easier for S&Ls to sell underwater FRMs without immediately recognizing a loss stimulated the development and growth of the secondary mortgage market.[4] Fannie Mae and Freddie Mac introduced the concept of the swap in the 1980s that allowed lenders to exchange their portfolios of FRMs for securities with lower capital requirements reducing the cost of holding the loans. The large-scale sale of FRMs increased liquidity in fixed-rate mortgage securities, leading to improved pricing. The timely payment guarantees on mortgage securities provided by Ginnie Mae, Fannie Mae, and Freddie Mac lowered the relative

[1]Savings and loans offered amortizing mortgages through sinking fund and level payment arrangements. In 1930, such instruments accounted for approximately half of loans outstanding. Their average term was 11 years. See Bodfish & Theobold (1940).

[2]However, a 1935 amendment to the National Housing Act authorized a prepayment penalty equal to the lesser of 1% of the original mortgage amount or the amount of premium payments the borrower would have been required to pay if the FHA-insured mortgage had remained in force through its maturity date (Herzog 2009).

[3]Savings and loans originated nongovernment-insured loans but were subject to regulation that required fixed-rate lending (ostensibly for consumer protection reasons). Their lending was to borrowers who could not qualify for FHA loans (either due to underwriting or loan size restrictions).

[4]The sellers incurred an economic loss as investors purchased the loans at market prices. For regulatory accounting purposes the seller could recognize the loss over the remaining term of the loan. Deferred loss accounting proved to be a poisoned chalice for many savings and loans. Not only did the policies lead them to sell their FRMs at the wrong time—when rates were high but falling—but also, the 1989 Financial Institutions Reform, Recovery, and Enforcement Act legislation eliminated it for regulatory capital purposes, rendering many institutions insolvent.

price of securities backed by conforming fixed-rate loans, increasing the instrument's market share.[5]

The prepayment feature is a key factor in the FRM's dominance. FRMs contain an embedded option for borrowers to prepay their loans without penalty. Government policy promotes this feature: Many states ban prepayment penalties on FRMs, and Fannie Mae and Freddie Mac will not enforce a prepayment penalty on FRMs they purchase.[6]

Adjustable-rate mortgages (ARMs) were introduced by state-chartered S&Ls in the 1960s and allowed by regulation for federally chartered institutions in 1981. Since then, the FRM's market share has fluctuated based on the level and direction of interest rates. ARMs have achieved a market share as high as 35% for some short periods (when the FRM-ARM spread is wide or rising), but for the most part have had a market share of 20% or less (Krainer 2010). Although Fannie Mae, Freddie Mac, and the FHA have introduced ARM products, these agencies have directed most of their efforts toward developing and enhancing their fixed-rate offerings. Today, more than 90% of mortgage originations are FRMs, reflecting Federal Reserve efforts to keep rates low through monetary policy and quantitative easing, and because Fannie Mae, Freddie Mac, and Ginnie Mae are the only funding sources for mortgage loans.

The 2010 Dodd-Frank financial reform bill enshrined the FRM's dominance through the qualified mortgage.[7] Lenders will get safe harbor from risk-retention requirements for qualified residential mortgages (QRMs), as well as other regulatory benefits. Lenders will likely make QRMs their loans of choice, relegating non-QRMs to the nonbanking, non-governments sponsored enterprise (GSE, a limited purpose government chartered corporation) realms of private-market securitizations through private-equity funds, real estate investment trusts, and other vehicles.

Benefits of Fixed-Rate, Prepayable Mortgages

A long history of government support is not the only reason for the FRM's dominance. The instrument offers consumers several advantages. First and foremost, it provides nominal payment stability, which helps consumers budget and reduces the likelihood of default. The monthly payment on an FRM is the same throughout the life of the loan, whereas borrowers with ARMs can experience payment shock in a volatile interest-rate environment, making them more likely to default.[8] The FRM is also a simple instrument for borrowers to understand, which has led to proposals that lenders be required to offer the instrument to consumers applying for a mortgage (Thaler 2009).

[5]James Vickery (2007) analyzes the FRM/ARM market share as a function of the instruments' relative price, controlling for the term structure of interest rates and other time-series factors. He finds that a 20 basis-point increase in the retail FRM interest rate is estimated to cause a 17 percentage point decline in the FRM market share.

[6]Interestingly, many ARMs have prepayment penalties, and Fannie and Freddie will enforce them.

[7]A plain-vanilla mortgage amortizes in 30 years or less, is fully documented, and has reasonable rates and fees. The FRM is a qualified mortgage, as is a vanilla ARM. However, the requirement that borrowers be qualified at the highest possible rate during the first five years of the term suggests that most qualified mortgages will be FRMs. Most ARMs, interest-only mortgages, and high-cost loans will be nonqualified. QRMs will be exempt from the requirement that loan sellers retain at least 5% of the risk. Risk retention will raise the cost of nonqualified mortgages, reducing their market share. See Lea (2010).

[8]ARMs have had a much worse default experience during the recession. In part, this reflects the predominance of ARMs in the subprime market. It also reflects a selection bias whereby riskier and more speculative borrowers went into ARMs. For an analysis of the latter, see Barlevy & Fisher (2010).

The option to prepay an FRM without penalty is another consumer advantage.[9] This feature effectively converts the FRM into a downwardly adjustable instrument. When market interest rates fall, the borrower can refinance into a new loan at a lower rate. When rates rise, the fixed-rate feature protects the borrower against rising mortgage payments. Thus, the FRM (as opposed to a short-term ARM, for example) shields borrowers from most interest-rate risk. But the risk does not disappear—the lower the risk for the borrower, the greater it is for the lender/investor.

Costs of Fixed-Rate, Prepayable Mortgages

The instrument's supporters point out that it is easier for investors than consumers to manage interest-rate risk. It is true that lenders and investors have more tools at their disposal to manage interest-rate risk. But managing prepayment risk is costly and difficult and many institutions have suffered significant losses as a result (e.g., savings and loans in the 1980s; hedge funds and mortgage companies in the 1990s and 2000s).[10] Furthermore, borrowers rarely stay in the same home or keep the same mortgage for 15 to 30 years,[11] so one can reasonably ask why rates should be fixed for such long periods (increasing the loan's cost and risk). Also, the taxpayer ultimately bears a significant portion of the risk through support of Fannie Mae and Freddie Mac.

