**Joint Center for Housing Studies**
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# The Need for Government Intervention to Protect and Advance the Public Interest in Consumer and Mortgage Credit Markets

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**February 2010**
**MF10-15**

Paper originally presented at *Moving Forward: The Future of Consumer Credit and Mortgage Finance* – A National Symposium held on February 18 and 19, 2010 at Harvard Business School in Boston, Massachusetts.

This paper examines mortgage credit markets and the need for government intervention to protect and advance the public interest. We identify as rationales for the public interest: positive and negative externalities, the promotion of equal access, and information asymmetry and principal agent problems. We point to the role of market conduct and structure, as well as information asymmetry and principal agent problems, as prominent sources for the US mortgage debacle. While it is beyond the scope of this paper to outline a reform program, this paper points, in the aftermath of the crisis, to a need for a framework to address information and principal agent issues in the conduct and structure of mortgage markets. As a new framework for mortgage markets is developed, attention needs to be placed on the role that information on loan quality and pricing plays for borrowers' and investors' appropriate pricing and allocation of capital.

**Why the Government Has a Compelling Interest**

The public has a compelling interest in the private allocation of consumer and mortgage credit. This private allocation system influences the safety and soundness of the financial system, the cost to taxpayers for systemic failure, and overall economic efficiency. The public also has an interest in the provision of mortgage credit because homeownership is a means by which households build assets and ownership hedges the cost of shelter (Belsky and Prakken 2004, Sinai and Souleles 2005). In addition, homeownership arguably has positive externalities for communities and children of homeowners (Dietz and Haurin 2003, Herbert and Belsky 2006, Rohe et al 2002, Green 2009).

Beyond these economic rationales for government interventions in consumer and mortgage credit markets are others that are based on long-held social concerns with equity and fairness. Income and wealth are unevenly distributed, so government plays a redistributive function and concerns itself with what economists have called distributional efficiency (Lerner 1944). When it comes to fairness, government interventions are rooted in both ethics and economics. The economic rationale stems from the fact that unfair treatment can result in consumers making less than fully informed choices, which leads to suboptimal deployment of society's economic resources (Markovitz 1998).

Government's social and economic concerns in regulating markets intersect around discrimination and disparate treatment of consumers based on race, ethnicity or the racial or income composition of the communities in which they live. Discrimination is socially inequitable and can result in misallocation of scarce resources for three primary reasons. First, if credit is denied to borrowers that can use the funds as, or more, productively than borrowers not discriminated against, the result is economically inefficient in the sense that the input of credit could have produced more output (Litan and Rauch 1997). Second, if discrimination results in "redlining" neighborhoods (a term coined from the early practices of the Federal Housing Administration [FHA] in which mortgage insurance was denied in areas with concentration of African Americans) it can create negative externalities that result in inefficient disinvestment, loss of economic value, and economic costs that are not fully borne by the creditors and borrowers themselves, but by neighbors and potentially taxpayers as well. And this extension to neighborhoods is likely to occur because housing markets segregate areas by income and especially race. Furthermore, the problem is self-feeding because when credit is denied on a large scale in an area its property values fall (Canner and Passmore 1995, Lang and Nakamura 1993, and Ling and Wachter 1998). Third, if discrimination results in some consumers paying more than others for the same credit product, it is a direct violation of a precept of market efficiency (allocative efficiency) and it results in situations where someone can be made better of without making someone else worse off.

For decades, this third form of discrimination was not a material part of the nation's credit markets because it was close to a single price credit market. Discrimination came in the form of denying people access to credit rather than discrimination against them through pricing. This all changed when subprime lending based on risk-based pricing emerged (Chomsisengphet and Pennington-Cross 2006). When extended to mortgage credit in neighborhoods, because of residential segregation by race and income, it can and is likely to result in "reverse redlining." In this scenario, low-income and predominantly minority communities are exposed to higher-priced and riskier loans that can result in credit being withdrawn at a later date due to the higher rates of default in an area and its influence on property values. This can then feed back into

discrimination based on flat out rejection of credit again in these areas and "re-redlining." At the current juncture the possibility or re-redlining is real and may already be occurring.

This paper takes a closer look at these issues. It begins with a fuller explication of why the public has an interest in consumer and mortgage credit markets. It then turns to why government intervenes in these markets. These reasons fall broadly under the goals of correcting market failures, promoting positive externalities, and pursuing equity and equal treatment goals. The paper then lays out an explanation of why consumer and mortgage credit markets, as they have evolved in this country, are prone to market failures that the market itself is unlikely to correct, or cannot be counted on to keep corrected. In the final section, the policy alternatives for correcting market failures, promoting positive externalities of homeownership, and pursuing equity and equal treatment are discussed, but in broad terms.

**The Compelling Public Interest in Consumer and Mortgage Credit Markets**

The United States relies heavily on private enterprises to allocate and price credit. To connect savers and borrowers in the economy, a complex system has evolved in which savers rely on financial intermediaries to make underwriting and credit pricing decisions on their behalf. Historically in the US, these decisions were largely entrusted to banks and thrifts that held the lion's share of the nation's savings. In the aftermath of the Savings and Loan crisis, however, more of society's savings ended up with pension funds and insurance companies (Figure 1). By the 1980s, but especially by the latter half of the 1990s, the system evolved into one in which underwriting and pricing decisions were increasingly left to financial intermediaries that issued securities backed by consumer and mortgage debt traded on public capital markets (Green and Wachter 2005).

The public markets divide into two distinct markets. Securities backed by mortgage loans that are guaranteed by Fannie Mae and Freddie Mac (which are Congressionally chartered but private companies traded on public exchanges but now under government conservatorship) and Ginnie Mae (a federal agency) are traded in the "agency market" for Mortgage Backed Securities

(MBS). Securities backed by mortgage loans not backed by these agencies, as well as credit card receivables, and auto loans all trade in the "Asset Backed Securities" (ABS) or "private label" market (PLS). In the case of banks and thrifts holding loans in portfolio, the underwriting standards and loan pricing are set by these firms themselves. In the case of the agency markets, Fannie Mae and Freddie Mac set underwriting standards loan sellers have to meet and also establish the pricing of guarantee and servicing fees for the securities (the market prices the rest of the risk that determines the interest rate charged borrowers).[1] In the case of Ginnie Mae, FHA establishes the underwriting standards and establishes the mortgage insurance fee – this is the only part of the market where government itself decides on who gets credit. In the private label market, it is issuers, working with rating agencies, that largely establish underwriting standards and pricing of tranches of ABS.[2]

Taken together, it is clear, then, that it is these private firms that largely decide how the nation's savings are allocated to borrowers, with the government only directly involved in the consumer or mortgage markets through FHA and Ginnie Mae. While FHA has ballooned to a third or more of mortgage originations in 2009, for years it constituted less than 10 percent of originations and for many recent years just a few percent. It is also worth noting that private firms, working in the context of markets that set the general yield expected to cover the costs of expected inflation plus a risk-adjusted return, also establish other costs built into the interest rate charged the borrower, including servicing fees and broker commissions in cases where these commissions are yield spread premiums. While shaped in competitive markets, rating agencies have a great deal to do with the yields investors demand as a return.

