Recouping the True Cost of Predatory Lending: A Strategy for Preserving Our Neighborhoods

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Introduction

The various predatory lending schemes that have led to an increase in residential mortgage foreclosures, particularly in low-income, inner-city neighborhoods, have victimized not just the unfortunate mortgagors but also a variety of innocent bystanders including:

- other homeowners in the neighborhood whose property values are adversely affected by multiple foreclosures and destabilized neighborhoods;
- public funding sources (including cities and the Commonwealth) who can anticipate
    - the loss of prior investment of hundreds of millions of dollars in neighborhood stabilization and improvement;
    - reduced real estate tax receipts on account of falling values;
    - additional costs to combat arson and increasing levels of crime as neighborhoods destabilize; and
- community lending and development entities whose projects and loans are now also at risk.

The key participants in the predatory lending schemes include

- mortgage brokers and correspondents,
- bank and non-bank lenders,
- large national and international investment banks, and
- national rating agencies

each of whom sold, structured or promoted a mortgage product that they knew or reasonably should have known would

- lead to multiple foreclosures,

and each of whom knew or reasonably should have know that

- such multiple foreclosures would have an adverse impact on innocent bystanders.

Each of the participants had incentive to participate because each collects a fee for its participation. Moreover, by aggregating residential mortgage loans into large pools and then using the streams of income such loans produce to create collateralized mortgage obligations (CMOs) and collateralized debt obligations (CDOs), which are then sold to third parties (e.g. insurance companies, foreign banks and pension funds), the participants have been able to lay off the ultimate risk of loss from foreclosure on to third party purchasers.

The Problem

A homeowner's acceptance of a secured loan, evidenced by a promissory note and secured by a mortgage, for purposes of acquiring or refinancing a home has always carried with it the potential for a foreclosure of that homeowner's interest in the secured property for failure to make payments of principal and interest or failure to meet other requirements of the loan documents. All residential mortgage loans, however, do not carry the same risk of foreclosure. Loans, for example, that

- are appropriately underwritten to account for the homeowner's ability to pay,
- require evidence of sufficient income or assets,

- require reasonable loan to value ratios, or
- have consistent requirements with respect to the payment of principal and interest,

generally have very low foreclosure rates.

Foreclosure on properly underwritten loans generally occurs not because of the particular terms, covenants and conditions of the loan, but because of an unforeseen event or combination of events in the life of the homeowner or the community. A job is lost and not replaceable in timely fashion. An unforeseen illness reduces family income while increasing family expense. Real estate values fall because of unforeseen changes in market condition. Put another way, the events leading to the foreclosure are substantially independent of the particular terms of the loan.

Some residential mortgage loans, however, end in a foreclosure of the homeowner's interest not because of an unforeseen event or externality but because the particular terms and conditions that govern the loan reduce the likelihood that the homeowner will be able to make the agreed upon payments. In particular, loan transactions that contain so-called predatory features – e.g.,

- negative amortization provisions,
- teaser interest rates,
- stated rather than proven income requirements,
- unreasonably high loan to value provisions,
- unreasonably high closing costs that are then financed through the mortgage loan, balloon payments,
- inflated appraisals, and
- adding unsecured credit card debt to the mortgage loan

are more likely to cause homeowners to lose their homes through foreclosure.

(See Tab 2.)

According to the Center for Responsible Lending (CRL), a widely-respected national research center on mortgage lending, so-called sub-prime loans, or predatory loans, have foreclosure rates on the order of 19%. In an analysis of a six-year national sample of over $1.2 trillion of subprime loans representing approximately 70% of all subprime mortgage lending by dollar volume, CRL found that only 9% of all subprime loans were used by first time homeowners to purchase homes. More than 60% of all subprime mortgages were used to refinance existing mortgages.

Similarly, a study in the Journal of Real Estate Finance and Economics found that as many as 60% of subprime borrowers refinanced their loans with new subprime loans. (See Marsha Courchane, Peter Zorn, Brian Surette, Subprime Borrowers: Mortgage Transitions and Outcomes, p. 365. 374-376 Journal of Real Estate Finance and Economics (2004).)

Thus, many subprime mortgages represent the refinance of a prior distressed or troubled subprime mortgage, that is, borrowers who could not meet their monthly mortgage payments simply refinanced into a new, larger subprime mortgage. CLR estimates that the ultimate foreclosure rate on subprime mortgages is likely to be between 36% and 49%. (Tab 3.)

Teaser interest rate loans, that is, loans that start at an artificially low rate and then increase as much as 500 basis points in a short period of time, offer a particularly good example of loans that

end in foreclosure because of the particular terms and conditions of the note rather than other externalities. Often such loans are underwritten as though the teaser rate will last the life of the loan. Thus, as an example, a homeowner might qualify for a 30 year, $300,000 loan at an initial affordable rate of 2% because the monthly payment of principal and interest is only $1,109. When the rate jumps, generally after two years in what is known as a 2/28 loan, to 7% the monthly payment of principal and interest increases to $1,996, an increase of $887, or more than 55% per month, an amount for which the homeowner would not have qualified; and the homeowner loses the ability to pay the loan monthly. When combined with other features like negative amortization or high loan to value ratios, the likelihood of foreclosure increases.

Our analysis of multiple foreclosures in Boston provides evidence that, in the last eighteen months, residential foreclosure rates are up substantially and have clustered in low-income neighborhoods. (See Tab 1.) We can speculate on the precise reason for that clustering, but several factors are clear. For most homebuyers, obtaining a mortgage loan is the largest financial transaction they will ever engage in, but it is also a rare occurrence. Unless homebuyers have the education, the ability and the interest to develop sufficient financial acumen to assess competing loan products, they rely on the advice and counsel of the mortgage broker.

The mortgage broker, however, may not represent the interest of the borrower. Although mortgage brokers offer a variety of mortgage products, each with its own fee structure, they are not required to offer or even disclose all of their products to a potential borrower. In particular, they are not required to offer a borrower the lowest cost or the most appropriate mortgage loan. Moreover, the fees that a mortgage broker earns on a transaction depend on the product sold, and neither the actual fees earned nor the fees that could be generated by competing mortgage loan products are ever disclosed to the prospective borrower. Thus, a borrower may be offered and even encouraged to enter into a higher-priced, more risky loan because that particular loan product generates higher fees for the broker rather than because it is an appropriate product for the borrower.

Similarly, a low-income borrower with little awareness of the potential pitfalls of over borrowing, particularly when the initial “teaser” rate seems quite affordable, may also be implicitly or explicitly encouraged by the broker to overstate income in order to qualify for a higher loan amount, which generates a higher fee to the broker.

To the extent that low-income neighborhoods contain a greater concentration of potential borrowers who are less likely to have sufficient financial education to either effectively shop for the most appropriate and cost-effective mortgage loan or to assess the added risk of teaser rates and the like, such neighborhoods will show higher concentrations of “bad” loans leading to foreclosures.

Interestingly, lenders tend to specialize in prime loans or in subprime loans. Indeed, the rise of subprime mortgage lending is linked to the rise of new mortgage delivery systems in which a few higher-priced loan specialists and their networks of mortgage brokers dominate the subprime market. Channel specialization also extends to secondary market outlets. (See Tab 4.)

The Anatomy of a Loan Sale

At first blush, an analysis of the actions of the broker might seem sufficient to understand a failed loan transaction. The broker misleads the unsuspecting borrower, and a loan is made that will ultimately lead to foreclosure. Brokers, however, are only the beginning of the analysis because brokers are only sales agents for mortgage loan products developed by others; namely, bank and non-bank originators or lenders who do develop loan products, establish pricing, fees, and the like. (See Tab 5.)

Lenders, however, do not as a rule create mortgage loan products to hold for their own portfolios. First, most bank lenders seek the security of up-front fee-based income rather than take on the risk of fixed or variable interest income over time in a changing interest rate environment. Second, holding loans for portfolio requires the establishment of loan loss reserves that adversely affect reported income and that, therefore, can adversely impact share price. Third, by selling the loan, the lender passes along the risk of non-performance to a third party.

Accordingly, once a loan is made, the lender takes its own fee and then immediately sells the promissory note evidencing the loan, and its related mortgage, to an aggregator – typically an investment bank or other capital market intermediary. Since the lender needs a ready market for the loans it has made, it has a strong incentive to create mortgage loan products for which it knows a market exists. Thus, the party arguably most in control of the ultimate loan product and the markets in which such product is sold is neither the broker nor the lender but the capital market aggregator and the rating agencies who rate the ultimate financial instrument. (See Tab 6.)

The capital market aggregator buys the loan and combines it with many other loans to create a pool of loans from which it will create a series of capital market instruments known as a collateralized mortgage obligations, or CMOs, or collateralized debt obligations, or CDOs, which it then makes available for sale to its customers – generally large insurance companies, foreign banks and pension funds.

The CMO or CDO is not attached to a particular mortgage loan. Instead, the financial manager at the capital market aggregator uses the anticipated income from the aggregated mortgage loans to create a series of income streams, each with a different set of characteristics. For example, one stream might have a low rate of return, a relatively short duration, and be backed by the top 20% of the value of the underlying collateral, while another might have a higher rate of return, a longer duration and be backed by the bottom 20% of the value of the underlying collateral. Thus, each CMO or CDO has its own set of risk, return and pricing characteristics intended to appeal to its ultimate purchaser. Rating agencies who are asked to offer assurances of quality through the provision of a rating also actively participate in structuring CMOs and CDOs. (See Tab 5.) Whatever the characteristics of the CMO or CDO, its ultimate form takes it far afield from the original mortgage loan from which it originated.

The Internal and External Costs of A Residential Mortgage Foreclosure

The foreclosure of a loan on a primary home is one of the most devastating financial events that can occur in the life of a family. To the extent that homeowners have equity in their homes, that equity is often lost. Personal bankruptcy, a reduction in the family standard of living and, even,

homelessness often follow. Understandably, therefore, much of the public spotlight on residential foreclosure focuses on the losses incurred by individual homeowners and their families (See Tab 7.)

But foreclosure has other hidden costs, as well. When multiple foreclosures occur in the same neighborhood, particularly in low-income neighborhoods, the value of surrounding properties is reduced. (See Tab 8.)

A study of the neighborhood and public impact of foreclosures in Chicago found that beginning a foreclosure process on a home lowered the price of other nearby single-family homes, on average, by 0.9%. The study also showed that the downward pressure on housing prices extended to houses that sold within two years of the foreclosure. Further, the report found this negative impact was cumulative; that is, each additional foreclosure start on the block lowered values an additional 0.9%. The impact was even higher in lower-income neighborhoods, where each foreclosure dropped home values by an average of 1.44%. Overall the researchers estimated that the cost to the City of Chicago for these foreclosures, as measured by reduced property value and a lower tax base, was $598 million to $1.4 billion. (See Tab 8.)

The number of vacant properties increases and that, in turn, leads to an increase in arson and crime. Reduced home value is a real cost that is incurred not only by the foreclosed homeowner but also by that homeowner's neighbors. Reduced values also reduce property tax collections which, in turn, reduce funding for public schools. Arson increases insurance costs and adds to the cost of fire-fighting efforts. The resultant burned-out buildings provide shelter for illegal activities, all of which increase blight. In short, a once thriving neighborhood that residents were pleased to call home can quickly spiral into a blighted, decadent and substandard area that then requires substantial public subsidy to restore – an additional externalized cost of multiple foreclosures.

Multiple foreclosures in inner-city or low-income neighborhoods can be particularly devastating. Neighborhoods in Boston (and in other cities around the Commonwealth and around the nation) have been through this cycle before. For example, in the late 1960's and early 1970's the foreclosures resulting from a combination of 100% federally guaranteed lending within the so-called BBURG line and racially motivated block-busting tactics by unscrupulous brokers destroyed many of Boston's then thriving inner-city neighborhoods. (See The Death of an American Jewish Community: A Tragedy of Good Intentions, by Larry Harmon and Hillel Levine, Free Press, 1993.)

Taxpayers in the Commonwealth have been paying the cost of the BBURG debacle for more than thirty years. In the last five years alone, for example, the City of Boston through its Department of Neighborhood Development has invested more than $72,000,000 in the communities of Dorchester, Hyde Park, Mattapan, and Roxbury. These funds have leveraged an additional $177,000,000 in public investment dollars which combined have funded over $649,000,000 in projects in these neighborhoods which have generated and/or preserved over 4,500 units of housing. (See Tab 9.) If the downward spiral occasioned by multiple neighborhood foreclosure is allowed to proceed, a substantial portion of the value of that public

investment will be lost. The potential loss multiplies many times when investment in other low-income urban areas – Brockton, Lawrence, Lowell, Springfield, etc. – is taken into account.

Non-profit lenders that finance the redevelopment of low-income communities are at risk, too. Boston Community Capital, for example, has nearly $25,000,000 (representing almost 25% of our total portfolio) in loans outstanding tied to affordable housing, community development and neighborhood stabilization projects in neighborhoods hard hit by predatory lending schemes. (See Tab 9.) Affordable homes developed by community development corporations and other non-profit developers are all also at risk.

Potential Strategies Toward A Solution

Broadly speaking, the potential strategies for ameliorating the impact of multiple foreclosures include:

- policy and regulatory changes at the municipal, state and federal levels;
- self-regulation by the relevant industries; and
- a business strategy intended to create financial disincentives for developing and selling residential mortgage loans likely to lead to foreclosure.

With the notable exception of the imposition of a moratorium on mortgage foreclosures, many of the policy and regulatory proposals, for example,

- the hearings that Senator Chris Dodd is holding for the purpose of developing a set of principles for the residential mortgage industry,
- proposed legislation to regulate or criminalize certain activities of mortgage brokers,
- statements by federal financial regulatory agencies,
- proposed modifications to Ch.93A, and
- modifications to the bankruptcy code

are prospective in nature. While they may be helpful in ameliorating future mortgage foreclosure cycles, they will not solve the current challenge.

Similarly, while work accomplished by the various Massachusetts mortgage lenders who focus primarily on the prime mortgage market may be helpful going forward, the creation of new self-regulating principles will not save our neighborhoods from the current effects of multiple residential foreclosures.

The Remedies

Any remedy should include elements of the following:

- a substantial buy-out fund financed by investment banks and others who have participated in structuring, promoting and selling the foreclosed loans; and
- a shift in the way capital markets finance residential mortgages so that the participants who structure and promote the sale of instruments based on income streams from residential mortgage pools are
    - not relieved of the risk of foreclosure, and

- required to certify that the underlying mortgage loans have been fully and fairly underwritten consistent with a set of underwriting criteria that are agreed upon by the ultimate purchasers of the CMOs and CDOs.