Min (2010) argues that the FRM promotes financial- and housing-market stability. A system dominated by ARMs or short-term fixed-rate mortgages is more sensitive to interest-rate fluctuations than one dominated by the FRM and can contribute to boom-bust cycles in housing. Housing demand is more rapidly influenced by monetary policy with ARMs relative to FRMs. But FRMs hardly eliminate housing cycles. The United States has experienced pronounced housing cycles in most decades since World War II, including a massive housing boom and bust in the last decade. Min attributes the most recent cycle to the rapid growth in short-duration mortgages. In large part, the shortening average life of mortgages reflects the widespread exercise of the FRM prepayment option.

The FRM has a uniquely one-sided design that protects the borrower at the expense of the lender/investor. But such protection comes at a cost. Longer-term fixed-rate loans have higher rates than shorter-term fixed-rate loans in most interest-rate environments (**Table 1**). Having a range of fixed-rate terms allows the borrower to trade off monthly payment stability with overall mortgage affordability. For example, a mortgage whose interest rate is fixed for 30 years will usually have the highest interest rate, whereas a 3:1 ARM, whose interest rate is only fixed for the first three years, will usually have the lowest interest rate.

Also, prepayable mortgages have higher rates than non-prepayable mortgages. In effect, all U.S. mortgage borrowers pay for the option to refinance, regardless of whether they

[9]Prepayment is not costless, however. There are significant transaction costs associated with refinancing. John Kiff (2009) compares Canadian and U.S. mortgage origination costs and finds that the U.S. costs are three to five times higher for purchase loans and comparable for refinance loans (Canadian prepayment penalties are similar to the transactions costs of a U.S. transaction). Also, frequent refinancing often results in equity stripping, increasing the probability of future default.

[10]The uncertainty about prepayment leads to considerable speculation on the future direction of mortgage rates that has little social benefit. Hedging also increases systemic risk through counterparty exposure. The huge hedge positions of Fannie and Freddie were one reason why the government placed them in conservatorship in 2008.

[11]Over the past 50 years the average life of a 30-year mortgage has never been higher than 12 years (during periods of high interest rates) and often no more than five years (during periods of lower interest rates) (Dennis & Pinkowish 2004).

Table 1 Mortgage pricing[a,b]

Instrument	Pricing on 5/20/2011	
	Rate	Points
30-year FRM	4.5%	−0.5
10-year FRM	3.75%	−0.5
3:1 ARM	2.75%	−0.625
5:1 ARM	2.875%	−0.5
10:1 ARM	3.875%	−0.25

[a]Source: MetLife Home Loans—negative points used to pay closing costs.
[b]Abbreviations: ARM, adjustable-rate mortgage; FRM, fixed-rate prepayable mortgage.

exercise it. This system differs from the Canadian and European systems. In those systems, the borrower receives a short- to medium-term fixed-rate loan without a free prepayment option. If the borrower wants to prepay for financial reasons (as opposed to moving), they must pay a penalty equivalent to the investor's or lender's cost to reinvest the proceeds at the new, lower market rate. The option's cost is thus individualized—borne by the individual exercising the option. In the United States, the option's cost is socialized, with all borrowers paying a premium in their mortgage rates (on average, approximately 50 basis points, or 0.5%) (Lea 2010, Supra note 12). In effect, the prepayment option is a tax on all borrowers.

Because all borrowers pay for the prepayment option, borrowers who do not exercise the option effectively subsidize those who do. Most often, unsophisticated borrowers who are intimidated by the refinance process or who are credit impaired pay the subsidy. The latter group is most likely to benefit at the margin (i.e., by lowering the risk of default) but least able to refinance.

Alex Pollock (2011) points out another significant problem with the FRM. When interest rates and house prices are rising, borrowers benefit from constant nominal and falling real mortgage payments and get to keep the inflation premium in the house price. But if interest rates are low and house prices are falling, a dark side emerges. Borrowers often cannot refinance because of the fall in house prices, and they are stuck with high nominal and real mortgage payments and potential negative equity. As a result, they are unable to take advantage of historically low interest rates. Many borrowers find themselves in this situation today.

The potential for negative equity with a slowly amortizing mortgage product is daunting. For example, **Figure 1** shows what would happen with a 30-year, fixed-rate mortgage paydown when house prices are declining by 2.5% per month. In this example, the borrower is in negative-equity territory by month 11, given that house prices are falling faster than the loan is being paid down. The difference between the loan-balance line and the house-price line illustrates how severe the negative-equity problem can get with a 30-year, fixed-rate mortgage and declining house prices.

The FRM can create negative equity for borrowers in a rising interest-rate environment as well (Dübel 2005). When interest rates rise, a house's value may fall. And the economic value of the mortgage falls. However, the borrower is still responsible for repaying the loan at par value (the nominal outstanding balance). The combination of falling house price and

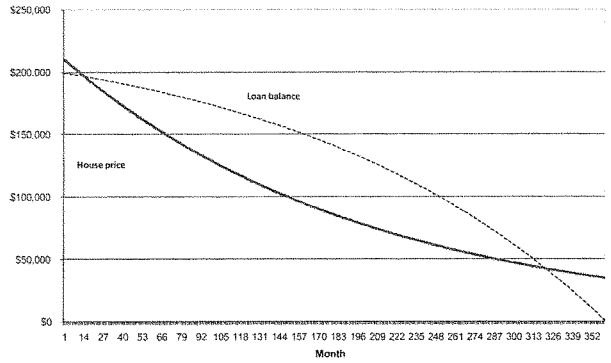

Figure 1

House prices and mortgage loan balance on 30-year fixed-rate, prepayable mortgage (FRM). 5% down payment with −1/2% decline in house prices per month.

constant mortgage value can lead to or exacerbate negative equity. Homeowner negative equity can also produce significant economic costs in that they are less likely to move to change their housing consumption, or to take advantage of job opportunities.