The public has a strong, compelling interest in how these financial intermediaries price and allocate credit. The most important of these reasons follow:

[1] In the wake of the crisis, as discussed below, Fannie Mae and Freddie Mac are under conservatorship with 79.9% of the stocks of these companies owned by the U.S. Treasury; thus, in conservatorship, these companies are currently being used to help mitigating the foreclosure impact of the crisis.
[2] For a description of the growth of PLS market, see Green and Wachter 2008.

- The amount of capital that financial institutions are required to hold as a reserve against losses is an important factor in economic growth, as the credit crunch of 2009 clearly demonstrated.

- The amount of capital reserves financial institutions are required to hold and the amount of risk they are permitted to assume—based on capital reserve requirements and on permissible loan products, underwriting standards, and portfolio concentrations—influences the safety and soundness of the financial system, the nation's savings, and the payment mechanism for the overall economy.

- Consumer and mortgage credit account for a large share of the total debt market so that missteps that create systemic risk can have crippling effects on the markets for all debt (Figure 2).

- Global capital markets have become more tightly integrated so that problems in the US consumer and mortgage markets have global economic consequences.

- Consumer and mortgage credit markets govern which consumers have access to credit to finance consumption and investment and at what cost, thus decisions by private firms impact economic efficiency and fairness.

- Mortgage markets have a unique role because: 1) they govern the capacity of consumers to become homeowners; 2) many homeowners primary store of wealth is the equity in their homes; 3) homeownership is a hedge against rent increases (Sinai and Souleles 2005); 4) individual investment decisions of homeowners have impacts on the value of surrounding properties; and 5) homeownership *may* lead to better social and economic outcomes even after controlling for income and wealth differences.

These public interests are consequential. They involve the safety and soundness of the financial system, the amount of good and services produced in the economy, the positive or negative

externalities for neighborhoods, the distribution of household wealth, and individual opportunities to manage lifecycle consumption and investment.[3]

## The Reasons Governments Intervene in Markets

Unfettered, consumer and mortgage markets operate in ways that can and have produced serious market failures. It is to these failures and other reasons for government intervention we now turn. The purpose of this section is to define key terms around these government interventions. How these apply in the context of mortgage and credit markets are discussed in the section that follows this one.

The largest class of reasons the government intervenes in markets is to correct or prevent market failures but the government clearly also intervenes, as noted above, to pursue equity goals with respect to the distribution of income and wealth, and pursue equal and fair treatment for other than merely economic reasons.

### ***Correct Market Failures***

Economists may disagree on many things but most agree that factors that cause deviations from free and competitive markets result in economic inefficiencies which may justify corrective government actions. While there are vigorous disagreements about how deep, long lasting, and consequential these deviations have to be to justify government action, few economists would argue that they should not be addressed if they are deep and consequential. Of course, regulations themselves can contribute to deviations from models of perfect competition, usually impose compliance costs, and may themselves produce regulatory failures (McKean 1965). Thus a rationale for government action is not the same thing as a blind and uninformed enthusiasm for them. To the contrary, it means before action is taken a concerted effort must be

[3] Life-cycle consumption theory explores how people allocate time, effort, and money in terms of borrowing, saving, and consuming over their life time. It predicts that people consume their expected lifetime earnings smoothly by borrowing against future income early in their working life (Hannsgen 2007).

made to assess the costs imposed by regulations relative to their benefits (assessing these cost and benefits is often challenging and subject to differing views) and care must be taken to try to anticipate unintended consequences and correct them through regulatory changes if and when they occur.

In the economics and public policy literature, market failures are grouped in a number of different ways for expository purposes. Here, we choose to organize them into four broad categories that serve the purposes of looking at market failures specifically in the consumer and mortgage credit markets; we begin with negative externalities and the nature of exchange. Within the latter, we highlight two forms of market failures: information asymmetries and principal-agent problems. These categories of market failures are not independent of each other, but rather often feed into each other. We then turn to consider positive externalities and the public interest in promoting equity and ensuring equal treatment.

**Negative externalities.** Negative externalities occur when the full economic or social costs of a transaction are not borne by the parties to the transaction. This can lead to behaviors that lower economic efficiency and that leave other bystanders paying these costs. These bystanders can just be neighbors in the case of negative externalities that have steep distance decay functions, and broader society and taxpayers when they do not. A classic example of a negative externality is pollution for which manufacturing firms do not bear the cost. People nearby may bear the greatest cost in the form of exposure to health hazards but society can as well if the pollution spreads or is joined by other point sources to create health hazards across wide areas. In the housing market, and as discussed below, the classic negative externality is when a property owner fails to maintain a property, lowering the value of neighboring properties.

**Nature of Exchange.** There are two aspects of the nature of exchange that can lead to market failures of concern in credit markets. First, information asymmetries can lead consumers to make suboptimal decisions due to the fact that they are less than fully informed. Lacking clear information on the least cost credit product they are eligible to receive (but which lenders possess) and without the ability to go to multiple lenders to assess both the products they can qualify for and the prices of those products, consumers may select products that are not the least

costly.[4] This produces allocative inefficiencies.[5] In addition, when information on costs is shrouded, this can lead to economic rent seeking behavior that does *not* dissipate with time.[6] Second, principal-agent problems can arise when incentive structures between agents acting on behalf of a principal are not aligned, especially in the presence of asymmetric information which makes it difficult to detect when an agent is working against the principal's interest. A classic example is when car salesmen serve as brokers for auto finance companies. The brokers' incentive is to sell cars and get an upfront fee both for the car and arranging the financing. They may withhold information from lenders that would prevent a borrower from qualifying in an effort to maximize their own compensation. Such principal-agent problems can give rise to allocative inefficiencies and propagate systemic risk.

**Promoting Positive Externalities.** Just as some transactions create costs for bystanders to a market transaction or to production activity, other transactions can create benefits to bystanders. These activities increase the overall welfare of society so that government has an interest in promoting them. A classic example of an activity with a positive externality is vaccination programs. By slowing the spread of disease, even those who do not get vaccinated benefit from those who do. Therefore, governments and health insurers may want to subsidize vaccinations. Positive externalities are also created when collective action corrects for unfettered market production of negative externalities.