The buy-out fund could be administered by non-profit housing finance entities, the public sector, or a combination thereof. It should be able to fashion remedies that are customizable to the particulars of each foreclosed loan. For example, in some circumstances the fund might write down first mortgages to a level at which a particular homeowner would qualify pursuant to conservative underwriting guidelines and fund the remainder of the mortgage through a soft-second mortgage program. In other circumstances, in which a homeowner has neither equity in the home nor sufficient income or creditworthiness to qualify for any significant mortgage, a fund-related entity might assume title to the home and offer the homeowner the ability to remain as a tenant. In still other circumstances, a fund-related entity might take title and convey the home to a community development corporation or similar community based organization with a commitment to maintaining affordable housing. Fund-related entities should also be able to finance credit counseling and similar financial education for affected homeowners. In each circumstance, however, the fundamental principle should be to maintain neighborhood stability and value in addition to assisting the foreclosed homeowners.

Stabilization of neighborhoods and maintenance of the value of public and non-profit sector investment in inner-city, low-income neighborhoods is key to the economic health and well being not just of the Commonwealth but of our sister states around the nation. It should not be sacrificed to the predatory activities of a few.

Tab References

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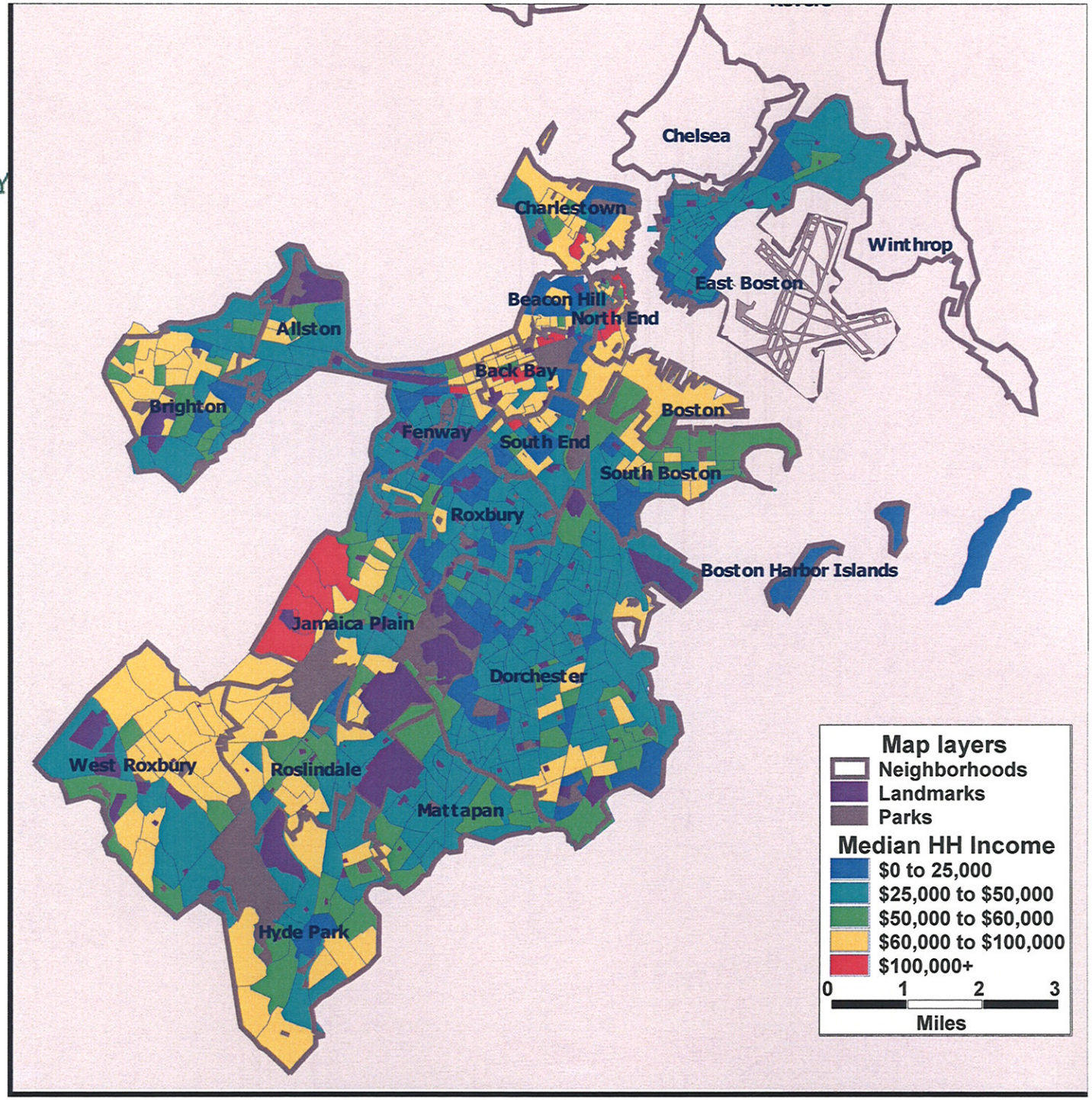

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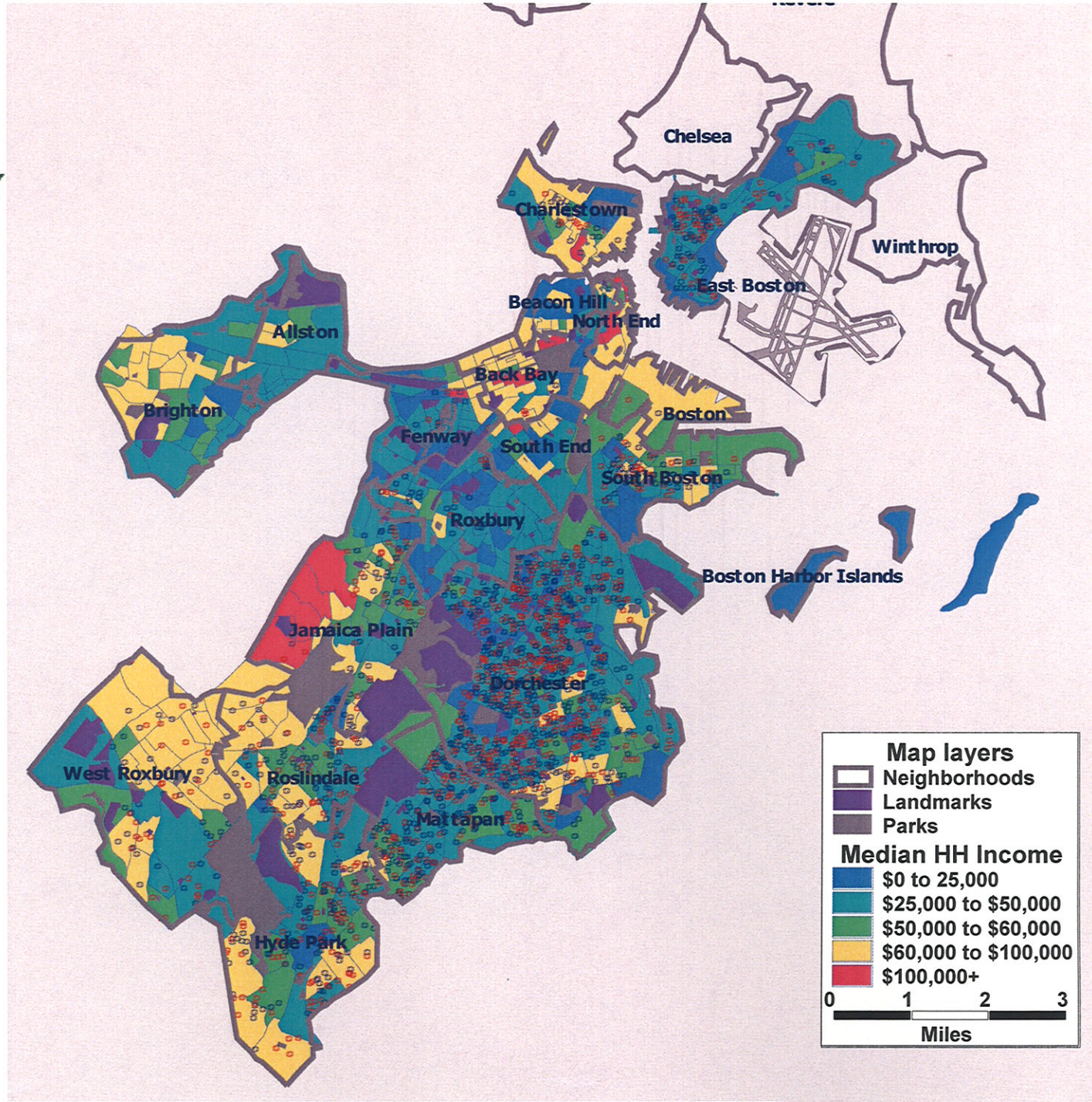

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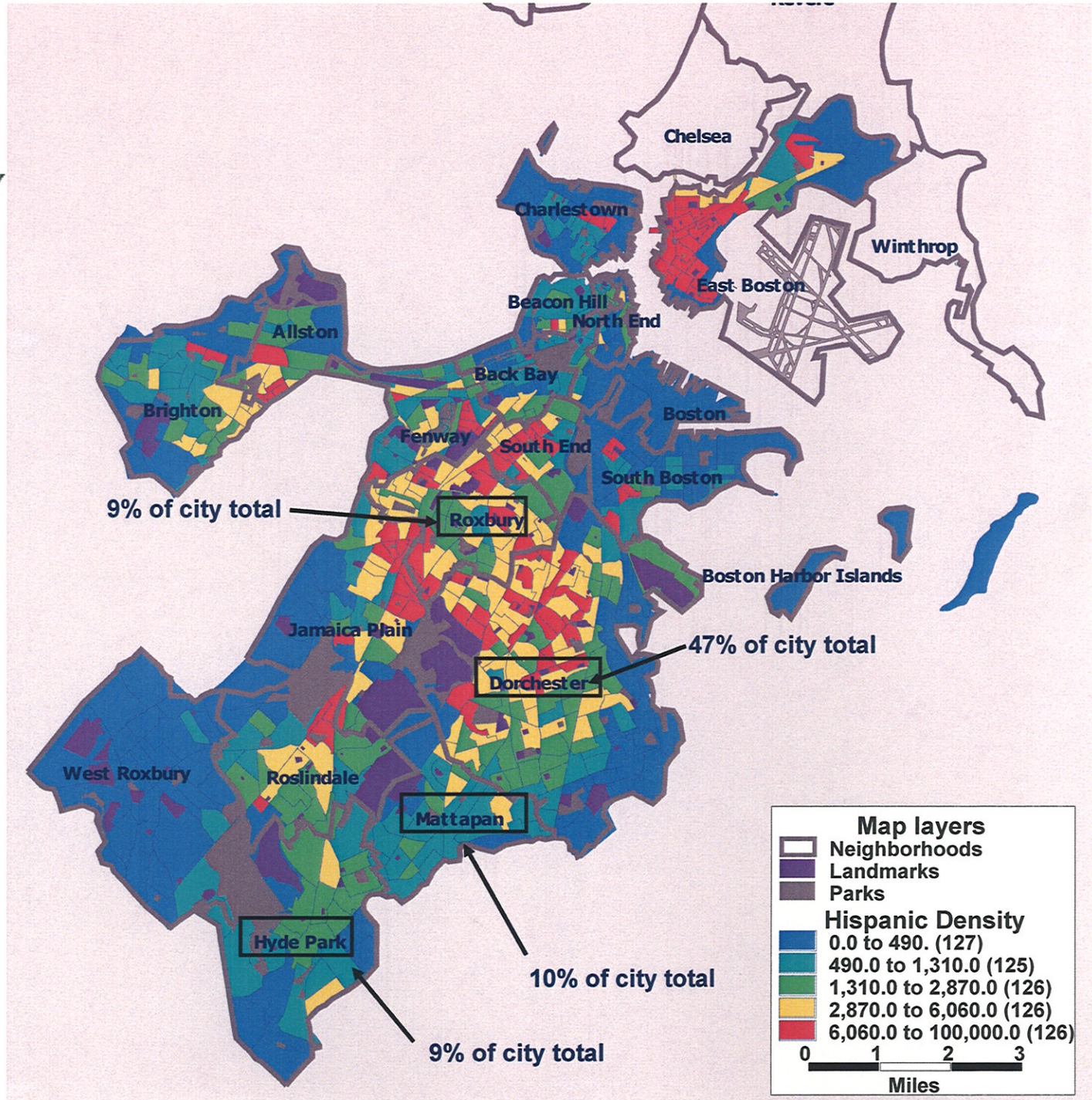

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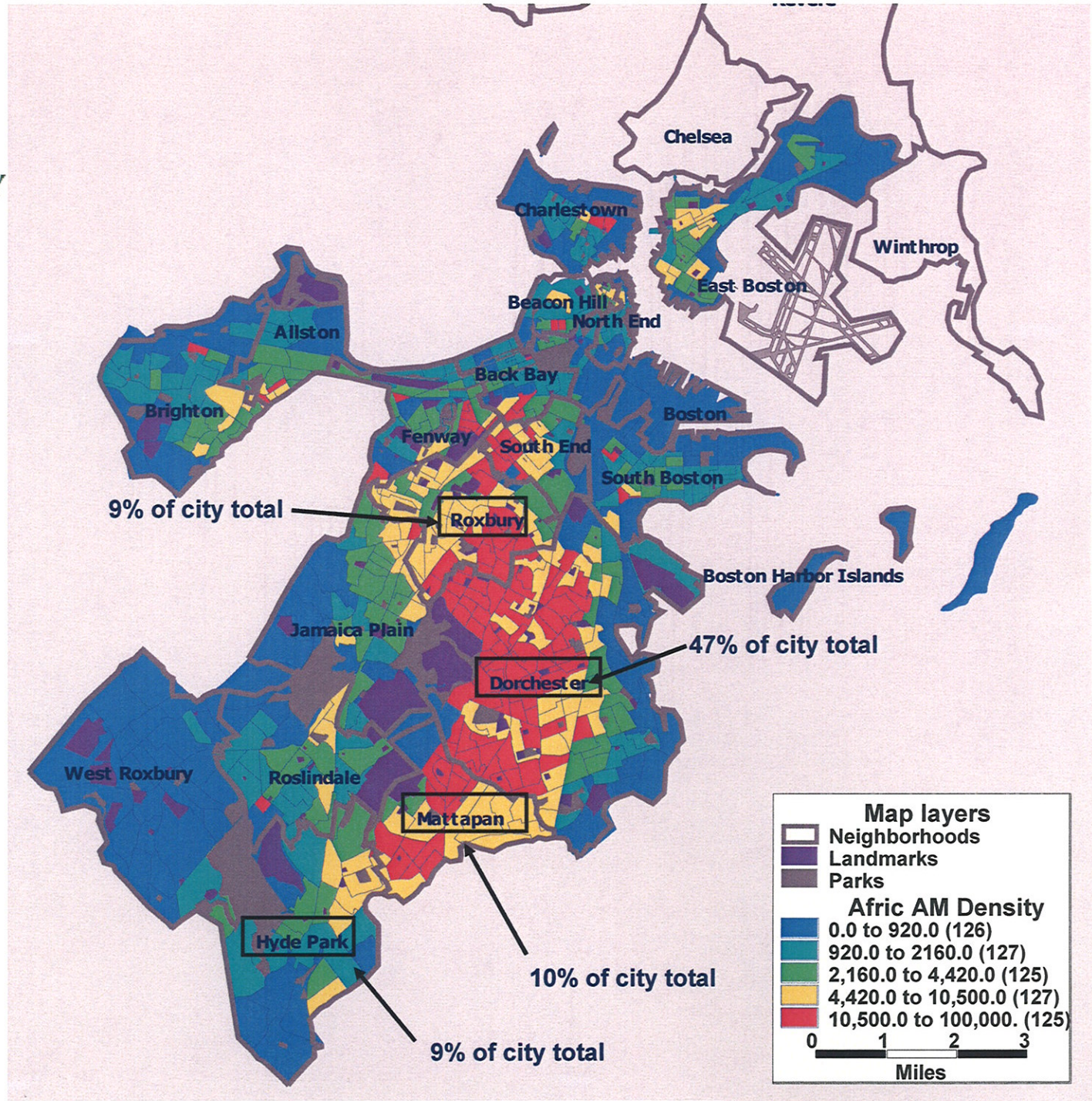

Predatory Mortgage Lending Overview

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Predatory Mortgage Lending

Introduction:

The American dream of homeownership is being seriously threatened by a segment of the nation's mortgage lenders and brokers who are utilizing a variety of abusive lending practices to cheat, exploit and strip away the home equity (value) from individual homeowners and in some cases the equity of entire communities. Cloaked in a mantle of "trust", unscrupulous lenders engage in predatory lending practices that are questionable, fraudulent, and in many case just plain illegal.