Rising interest rates cause other problems for FRM borrowers and investors. If rates rise because of expected inflation, FRMs create affordability problems for new borrowers. (This scenario occurred during the 1970s in the United States.) Unhedged investors experience an economic loss on their holdings of FRM-backed securities when interest rates rise (they also do not benefit from a rate decline, as noted earlier). Rising interest rates also create an extension risk (the risk that the average life of securities rises) for investors. As rates rise, prepayments slow and the effective maturity of the securities increases beyond that expected by investors.

Volatile interest rates cause problems for both borrowers and lenders. Long-term fixed-rate instruments have greater sensitivity to interest-rate changes than shorter-term instruments do. Volatility in pricing also makes mortgage shopping more difficult for borrowers in that mortgage prices can vary significantly on a daily (or even intraday) basis.[12]

Interest-rate volatility also causes refinancing waves, which increase costs for mortgage originators and borrowers. As interest rates rise and fall, mortgage origination volume is subject to massive swings. Mortgage originators and servicers have significant costs

[12]Mortgage shopping in the United States is also complicated by the use of points to adjust pricing. Borrowers are confronted with an array of rate and point combinations that differ across lenders. Points were introduced in the 1970s when market rates rose above FHA rate ceilings—another effect of government regulation.

associated with managing such volatility. For example, origination volume rose from less than $3 trillion in 2002 to nearly $4 trillion in 2003 and fell to less than $3 trillion in 2004. Thus, the industry had to increase capacity by 33% in one year and reduce it by 25% the following year. FRM refinancing was the main reason for this volatility (see **Figure 2**). For mortgage borrowers, the cost of refinancing lies in the thousands of dollars they must pay in transactions costs simply to lower their mortgage rates.[13]

The FRM has also created significant costs for taxpayers. Until 1981, federally insured depositories were prohibited from offering ARMs. Predictably, when inflation and interest rates rose in the 1970s and early 1980s, reliance on this instrument effectively killed off the S&L industry. In 1982, approximately 80% of the S&L industry was bankrupt and insolvent due to the mismatch between FRM assets and the short-term deposits that funded them. A similar mismatch rendered Fannie Mae insolvent. When numerous thrifts eventually failed, the taxpayer picked up a significant tab to restructure the industry.[14]

Learning from the experience, banks and thrifts continued to originate 30-year FRMs, but only if the loans could be sold to Fannie Mae, Freddie Mac, or guaranteed by Ginnie Mae. In other words, banks and thrifts did not retain the interest-rate risk that they created by originating the FRMs. Instead, investors absorbed the risk. As the ultimate risk bearers, private investors attempted to price and manage the risk (with varying degrees of success). The GSEs hold a significant portion of the FRM inventory,[15] so when interest rates rise, they may suffer large losses that will be borne by taxpayers.

The FRM's popularity and its government backing produce another significant risk for the government. To finance the FRM and allocate the interest-rate risk to investors, the government—through FHA insurance and Fannie/Freddie guarantees—absorbs the mortgages' credit risk. Ironically, it was credit risk that led to the failures of Fannie and Freddie in the financial crisis. Although part of their losses can be attributed to speculative investments in subprime- and Alt A–backed securities (mostly non-fixed-rate mortgages), a significant portion of their losses have come from FRM defaults.[16] The FHFA now projects GSE losses to be $220 to $360 billion. A portion of these losses can be attributed to the policy goal of ensuring the FRM's availability through the government's absorption of the credit risk.

The Myth of the Fixed-Rate, Prepayable Mortgages as a Gold Standard

David Min has written that "the 30-year fixed-rate mortgage remains the gold standard for mortgages throughout the world, offering superior stability for both homeowners and financial systems" (Min 2010, p. 11). If this statement is true, why is the United States one of only two countries with this instrument? And why is the United States the country

[13]Refinancing transactions costs could be eliminated with use of a ratchet mortgage, in which the rate is automatically lowered without transaction costs. See Ely (2010).

[14]Although the popular press tended to focus on excessively risky nonresidential mortgage investments as the cause of the S&Ls' failure, the fact was that they were bankrupted by the asset-liability mismatch and tried to grow out of their earnings and capital problems through investment in high-risk assets.

[15]The GSEs hold whole loans in their portfolios. They also repurchase securities they guarantee—in effect investing in the cash-flow risk associated with funding callable mortgages with a blend of callable and noncallable debts of different maturities.

[16]Federal Housing Finance Agency (FHFA) projections of GSE losses found that most of the losses are due to their purchased loans rather than securities. See FHFA (2010, attachment).

most afflicted by a housing bust? Given the catastrophic conditions of Fannie Mae and Freddie Mac, it is clear that the 30-year, fixed-rate mortgage is outright dangerous—not a gold standard. Perhaps his musing should be rewritten to say, "The 30-year fixed-rate mortgage remains the fool's gold standard for mortgages throughout the United States, offering superior stability for some homeowners and potential catastrophe for U.S. and global financial systems."

The FRM is a unique instrument by international standards. Only one other country, Denmark, has a long-term, fixed-rate, prepayable (without penalty) mortgage.[17] Several other countries have long-term fixed rate products (e.g., France, Japan, and Germany), but the typical terms are shorter and prepayment is subject to penalty. Shorter amortization periods benefit both borrowers and lenders because borrowers accumulate equity faster.

A more common fixed-rate instrument is the rollover mortgage, which is the dominant instrument in Canada and several European countries. Its interest rate is typically fixed for up to five years and rolls into a new fixed rate at the end of the term. The new rate is negotiated with the lender and is based on prevailing market rates. These loans also have prepayment penalties during the fixed-rate term but allow total repayment without penalty at the end of the term.

Adjustable-rate loans are the dominant instrument in several countries, including Australia, Spain, and the United Kingdom. **Table 2** shows the types of mortgages available in different countries and how common each product is.