**Promoting Equity and Ensuring Equal Treatment**. – Beyond matters of economic efficiency and promoting maximum production and wealth, government may intervene in markets to address the uneven distribution of wealth and income, or the fairness with which different groups are treated. Government has an interest in promoting equity for social (compassion) and economic (distributive efficiency) reasons. It has an interest in promoting equal treatment for both social (fairness) and economic reasons (efficiency). Unequal treatment, such as discrimination, can lead to squandering resources by not making resources available at all or at a

[4] See Wachter (2003) for a discussion of the need for price revelation in this market.
[5] Allocative inefficiency occurs in credit markets when similarly situated borrowers pay different prices for the products with the same terms and conditions or when borrowers end up with products that are not the lowest cost they can qualify for.
[6] A classic example of shrouded information is the recurring costs of operating printers. No firm is likely to reveal this information because all firms benefit from it being shrouded (Gabaix and Laibson 2006).

higher price to people who might use them the most productively, for example through overcharges for credit. But even in the absence of efficiency losses, societal equity interests may call for collective action.

**Consumer and Mortgage Credit Market Failures**

In the history of government intervening in credit markets to correct market failures, some of the earliest steps relate to states setting the maximum interest rates borrowers could be charged, as part of far-reaching legislation passed to reduce system risk in the 1930s.[7] But more recently many of the laws governing credit arose to outlaw discrimination and improve consumer disclosures in credit and housing markets. These legislative initiatives began n the 1960s and continued through the 1980s with efforts to eliminate redlining, outlaw discrimination of protected classes, and improve disclosures laws.[8] Then efforts to address abusive lending in subprime markets were taken in the 1990s.[9] These were followed by a spate of efforts taken in the wake of the 2007-2008 financial crisis aimed at further strengthening disclosures and consumer protections in the extension of credit cards and home loans, and reforming other aspects of the financial system.[10] Against this effort to impose more regulation on consumer and mortgage markets to correct market failures there have been others aimed at relaxing some regulations. These include federal preemptions of state usury limits and restrictions on lending practices in the early 1980s,[11] to lifting restrictions on interstate bank branching in the early 1990s,[12] to breaking down constraints on capital markets barriers to the range of financial

[7] These were eliminated in the run-up to the savings and loan crisis of the 1980s which itself had its origin in the rise of inflation and bank's asset liability and mismatch problem. See Green and Wachter (2005) for a history of government intervention in mortgage market.
[8] These include the Equal Credit Opportunity Act, Fair Housing Act, Truth-In-Lending Act, Real Estate Settlement Procedures Act, Community Reinvestment Act, Home Mortgage Disclosure Act, and Fair Credit and Credit Card Disclosure Act.
[9] These included the Home Ownership Equity Protection Act and several state anti-predatory lending laws. See Bostic et al. (2007) for a description of the impact of state unti-predatory laws.
[10] These included the Secure and Fair Enforcement for Mortgage Licensing Act of 2009, new Home Ownership and Equity Protection Act regulations, Real Estate Settlement Procedures Act reform, the Mortgage Disclosure Improvement Act, and the Credit Card Act of 2009.
[11] The Depository Institutions Deregulation and Monetary Control Act and the Alternative Mortgage Transactions Parity Act.
[12] The Riegle-Neal Act.

services a holding company could operate in the late 1990s,[13] to enabling the issuing of credit default swaps without reserving,[14] to preemptions from state anti-predatory lending laws by national banks.[15]

In addition, government has also intervened to help low and moderate income first-time homebuyers and to encourage broader efforts to expand homeownership. Limited programs to provide subsidies for low-income homebuyers have come in the form of the short-lived Section 235 and the lasting Mortgage Revenue Bond Program. Also, as noted above, FHA's mission is to expand access to homeownership. But beyond these, efforts to expand homeownership have come mostly through regulation. The most significant of these are the Community Reinvestment Act (CRA) of 1977 and affordable lending goals imposed on Fannie Mae and Freddie Mac by a 1992 law. Although the mortgage interest deduction clearly expands homeownership, but its original intent was not to promote homeownership but to reduce the cost of debt in general because all forms of consumer interest were deductible from the time of the first tax code in 1913 to the elimination of most non-mortgage interest deductions in 1986.

## ***Heightened Risks of Failure in Consumer and Mortgage Credit Markets***

The nation's consumer and mortgage credit markets are prone to several important market failures. Some of these stem from the nature of credit transactions while others stem from the specific structure and conduct of the markets as they have evolved in the United States.

**Nature of Credit Transactions**. As discussed above, credit transactions are unique in important respects. Borrowers that want to purchase credit are not automatically eligible to purchase it. And unlike similar situations in which rules established by government determine whether an

[13] The Financial Modernization Act.
[14] The Commodities Future Modernization Act.
[15] This was accomplished through increasing preemption of state laws claimed by federal banking regulators. For a discussion of the role of deregulation in the mortgage crisis, see McCoy et al. (2009).

individual can purchase them—such as guns, drugs, and cigarettes—it is usually private suppliers that make these decisions based on largely private rules that are privately applied.

In addition, credit products are often complex and their cost relies on uncertain future events, including inflation and changes in risk-adjusted interest rate spreads. The terms of credit are often complicated and the costs of failing to make timely payments difficult to comprehend. In addition, in the case of lines of credit, the costs of failing to make timely payments are prone to change in unpredictable ways. In the case of adjustable rate loans, the future cost of the loan is also uncertain.[16] Furthermore, the capacity of borrowers to repay their loans is related not only to the cost of loans in real terms but also the future incomes of the borrowers' and the stability of their budgets, as well as general trends in house prices.

Making decisions about complex products is more difficult and more likely to lead to suboptimal choices (Laibson and Zeckauser 1998; Woodward 2003). Making decisions about the future that require probabilistic judgments are also prone to certain biases and errors that can also lead to suboptimal choices. As Laibson (1997) points out, people tend to apply a lower discount rate to events further in the future than more proximate. This "hyperbolic discounting" leads to making choices today about the future they would not if the effects of these decisions were more immediately felt. Thus, people will discount what will happen if interest rates rise on their adjustable credit and take on adjustable rate rather than fixed rate credit because adjustable rate credit is lower cost except during periods of inverted yield cures. On top of this, making effective credit decisions requires some degree of numeracy and financial literacy that many lack. All this makes credit ripe for asymmetric information between lenders and borrowers, and leaves borrowers prone to errors and biases in judgments that cause them to pick products that are not the lowest cost or best suited to their circumstances.

**Structure and Conduct of the Markets.** Credit and mortgage markets in the United States have evolved in ways that heighten the risks of market failure. Five are especially worth noting.

[16] See Green and Wachter (2005) for a discussion of the difficulties of using estimated annual perfectage rate (APR) to compare the cost of mortgage across different instruments.