Being informed of these lending practices is the best defense to avoid becoming a victim of predatory lending.

Definition:

A **predatory mortgage loan** is an unsuitable loan designed to exploit vulnerable and unsophisticated borrowers. A predatory loan has one or more of the following features:

- Charges more in interest and fees than is required to cover the added risk of lending to borrowers with credit imperfections or past problems;
- Contains abusive terms and conditions that trap borrowers and lead to a spiral of increased indebtedness;
- Does not take into account the borrower's ability to repay the loan; and
- Often violates fair lending laws by targeting women, minorities and communities of color.

Predatory Lending Targets:

The main targets of predatory mortgage lenders are families and individuals with less than perfect credit histories. These persons have limited incomes, but do have equity (value) in their homes and historically have been the elderly, minorities and women. They are frequently individuals whose homes are in need of repair, or homes that have been damaged as a result of natural disasters such as hurricanes, tornados or floods. In most, but not all cases, they are ineligible for "normal" **prime mortgage loans** and must go to **sub-prime loan** lenders.

Sub-prime Mortgage Lending:

Sub-prime mortgage loans are offered at higher interest rate to homebuyers who do not qualify for prime loans because of their credit histories. Studies have shown that as much as 50 percent of the refinanced mortgage loans could have been prime loans, but some mortgage lenders and brokers are steering lenders to sub-prime loans where profits and fees are higher.

The higher rates for sub-prime loans are justified by the lending industry because of the higher risks associated with lending money to those with "poor" credit. ***Sub-prime loans are not in their nature predatory,*** but they do provide opportunities to dishonest and greedy mortgage lenders and mortgage brokers to exploit vulnerable borrowers.

Predatory Lending Practices:

Marketing-

• **Aggressive solicitations to targeted neighborhoods** – Companies typically advertise through television commercials, direct mail, by telephone and door-to door. The companies use terms like "no credit, no problem," or "credit never a problem." They frequently distribute **live checks,** that when endorsed and cashed commit homeowners to high interest, high fee, second mortgages putting their homeownership at risk.

• **Home improvement scams** – Predatory mortgage lenders use local home improvement companies to solicit loan business. The home improvement contractor makes claims that are frequently untruthful including stating the government will pay for a portion of the repairs. Repairs are done without the necessary permits, and the homeowner is often overcharged for the work.

• **Kickbacks to mortgage brokers** ("Yield Spread Premiums") –While pretending to work for the homeowner to find them the "best" mortgage, the broker is actually working for the predatory lender and receives fees from the homeowner and also the predatory mortgage company for bringing them new business.

• **Racial steering to high rate lenders** – Minority homeowners who would be eligible for prime loans, (some studies indicated at least 50%), if they approached the right financial institution, fall victim to brokers and others who steer them to predatory sub-prime lenders where fees and profits are higher.

Sales Procedures –

• **Purposely structuring loans with payments the borrower cannot afford** – loans should be structured on the borrower's ability to pay, not on whether the house value can "cover" the amount of the loan.

• **Falsifying loan applications (particularly income level**) - lenders pretend to assist homeowners to secure a mortgage by falsifying income levels, but in reality they help cause financial hardship and possible calamity for the borrower.

• **Adding insincere co-signers** – lenders/brokers add individuals, who do not have any will, ability, or the money to support the payment of the loan, in order to secure the mortgage.

• **Making loans to mentally incapacitated homeowners**

• **Forging signatures on loan documents** (i.e., required disclosure) – salesmen are forging borrowers signatures to documents that place the borrowers home in jeopardy, or ask the borrower to sign applications that have blank spaces that are filled in later with higher rates and fees than agreed upon. Never sign blank spaced documents!

• **Paying off lower income mortgages** – urging borrowers to pay off lower income mortgages and replacing them with larger mortgages with higher rates.

• **Shifting unsecured debt into mortgages** – lender counsels borrowers to pay off-credit card debts or health costs with a second mortgages

• **Loans in excess of 100% LTV** – taking a loan on your house that is more than the value of your house

• **Changing the loan terms at closing** – tactic causes higher fees and higher loan payments and violates many state laws on full disclosure of mortgage details before closing.

The loan itself -

• **High annual interest rates** – all rates should be in line with other sub-prime rates being charged by other financial institutions.

• **High points or padded closing costs**

• **Balloon payments** – loans that require a huge payment within 3-8 years, a payment so high that it would require a new loan.

• **Inflated appraisal costs** – a major cause of foreclosures when the home is appraised way beyond its actual value and the amount of the mortgage is then increased.

• **Padded recording fees** – the charging of fees above what is set by local and state laws

• **Bogus broker fees** – setting fees in excess of those set by law and/or industry

• **Unbundling (itemizing duplicate services and charging separately for then**) – charging of one fee for several un-itemized services, and then itemizing the services and charging for each of them *again.*

• **Required credit insurance** – requiring borrower to pay for credit insurance to guard against a default; sometimes requiring it to be pre-paid and placed as part of the loan; borrower then has to pay interest on the insurance premium

• **Falsely identifying loans as "lines of credit" or "open end mortgages"**

• **Forced placed homeowners insurance** – requiring homeowners insurance supplied by lender or mortgage broker; sometimes requiring it to be pre-paid and placed as part of the loan; borrower then has to pay interest on the insurance premium.

• **Mandatory arbitration clauses** – borrower waves right to take lender to court regarding the mortgage and requires arbitration in location and by individuals hired by the lender.

After closing:

• **Flipping** (repeated refinancing, often after high-pressure sales) – this repeated re-financing usually has no benefit to the homeowner in lower rates or shorter timeframe for payment. It generates higher fees, higher rates and more profit for the lender... and nothing but grief for the borrower.

• **Daily interest when loan payments are late –** there is usually a 10-15 day grace period before late payments are charged and late payments are usually based on weeks, not a daily calculation.

• **Abusive collection practices –** garnishment of wages without due process, phone calls and visits and the threatening of borrowers are frequent occurrences

• **Excessive prepayment penalties –** sets excessive charges so that paying off the loan early becomes too costly, and borrowers are stuck paying the loan and all the interest over the entire agree upon period.

• **Foreclosure abuses –** move to foreclosures too quickly and sell the house (or buy the house themselves) far below market value to cover the loan; both actions leave the homeowner with nothing.

• **Failure to report good payment on borrower's credit reports –** by failing to report good payment activity, borrowers credit never improves and them can continue loan them funds at sub-prime rates,

• **Failure to provide accurate loan balance and payoff amount** – action works to discourage payoff of loan and thereby avoid a loss of interest to lender; inaccurate information causes the borrower to pay more than necessary to satisfy the loan.

Subprime Lending:
A Net Drain on Homeownership

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About the Center for Responsible Lending

The Center for Responsible Lending is a nonprofit, nonpartisan research and policy organization dedicated to protecting homeownership and family wealth by working to eliminate abusive financial practices. CRL is affiliated with Self-Help, one of the nation's largest community development financial institutions.

Visit our website at **www.responsiblelending.org.**

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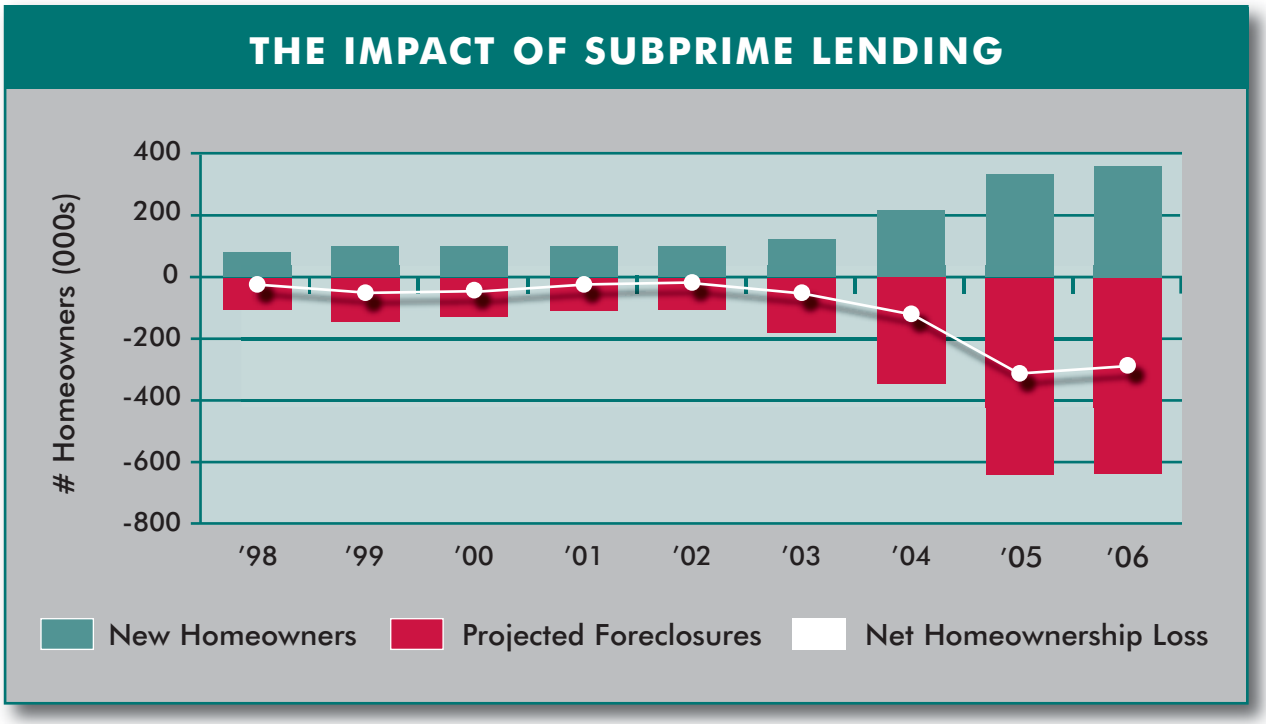
Subprime Lending: A Net Drain on Homeownership

Over the past nine years, the subprime market has produced more than $2 trillion in home loans, but contrary to industry assertions, these loans have *not* resulted in a net gain in homeownership. Between 1998 and 2006, only about 1.4 million first-time home buyers purchased their homes using subprime loans. In CRL's "Losing Ground" report, we estimated that over 2.2 million borrowers who obtained subprime loans will lose or have already lost their home to foreclosure. Updating the analysis to include subprime originations for fourth quarter 2006 increases the total number of projected subprime foreclosures to 2.4 million.[1]

Subprime loans made during 1998-2006 have led or will lead to a net loss of homeownership for almost one million families. In fact, a net homeownership loss occurs in subprime loans made in every one of the past nine years.

The result: Subprime loans made during 1998-2006 have led or will lead to a net loss of homeownership for almost one million families. In fact, a net homeownership loss occurs in subprime loans made in every one of the past nine years.[2]

History has shown that borrowers with lower incomes or blemished credit can be successful homeowners when given suitable mortgages with reasonable terms and fees. But lax underwriting practices, dangerous loan products, and a disregard for affordability have set up vulnerable homeowners to fail. As a result, millions of families with the most to gain from ownership have lost their homes and billions of dollars in equity.



See Table 2 for data points

The implications of this analysis are even more disturbing given the difficulties of recovering from foreclosure. Research indicates that homeowners who give up homeownership for any reason can take more than a decade to get back in—longer for minorities.[3] Thus, these subprime foreclosures represent a loss of opportunity for wealth-building that can carry forward for many years.

We estimate that overall since 1998, only 9% of subprime loans have gone to first-time homebuyers and hence led to increased homeownership.

Why a Net Loss?

Basic characteristics of the subprime market explain the net loss in homeownership. First, most subprime loans are not used for buying homes, but for refinancing existing mortgages. Until the recent boom in housing prices, the overwhelming majority of subprime loans were refinances.[4] Even in 2006, subprime refinance loans accounted for a majority (56%) of all subprime loans originated. These loans, obviously, do not contribute to new homeownership. Additionally, a significant proportion of subprime purchase mortgages are obtained by existing homeowners buying another home, not first-time homebuyers.[5] Again, this does not increase homeownership levels. We estimate that overall since 1998, only 9% of subprime loans have gone to first-time homebuyers and hence led to increased homeownership (Table 1).