Many countries have had housing booms and busts during the last decade (e.g., Australia, Denmark, Ireland, Spain). Yet only Ireland has had as severe of a downturn as the United States (**Table 3**). Min (2010) attributes the U.S. housing cycle to a shortening of the duration of mortgages over the past two decades, which caused house prices to become more sensitive to interest rates. Low interest rates and ample credit clearly contributed to the boom—however throughout the boom period a majority of loans were in fact fixed rates. Most of the reduction in average mortgage maturity was due to borrowers exercising the prepayment option in their FRM contracts. And much of the shortening was for cash-out refinances to facilitate consumption at the expense of wealth accumulation. The inability of households to refinance FRMs to reduce negative equity has exacerbated the current crisis as noted above.

Min (2010) assumes the prepayment option to be free, but it is far from free, as discussed earlier. Although only some borrowers will actually utilize the prepayment option, everyone has to pay for it. Fannie Mae and Freddie Mac will only purchase prepayable mortgages, even though non-prepayable mortgages may be in many borrowers' best interests.

CONCLUSION

The fundamental question remains: Are the benefits of the FRM worth the costs? All borrowers pay a substantial tax—50 basis points or more—for this instrument. Furthermore, taxpayers have absorbed substantial losses to support this instrument, first through the S&Ls and now through Fannie Mae and Freddie Mac. Should the government subject

[17]The Danes add a unique twist to the instrument in that the loan is backed by an individual mortgage bond. If rates rise, the borrower can buy the bond at a discount and cancel the loan with the lender. This feature facilitates automatic deleverage and reduces the likelihood of negative equity. See Lea (2010.)

Table 2 International mortgage products (market share of instrument by fixed-rate period)[a,b]

	Adjustable rate	Short-term fixed rate (1–5 yrs.)	Medium-term fixed rate (5–10 yrs.)	Long-term fixed rate (10+ yrs.)
Australia	92%	8%	–	–
Canada	35%	–	55%	10%
Denmark	–	17%	40%	43%
France	33%	–	–	67%
Germany	16%	17%	38%	29%
Ireland	91%	–	9%	–
Japan	38%	20%	20%	22%
Korea	92%	–	6%	2%
Netherlands	–	15%	66%	19%
Spain	91%	8%	–	1%
Switzerland	2%	–	98%	–
UK	47%	53%	–	–
U.S.	5%	–	–	95%

[a]Source: Lea (2010).
[b]No entry means negligible market share.

Table 3 Troubled mortgages: Western Europe and the United States[a,b]

	≥ 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)	9.47%	–	4.58%	2009
U.S. (prime)	6.73%	–	3.31%	2009
U.S. (subprime)	25.26%	–	15.58%	2009

[a]Source: Jaffee (2010).
[b]No entry means negligible rate.

taxpayers to the risk of another catastrophic meltdown to preserve the FRM? Are there alternatives that maintain some of the FRM's benefits while greatly reducing the costs?

If the government abolished Fannie Mae and Freddie Mac, the FRM would not cease to exist. Private-label securitization in the United States and covered bonds in Denmark have funded this instrument in the past and are fully capable of funding it in the future. Investors are sophisticated enough to price both credit risk and interest-rate risk. Conventional wisdom suggests that U.S. investors will not accept both credit risk and interest-rate risk for large volumes of mortgages and the reason is clear: Private investors can get the government to absorb the credit risk at a lower cost than would be charged by the private market. The loss experiences of Fannie and Freddie suggest that they were funding mortgages at below-market (risk-adjusted) rates. Without Fannie and Freddie, the FRM would still be offered by lenders, but not at a subsidized rate. The FRM would have a smaller market share, but it would not disappear, as Min (2010) asserts. Nor would the only alternative be a short-term ARM, as international experience suggests.

What would emerge as the standard U.S. mortgage instrument without government support of the FRM? A rollover mortgage similar to that offered in Canada and several European countries is the likely candidate.[18] This instrument offers borrowers short- to medium-term payment stability, and borrowers can manage interest-rate risk by adjusting the fixed-rate term upon renewal. Modern international experience does not bear out Min's (2010) assertion that borrowers would be unable to refinance. Borrowers could hedge the interest-rate risk by locking in a forward rate in advance of renewal. German lenders offer forward rates up to five years—certainly U.S. lenders could do the same, given the deep derivative market. Alternatively, borrowers can adjust the degree of risk by varying the length of the fixed-rate period.

A complete and robust housing-finance system should offer borrowers a menu of mortgage options, ranging from short-term ARMs for borrowers who can handle payment change to long-term FRMs for borrowers who value payment stability. To assert that the FRM is the preferred alternative for most borrowers is naïve. Many borrowers have shorter-term time horizons and can handle some interest-rate risk. The reason borrowers select a longer-term fixed rate is that government guarantees subsidizes the rate. International experience does not support Min's (2010) assertion that the switch to shorter-duration instruments would lead to massive defaults if and when interest rates increase.

The prohibition of prepayment penalties on fixed-rate mortgages is also misguided. Borrowers should be given a choice—long-term versus short-term fixed rates, with and without prepayment penalties. The market will price the differences, giving price breaks to those borrowers willing and able to handle interest-rate risk. Following Canadian and European tradition, the imposition of a prepayment penalty should be limited. It should not apply to borrowers moving and it should be limited in term. (For example, the maximum term over which the penalty applies is five years in Canada and the Netherlands and 10 years in Germany.)

The most important result of a shift away from the FRM would be a reduction in taxpayer liability for mortgage risk. There is nothing so special about housing finance that

[18]Canada supports its mortgage market through default insurance and cash-flow guarantees comparable to FHA insurance and Ginnie Mae guarantees in the United States. The market share of government-backed mortgages is considerably less, however, with approximately 50% of mortgages backed by government insurance and 25% of mortgages backed by guarantees. European countries (with the exception of the Netherlands) do not support their mortgage markets through insurance or guarantees.

the government should absorb the credit risk of the vast majority of the mortgage market or underwrite the interest-rate risk of that market. Two episodes of massive taxpayer losses should convince us of that fact.

DISCLOSURE STATEMENT

The authors are not aware of any affiliations, memberships, funding, or financial holdings that might be perceived as affecting the objectivity of this review.