First, the introduction of risk-based pricing and a proliferation of products in recent years have sharply increased the range of product types, lending terms, and prices offered to borrowers. There are closed-end and credit-line options for home equity loans. There are prime and subprime credit cards, mortgage loans, and auto loans. There are multiple forms of initial discounts offered to attract borrowers to credit products. There are interest-only, payment-option, and hybrid adjustable-rate mortgages. There are mortgages with and without prepayment penalties. And the list goes on and on. This has made comparison shopping difficult and expensive but also essential to selecting the lowest cost product that best suits the consumer's needs. In addition, despite efforts in the case of both credit cards and mortgages to simplify and improve disclosures of finance charges and fees, much of the information about these fees remains shrouded and some are subject to change. Classic examples of terms subject to change are late fees and credit card interest rates. A classic example of shrouded information is the yield spread premium (which is now more clearly disclosed but may confuse borrowers because they show up on good faith estimates and settlement sheets as a "credit" to "you" the borrower). This has greatly amplified *information asymmetries* in consumer and mortgage credit markets.

Second, these markets have evolved to depend heavily on an originate-to-distribute model. In this model, brokers or correspondent lenders are relied upon to originate loans which are then sold and aggregated to back securities. These securities are rated and resold to investors (principals) who rely on these agents to make underwriting decisions and assess the credit risk associated with the securities. This escalates *principal-agent risk* in the markets.

Third, the advent of risk-based pricing also opened up the door to *discrimination on the basis of the price* of a loan. Automated underwriting systems have reduced the opportunities to intentionally discriminate within a lending institution, but setting up a business model that involves only providing subprime loans and then extending a subprime loan to a prime borrower just as they would a subprime borrower has a comparable effect. If the business model involved targeting minority communities because credit scores are on average lower there, it can have disparate impacts. In addition, brokers and loan officers are often able to charge "mark ups" or yield spread premium, and this creates the opportunity for intentional discrimination to exist (Courchane 2007).

Fourth, a system which relies on incomes, wealth, and credit scores to make lender decisions on product offerings and pricing—when income, wealth, and credit scores are unevenly distributed across races, ethnicities, and incomes of borrowers and communities—is prone to give rise to disparate impact based on borrower and community characteristics (Calem et al. 2005).

Fifth, a credit and mortgage system with risk based pricing and without regulatory controls is likely to lead to pricing and risk terms that evolve over time. The result is a race to the bottom for market share and the need for lenders to match problematic abusive terms offered by others to keep in the game. This is exactly what has transpired in the mortgage crisis, with a pro-cyclical erosion of credit standards first flooding neighborhoods with capital and then reversals with a drought replacing the flood. Neighborhoods that are exposed to subprime lending are the most vulnerable since lending there will be pumped up by temporary expansion of risky credit products, only to be subject to credit deserts as capital markets are closed.

***Negative externalities***

There are three negative externalities associated with the nation's consumer and mortgage credit markets that the public has a compelling interest to avoid.

**Redlining.** Redlining can be defined as the imposition of less favorable terms in one area to one group or another, or refusal to lend altogether, that is not justified by differences in risk or cost. This concept of redlining identifies it with "irrational behavior" by lenders. Irrational lending behavior would be condemned by most observers on grounds that it is consistent neither with the self-interest of lenders nor with community interest.

While irrational behavior is socially non-optimal, redlining that is rational for individual lenders can also be socially suboptimal (Figure 3). Rational behavior by a lender can cause disinvestment in neighborhoods that would otherwise not occur.[17] For example, if there is a

[17] See Guttentag and Wachter (1980) for definitions of neighborhood effect redlining, lending behavior that contributes to rational lending behavior that nonetheless contributes to neighborhood disinvestment.

perception that the widespread risk of this neighborhood's decline is appreciable, coordination of lending and investment decisions may be necessary to prevent a self-fulfilling prophecy. Without coordination, the rational lender, even one that is not sharing the perception that decline is inevitable, will find it rational to do what others do (redline the neighborhood) (Gruben et al. 1990). Without coordination, furthermore, the cost of identifying a good neighborhood within a generally poor neighborhood may be excessively high for the individual lender, especially if the volume of loans the lender might make there is small. If the neighborhood information gathering processes were very coordinated, cost duplications would be eliminated.

**Reverse redlining.** Indiscriminately and recklessly lending to low-income and minority communities can also create negative externalities. Reverse redlining is the process of concentrating high-risk mortgage and consumer credit in low-income and minority communities, especially when the risks taken are extreme and the attention to preventing fraud scant. Lenders or brokers may reverse redline either intentionally to exploit borrowers who may have fewer options and less access to financial information, or to achieve marketing efficiencies by targeting markets more likely to have borrowers with subprime credit scores or in greater need of low-downpayment and low-documentation loans. Either way, it can create negative externalities as a result of heavy foreclosures and eventual disinvestment. Both are economically inefficient and cause innocent bystanders to suffer (both those that did not take out risky loans and own nearby properties as well as the lenders that lend to them).

The federal government was the first to try to make a concerted effort to extend mortgage credit, though on a limited scale, in low-income communities in the 1960s with its Section 235 program. But the program ran into serious difficulties because of widespread appraisal fraud, jacking up prices that were unsustainable and put homeowners on a path to homeownership that were essentially already underwater on their mortgages (Boyer 1973). In the 2000s, when the credit poured into these areas, this time easy credit allowed borrowers to bid up home prices and that created elevated risks that borrowers would not be able to keep up with their payments. When prices fell—after even creative finance could no longer blunt the impact of rising interest

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Also see Lang and Nakamura (1993) and Ling and Wachter (1998) for a discussion of redlining that results in information externalities due to the lack of sales.

rates and high home prices on affordability—it was impossible for people to sell or refinance their way out of mortgages they could not handle. It is telling that in 17 metros where information price tiers are available from the Case-Shiller index, the prices all had the lowest of three price tiers and correspondingly saw the most rapid appreciation and then depreciation[18]

**Systemic risk and safety and soundness.** If widespread enough, poor underwriting practices can result in a rising tide of risk not just in neighborhoods but in the broader financial system as well. This was brought into sharp relief in the second half of 2007 when deterioration in the performance of securities backed by subprime mortgages (and sometime later and to some degree subprime auto loans and credit card receivables as well) sparked a process that resulted in the near meltdown of the financial system. Regulations failed to prevent excessive risk from being taken in the nonprime lending market, and in the capital markets where nonprime loans were securitized into structured tranches, the tranches were reassembled into Collateralized Debt Obligations (CDO), the CDOs were reassembled into CDO-squared, and Credit Default Swaps (CDS) were issued that referenced the lot of them. In addition, government-imposed capital reserve requirements across the system proved inadequate to cover the flood of losses brought on by the credit crunch and the ensuing severe global recession.