TABLE 1: Estimated New Homeownership from Subprime Lending

Year	Total Subprime Loans Originated[6]	Subprime Loans Used for Home Purchases		Estimated Subprime Loans to First-Time Homebuyers[7] (Homeownership Gain)	
		Number	% of all SP Loans	Number	% of all SP Loans
1998	962,273	293,012	30%	73,253	8%
1999	1,132,280	357,234	31%	89,309	8%
2000	911,369	350,604	38%	87,651	10%
2001	918,557	323,424	35%	80,856	9%
2002	1,046,072	343,530	33%	85,883	8%
2003	1,505,854	483,229	32%	120,807	8%
2004	2,219,547	876,721	40%	219,180	10%
2005	3,259,908	1,297,443	40%	324,361	10%
2006	3,219,749	1,416,690	44%	354,172	11%
TOTAL '98-'06	**15,175,609**	**5,741,887**	**38%**	**1,435,472**	**9%**

Second, a sizeable percentage of subprime loans end in foreclosure—a much higher proportion than prime loans. We estimate that 15.6% of all subprime loans originated since 1998 either have ended or will end in foreclosure and the loss of homeownership (Table 2). These statistics include homeowners who bought their homes with prime loans, but have lost or will lose their homes through abusive subprime refinance loans. (Projections aside, we note that a net loss of homeownership has ***already*** played out for portfolios of

We estimate that 15.6% of all subprime loans originated since 1998 either have ended or will end in foreclosure and the loss of homeownership.

seasoned subprime loans, which have previously experienced their peak foreclosure activity.)

Comparing the homeownership gain from subprime lending to first-time homebuyers (Table 1) to the loss of homes caused by subprime foreclosures (Table 2), we see a net loss of homeownership from subprime loans made each year since 1998, totaling almost one million families.

TABLE 2: Net Impact on Homeownership from Subprime Lending

Year	Total Subprime Loans Originated[6]	Homeownership Gain: Subprime Loans to First-Time Homebuyers (A)	Homeownership Loss: Projected Subprime Foreclosures[8]		Net Homeownership Gain or (Loss) (A) - (B)
			No. of Foreclosures (B)	Cumulative Foreclosure Rate	
1998	962,273	73,253	94,750	9.8%	(21,497)
1999	1,132,280	89,309	144,567	12.8%	(55,258)
2000	911,369	87,651	133,126	14.6%	(45,475)
2001	918,557	80,856	105,464	11.5%	(24,608)
2002	1,046,072	85,883	102,252	9.8%	(16,369)
2003	1,505,854	120,807	181,464	12.1%	(60,657)
2004	2,219,547	219,180	348,345	15.7%	(129,165)
2005	3,259,908	324,361	632,302	19.4%	(307,941)
2006	3,219,749	354,172	624,631	19.4%	(270,459)
TOTAL '98-'06	**15,175,609**	**1,435,472**	**2,366,901**[10]	**15.6%**	**(931,429)**

Lost Homeownership for African-Americans and Latinos

Subprime lenders frequently assert that subprime loans have been a boon for African-American and Latino families in particular, but that's not the case: Both populations also experienced a net loss of homeownership due to these loans.

TABLE 3: Impact of 2005 Subprime Lending on Homeownership by Race/Ethnicity

	African-Americans	Latinos	Other Borrowers
2005 Subprime Originations[11]	505,286	570,484	2,244,617
Number of Subprime Loans to First-Time Homebuyers (Homeownership Gain)	50,925	72,981	200,455
Projected Foreclosures on 2005 Subprime Loans (Homeownership Loss)[12]	98,025	110,674	423,723
Net Homeownership Gain or (Loss)	**(47,101)**	**(37,693)**	**(308,061)**

An Urgent Need to Act

Regulators and Congress have hesitated to curb abusive and reckless lending practices, citing a concern that stronger consumer protections might reverse the gains in homeownership. The poor record of subprime loans shows that this fear is misplaced. In fact, states that have passed stronger laws in recent years have reduced targeted practices without reducing access to home loans.[13] By acting now, policymakers will help ensure that mortgage loans pave the way to sustainable homeownership that truly benefits families and their communities.

Notes

1 All figures in this analysis cover only loans to owner-occupants in the 50 states and the District of Columbia secured by a first-lien on a single-family home, condominium, townhouse, or a unit in a planned development. 1998-2004 figures are derived from a proprietary database of subprime loans sold in the secondary mortgage market between 1998 and 2004. We modified 2005-2006 estimates from *Inside Mortgage Finance* and SMR Research Corporation to account for these criteria.

2 Our numbers are conservative for two reasons. First, the proprietary database used consists of loans sold on the secondary market, and contains a higher proportion of subprime loans used for home purchase than the overall subprime market. Second, the foreclosure projections were developed by CRL for its recent study *Losing Ground: Foreclosures in the Subprime Market and Their Cost to Homeowners (see full cite in note 8 below)*, and are based on conservative assumptions. Since that report was published in December 2006, other analyses suggest that foreclosures in the subprime market could actually be higher than CRL's projections. See, e.g., Lehman Brothers projects 30% losses over time for subprime loans originated in 2006 (*Mortgage Finance Industry Overview*, p. 4. Lehman Brothers Equity Research. December 22, 2006). If Lehman Brothers' foreclosure projections for 2006 are incorporated with CRL's projections for prior years, the total number of subprime foreclosures originated 1998-2006 climbs to 2.7 million households.

3 Donald R. Haurin and Stuart S. Rosenthal, *The Sustainability of Homeownership: Factors Affecting the Duration of Homeownership and Rental Spells*, p. 43 HUD Office of Policy Development (December, 2004), at **http://www.huduser.org/Publications/pdf/homeownsustainability.pdf**

4 Data on subprime loans used for home purchase versus refinance were derived from the proprietary database for 1998-2004, and from SMR Research Corp and *Inside Mortgage Finance* for 2005-2006. The specific percentages by year are shown above. Totals may not add to 100% because a small percentage of loans in the database are listed as "other purpose."

	1998	1999	2000	2001	2002	2003	2004	2005	2006
% Subprime Refinance	67.2	66.9	60.4	64.8	67.1	67.9	60.5	60.0	56.0
% Subprime Purchase	30.5	31.6	38.5	35.2	32.8	32.1	39.5	40.0	44.0

5 Douglas Duncan of the Mortgage Bankers Association testified on February 27, 2007 before the U.S. Senate Committee on Banking, Housing, & Urban Affairs that "based on first half 2006 data, nearly half of non-prime borrowers, or 45 percent, utilize nonprime loans to buy homes. One in four of these purchases was by a first-time homebuyer." (See p. 5 at **http://banking.senate.gov/_files/duncan.pdf**)

6 See note 1 for information on the source of these numbers.

7 Our analysis applied the percentage of loans to first-time homebuyers cited by the MBA (25%, see note 5) consistently to subprime purchase loans for all years 1998-2006. We believe this is a conservative approach, as the percentage of first-time homebuyers served in earlier years was probably below this figure.

8 Ellen Schloemer, Wei Li, Keith Ernst, and Kathleen Keest, *Losing Ground: Foreclosures in the Subprime Market and Their Cost to Homeowners*, Center for Responsible Lending at 16 (December 2006), available at **www.responsiblelending.org.** The statistics for 2006 have been adjusted upward to reflect inclusion of fourth quarter 2006 numbers, which were not included in original report published December 2006.

9 See *Losing Ground* (note 8), p. 22.

10 CRL's original foreclosure projection of 2.2 million for subprime loans originated from 1998 through 2006 did not include Q4 2006 data. See *Losing Ground* (note 8), p. 22.

11 HMDA statistics for the total market are slightly lower than statistics shown in Tables 1 and 2, because not all subprime lenders are required to report under HMDA regulations.

12 Assumes a 19.4% foreclosure rate as calculated for all 2005 subprime originations—see Table 2. This is a conservative estimate, as communities of color receive a disproportionate share of subprime loans, and the clustering of foreclosures in these markets is likely to cause a "feedback loop" that further depresses home values in the market and spurs additional foreclosures.

13 Wei Li and Keith Ernst, *The Best Value in the Subprime Market: State Predatory Lending Reforms*, Center for Responsible Lending (February 23, 2006), available at **www.responsiblelending.org.**

Losing Ground:

Foreclosures in the Subprime Market and Their Cost to Homeowners

Ellen Schloemer, Wei Li, Keith Ernst, and Kathleen Keest
Center for Responsible Lending

December 2006

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SYNOPSIS

In this report, we examine foreclosure trends in the subprime market and provide the first comprehensive assessment of how homeowners have fared in the fast-growing subprime mortgage market. Our research analyzes the performance of more than six million subprime mortgages from 1998 through 2004 and projects lifetime cumulative subprime foreclosure rates for each annual cohort of subprime loans from 1998 through 2006. We investigate patterns of subprime foreclosures and, based on housing appreciation forecasts from Moody's Economy.com, project subprime foreclosure rates and losses for homeowners.

Our results show that despite low interest rates and a favorable economic environment during the past several years, the subprime market has experienced high foreclosure rates comparable to the worst foreclosure experience ever in the modern prime market. We also show that foreclosure rates will increase significantly in many markets as housing appreciation slows or reverses. As a result, we project that 2.2 million borrowers will lose their homes and up to $164 billion of wealth in the process. Further, we find that many features of typical subprime loans substantially increase the risk of foreclosure, regardless of the borrower's credit history.

Acknowledgements

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Editor's Note

This report reflects minor corrections made since its initial release on December 19, 2006. None of these changes altered the methods, results or conclusions contained in the December 19 version.

I. EXECUTIVE SUMMARY

In this report, the Center for Responsible Lending presents research on how homeowners have fared with subprime mortgages. Analyzing the performance of more than six million subprime mortgages made from 1998 through the third quarter of 2006 and taking into account changes in housing prices, we find that foreclosure risk in the subprime market has escalated in recent years, and is likely to grow even worse in many areas.

As this year ends, 2.2 million households in the subprime market either have lost their homes to foreclosure or hold subprime mortgages that will fail over the next several years. These foreclosures will cost homeowners as much as $164 billion, primarily in lost home equity.

We project that one out of five (19 percent) subprime mortgages originated during the past two years will end in foreclosure. This rate is nearly double the projected rate of subprime loans made in 2002, and it exceeds the worst foreclosure experience in the modern mortgage market, which occurred during the "Oil Patch" disaster of the 1980s.

In brief, these are the primary findings:

1. Even during the recent period of strong housing appreciation, subprime foreclosures have been high. As many as one in eight (13 percent) subprime home loans ended in foreclosure within five years of origination.

2. The past housing boom masked the high proportion of homeowners who have struggled with subprime loans. For many borrowers, strong house price growth increased the amount of equity in their homes and enabled them to refinance their mortgages despite being behind on the monthly payments. When these distressed prepayments are added to the foreclosure rates, the total "failure rate" for subprime loans approaches 25 percent.

Key Findings

- 2.2 million subprime home loans made in recent years have already failed or will end in foreclosure.
- These foreclosures will cost homeowners as much as $164 billion.
- One out of five subprime mortgages originated during the past two years will end in foreclosure.

About this Research

Our study projects foreclosures on subprime home loans made nationwide during each year from 1998 through 2006, and measures the effects of housing appreciation on loan performance. We estimate future foreclosure rates using housing appreciation forecasts developed by Moody's Economy.com, and predict subprime foreclosure rates in all major metropolitan areas in the United States. The study also examines factors associated with subprime foreclosures, including high-risk features typically included in subprime home loans.

3. As housing prices decline, subprime foreclosures will rise. Now that the housing boom has cooled, fewer delinquent borrowers will have the equity needed to refinance their loan or sell their home to avoid foreclosure. Our results confirm that foreclosures are more likely in housing markets with lower house price growth.

4. The chance of foreclosure on a subprime loan doubled between 2002 and 2005. Subprime loans originated in 2002 have a one-in-ten lifetime chance of foreclosing. For loans originated in 2005 and 2006, the probability shoots up to one in five.

5. Multiple subprime loans boost foreclosure risk even higher. Lenders often portray subprime loans as a stepping-stone to a prime loan. In reality, many borrowers in the subprime market refinance from one subprime loan to another, losing equity each time to cover the cost of getting a new loan. When we analyze the likelihood of foreclosure for borrowers who repeatedly refinance, we find that the risk of losing the home climbs to 36 percent. While more research is needed, this estimate relies on assumptions drawn directly from refinance patterns in the subprime market.

Why Subprime Foreclosures Matter

The report describes the first comprehensive research on foreclosures in the subprime market, assessing how frequently subprime mortgages fail and the associated costs to homeowners. The loss of home equity is significant because, for most families, the value of this ownership is their greatest financial asset. The performance of the subprime market is significant because it has rapidly grown from a niche market into a major economic force, now representing roughly one quarter of all home loans made in the United States.

Our research shows that subprime foreclosure levels have been extraordinarily high even during the recent past. As housing appreciation slows, subprime foreclosures will rise even higher in the future. The losses will inevitably have ripple effects throughout the economy and our society as over two million families lose their physical shelter, their major source of financial security, and the social benefits of homeownership.

Increased Foreclosure Rates Will Adversely Affect Communities

Increased foreclosures will have an adverse impact on many local markets and specific communities.

Problem Markets. Real estate markets that have experienced high housing appreciation in recent years will see a marked increase in subprime foreclosures as housing prices cool. In fact, increases in subprime foreclosures will be the norm. Using recent Moody's Economy.com housing appreciation forecasts, we show projected subprime foreclosure rates in every major metropolitan statistical area in the U.S. Our data show that cities in California, Nevada, New Jersey, New York and Michigan, as well as the greater Washington, D.C. area, can expect a high rate of subprime foreclosures.

Vulnerable Homeowners. It is beyond the scope of our study to analyze racial disparities related to subprime foreclosures. However, the loss of equity resulting from subprime foreclosures will affect a great many African American and Latino homeowners, since these communities receive a disproportionate share of subprime home loans.

Subprime Loans Inherently Pose Higher Risk of Default

Subprime loans are riskier in and of themselves, not just because the borrowers may have weaker credit. Borrowers who are already financially vulnerable are receiving loans known to pose a higher risk of default.

The following factors contribute to subprime foreclosures:

Risky Loans. Subprime mortgages routinely include features that increase the risk of foreclosure. Such features include adjustable interest rates, balloon payments, prepayment penalties, and loans with limited documentation of borrowers' loan qualifications. We note that the dominant type of subprime loan today is an adjustable-rate mortgage called a "2/28" that features semi-annual interest rate adjustments after a two-year fixed-rate period. The initial fixed rate is often a discounted or "teaser" rate, so the rate adjustment can lead to a significantly higher payment. Because of the resulting payment shock, these loans are sometimes referred to as "exploding ARMs."

We also note an increasing share of loan products in the subprime market that limit the amount of equity a borrower builds. These loans also carry a high risk of payment shock and may limit homeowners' ability to acquire the equity needed to refinance out of an unaffordable loan.

Loose Underwriting. Lax underwriting standards magnify the risk of loans that already include high-risk features. Subprime lenders who market exploding ARMs and other high-risk loans often do not adequately consider whether the homeowner will be able to pay when the loan's interest rate resets, even if rates stay constant. Lenders escalate the risk of foreclosure even further when they fail to require escrow for the cost of property taxes and hazard insurance, and when they approve loans without verifying the borrower's income and employment.