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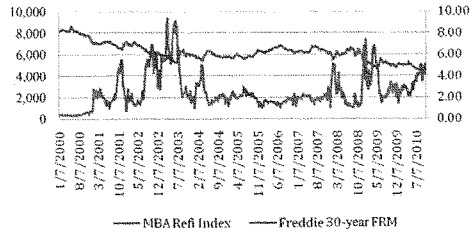


Figure 2

Mortgage refinance index versus Freddie Mac's 30-year, fixed-rate, prepayable mortgage (FRM). Refinance index is nonseasonally adjusted. Base period for index is March 16, 1990 = 100. Source: Mortgage Bankers Association (MBA).

9
Reform of GSE Housing Goals

Jonathan Brown

HUD's proposed rules for housing goals for Fannie Mae and Freddie Mac and the many public announcements of Fannie Mae and Freddie Mac on their housing commitments have fostered the general impression that the goals have been a success, although some adjustments are needed to strengthen the goals. A perspective of local community reinvestment and civil rights, however, reveals major problems in the design and implementation of the GSE housing goals. The problems stem in large part from serious flaws in the structure of the goals. An extensive review of GSE performance in metropolitan statistical areas (MSAs) across the nation indicates that in many MSAs in 1998 the GSE market share of one- to four-family mortgage loans in low- and moderate income and minority neighborhoods was roughly half the GSE market share of such loans in upscale, nonminority neighborhoods.

My analysis measured GSE market share as the ratio between Fannie Mae and Freddie Mac's combined purchases of one- to four-family mortgages and the total number of conventional one- to four-family mortgage loan originations reported under the Home Mortgage Disclosure Act (HMDA) with loan amounts less than $227,000, the 1998 GSE ceiling for mortgages on one-unit homes. GSE purchases are based on the Census Tract File in the GSE Public Use Database. Because the file does not distinguish between home purchase loans and refinancing loans, I consolidated these two types of mortgage loans in computing GSE market shares.

Implicit in the GSE concept of housing goals is the idea that the GSEs should at minimum support the mortgage market in low- and moderate-income and minority neighborhoods to the same extent that they support the mortgage market in affluent, nonminority neighborhoods. Clearly the minimum standard of support is not

being met where the GSE market share of mortgage loans in low- and moderate-income or minority neighborhoods is much less than the GSE market share in affluent or nonminority neighborhoods. Similarly the GSEs fall short of the minimum standard when the GSE market share of mortgage loans to low- or moderate-income or minority borrowers is well below the GSE market share of loans to more affluent or nonminority borrowers.

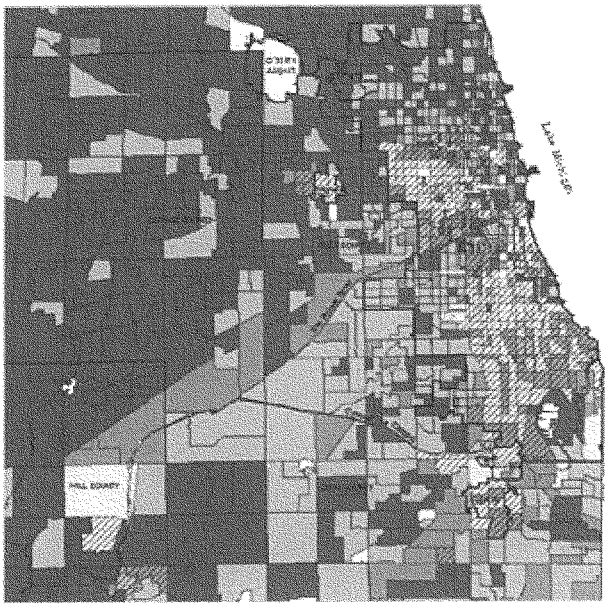
Figures 9–1 through 9–4 provide stark examples of how the GSE market share tends to decline sharply in inner-city neighborhoods. (The 1998 Chicago, Cleveland, and Akron maps were submitted to the Department of Housing and Urban Development according to the pending rulemaking on GSE housing goals by Illinois Association of Community Organizations for Reform Now and the Metropolitan Strategy Group of Ohio. The 1996 Chicago map was presented by Essential Information at a 1998 conference on the role of the GSEs.) The map's diagonal overlay identifies minority census tracts. The Chicago map overlay identifies census tracts in which nonwhite and non-Asian persons are 70 percent or more of the census tract population. The Cleveland and Akron diagonal overlays indicate census tracts in which minority persons are 40 percent or more of the census tract population. The maps strongly correlate the racial composition of census tracts and the GSE market share. Also comparison of the 1996 and 1998 Chicago maps shows that the overall pattern of GSE market share disparity did not change much during this two-year period.

To provide further insight into the nature of GSE housing goal performance in the Chicago MSA, I prepared a set of statistical tables on 1998 GSE market shares by census tract race and census tract income categories and by borrower race and income categories. I based the tables on GSE loan purchase data and HMDA loan origination data for the nine-county Chicago primary metropolitan statistical area (PMSA).

Table 9–1 cites GSE market share data by census tract racial category. The table shows a decline in GSE market share from 75.10 percent in predominantly nonminority census tracts to only 33.28 percent in census tracts in which minorities constitute 75 percent or more of the population. In the Chicago PMSA these two census tract categories account for almost 60 percent of the 1,776 census tracts.