***Information asymmetries***

There are three layers of information asymmetries in the credit markets which are created by differences in the information that is possessed by borrowers, lenders, and investors.

**Borrower information advantages over lenders**. Borrowers have more information pertinent to their individual circumstances than loan officers or brokers. For example, borrowers may know if they expect to lose their jobs, get a divorce, run up their other credit to increase their consumption or investment, incur a major medical expense, etc. This gives borrowers in these circumstances an information advantage over their lenders. In addition, borrowers can falsely answer questions to gain an advantage. As a result, some borrowers will succeed in getting

[18] Pavlov and Wachter (2010) test for and find evidence that in neighborhoods heavily exposed to subprime lending, this exposure increase the volatility of house prices (Pavlov and Wachter 2010). Also see Calem et al. (2005) for a description of neighborhood patterns of subprime lending.

credit products they would not otherwise have qualified for if this information were disclosed, and at prices that do not cover the full risk of the loan.

**Lender/broker information advantages over borrowers.** Lender/brokers have more information than borrowers on the products a borrower might be eligible for and the costs of those products. While the lender may know the borrower's relative FICO score, expected risk and expected risk premium, the borrower is likely to lack this last piece of critical information. This can lead to economic rent seeking on the part of lender/originators, which can persist if the costs of obtaining accurate information are great or accurate cost information and options are not communicated to borrowers. It can also lead to less than economically efficient choices being made by borrowers who may end up with something other than the least cost product they qualify or at the lowest cost for the least-cost product. These problems are especially keen in risk-based priced markets (nonprime) and ones that involve agents compensated though upfront volume-based fees. But they can also be present in the prime market as well due to product complexity and the costs of obtaining information. Moreover the complexity and lack of standardization of products in the nonprime market adds to the difficulty of effective choice and effective shopping (Woodward 2003).

**Lender/broker information advantages over investors/funders.** Lender/originators have more information on borrower characteristics and circumstances than the investors to whom loans are resold. Like borrowers, lenders/brokers can withhold information pertinent to the final investor and, in the case of portfolio lenders, lead to selling loans that are riskier in ways not transparent to the buyer (adverse selection). As for broker-dealers that sell asset-backed securities, they can elect what information to include in public disclosures. This creates opportunities for them to shroud information that may result in opaque risks. In fact as information deteriorated and with the growth in the proportion of market share of securitized loans backed by low doc and no doc loan products, the risk premia attached to these PLS declined (Levitin et al. 2009).

In sum, due to information asymmetries, as well as the high cost of obtaining firm price quotes from different lenders and strong demand for credit regardless of price, lenders have unequal

bargaining power. This can result in economic rent seeking behavior that persists, as well as suboptimal choices by consumers.

***Principal-Agent Problems***

With so much credit flowing through the securitization channels in the 2000s due to the explosive growth of ABS and agency MBS markets, principal-agent problems burgeoned. There are three problems that can be created by, or result from, principal-agent problems.

**Misaligned incentives.** The originate-to-distribute model that evolved in the ABS and MBS markets relies heavily on upfront fees to reward brokers, lender-sellers, and broker dealers in ABS and MBS. In addition, brokers are seldom required to retain any of the risk, and lender-sellers also may not have had to retain much of the risk, save for making representation and warranties and agreeing to repurchase loans that went into early default (with "early" defined quite differently from agreement to agreement). Thus, agents had little capital at risk and were rewarded upfront for volume, not long-term performance. As a result, the interests of agents in flow may not have been aligned with the long-term performance interests of investors or insurers that bore the credit risk.

**Adverse selection.** Due to information asymmetries, agents can shroud important information from investors and insurers that allows lender to retain loans that are less risky, and sell along riskier loans. This is the so-called lemons problem where lemons that do not appear as such but are suspected or known to be by sellers are sold to unsuspecting buyers. This causes mispricing of credit and can add to counter party risk.

**Systemic risk.** If principal-agent problems are severe enough and create problems on a scale grand enough, they can add to systemic risk

**Promoting Positive Externalities: Why Homeownership Matters**

Government interventions aimed at promoting homeownership, as well as helping reduce the risks that homeownership will end in failure, are often justified because of the positive externalities thought to be associated with homeownership. Despite many papers pointing to such externalities, these studies struggle to control for the possibility of self-selection bias. It is difficult to disentangle the effects of homeownership on wealth accumulation, family stability, civic participation, and outcomes of the children of homeowners because people more prone to save and invest, stay in a home longer, get politically involved, and invest more in their children may all self-select into homeownership. Still, thoughtful efforts to do so have generally found that homeownership does bring these benefits, at least on average and to some degree.

Many studies have been done that explore the social impacts of homeownership. Although these studies have been faulted with not dealing satisfactorily with self-selection biases (Apgar 2004), these studies do suggest homeownership does have positive social impacts. Reviewing over 50 articles on the impacts of homeownership, Rohe, Van Zandt, and McCarthy (2002) found evidence that homeownership is associated with better educational outcomes for children, greater wealth accumulation, and better psychological health of family members. They also present a model of why homeownership may produce these outcomes, keying off the benefits that accumulating wealth and the heightened sense of self esteem may have not just on homeowners and their children.[19] Another review of the literature by Dietz and Haurin (2003) also found that the weight of the evidence suggested that homeownership had positive individual and social outcomes. They same is true of a review on the literature on the financial and social outcomes of homeownership conducted by Herbert and Belsky (2008).

Harkness and Newman (2002, 2003) found that homeownership is positively associated with educational achievement for children and that the outcome is even stronger among low-income than higher-income households after controlling for demographic and neighborhood characteristics of owners and renters. Both Harkness and Newman (2002) and Boehm and

[19] Rohe and Stewart (1996), however, review other literature that shows how destructive failing in homeownership is and how comparatively understudied this aspect of homeownership has been..

Schlottmann (1999) found evidence that the children of homeowners had improved employment outcomes. Green and White (1997) and Haurin, Parcel and Haurin (2002) also found evidence of a small positive impact of homeownership on the behavioral problems of children. There is also some evidence that the adult children of homeowners, all else equal, are far more likely to become homeowners than the adult children of renters within 10 years of leaving their parent's homes (Boehm and Schlotmann 1999). There are several studies that have found homeownership has a positive influence on voting and political participation (Gilderbloom and Markham 1995, Rossi and Weber 1996, DiPasquale and Glaeser 1999). But evidence on the impact of homeownership on involvement in local organizations is more tentative and mixed, and may be largely accounted for by differences in lengths of residence between owners and renters (DiPasquale and Glaeser 1999, Rohe and Stegman 1994, Rohe and Basolo 1997).[20]

Though not a settled matter, and not set against the negative externalities and social impacts of foreclosures, there is reason to believe that homeownership may produce positive externalities and that attention to the conditions under which mortgage credit is extended can avert negative externalities. In this sense, government investments that make homeownership relatively less expensive than renting and help assure that people are on secure financial footing when they buy a home may be justified.