Predatory Lending. This report does not attempt to measure how predatory lending may contribute to subprime foreclosures, but we make several points that suggest predatory practices may play a large role: In recent years, more subprime lenders with significant market share have been successfully prosecuted for predatory lending activities. In addition, high-risk loan products and terms, so common in the subprime market, make it easier for unscrupulous lenders to entice borrowers with a low **initial** payment, regardless of whether the borrower can manage future payments. Costly fees and prepayment penalties associated with predatory loans also strip equity, making it harder for borrowers to refinance and forcing them into foreclosure more quickly. We also note reports of increasing problems associated with foreclosure "rescue" scams.

Third-Party Originators/Lack of Accountability. Mortgage brokers, who originate the majority of subprime mortgages, have a strong incentive to close as many loans as possible, but very little reason to consider the loans' future performance. Lenders shield themselves from the full potential cost of foreclosures by selling their loans to investors through the secondary mortgage market. Together, third-party originations and the risk dispersion made possible through the secondary market help distance loan originators from seriously adverse consequences of foreclosures.

Inadequate Oversight. Today there are insufficient legal and regulatory consequences for making home loans that are not appropriate or affordable for the borrower. Recently federal and state regulators issued guidance requiring lenders to tighten credit standards on certain high-risk home loans. However, these standards do not apply to all risky loan products and questionable business practices common in the subprime market.

Proposed Solutions

With billions of dollars in equity already lost, there is an urgent need to curtail foreclosures in the subprime market and mitigate losses families will incur in the future on unsustainable mortgages. In brief, CRL recommends the following:

Establish that every borrower has the means to repay his/her loan—without resorting to selling the property or refinancing under pressure. Unless subprime lenders ensure borrowers can afford their loans, other efforts to prevent foreclosures will have minimal success. For example, when offering loans with scheduled interest rate changes, lenders should consider whether the borrower will be able to afford the mortgage after the initial fixed "teaser" rate expires. Subprime lenders also should require escrow payments and appropriate verification of the borrower's income, and they should confirm that the loans they offer make economic sense for a given borrower's circumstances.

Ensure that all parties involved in the loan operate in good faith, and that everyone—not just the borrower—has a stake in a successful loan outcome. Recently several major banking regulators issued guidance on nontraditional mortgage product risks. The regulators' guidance, which recognizes the risk posed by imprudent underwriting practices, should apply to **all** subprime ARM loans and nontraditional products. Similarly, the principles of the guidance should be applied to **all** subprime mortgage lenders. Mortgage brokers should be subject to standards that apply to other financial professionals, and they should have an affirmative duty to ensure that the products they recommend are suitable for their customers. Lenders and appraisers should uphold existing standards to ensure that appraisals are accurate and independent. And regulators should hold secondary market investors to basic standards of fair dealing and require them to take reasonable steps to avoid supporting abusive subprime loans.

Help existing subprime borrowers who are in danger of losing their homes. Opportunities for reasonable work-out plans can go a long way to help struggling homeowners avoid foreclosure, and regulators should focus on banning predatory lenders/servicing practices and enforcement actions against servicing practices that facilitate subprime loan failures. Community groups, lenders, and state and local governments have demonstrated the efficacy of a variety of home preservation programs, including those that involve targeted outreach to delinquent borrowers, financial counseling, and restructuring consumer debt. Another successful model comes from the states that have passed strong laws against foreclosure "rescue" scams, banning predators from targeting struggling borrowers.

II. BACKGROUND

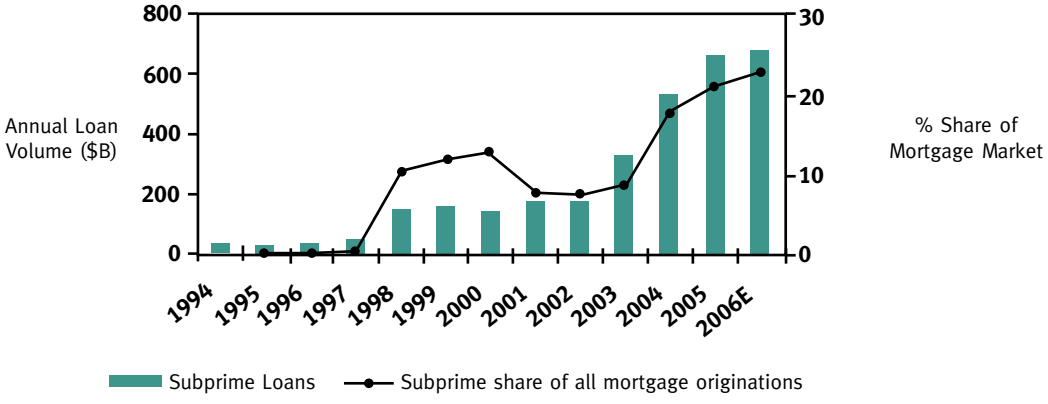
In the United States, the proportion of mortgages entering foreclosure has climbed steadily since 1980, with 847,000 new foreclosures filed in 2005.[1] This year lenders reported 318,000 new foreclosure filings for the third quarter alone, a 17 percent increase over the previous quarter and 43 percent higher than the third quarter of 2005.[2] In the past 12 to18 months, there have been frequent stories in the media about risky lending practices and surges in loan defaults, especially in the subprime mortgage market.[3]

In a short period of time subprime mortgages have grown from a small niche market to a major component of home financing.

The subprime market is intended to provide home loans for people with impaired or limited credit histories. In addition to lower incomes and blemished credit, borrowers who get subprime loans may have unstable income, savings, or employment, and a high level of debt relative to their income.[4] However, there is evidence that many families who receive subprime mortgages could qualify for prime loans, but are instead "steered" into accepting higher-cost subprime loans.[5]

As shown in Figure 1 below, in a short period of time subprime mortgages have grown from a small niche market to a major component of home financing. From 1994 to 2005, the subprime home loan market grew from $35 billion to $665 billion, and is on pace to match 2005's record level in 2006. From 1998 to 2006, the subprime share of total mortgage originations climbed from 10 percent to 23 percent.[6] Over most of this period, the majority of subprime loans have been refinances rather than purchase mortgages to buy homes.[7] Subprime loans are also characterized by higher interest rates and fees than prime loans, and are more likely to include prepayment penalties and broker kickbacks.

Figure 1: Subprime Mortgage Market Growth and Share of Total Mortgage Market



Source: Inside Mortgage Finance

The growth of the subprime mortgage market has in part been spurred by the deteriorating financial situation of households in the United States. In large measure, this reflects macroeconomic factors: over the past two decades, after-tax income for the bottom 60 percent of families climbed only five to 15 percent while costs for such basics as housing, child care, and health care rose 53 to 75 percent.[8] At the same time, rates of personal savings—the financial cushion for most families—have dropped steadily and have been negative since mid-2005.[9] In addition, for many families, their income stream is much less certain than in the past: a 2004 study reported that the average annual variation in income for middle-income households ($13,500 at that time) had doubled since the 1970s.[10]

Even as many households are financially strained, the combination of low interest rates and easy credit (particularly credit cards) has encouraged consumers to spend more, and to use debt to cover the gap between their household income and spending. By mid-2006, the percentage of the average family's disposable income that was devoted to covering debt reached an all-time high.[11]

In this context, the lending industry has encouraged middle- and low-income families to conclude that "borrowing against their homes is a sensible way to plug holes in household budgets."[12] American households have used refinances or home equity loans to pull money out of their homes at an unprecedented rate: over two trillion dollars in the past five years alone.[13] And the pace accelerated in early 2006, even as interest rates were rising. In the first six months of 2006, consumers extracted over $500 billion in home equity, more than the total amount taken out in all of 2005 (which was itself a record year).[14]

These economic developments have contributed to an increase in the proportion of American families with lagging and less certain income, fewer savings, higher debt, and less home equity—in other words, prospective customers for the subprime mortgage market.

Taken together, these economic developments have contributed to an increase in the proportion of American families with lagging and less certain income, fewer savings, higher debt, and less home equity—in other words, prospective customers for the subprime mortgage market.

Some have heralded the growth in subprime lending as a positive break-through in extending credit. Former Federal Reserve Chairman Alan Greenspan referred to subprime lending as the "democratization of credit," a dramatic change that enables borrowers with less-than-perfect credit to receive access to home loans that would have been denied in the past. To be sure, the community reinvestment movement, civil rights activists, and others have fought for years to bring investment to communities that have lacked access to vital capital.

Yet this increased access has come at great cost to many families, since the highest rate of home foreclosures occurs among subprime home loans. In many communities, the pressing issue today is less the availability of home-secured credit than the terms on which credit is offered. For the average American, building wealth through homeownership is the most accessible path to economic progress, but progress is not achieved when a family buys or refinances a home only to lose the home or get caught in a cycle of escalating debt.

For most families, foreclosure is a last resort, often coming in the wake of unemployment, illness, divorce, or other personal event that causes a drop in income. However, for some homeowners, the problem is not a change in income, but rather an unmanageable increase in the amount of the mortgage payment or the realization that the mortgage was not affordable in the first place.[15]

A few years ago, this problem likely would have received scant attention from policymakers, since subprime mortgages represented only a small fraction of the total mortgage market. Today subprime mortgages comprise almost one quarter of all mortgage originations. The merits of this expanding market are widely debated, but one point is clear: Subprime mortgage credit—and the accompanying foreclosures—have become a major force in determining how and whether many American families will attain sustainable wealth.

For a brief discussion of previous research on mortgage delinquencies and foreclosures, see Appendix 1.

III. DATA AND METHODS

The findings presented here are based on our analysis of information from a proprietary loan-level dataset that includes more than six million securitized subprime loans totaling $1.2 trillion originated from January 1998 through December 2004. For the full seven-year period, we estimate that the database covers over 70 percent of the U.S. subprime market, measured by dollar volume (Table 1). To focus on issues of concern to typical U.S. families, we limited our analysis to loans originated in the 50 states and the District of Columbia that were secured by a first lien and made to borrowers who occupied the home, excluding loans secured by manufactured homes or multifamily dwellings. These selection criteria leave us with an analysis dataset that comprises a substantial proportion of the overall dataset (see Table 2).

Table 1: Dataset Coverage of Subprime Market

Origination Year	Observed Subprime Volume ($ Billions) (A)	U.S. Subprime Volume ($ Billions)* (B)	Observed Coverage (A)/(B)
1998	62.5	150	41.2%
1999	67.7	160	42.3%
2000	64.8	138	47.0%
2001	104.4	173	60.1%
2002	166.3	213	78.1%
2003	297.4	332	90.0%
2004	448.3	529	84.7%
Total	$1,211.4	$1,695	71.5%

* Source: Inside Mortgage Finance

Table 2: Proportion of Subprime Loans Used in Analysis with Designated Characteristics

Origination Year	Total No. of Loans Originated in 50 States and DC (A)	No. of Owner-Occupied and 1st Lien Loans in 50 States and DC (B)	No. of Single-Family Owner-Occupied and 1st Lien Loans in 50 States and DC* (C)	Observed Coverage (C)/(A)
1998	645,194	427,301	400,926	62%
1999	722,978	509,980	479,073	66%
2000	625,961	445,697	427,916	68%
2001	793,524	577,981	554,304	70%
2002	1,128,233	839,125	816,692	72%
2003	1,814,360	1,368,940	1,348,887	74%
2004	2,439,144	1,904,728	1,877,360	77%
Total	8,169,394	6,073,752	5,905,158	72%

*These loans included single-family residences, condos, townhouses, and units in a planned development.

Identifying Foreclosures and "Distressed" Prepayments

In this study, foreclosures are the ultimate outcome of interest. The dataset used here contains both static information about the loan at origination and dynamic information on payment patterns over time. Specifically, for each month for a given loan, we know whether the borrower made a payment, and we have several measures of the loan's status, including whether the loan was in foreclosure or delinquent, and whether the borrower was in bankruptcy. For each month, we also know the loan balance. We coded as a foreclosure any instance in which a loan balance went to zero in a given month when the prior month's status was listed as in foreclosure, bankruptcy, or as real estate owned by the lender (REO).

When homeowners fear they can no longer make their mortgage payments and know they risk losing their home, they often use two common strategies to avoid foreclosure. One action is to seek a refinance. Another strategy is to try to salvage some equity by selling the home.[16] Because the result of either of these exit strategies, if successful, is a zero dollar balance on the loan in default, they are observed in our data as prepayments. We identify instances in which a borrower prepays a mortgage that was 30 or more days delinquent as a "distressed prepayment" following research from Danis and Pennington-Cross.[17]

To explore the relationship among foreclosures, distressed prepayments, and differing house price appreciation rates, we examined our dataset of subprime home loans by year of origination and by metropolitan statistical area (MSA). After observing foreclosure rates and distressed prepayment rates, we estimated elementary regression models to explore the relationship among foreclosures, distressed prepayments, and housing price appreciation. We then used these results to project foreclosure experiences going forward. For more information on methods used, see Appendix 2.

A Tale of Two Foreclosure Rates

Analysts and the media often cite a mortgage foreclosure rate calculated by the Mortgage Bankers Association (MBA), which is based on data from about 150 mortgage servicers. The MBA rate commonly cited reflects the percentage of outstanding loans that are in foreclosure **at a specific point in time** (e.g., at the end of the second quarter 2006). This statistic is useful for comparing results across geographic markets.

An alternative measure is the total proportion of loans originated during a given time period that end in foreclosure. Such rates are used by mortgage lenders, investors, insurers, and rating agencies to predict the risk and profitability of a group of loans, and also may be used to compare the performance among different types of loans or loans originated in different years.

Example of Differences in Published Foreclosure Rates

2.34% MBA-reported foreclosure rate for FHA loans at end of 4Q05

6.29% Cumulative foreclosure rate at end of 2005 for FHA loans made in 2000

Sources: MBA National Delinquency Survey, 4Q 2005 and FHA Mutual Mortgage Insurance Fund Analysis FY 2005

IV. FINDINGS

A. For subprime mortgages originated from 1998 through 2006, we project that 2.2 million U.S. households will lose their homes to foreclosure, costing these households as much as $164 billion. One out of every five (19.4 percent) subprime loans made today will fail.

For the subprime market as a whole, the 19.4 percent foreclosure rate exceeds the worst ever seen in the modern mortgage market—a 14.9 percent foreclosure rate in the "Oil Patch" states of Arkansas, Louisiana, Mississippi, and Oklahoma during the 1980s.[18] Just as that episode reflected a downturn in a large regional housing market, we find that the current increase in subprime mortgage foreclosure risk is driven by the cooling of the housing sector in areas where house prices had previously climbed rapidly, such as California, Nevada, New York, New Jersey, and the Washington, D.C. area.