Table 9–2 reports GSE market share data by census tract income category and shows a decline in GSE market share from 77.54 percent in upper-income census tracts to only 39.01 percent in low-income

FIGURE 9–1
FANNIE MAE AND FREDDIE MAC SUPPORT FOR CONVENTIONAL HOME MORTGAGE LOAN MARKET, CHICAGO METROPOLITAN AREA, 1996



Fannie Mae and Freddie Mac market share of conventional loans 1996, by census tract

Municipal boundaries: Chicago, Maywood, Riverdale, Harvey
Minority census tract
No conventional loan originations

0–15%
15–30%
30–45%
45–60%
60% or more

Diagonal overlay for minority neighborhoods

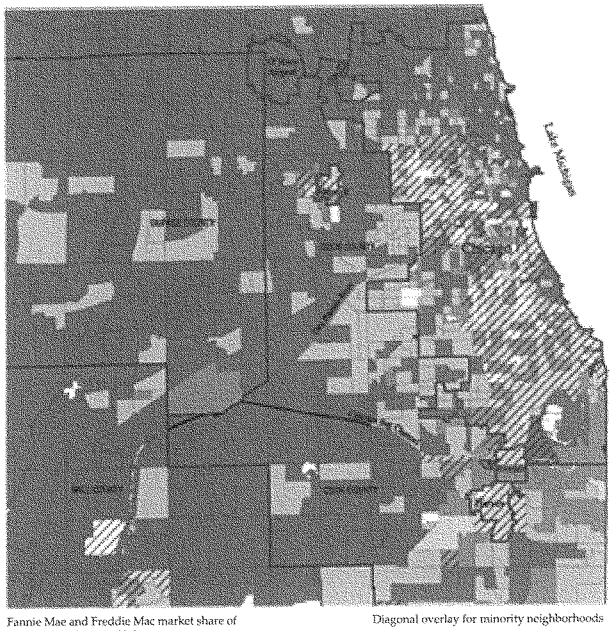
Minority census tract: African-American, Hispanic, Native-American, and Other-Race persons (excluding White and Asian persons) comprise 75% or more of census tract population.

Fannie Mae and Freddie Mac market share: Combined number of home mortgage loans purchased by Fannie Mae and Freddie Mac in 1996 as a percentage of total conventional home mortgage loan originations in 1996.

Home mortgage loan: Home purchase loan or refinancing loan secured by a 1-4 unit dwelling (excluding loans above $227,000—the Fannie Mae and Freddie Mac loan-size ceiling in 1996).

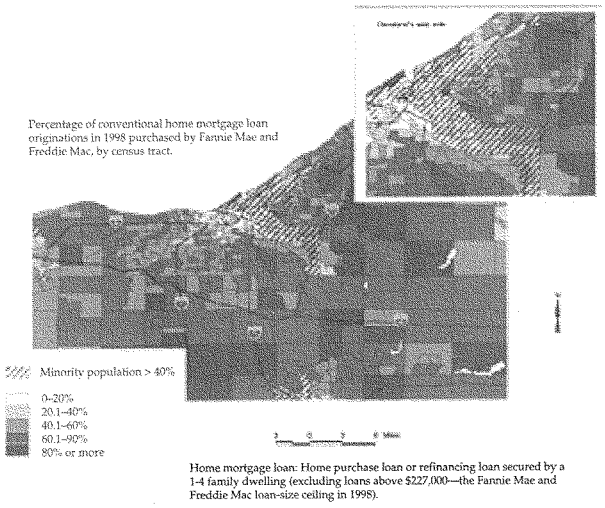
SOURCES: HUD, 1996 GSE Single-Family Public Use Data; FFIEC, 1998 HMDA data; and 1990 U.S. Census data.

FIGURE 9–2
FANNIE MAE AND FREDDIE MAC SUPPORT FOR CONVENTIONAL HOME MORTGAGE LOAN MARKET, CHICAGO METROPOLITAN AREA, 1998



SOURCES: HUD, 1996 GSE Single-Family Public Use Data; FFIEC, 1998 HMDA data; and 1990 U.S. Census data.

FIGURE 9–3
FANNIE MAE AND FREDDIE MAC SUPPORT FOR CONVENTIONAL LOAN MARKET, CLEVELAND METROPOLITAN AREA, 1998

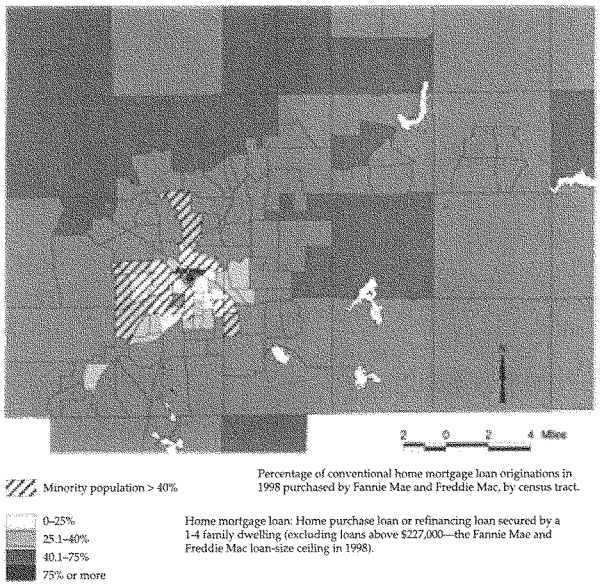


SOURCES: 1998 GSE Single-Family Public Use Data; 1998 HMDA data; and U.S. Census Bureau 1990. Prepared by Metropolitan Strategy Group.

census tracts. The census tract income-related decline in GSE market share in table 9–2 is similar to the census tract race-related decline in table 9–1 except that not as many census tracts have the lowest market share interval in the former. Generally one can obtain a sharper focus on GSE market share disparities by looking at census tract race rather than census tract income.

Table 9–3 compares the GSE market share in minority census tracts and nonminority census tracts for separate census tract income intervals. While the GSE market share in nonminority census tracts ranges from 61.27 percent to 69.62 percent for a census tract within various moderate- and middle-income intervals, it never rises

FIGURE 9–4
FANNIE MAE AND FREDDIE MAC SUPPORT FOR CONVENTIONAL LOAN MARKET, AKRON, OHIO, 1998



SOURCES: 1998 GSE Single-Family Public Use Data; 1998 HMDA data; and U.S. Census Bureau, 1990. Prepared by Metropolitan Strategy Group.

above 42.61 percent for minority census tracts in comparable census tract income intervals. Although such tract-based analysis does not by itself establish disparate treatment or disparate impact in violation of the federal discrimination laws, it does indicate major disparities between neighborhoods along racial lines in accessing the GSE-operated secondary mortgage market. The disparity needs to be addressed directly in implementing the GSE housing goals.