**Promoting Equity and Ensuring Equal Treatment**

Government intervention in consumer and mortgage credit markets is also a way that government can promote equity and help ensure that people are treated fairly and quality. These can be done by promoting distributive efficiency and combating discrimination.

*Distributive efficiency*

[20] Green (2009), however, points out that these benefits may be derived from the stability that sustainable homeownership provides.

People with low incomes have special challenges making ends meet. They resort disproportionately to tapping short-term credit to meet these challenges from sources that are often high cost and, overtime, can lead to longstanding debt traps that are hard to escape (Draut and Garcia 2010; Cole, Thompson and Tufano 2008; and Schneider, Tescher and Koide 2010). Government, therefore, has an interest in creating incentives for consumers to shift to lower-cost short-term credit products, reducing the costs of privately providing short-term credit to low-income consumers, and providing incentives for low-income households to save so that they can bridge short-term liquidity crunches without having to resort to expensive forms of short-term credit, like payday lending, that can result in ever-growing balances because the interest payments themselves are excessive. Yet, it is these low-income borrowers that would benefit most at the margins from lower debt costs.

Furthermore, to the extent that using short-term credit results in problems establishing credit records or problems that reduce credit scores, difficulties with short-term credit usage may spillover into problems getting a mortgage and increase the cost of mortgage credit for the most vulnerable borrowers. As noted, both the ability to qualify for mortgage credit and the pricing and terms of mortgage credit make a material difference to the ability and extent to which household's can accumulate wealth through home equity. Furthermore, home equity is far more evenly distributed than other forms of wealth, so investments in helping people become homeowners can help reduce —and in fact are likely critical to reducing—the uneven distribution of household wealth (chart).

In addition, because low-income households are the least able to bear the costs of short-term and long-term mortgage credit—and paying higher rates has the greatest marginal impacts on them—government may have reasons to help low-income households to establish stronger credit records and shop more effectively for the lowest cost mortgage available. The federal government already pursues all these goals: subsidized interest rates through the Mortgage Revenue Bond program for low and moderate-income first time buyers; limited matched savings programs to encourage savings and help borrowers build stronger credit records; and funds for homeownership counseling to help borrowers shop more effectively. While government may have reasons to do these things on efficiencies grounds, equity provides an additional rationale.

*Discrimination*

As noted at the outset of this paper, economic efficiency and equity concerns both motivate the government's interest in preventing discrimination in mortgage and credit markets. Discrimination is both unfair and economically inefficient. Such lending behavior can lead to borrowers that should have access to credit being denied and markets not being as complete as they could be. This is economically inefficient. Such behavior can also result in a class of borrowers being overcharged or improperly sorted into buckets in a world of risk-based pricing. This can lead to unfair treatment, equity concerns, and allocative inefficiency. While it may be rational for individual lending firms to statistically discriminate in the sense of using limited information to screen loans on the basis of social characteristics as indicators of risk, such lending behavior is clearly inequitable and has social costs that extend beyond the firm. Thus Congress, in the Fair Housing Act and the Equal Credit Opportunity Act, has provided the following list of borrower characteristics which lenders cannot use in making loan decisions race, age, national origin, sex, marital status, religion, color, receipt of income from public assistance, and good faith exercise of rights under the Consumer Credit Protection Act.

A basic rationale for not admitting such information is that it may be used as an information-economizing device, reducing the perceived need for additional sifting of evidence. Similarly, it argued that certain types of information on loan applications should be declared non-usable because lenders may be tempted to use them as low-cost early screening devices for rejecting applicants who fall into certain categories through no fault of their own, but who nevertheless may be proven to be acceptable risks were lenders prepared to investigate. Anyone who has been invidiously categorized can appreciate this point of view.

Such discrimination is not a standalone problem. The earlier discussion points out the disparate impact of the pervasiveness of information asymmetries and principal agent problems in the structure and conduct of the credit and mortgage markets. Moreover the systemic failure that in the event these problems led to have had severe negative externality impacts in the form of heightened foreclosures on neighborhoods more exposed to subprime lending.

## Conclusion and Policy Directions

The public interest in the safety and soundness of the banking system, as well as fair and equal access to credit and special access to mortgage lending for homeownership, have informed the extensive array of government regulations and policies that have held sway in these broad economic spheres. Such initiatives range from banking legislation in the 1930s to the anti-discriminatory legislation of the 1970s and the state level anti-predatory lending initiatives in response to subprime lending.

We have set out here the public interest in access to consumer and mortgage lending for homeownership in four broad areas: prevention of negative externalities, the promotion of equal access, the response to market information asymmetries and principal agent problems, and the promotion of positive externalities. The pro-homeownership stance of policy, exemplified in the mortgage interest tax deduction and the existence of the FHA, is being deeply questioned due to the mortgage meltdown. Maximizing homeownership at any one point in time with a subsequent loss of homes to these temporarily owning families clearly is not in the public interest if this is what it results in. The literature does establish significant hedging and civic benefits of sustainable homeownership.[21] Moreover, the public interest, clearly expressed, is to avoid discrimination based on race or ethnicity in consumer and mortgage lending and housing markets. There is no call for dismantling the anti-discrimination initiatives put into place in the 1970s.

There is certainly no public interest in distorting well-informed tenure choice, when this correctly reflects social benefits and costs, nor in promoting increases in homeownership that are unsustainable. To illustrate: A household may correctly calculate that their dwelling costs would be minimized by being owners rather than renters, but barriers to ownership in the form of down payment requirements, for example, preclude this choice. This does not mean that collective action is called for to reduce down payments, which after all, are there for a reason and enable the mortgage contract in the first place. Without that access to collateral, the mortgage loan

[21] For why sustainable homeownership is important, see Green (2009). For evidence of the negative impacts of subprime lending on sustainable homeownership as early as 2005, see Calem et al. (2009).

would be a consumer loan and far more costly to the borrower. Without an equity cushion, the home's value as collateral is substantially eroded, thus undermining the risk reduction which enables lower lending rates. The public interest, as noted, is not in maximizing what may very well turn out to be temporary increases in homeownership rates. Quite to the contrary, the external benefits from homeownership accrue at least in some measures from the stability that this tenure arrangement affords.