Our analysis shows that the increase in foreclosures is partially the result of subprime market weaknesses that have been harder to observe during a period of increasing home values: a "trade off" between foreclosure rates and the rates at which borrowers prepay their mortgages while delinquent. We find that a large proportion of borrowers have been exiting their mortgages under duress, even during recent times of remarkable housing price appreciation. For these borrowers, strong house price growth increased the amount of equity in their homes and enabled them to use this equity to refinance their mortgages despite being behind on the monthly payments. Today, without that strong appreciation, it appears that many more borrowers are unable to refinance while delinquent and find themselves in foreclosure instead.

The projected foreclosure rate and accompanying losses are based on the following findings from our research:

1. Even under recent favorable economic conditions, as many as one in eight subprime loans originated between 1998 and 2004 ended in foreclosure within five years.

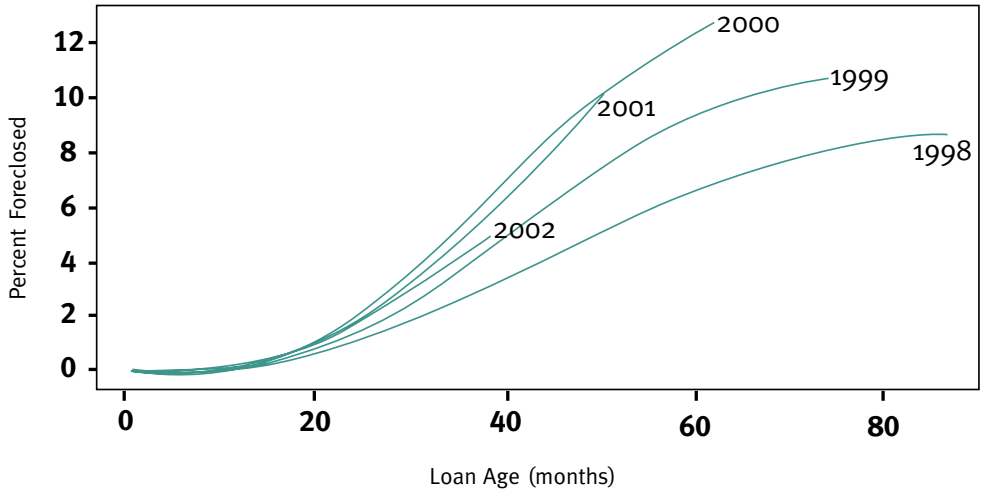
As shown in Table 3, the proportion of foreclosed subprime loans is substantial. For example, one in every eight subprime home loans (12.9 percent) originated in 2000 was foreclosed by May 2005. While Table 3 reports lower to-date cumulative foreclosures for more recent years as of this date, this is largely because these loans had not yet experienced their peak foreclosure activity as of May 2005.

Table 3: Subprime Home Loan Terminations By Year of Origination (as of May 2005)

Year of Origination	Number of Loans	Percent Prepaid (A)	Percent Foreclosed (B)	Percent of Loans Still Outstanding 1- (A) -(B)
1998	400,926	79.3	9.7	11.0
1999	479,073	71.9	12.0	16.1
2000	427,916	69.4	12.9	17.7
2001	554,304	70.2	8.2	21.6
2002	816,692	65.2	4.1	30.7
2003	1,348,887	41.7	1.2	57.1
2004	1,877,360	13.7	0.2	86.1

In fact, Figure 2 shows that more recent loans are performing quite similarly to earlier annual loan cohorts, particularly with respect to loans originated in 2000. Each line in Figure 2 represents the proportion of loans originated in a given year that have foreclosed at a given age. The slight differences between foreclosure patterns in the 2000 cohort and later cohorts is almost entirely explained by fast prepayments among those later loans (see Appendix 2 for more information).

Figure 2: Subprime Cumulative Foreclosure Rate by Year of Origination



Note: 2003 and 2004 curves are too short to depict here.

2. One in 10 subprime mortgages in recent years have prepaid while delinquent. When these distressed prepayments are added to the foreclosure rates, the composite subprime "failure rate" approaches 25 percent within five years of origination.

The data from recent years indicate that almost half of all subprime loans will be delinquent at least once within five years (see Table 4). More than one fifth will actually experience a foreclosure start. For example, 21.2 percent of 1999 loans and 22.9 percent of loans made in 2000 received a foreclosure notice at some point before June 2005. This is in and of itself a troubling trend, since these foreclosure starts have an adverse effect on a borrower's creditworthiness as evaluated by credit scoring bureaus and lenders.

Yet Table 4 also shows that, at least in recent years, only a portion of these delinquent and defaulted loans finished the foreclosure process. Many of the rest of these delinquent and defaulted loans were prepaid, often while still delinquent. For example, for loans made in 2000, Table 4 shows that half (49.6 percent) were delinquent at some point; one in five (22.9 percent) started foreclosure at least once; one in eight (12.9 percent) finished foreclosure; and one in ten (11.1 percent) prepaid while delinquent (termed a distressed prepayment).

Undoubtedly the majority of distressed prepayments represent homeowners who could not make their monthly payments and turned either to a refinance or to the sale of their home to avoid foreclosure. In either case, they were likely to experience a loss in the process. For example, borrowers who refinance a delinquent loan typically will pay a higher interest rate on their new loan because of the higher risk. Also, if they prepay their loan during the first 24-36 months of its life, they usually will incur a prepayment penalty. Alternatively, borrowers who sell a home under pressure are likely to recover less than the full fair market value.

If the proportion of these distressed prepayments were small, this concern might be easily dismissed but, as shown in Table 4, adding distressed prepayments to observed foreclosures shows that a sizeable proportion of the market ended mortgages under duress—roughly one quarter of all subprime loans.

Table 4: Indications of Homeowner Distress as of May 2005

Origination Year	Percent Ever Delinquent	Percent Ever in Foreclosure	Percent Foreclosed (A)	Percent Prepaid In Distress (B)	Percent Foreclosed or Prepaid in Distress (A) + (B)
1998	41.8	16.0	9.7	10.8	20.5
1999	47.6	21.2	12.0	11.0	23.0
2000	49.6	22.9	12.9	11.1	24.0
2001	42.0	17.0	8.2	9.4	17.6
2002	36.0	10.9	4.1	8.3	12.4
2003	25.9	5.6	1.2	4.4	5.6
2004	16.6	2.8	0.2	1.3	1.5

3. Regression results show that distressed prepayments and foreclosure rates move in opposite directions in response to changes in housing appreciation. This suggests that distressed prepayments are "substitutes" for foreclosures in strong housing markets. In other words, strong housing appreciation may protect a market from high foreclosures, but not from failed loans.

Research on mortgage defaults has long noted that foreclosures are more likely in situations where borrowers hold less equity,[19] as is the case when housing prices dip or even when the growth in prices slows. While house price increases in recent years have generally been strong in the United States, they have not been strong everywhere. Accordingly, we took advantage of the variation in housing price appreciation rates found across the nation's metropolitan statistical areas to estimate the relationship between appreciation rates and subprime foreclosure rates. We also examined how different appreciation rates influenced the proportion of loans prepaying while delinquent, as well as the effect of varying appreciation rates on the composite failure rate (foreclosures plus distressed prepayments.) See Appendix 2 for a description of our methods.

The results in Table 5 confirm that foreclosures are more likely in housing markets experiencing less housing price appreciation. Also as expected, the results show that more borrowers refinance while delinquent in stronger housing markets. For example, for loans originated in 2001, each percentage point increase in annual housing price appreciation was associated with a 7.23 percent decrease in the odds of foreclosure and a 2.84 percent increase in the odds of distressed prepayment. Moreover,

the consistency of this pattern across multiple annual origination cohorts is additional evidence that these relationships are substantial and robust. These findings support the contention that distressed prepayments and foreclosures are substitute outcomes that respond in opposite directions to a given change in housing prices.

Table 5: Increased Percentage Risk of Various Loan Outcomes Associated with One Percentage Point Increase in Annual Housing Price Appreciation, By Year of Loan Origination

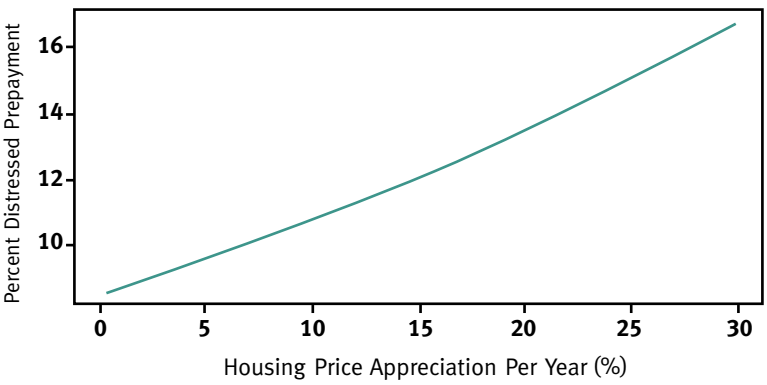
Dependent Variables	Origination Year			
	1999	2000	2001	2002
Foreclosed	-8.32***	-8.26***	-7.23***	-5.95***
Distressed prepaid	1.04*	2.63***	2.84***	2.53***
Distressed prepaid or foreclosed	-4.12***	-3.46***	-2.08***	-0.34

Notes: Unit of observation is MSA, n=950 for all models. Confidence levels: * = 95%, ** = 99%, *** = 99.9%. Increased risk measured as the percentage change in the odds of a given outcome occurring in a given MSA.

The results from Table 5 are shown graphically in Figures 3 and 4 below. As can be observed, foreclosure is downward sloping as housing price appreciation rates rise (Figure 3), while distressed prepayments are upward sloping in the face of stronger appreciation (Figure 4).

Figure 3: Impact of Housing Price Appreciation on Risk of Foreclosure

Figure 4: Impact of Housing Price Appreciation on Proportion of Distressed Prepayments



4. Ultimately, we project that 15.4 percent of subprime loans originated between 1998 and the third quarter of 2006 will foreclose, and that the probability of foreclosure will double from a low of one in ten (9.8 percent) for loans originated in 2002 to a high of one in five (19.4 percent) for loans originated in 2005 and 2006. We also estimate that, in the end, these foreclosed loans will cost homeowners as much as $164 billion.

Applying the relationships we found between differing housing price appreciation rates and loan outcomes, we are able to provide projections for total foreclosures and associated losses for each annual cohort of subprime home loans. Essentially, this estimate is generated by using the observed foreclosure and loss rates associated with known housing price appreciation rates, and extrapolating to expected performance based on the difference between the rates of appreciation observed and those forecasted by Moody's Economy.com.[20] For a complete description of methods, please see Appendix 2.

Table 6 provides the results of this analysis, separately reporting observed outcomes and projected outcomes. To assist readers, the results in Table 6 are scaled to full market size and the observed outcomes are from date of origination through May 2005 and projections are for the life of the loan.[21] So, for example, Table 6 reports that 43,260 loans made in 2002 had been foreclosed by May 2005 and projects that an additional 58,992 loans originated in that year will ultimately be foreclosed. In total, we project that 2.2 million (15.4 percent) of 14 million subprime home loans made from 1998 through 2006 will end in foreclosure. The rates of foreclosure, however, are not uniform across all years. For example, we note the increase in projected foreclosures for more recent mortgages that were originated when house prices were at their peak in late 2004 through early 2006 (see Figure 5). Specifically, total projected foreclosures climb from 9.8 percent for loans originated in 2002 to 19.4 percent for loans made in 2005 and 2006.

We note that these findings are similar to those in at least two other recent analyses of subprime mortgages. In the first, Pennington-Cross and Ho analyze the propensity of subprime adjustable rate mortgages and fixed rate mortgages to foreclose.[22] After analyzing a large set of subprime loans originated from 1998 to 2005, and following those loans to the end of 2005, they report that "at the end of five years almost exactly 18 percent of the loans have defaulted and almost 70 percent have prepaid."[23] Similarly, using a large database of securitized subprime loans originated by retail lenders in 1999, researchers at the University of North Carolina reported that 20.7 percent of subprime loans they examined from that year had experienced a foreclosure start at least once within five years of origination.[24]

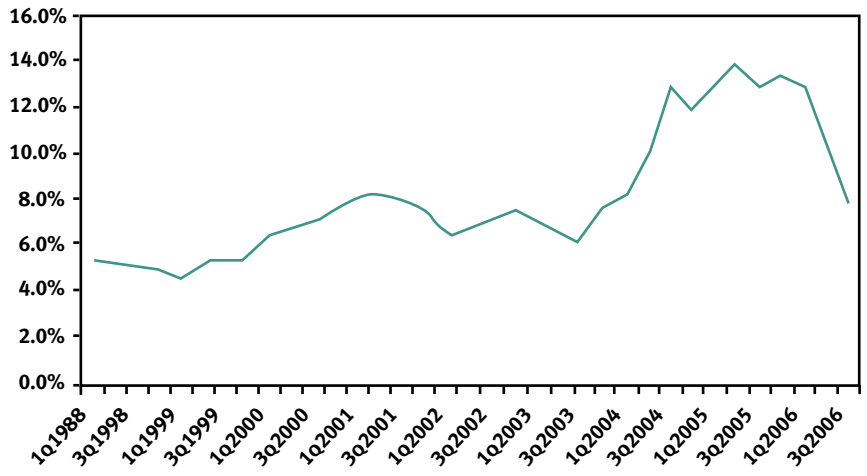
In any case, these high rates of foreclosures have serious implications for households with subprime mortgages. When a foreclosure occurs, homeowners forfeit their house as well as the wealth they have invested (their down payment and principal payments) and other equity they gained as their home appreciated. Table 6 shows that homeowners have lost as much as $45.7 billion, primarily in home equity, as a consequence of subprime foreclosures on loans originated from 1998 to 2004 as of May 2005. Going forward, Table 6 shows that homeowners who received mortgages from 1998 to 2006 are projected to lose as much as $164 billion.

Table 6: Projected Subprime Foreclosures and Losses, by Annual Origination Cohort

Origination Year	US Subprime Loans[a]		Loans Foreclosed			Losses ($ billions)	
	Volume ($ billions)	No. Loans	Observed	Projected	Total	Observed	Projected
1998	114	962,273	93,209	1,541	9.8%	6.9	0.0
1999	124	1,132,280	135,891	8,676	12.8%	8.1	0.2
2000	111	911,369	117,958	15,168	14.6%	8.6	0.4
2001	145	918,557	75,152	30,312	11.5%	10.8	1.2
2002	181	1,046,072	43,260	58,992	9.8%	7.6	3.5
2003	281	1,505,854	18,635	162,829	12.1%	3.2	11.5
2004	452	2,219,547	3,808	344,687	15.7%	0.5	26.6
2005[b]	512	3,259,908	0	632,302	19.4%	0	42.3
2006[b, c]	391	2,490,275	0	483,022	19.4%	0	32.3
Total	2,311	14,446,135	487,913	1,737,529	15.4%	45.7	118.0
	Total		2,225,442		15.4%	$164	

Notes:
a) Includes only loans to owner-occupants in the 50 states and the District of Columbia secured by a first-lien on a single-family home, condominium, townhouse, or a unit in a planned development.
b) 2005 and 2006 estimates of U.S. subprime lending from Inside Mortgage Finance and SMR Research Corporation modified to account for the criteria in note a.
c) 2006 only includes loans from 1Q2006 to 3Q2006.