TABLE 9–1
GSE MARKET SHARE, BY CENSUS TRACT RACIAL CATEGORY, CHICAGO PMSA, 1998

Census Tract Minority Population (%)	*Census Tracts*	*Loan Originations*	*GSE Purchases*	*GSE Market Share*
75 or more	472	23,616	7,860	33.28
50–75	141	12,546	6,846	54.57
30–50	182	20,194	12,825	63.51
20–30	146	24,887	16,971	68.19
10–20	267	66,815	47,842	71.60
Less than 10	550	167,043	125,446	75.10
Tracts with no population data	18			
Total tracts	1,776			

Table 9–4 provides GSE market share data by borrower income category. The table indicates that borrower income-related disparities in GSE market shares are not as great as neighborhood-related disparities. Further, the GSE market share disparity is substantial only for low-income borrowers but is not much of a factor for borrowers with incomes exceeding 80 percent of MSA median family income.

Table 9–5 provides GSE market share data by borrower racial category and shows that the GSE market share is dramatically lower for African-American borrowers and moderately lower for Hispanic borrowers.

The failure of the GSE housing goals to provide residents of many minority neighborhoods and low- and moderate-income neighborhoods and, more generally, minority borrowers and low- and moderate-income borrowers with the same access to the secondary mortgage market enjoyed by most Americans is rooted in several major structural flaws in 1992 GSE housing goal legislation. First, the legislation used unduly broad definitions to determine the focus of the GSE housing goals, with the result that they are not properly targeted on underserved sectors of the mortgage market. Much of this inadequate targeting or dilution is associated with misapplication of terms commonly used in the Community Redevelopment Agency (CRA) and community development activities.

TABLE 9–2
GSE MARKET SHARE, BY CENSUS TRACT INCOME CATEGORY, CHICAGO PMSA, 1998

Census Tract MFI as a Percentage of MSA MFI	*Census Tracts*	*Loan Originations*	*GSE Purchases*	*GSE Market Share*
Less than 50	280	8,631	3,367	39.01
50–80	374	29,541	14,717	49.82
80–90	168	22,722	12,919	56.86
90–100	209	36,401	23,260	63.90
100–110	167	39,927	27,440	68.73
110–120	141	43,729	31,931	73.02
More than 120	409	133,944	103,858	77.54
Tracts with no income data	28			
Total tracts	1,776			

For purposes of the low- and moderate-income housing goal, *low- and moderate-income borrowers* are defined to include not only borrowers with incomes less than 80 percent of MSA median family income (as they are for CRA purposes) but also borrowers with incomes between 80 percent and 100 percent of MSA median family income. Yet table 9–4 shows that in the Chicago PMSA borrowers with incomes in the 80–100 percent range of MSA MFI (lower-middle-income borrowers) have a GSE market share (69.03 percent) almost the same as the average GSE market share for the Chicago PMSA as a whole (68.92 percent). Why are GSE housing goals needed to encourage GSE purchases from this middle subsector of the mortgage market? Moreover, if the GSE housing goals are successful in encouraging the GSEs to change underwriting and other policies to stimulate more GSE purchases of loans to low- and moderate-income borrowers, wouldn't borrowers in the 80–100 percent range of MSA MFI also benefit from such changes?

Similarly, for purposes of the special affordable housing goal, the GSE legislation defines *low-income borrowers* to mean borrowers with incomes less than 80 percent of MSA median family income rather than the 50 percent of MSA median family income standard used for CRA purposes. Yet, as table 9–4 shows, borrowers with incomes less than 50 percent of MSA mean family income have the

TABLE 9–3
GSE Market Share, Minority and Nonminority Census Tracts, Chicago PMSA, 1998

	Loan Originations	*GSE Purchases*	*GSE Market Share*
280 tracts with MFI less than 50% of MSA MFI:			
272 minority tracts			
374 tracts with MFI of 50–80% of MSA MFI			
253 minority tracts	18,484	7,845	42.44
121 nonminority tracts	11,057	6,872	62.15
168 tracts with MFI of 80–90% of MSA MFI			
32 minority tracts	3,367	1,061	31.51
136 nonminority tracts	19,355	11,858	61.27
209 tracts with MFI of 90–100% of MSA MFI			
33 minority tracts	3,422	1,458	42.61
176 nonminority tracts	32,979	21,802	66.11
167 tracts with MFI of 100–110% of MSA MFI			
8 minority tracts	1,137	435	38.26
159 nonminority tracts	38,790	27,005	69.62

Note: Minority tract: minority population percentage of 50% or more. Nonminority tract: minority population percentage less than 50%.

most difficulty in accessing the GSE secondary market and clearly the most need for a "special affordable housing goal."

In addition the GSE legislation established a geographic GSE housing goal that included all central cities, rural areas, and other underserved areas as defined by HUD. Clearly this was an excessively broad definition of geographic areas with restricted access to the GSE-operated secondary market, although HUD has to some extent narrowed its scope by means of its regulatory authority to define underserved geographies.

Second, the GSE legislation prohibits HUD from establishing enforceable subgoals for the low- and moderate-income housing goal and the geographic area goal. Subgoals are a logical tool to ensure

TABLE 9–4
GSE MARKET SHARE, BY BORROWER INCOME CATEGORY, CHICAGO PMSA, 1998

Borrower Income Category	*Loan Originations*	*GSE Purchases*	*GSE Market Share*
Low	20,851	10,631	50.99
Moderate	64,537	40,351	62.52
Lower-middle	51,595	35,614	69.03
Upper-middle	46,936	34,438	73.37
Upper	119,538	92,206	77.14
No borrower income	12,568	4,552	36.22
MSA total	316,025	217,792	68.92

NOTE: Low income: borrower income less than 50% of MSA MFI. Moderate income: borrower income greater than 50% but less than 80% of MSA MFI. Lower-middle income: borrower income greater than 80% but less than 100% of MSA MFI. Upper-middle income: borrower income greater than 100% but less than 120% of MSA MFI. Upper income: borrower income greater than 120% of MSA MFI.

that the GSEs adequately consider the most underserved sectors of the mortgage market. For example, census tracts with minority population percentages exceeding 50 percent, or even 75 percent, would be good candidates for an enforceable subgoal.