In the aftermath of the mortgage and credit meltdown in the US, the public interest in *sustainable* homeownership and *serviceable* mortgage and consumer debt continues. What is readily apparent from recent history is that in order to support serviceable debt, there must be a focus on the dangers of systemic risk and neighborhood value destruction which derive from volatile consumer credit and mortgage markets. The negative externalities that result have as their source the unfettered workings of markets in which asymmetries and principal agent problems prevail.

Markets can work to signal costs and risk through prices and rates and efficiently allocate resources based on this information. In markets where information flows between consumers and producers are blocked, and prices and rates do not reflect costs and risks, efficient allocation fails. In the crisis, information asymmetries and principal agent problems blocked this nexus of costs and value.

The very profusion of terms and heterogeneity of credit products—especially of mortgages—make it difficult for borrowers either to comparison shop or to understand likely long run costs and risks. In the case of mortgages, it made informed choice nearly impossible. Mortgage products, initially affordable, but toxic in the out-years, increased their market share and allowed an expansion of leverage which inflated the housing bubble. At the same time, this heterogeneity and profusion of terms made it possible to expand the market by eroding lending standards and overcoming "affordability barriers," without setting off alarm bells because the resulting shift in quality in the mortgage and other ABS book of business was not easily traced. Because of complexity, it was difficult and nearly impossible to monitor the risk or the appropriate pricing for risk of these credit products for lenders and investors as well. In the case of mortgages a

spike in defaults was not immediate, quite the contrary, because the short run result was an inflation of housing prices which temporarily and artificially reduced loan to value ratios, like the calm before the storm, defaults appeared to be under control. In the case of consumer credit, the day of reckoning came even later when the economy unraveled.

While individual investors were faced with increasingly opaque private label securities, the system as a whole experienced an explosion of these products due to the increasing demand for these securities. The temporary price increases concealed poor underwriting until the market could be expanded no further. The erosion of lending standards, which was enabled by information shrouding, did not become apparent in immediate negative market outcomes. This allowed the pattern to continue and fueled demand for nontransparent loans to package into securities, as prices rose. The erosion of lending standards, mispricing of individual consumer and mortgage products, and underpricing of private label securities was not detectable in real time by investors or borrowers. There is a temporary advantage to market expansion, in the aggregate, due to a lack of knowledge of quality erosion. In addition, the need for competitive advantage for individual firms goes along with such erosion. The subsequent societal costs of collapse when erosion of standards can no longer support price acceleration argues for the public's interest in transparency in the risks and pricing of mortgages, the maintenance of lending standards, and the correct pricing of lending through the cycle.

Without correct information, markets will fail. The issue is that markets will not necessarily self-organize to provide transparent or correct information. When there is a return to originators and to securitizers, deriving from the information asymmetries, principal agent problems, and lack of transparency, this might be expected. In the absence of effective regulatory oversight, these information asymmetries and principal agent problems resulted in allocative inefficiency for borrowers, underpricing of risk for investors, and ultimately system failure for the economy as a whole.

The public has a vested interest in seeing to it that systemic risk does not build in the financial system and that discrimination and information asymmetries do not lead to market inefficiencies that are neither fair nor good for the economy. It has an obligation to contain negative

externalities and an interest in promoting fair and efficient markets. In the case of consumer and mortgage credit, these obligations and interests are especially keen.