Figure 5: Year-over-Year Percentage Change in U.S. Housing Price Index



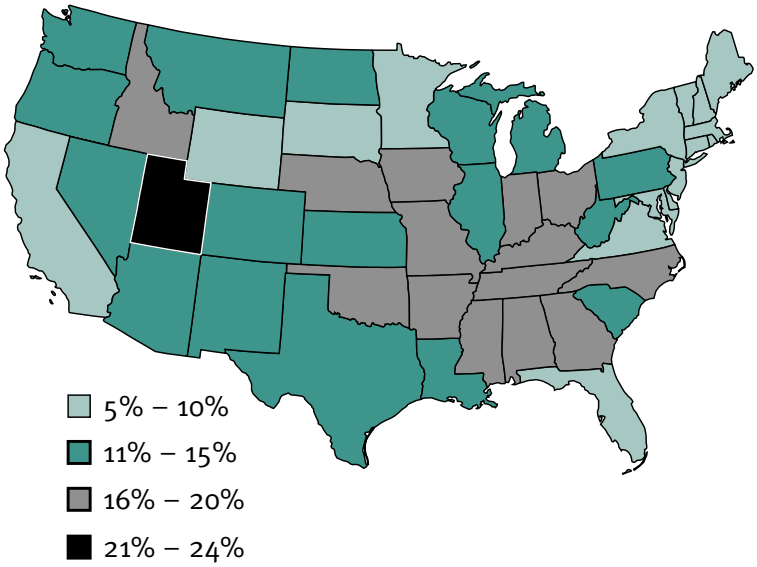
Source: Office of Federal Housing Enterprise Oversight

Further, just as foreclosure rates are not constant across all years, they also are not uniform across states. In large part, this pattern flows from the substantial variation in housing price appreciation across local markets. Figures 6 and 7 below graphically display the projected total foreclosure rates for the various states for loans originated in 1998-2001 and 2006 respectively, and the specific rates are listed in Appendix 4.

As Figure 6 shows, high subprime foreclosure rates in the past primarily were a problem for states in the central U.S., such as Ohio, Oklahoma, and Tennessee. Now Figure 7 shows a "darkening" foreclosure picture across the U.S., where almost every state will experience high foreclosure rates.[25] Further, foreclosure rate increases will be felt most acutely in states with previously strong appreciation (such as California, New York, Maryland and Virginia.) While methods and limitations are discussed more completely in Appendix 2, it is worth noting here that these findings do not take into account the effect that any recent policy changes may have on foreclosure rates.

Figure 7 shows a darkening foreclosure picture across the U.S., where almost every state will experience high foreclosure rates.

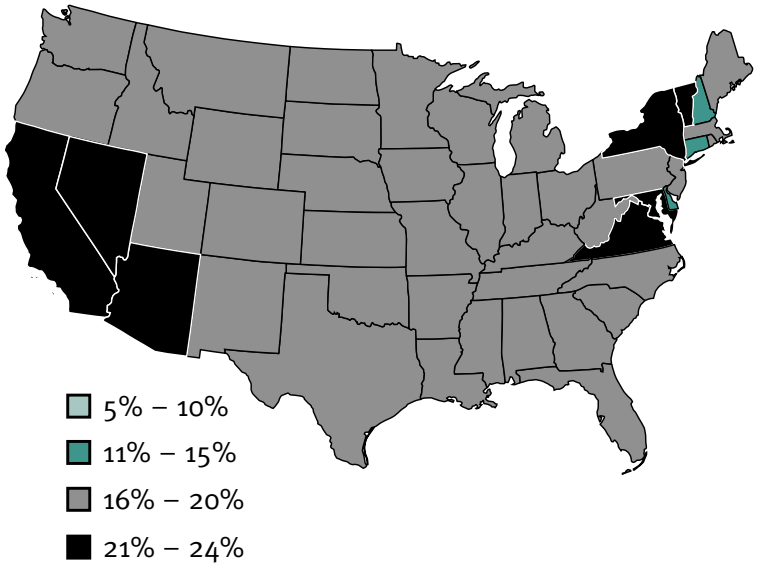
Figure 6: Projected State Foreclosure Rates for Subprime Loans Originated 1998-2001



Foreclosure rates for Alaska and Hawaii are 11% and 5% respectively

Specific rates for each state are listed in Appendix 4.

Figure 7: Projected State Foreclosure Rates for Subprime Loans Originated in 2006



Projected foreclosure rates for Alaska and Hawaii are 17% and 21% respectively

Specific rates for each state are listed in Appendix 4.

5. While one in five households with subprime loans originated in 2005 and 2006 is projected to foreclose, other families who took out these loans and then refinanced into subsequent subprime loans also will experience foreclosure. Using the best information available, we estimate that one-third of families who received a subprime loan in 2005 and 2006 will ultimately lose their homes.

Our estimated 19.4 percent foreclosure rate for subprime loans originated in 2005 and 2006 is in and of itself disconcerting, but it actually represents only the likelihood that one specific subprime loan will end in foreclosure, not the cumulative foreclosure rate for an individual borrower or household who took out that initial loan. While more research is needed, one study based on a survey of thousands of borrowers found that 60 percent of subprime borrowers do not "move up" into a prime loan when refinancing, but instead get another subprime loan.[26] As Table 7 below illustrates, **a borrower who repeatedly refinances one subprime loan with another faces steadily increasing chances of foreclosure, reaching 36 percent by the fourth loan.**

Table 7 is based on the assumption that 19 percent of subprime loans foreclose, and 60 percent of those borrowers who refinance transition to another a subprime loan, and that these probabilities are constant for all loans. To extend this experiment, Table 8 shows the increase in the cumulative foreclosure rates after three refinances associated with variations on these assumptions. For example, if the actual foreclosure probability for a subprime loan is altered to 25 percent and the proportion of subprime borrowers who refinance and receive a subsequent subprime loan is altered to 70 percent, then the cumulative probability of foreclosure grows to 49 percent.

Table 7: Projected Multiple Loan Subprime Foreclosure Rates

	Proportion of Borrowers from Original Loan Cohort	Proportion of Original Cohort Refinanced to Prime	Proportion of Original Cohort Foreclosed	Cumulative Cohort Foreclosure Rate
Original Loan Cohort	100%	32%	20%	20%
Refinance 1	48%	15%	10%	30%
Refinance 2	23%	7%	5%	34%
Refinance 3	11%	4%	2%	36%

Table 8: Sensitivity of Cumulative Foreclosure Rate After Three Refinances to Subprime Refinance Rate and Foreclosure Rate

	Subprime-to-Subprime Refinance Rate		
Foreclosure Rate	50%	60%	70%
10%	17%	20%	23%
15%	25%	29%	32%
20%	32%	36%	41%
25%	39%	44%	49%

B. Many local markets that have experienced extraordinary housing price appreciation in recent years are likely to experience marked increases in subprime foreclosure rates.

As history has shown, local housing markets with high levels of appreciation and low foreclosure rates are in an unsustainable situation. Typically, a rapid run-up of home prices in overheated markets makes housing less affordable and leads to a slowdown. While in many cases this is a gradual process, there are times when economic conditions trigger a severe drop in house prices. It happened in the 1970s in the "rust belt" states of the Midwest, as the once dominant industrial region experienced widespread factory closings and unemployment. As mentioned previously, it happened in the mid-1980s in the Oil Patch states. And it happened in the early 1990s in both the Northeast and California.[27]

All signs are pointing to a drop in house prices in many U.S. markets.

Currently, all signs are pointing to a drop in house prices in many U.S. markets, including the southwest coast of Florida, many metropolitan areas of California, Arizona, Nevada, and the greater Washington, D.C. area. As the chief economist at Moody's Economy.com puts it: "The housing market downturn is in full swing."[28]

For each MSA, we project foreclosure rates based on observed and forecasted housing price appreciation rates. Again, forecasted housing price appreciation rates were obtained from a recent study by Moody's Economy.com.[29] While complete MSA results are available in Appendix 5, Table 9 shows the top fifteen local markets with the highest projected foreclosure rates for subprime loans originated in 2006. Similarly, Table 10 shows the top fifteen markets with the largest increase in projected subprime foreclosure rates for loans originated in 2006, compared to foreclosure rates expected for subprime loans made from 1998 through 2001. The top fourteen markets on this list are in California.

"I have never seen a soft landing in 53 years."

Angelo Mozilo, CEO
Countrywide Financial
Source: Patrick Crowley, "Mortgage Outlook Gloomy," MortgageDaily.com (August 31, 2006)

Table 9: Top 15 MSA Projected Foreclosure Rates for Subprime Loans Originated in 2006

Rank	MSA	Foreclosure Rate (%)
1	Merced, CA	25.0
2	Bakersfield, CA	24.2
3	Vallejo-Fairfield, CA	23.8
4	Las Vegas-Paradise, NV	23.7
T5	Fresno, CA	23.5
T5	Ocean City, NJ	23.5
7	Stockton, CA	23.4
8	Reno-Sparks, NV	23.2
T9	Santa Ana-Anaheim-Irvine, CA	22.8
T9	Washington-Arlington-Alexandria, DC-VA-MD-WV	22.8
11	Riverside-San Bernardino-Ontario, CA	22.6
12	Carson City, NV	22.5
T13	Atlantic City, NJ	22.2
T13	Visalia-Porterville, CA	22.2
T15	Los Angeles-Long Beach-Glendale, CA	22.0
T15	Nassau-Suffolk, NY	22.0
T15	Saginaw-Saginaw Township North, MI	22.0

See Appendix 5 for results for all MSAs.

Table 10: Top 15 Largest Increases in Subprime Foreclosure Rates by MSA (Comparing projected foreclosure rates on loans made from 1998–2001 to projected foreclosure rates on loans made in 2006)

Rank based on % change		Projected Foreclosure Rate for 1998-2001 cohort of sub-prime loans	Projected Foreclosure Rate for 2006 cohort of subprime loans	Projected % Change
1	Santa Ana-Anaheim-Irvine, CA	3.0	22.8	668%
2	Santa Barbara-Santa Maria, CA	2.8	19.6	596%
3	San Diego-Carlsbad-San Marcos, CA	3.2	21.4	567%
4	Santa Rosa-Petaluma, CA	3.4	21.1	527%
5	Napa, CA	2.6	16.4	527%
6	San Francisco-San Mateo-Redwood City, CA	3.0	16.7	462%
7	Oxnard-Thousand Oaks-Ventura, CA	3.2	17.6	453%
8	San Luis Obispo-Paso Robles, CA	2.6	13.6	416%
9	Salinas, CA	4.0	20.4	413%
10	Vallejo-Fairfield, CA	4.7	23.8	405%
11	Oakland-Fremont-Hayward, CA	4.6	21.3	359%
12	Santa Cruz-Watsonville, CA	3.2	14.5	356%
13	San Jose-Sunnyvale-Santa Clara, CA	4.3	19.3	352%
14	Sacramento-Arden-Arcade-Roseville, CA	4.8	21.0	339%
15	Barnstable Town, MA	4.8	19.9	313%

See Appendix 5 for results for all MSAs.

C. Subprime loans are riskier in and of themselves, not just because the borrowers may have weaker credit. Borrowers who are already financially vulnerable are receiving loans associated with a higher risk of default.

We explored whether certain features of subprime loans are associated with an increased risk of entering foreclosure. Our analysis is consistent with other studies in finding that subprime loans with certain characteristics have a higher likelihood of default than subprime loans without those features, even when controlling for differences in credit scores.[30] These higher-risk features include adjustable interest rates (typically with large, scheduled payment increases), loans with prepayment penalties or balloon payments, and "low-doc" and "no-doc" loans, in which lenders approve borrowers for loans based on little or no verification of the borrower's income and assets.[31]

Our analysis is consistent with other studies in finding that subprime loans with certain characteristics have a higher likelihood of default than subprime loans without those features, even when controlling for differences in credit scores.

Table 11 shows the results of this analysis. For example, we observe a higher risk of foreclosure for adjustable-rate mortgages (ARMs) compared with fixed-rate mortgages. This foreclosure risk was 62 percent to 123 percent higher, depending upon the year the loan was originated. Our dataset includes a significant number of hybrid or exploding ARMs, which have been the predominant product in the subprime market in recent years. As described in the discussion section of this report, hybrid ARMS offer low teaser rates and the high probability of severe "payment shock" when the fixed-payment period expires after two years.

We also found a 14 percent to 86 percent higher risk of foreclosure for loans with balloon payments, and a 19 percent to 70 percent higher risk for loans that carried prepayment penalties. In addition, loans that were originated with low or no documentation of the borrower's income had five percent to 64 percent more foreclosure risk than loans with full documentation, and these loans represent just under half of the market today.[32]

Table 11: Percentage Increase in Foreclosure Risk for Specific Loan Features by Annual Loan Cohort (Positive numbers indicate higher risk, after controlling for borrower credit scores)

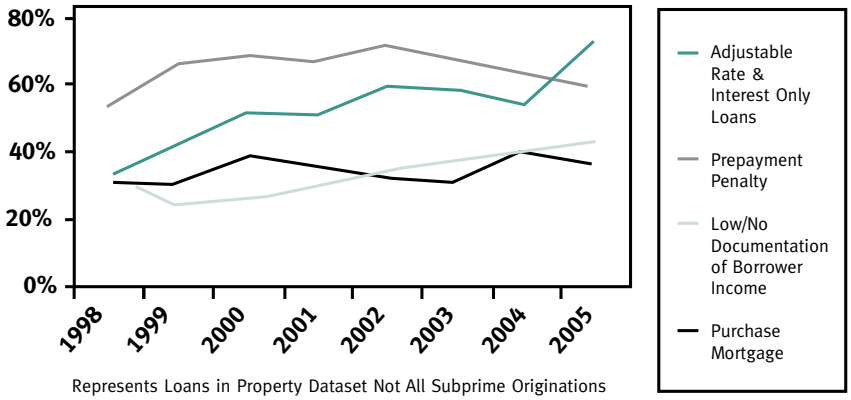
	1998	1999	2000	2001	2002	2003
ARM vs. Fixed-Rate Loan	123.3***	86.0***	72.0***	61.8***	77.9***	117.1***
Balloon vs. Fixed-Rate Amortizing Loan	75.7***	51.8***	36.0***	21.7***	14.1*	85.9***
Loan with Prepayment Penalty vs. Loan with No Prepayment Penalty	70.4***	65.0***	52.4***	35.8***	25.8***	18.7***
Loan with No or Low Documentation vs. Full-Doc Loan	5.6**	19.0***	29.0***	25.8***	44.7***	63.7***
Purchase Money Loan vs. Refinance Loan	19.3** *	20.7***	28.5***	37.9***	61.0***	102.0 ***

Confidence levels: * = 95%, ** = 99%, *** = 99.9%. Detailed results available upon request.