Third, and perhaps most important of all, the GSE legislation failed to establish separate GSE housing goals (or sets of housing goals) for one- to four-family mortgage loans and multifamily mortgage loans. As a result, in implementing all three statutory housing goals, HUD has devised an accounting system that measures the number of housing units financed by GSE loan purchases and combines one- to four-family units and multifamily units. This consolidation of one- to four-family and multifamily units has significantly diluted the impact of the special affordable housing goal, the one statutory GSE housing goal that made some effort to achieve proper targeting.

Because a high percentage of multifamily housing loans qualify for the special affordable housing goal, the GSEs can significantly reduce their obligation to purchase one- to four-family housing loans under the special affordable housing goal by increasing their pur-

TABLE 9–5
GSE MARKET SHARE, BY BORROWER RACIAL CATEGORY, CHICAGO PMSA, 1998

Borrower Racial Category	*Loan Originations*	*GSE Purchases*	*GSE Market Share*
White	227,212	165,569	72.87
African-American	24,521	8,556	34.89
Hispanic	21,312	13,016	61.07
Asian	12,448	9,562	76.82
Targeted minority	49,809	23,696	47.57
No race	26,556	18,965	71.42
MSA total	316,025	217,792	68.92

NOTE: Targeted minority: excludes white and Asian borrowers.

chases of multifamily mortgage loans. According to HUD roughly 50 percent of the multifamily mortgage loan purchases of the GSEs qualify for the special affordable housing goal. In 1997, multifamily loans accounted for 44 percent of Fannie Mae's special affordable housing goal units and 31 percent of Freddie Mac's. In short the commingling of one- to four-family housing loans and multifamily housing loans within the same special basket enables the GSEs to trade off performance on the one- to four-family side against performance on the multifamily side.

Reinforcing these statutory weaknesses, HUD set the special affordable housing goal too low in the 1995 GSE rulemaking. Although HUD estimated that such units were 20–23 percent of the market, it set the goal for 1997–1998 at only 14 percent of GSE loan purchases measured on a housing unit basis.

Improving the working of the GSE housing goals requires several basic reforms. First, in the one- to four-family side of the mortgage market, GSE market shares should define underserved sectors. Such market share analysis should be efficiently employed to identify underserved census tract categories, borrower income categories, and borrower racial categories. Such GSE market share data were not available to Congress in 1992 when it enacted the GSE housing goal legislation. Now that the data are available, Congress should

examine the information closely and restructure the statutory GSE housing goals to provide for better targeting.

In implementing the GSE housing goal legislation, HUD has generally relied on loan origination and loan denial rates derived from HMDA data to identify underserved segments of the mortgage market. While the approach has some value, GSE market share data provide a much sharper lens for identifying market segments that have restricted access to the GSE-sponsored secondary mortgage market. HUD should use this approach in its current rulemaking to bring as much targeting to the GSE housing goal rules as possible within the statutory framework.

Second, the legislation on GSE housing goals needs to be restructured to provide separate housing goals or sets of housing goals for one- to four-family housing and multifamily housing. The reform is needed to prevent the GSEs from trading off improved housing goal performance on the multifamily side for reduced housing goal obligation on the one- to four-family side. Most of this trade-off takes place within the category of the special affordable housing goal.

Multifamily housing loans and one- to four-family housing loans targeted toward underserved sectors are the most important elements of any strategy to address affordable housing needs. GSE housing goals should be structured to encourage the GSEs to take affirmative measures on both fronts.

Third, better targeted GSE housing goals for one- to four-family housing loans are needed to encourage the GSEs to purchase more CRA-type mortgage loans originated by banks and savings associations. One of the main reasons why the GSE market share is so low in most minority and low- and moderate-income census tracts is that many mortgage loans originated in such tracts are CRA-type loans that are often not sold to the GSEs. In some cases those loans have below–market rate features, and the GSEs will not purchase such loans without discounting them to market rates. Given the large indirect subsidies received by the GSEs and their substantial resources including strong earnings streams, the GSE should share more equally with banks the costs of effective CRA implementation. For example, with CRA-type loans with below-market rates, the GSEs should absorb some cost of marking these loans to market. Such action would make banks more willing to sell CRA-type loans to the GSEs and would in turn significantly expand the capacity of banks to originate CRA-type loans.

Fourth, HUD should establish a process for administrative review of GSE performance at the local level when GSE market share data indicate that the GSEs have significantly underserved minority census tracts or low- and moderate-income census tracts within a particular MSA or rural area. Local government officials, community groups, and lenders should be encouraged to participate in this administrative review. The administrative process should encourage the GSEs to make commitments to improve their housing goal performance in the local community.

Review of GSE performance within individual MSAs or rural areas is important because the GSEs can substantially underserve individual MSAs and still meet national targets if they are evaluated only in terms of national targets. Setting uniform targeting standards appropriate for all MSAs or rural areas in the nation is difficult. In particular the relationship between the minority percentage of census tract population and the GSE market share varies dramatically in different parts of the nation. In Brooklyn, New York, neighborhood access to the GSE-operated secondary market may not be greatly restricted until the minority percentage rises well above 50 percent. By contrast in Iowa such restricted access may be seen in census tracts with a minority percentage of only 15 percent.

Fifth, separate and enforceable subgoals for one- to four-family mortgage loans should be established for home purchase loans and refinancing loans. The GSE housing goals could be implemented much more effectively if the home purchase loan market were separated from the volatile and increasingly controversial refinancing loan market for evaluation purposes.

Finally, should the GSEs be given housing goal credit for the purchase of subprime loans? In many minority neighborhoods of the nation's larger cities, mortgage lenders classified by HUD as subprime lenders originated more than 40 percent or even 50 percent of the refinancing loans in 1998. GSE purchase of a substantial share of these loans, with housing goal credit awarded for such purchases, would significantly increase GSE housing goal performance in these neighborhoods. However, the primary mission of the GSEs should be to bring as many borrowers as possible into the mainstream of prime mortgage credit financing, or at least to provide a strong secondary market for legitimate CRA-type lending. At this point it would be counterproductive to the underlying GSE mission to encourage the GSEs to purchase subprime loans by giving them housing goal credit for such purchases.