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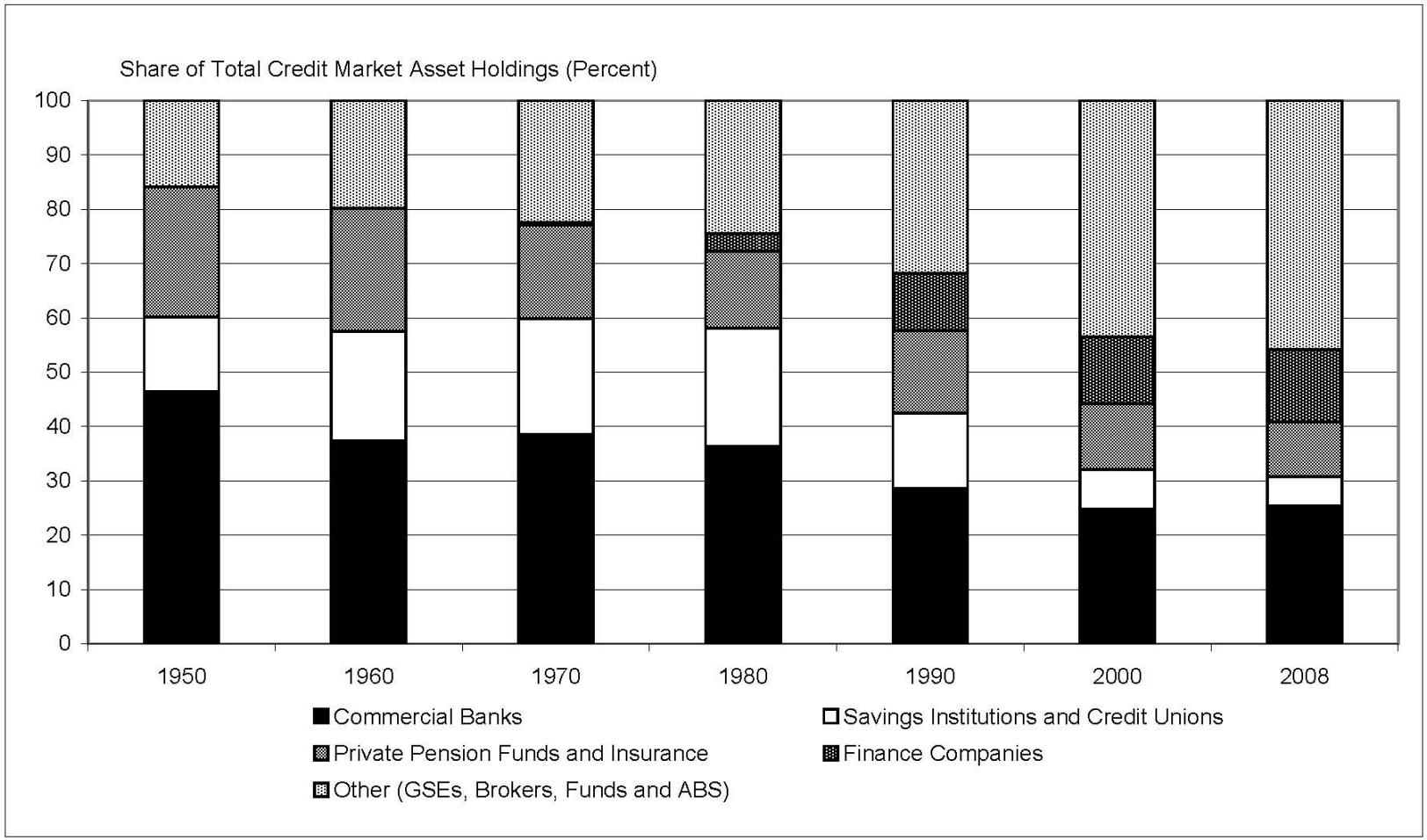
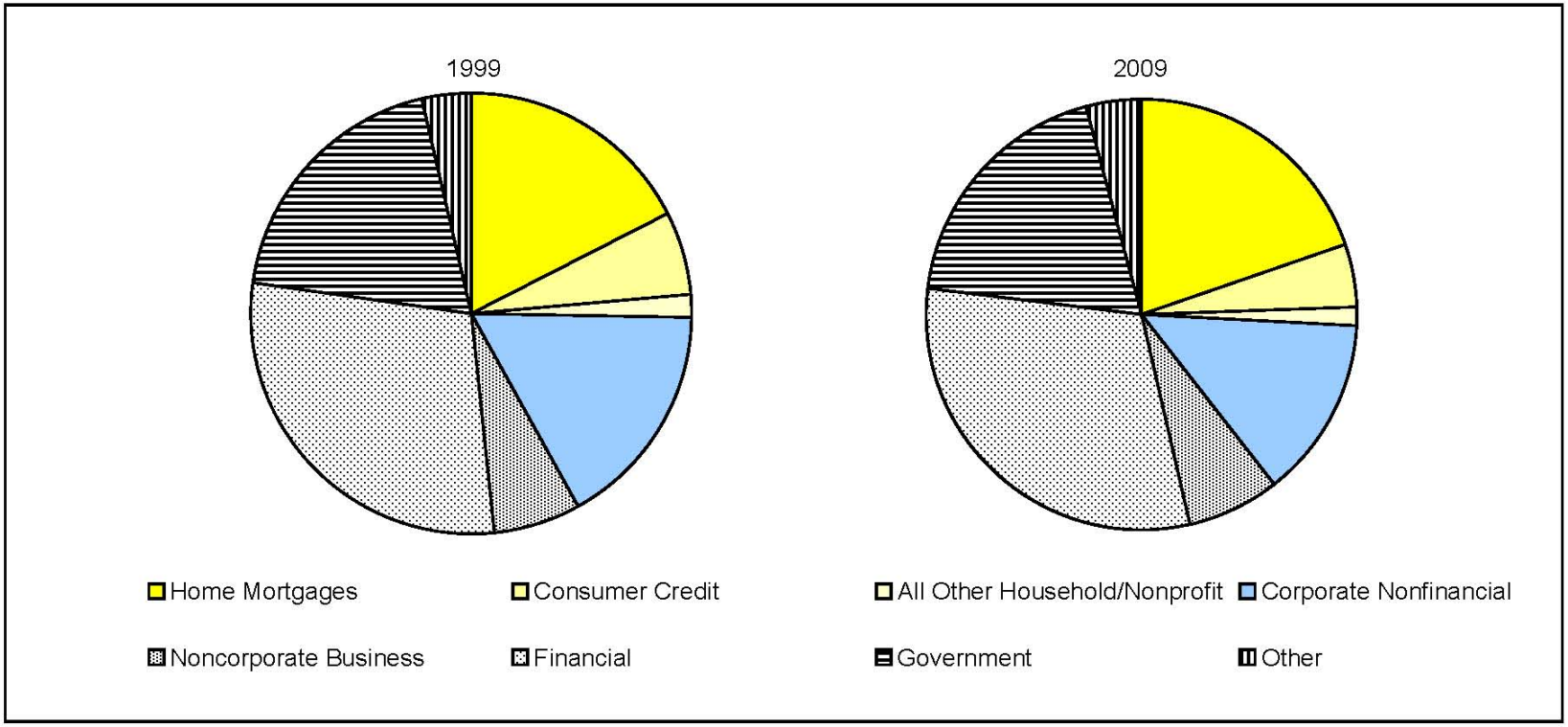
Figure 1. Commercial Banks Held Less of the Nation's Savings Over Time



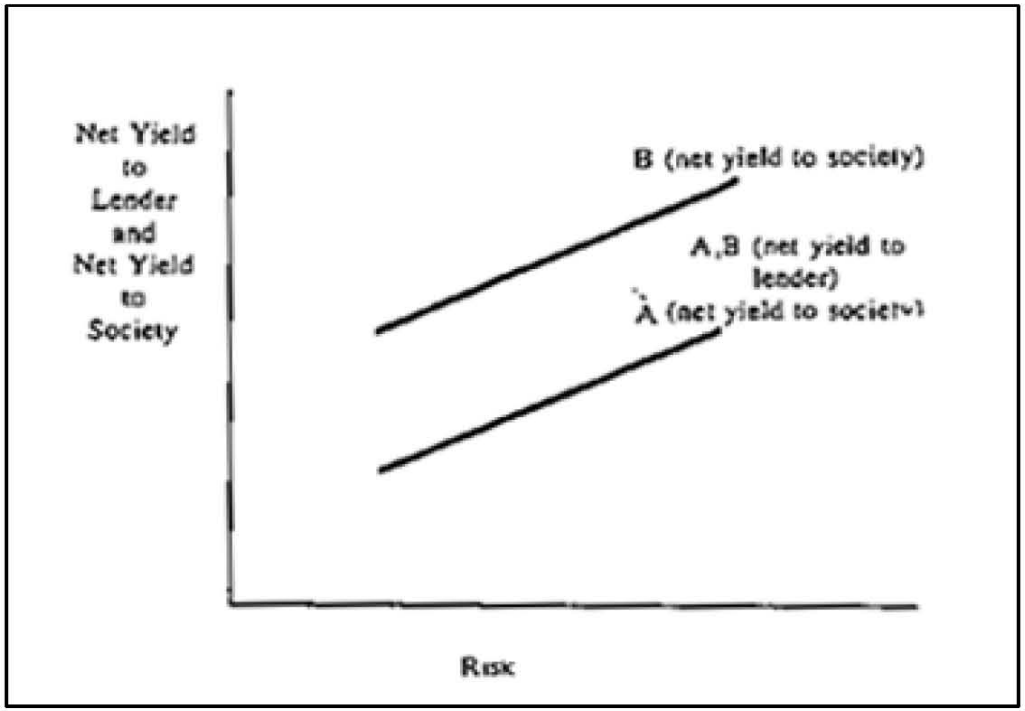

Source: Federal Reserve Board, Flow of Funds.

Figure 2. Household Debt Is a Large Share of the Total Debt Market




Note: 2009 data is as of the third quarter.
Source: Federal Reserve Board, Flow of Funds.

Figure 3. Coordination Can Increase the Net Yield to the Lender and Society




Source: Guttentag and Wachter (1980).