Interestingly, subprime **purchase** loans also showed a 19 percent to 102 percent higher risk of foreclosure compared to subprime **refinance** loans. It is likely that high housing prices in recent years meant that many families strained their budgets to qualify for purchase loans. That strain may have been exacerbated by higher financing costs on subprime loans.

Further, Figure 8 illustrates that in several cases the proportion of subprime loans with higher risk features has been large, or has increased in recent years. This should be cause for significant concern, particularly since these trends have continued in 2006 (see discussion in the next section).

Figure 8: Percent of Subprime Loans with Specific Features



Source: Proprietary dataset (See Appendix 3 for summary statistics.)

V. DISCUSSION: THE COSTS AND CAUSES OF UNSUSTAINABLE HOMEOWNERSHIP

A. The Costs: Individuals and Communities

Many Americans work hard and make great sacrifices to become homeowners, and for good reasons. For most families, homeownership is the most accessible path to economic security, and is associated with a host of non-economic benefits, including safer neighborhoods, better health and higher educational achievement.[33] However, in today's refinance-dominated subprime market, many borrowers risk their economic well-being for loans with lower monthly payments in the short term but a higher risk of financial ruin in the longer term. With a one-in-five failure rate on subprime loans—even higher for borrowers who get multiple subprime mortgages—holding a subprime loan has become something of a high-stakes wager.

Some may argue that high foreclosure rates are an acceptable price to pay for expanding access to credit, but this benefit must be balanced against a high proportion of families who lose their homes, the enormous costs to these families and their communities, and the difficulty of recovering. In addition to lost equity, families who lose their homes suffer other adverse effects, including a damaged credit history. These setbacks mean that they will be forced to pay more for any type of credit in the future. Research also shows that, after families give up homeownership for any reason, it can take a decade or more to buy another home.[34]

Even if they are able to avoid foreclosure, homeowners pay a heavy cost for being in default on their mortgage, including late fees, collection fees, and legal fees assessed by the lender or servicer. (In fact, fee-padding and other tactics used by some subprime servicers have been alleged to increase the risk of foreclosures, a potential contributory factor that is beyond the scope of this study.[35]) Even consumers who successfully sell their home with enough proceeds to pay off their mortgage will lose home equity in sales transaction costs, and also may incur a prepayment penalty for thousands of dollars. These are just some of the direct, immediate costs of default. There are additional financial, social, and psychological costs of relocating and beginning again, which, though harder to quantify, are just as real and should not be ignored.

Subprime foreclosures will affect eight percent of recent Latino borrowers and 10 percent of recent African-American borrowers. By comparison, subprime foreclosures will likely occur among only about four percent of recent white borrowers.

1. Bearing the Brunt: Communities of Color and Low-Wealth Families

The costs of subprime foreclosures fall heavily on African-American and Latino homeowners, since subprime mortgages are disproportionately made in communities of color. The most recent lending data submitted under the Home Mortgage Disclosure Act (HMDA) show that over half of loans to African-American borrowers were higher-cost loans, which, by definition, are a proxy for subprime loans. For Latino homeowners, the portion of higher-cost loans is also very high, at four in ten. As shown in Table 12, this implies that subprime foreclosures will affect eight percent of recent Latino borrowers and 10 percent of recent African-American borrowers. By comparison, subprime foreclosures will likely occur among only about four percent of recent white borrowers.

However, while the negative impact of foreclosures falls disproportionately on communities of color, the problem is not confined to any one group. In absolute terms, white homeowners received three times as many higher-cost mortgages, and therefore will experience a significant number of foreclosures as well.[36]

Table 12: Higher Cost Loans and Subprime Foreclosure Impact by Race/Ethnicity*
2005 Data Submitted by Lenders Under the Home Mortgage Disclosure Act

	% of Total Loans to Racial/Ethnic Groups (A)	2005 Projected Foreclosure Rate (B)	% Borrowers Affected by Foreclosure (A) * (B)
African American	52%	19.4%	10%
Latino	40%	19.4%	8%
White, Non-Latino	19%	19.4%	4%

Note: Column A data from Federal Financial Institutions Examination Council (2006).

2. The Pain Spreads: Neighborhoods and Cities

When a home goes into foreclosure, the negative effects extend beyond individual families to surrounding neighbors and the wider community. For example, Immergluck and Smith found that in Chicago a foreclosure started on a home lowered the price of other nearby single-family homes, on average, by 0.9 percent.[37] They also reported that the downward pressure on housing prices extended to houses that sold within two years of the foreclosure.

A foreclosure started on a home lowered the price of other nearby single-family homes by 0.9 percent.

Further, Immergluck and Smith found this negative impact was cumulative; that is, each additional foreclosure start on the block lowered values an **additional** 0.9 percent. The impact was even higher in lower-income neighborhoods, where each foreclosure dropped home values by an average of 1.44 percent. Overall, the researchers estimated that the cost to the City of Chicago for these foreclosures, as measured by reduced property value and a lower tax base, was $598 million to $1.4 billion.[38]

An additional expense to communities is the cost to govern or manage parts of the foreclosure process, including house inspections, additional policing of vacant properties, sheriff sales, etc. Another study of Chicago-area foreclosures, this one by the Homeownership Preservation Fund, found that the typical cost incurred by the City for a vacant foreclosed property sold at auction was between $5,400 and $7,000.[39]

B. The Causes: What Makes the Failure Rate So High?

Several factors contribute to the high rate of foreclosures in the subprime market. First, the drive for growth in the subprime market has led to a proliferation of risky loan products and looser standards for qualifying borrowers, as illustrated in Figure 8. A 2005 survey of credit underwriting practices by Office of the Comptroller of Currency (OCC) found a "clear trend toward easing of underwriting standards as banks stretch for volume and yield."[40]

Second, there is the structure of the industry itself. The high proportion of broker-originated loans in the subprime market (about two-thirds of the total) means that the primary loan sellers are those who have strong incentives to close as many loans as possible with little direct incentive to consider these loans' viability. Lenders, in turn, can minimize the cost of unexpected foreclosures because they typically cede much of this risk to the secondary loan market.

Finally, there are insufficient legal and regulatory consequences for making home loans that are predictably unsustainable. Federal banking regulators recently issued guidance on nontraditional mortgages that requires depository institutions (such as banks) and their affiliates to tighten credit standards for certain nontraditional loans, such as interest-only and payment-option ARMs.[41] Similarly, the Conference of State Bank Supervisors has issued guidance that largely is equivalent to the federal guidance, but is intended to apply to state-chartered non-depository institutions and state licensed-mortgage brokers. Observers expect that forty-nine states and the District of Columbia will issue the model guidance in some form.[42] However, it is not clear that these standards apply to all types of risky loan products and practices common in the subprime market.

FHA Loans: Similar Borrowers, Better Record

Like subprime loans, FHA loans are intended to serve riskier borrowers. However, FHA and subprime loans have quite different foreclosure rates. For example, subprime loans originated in 2000 in our sample had a 12.9% foreclosure rate within five years. In contrast, the 2005 actuarial review of the FHA Mutual Mortgage Insurance Fund (the latest available at this time) shows that FHA loans originated in 2000 had a 6.29% foreclosure rate by year-end 2005.* (This difference is generally consistent for all the years in our sample.)

In some ways, this finding is counter-intuitive, since FHA has steadily lost market share to the subprime sector, due to lower profitability for lenders and fewer loan programs for consumers. As a result, we might expect that FHA has been "adversely selected," with lenders using FHA for only the most credit-impaired borrowers and offering subprime loans to better qualified consumers (including the "Alt-A" borrowers with the best credit histories).

However, structural differences between FHA and subprime programs during the study period may help explain why a larger proportion of FHA borrowers avoid foreclosure. First, FHA loans are predominantly fixed-rate, amortizing loans and establish escrow accounts for taxes and insurance. Second, FHA provides more consumer protections and lower costs during the origination process. Third, FHA servicing practices emphasize curing delinquencies with foreclosure as the last resort.

Regardless of the reason, FHA's experience shows that it is possible to serve borrowers with lower credit scores without putting them at undue risk of losing their homes.

* Source: FHA Mutual Mortgage Insurance Fund Analysis FY 2005

These risk factors stand apart from risks posed by debt-strapped borrowers themselves—a condition that virtually defines the subprime market—and lower housing appreciation and rising interest rates, which are outside of borrowers' or lenders' control. Here we briefly discuss business practices and policies that have evolved in the subprime market during recent years that contribute to a high rate of foreclosures:

1. Risky Loans: Homeowners in Shock

Lenders and mortgage insurers have long known that some home loans carry an inherently greater risk of foreclosure than others. Our research identifies several factors associated with a higher rate of foreclosure in the subprime market, including mortgages with an adjustable interest rate rather than fixed; balloon payments; prepayment penalties; and loans approved without documents verifying income and/or employment. In addition regulators have expressed concern about combining multiple risk elements in one loan, stating "risk-layering features in loans to subprime borrowers may significantly increase risks for both the . . . [lender] and the borrower."[43]

A look at 24 foreclosures filed in January 2006 in Hardin County, Ohio:

All but two were high-interest subprime loans.

Most included prepayment penalties.

All but five had adjustable interest rate loans.

The average life span of loans was about 13 months from origination to foreclosure.

From "The Real Price of High-Risk Mortgages" by Geoff Dutton and Doug Haddix, *The Columbus Dispatch* (Feb 19, 2006).

Because the subprime market is designed to serve borrowers who have credit problems, one might expect the industry to offer subprime loan products that do not magnify the risk of loan failure. In fact, the opposite is true, because subprime lenders seek to structure loans with very low monthly payments. As a result, many subprime loans carry the risk of payment shock, meaning that the homeowner's monthly payment start low, but can quickly skyrocket to an unaffordable level.

Because the subprime market is designed to serve borrowers who have credit problems, one might expect the industry to offer subprime loan products that do not magnify the risk of loan failure. In fact, the opposite is true.

Unfortunately, payment shock is not unusual, but represents a typical risk that comes with the overwhelming majority of subprime home loans. Today the dominant type of subprime loan is an adjustable-rate mortgage called a "2/28" that effectively operates as a two-year balloon.[44] (See "Loose Underwriting" discussion below.) This ARM comes with an initial fixed "teaser" rate for two years, followed by rate adjustments in six-month increments for the remainder of the term of the loan.[45] Hybrid ARMs and hybrid interest-only ARMs have become "the main staples of the subprime sector."[46] Through the second quarter of 2006, hybrid ARMs made up 81 percent of the subprime sector's securitized loans, up from 64 percent in 2002.[47]

As a result, payment shock for subprime borrowers has become a growing concern. According to Barron's, over the next two years, reset of two-year initial interest rates on hybrid ARMs will lead to increased monthly payments on an estimated $600 billion of subprime mortgages.[48] Fitch Ratings has calculated that by the end of 2006, payments will have increased on 41 percent of the outstanding subprime loans—29 percent of subprime loans are scheduled for an initial rate reset and another 12 percent of subprime loans will face a periodic readjustment.[49]

Another problem for borrowers who receive higher-risk ARMs to purchase homes is that they make monthly payments while making little or no progress in becoming a true homeowner. Subprime loans are increasingly being made available with options that limit repayment of the loan's principal and equity accumulation (for example, interest-only, 40/50 year terms, "Option ARMs" that allow for payment of less than full amount of interest due).[50] These loans often come with slow or negative amortization that not only can produce payment shock, but also dramatically increases the risk that the borrower will not have enough equity to support a refinance.

2. Loose Underwriting: Affordability Matters

Lenders who market exploding ARMs often do not consider whether the homeowner will be able to pay when the loan's interest rate resets, setting the borrower up for failure. Subprime lenders' public disclosures indicate that some are qualifying borrowers at or near the initial start rate, even when it is clear from the terms of the loan that the interest rate can rise significantly, giving the borrower a higher monthly payment. For example, a recent prospectus shows a large subprime lender, Option One, underwriting to the **lesser** of the fully-indexed rate or one percentage point over the start rate.[51] For a loan with a typical teaser-rate 2/28 structure, the latter would always apply. This practice indicates that lenders routinely qualify borrowers for loans based on a low interest rate when the cost of the loan is bound to rise significantly—even if interest rates remain constant. In fact, it is not uncommon for 2/28 mortgages to be originated with an interest rate four or even five percent-

age points under the fully-indexed rate. For a loan with an eight percent start rate, a four percent increase is tantamount to a 40 percent increase in the payment amount.

A lender's failure to consider payment shock when underwriting is compounded by two other common business practices: failure to escrow property taxes and hazard insurance, and reduced or no documentation of income.[52] Most subprime lenders make loans based on low monthly payments that do not escrow for taxes or insurance.[53] This deceptive practice gives the borrower the impression that the payment is affordable when, in fact, there are significant additional costs. A recent study by the Home Ownership Preservation Initiative in Chicago found that among low income borrowers facing difficulty in managing their mortgage payments, for as many as one in seven, tax and insurance payments are a contributing factor.[54] When homeowners are faced with large tax and insurance bills they cannot pay, the original lender or a subprime competitor can benefit by enticing the borrowers to refinance the loan and pay additional fees for their new loan. In contrast, it is common practice in the prime market to escrow taxes and insurance and to consider those costs when looking at debt-to-income and the borrower's ability to repay.[55]

"I hate to blame the mortgage companies because they are just trying to make a living, but it seems like almost anybody can get a mortgage these days. There are people who get low interest [rates] to start, but after two years it goes away and they can't afford it."

Kent County (DE) Sheriff James Higdon, who oversees the county's monthly foreclosure auctions. ("Mortgage Defaults Rise with Debt Level," The News Journal, March 19, 2006.)

Inadequate documentation also compromises a lender's ability to assess the true affordability of a loan. Fitch recently noted that "loans underwritten using less than full documentation standards comprise **more than 50 percent** of the subprime sector . . . "[emphasis added].[56] Similarly, others have observed that over one-third of non-agency mortgage-backed securities in 2005 consisted of loans with alternative documentation or no documentation loans.[57] Low-doc and no-doc loans originally were intended for use with the limited category of borrowers who are self-employed or whose incomes are otherwise legitimately not reported on a W-2 tax form, but lenders have increasingly used these loans to obscure violations of sound underwriting practices. For example, a review of a sample of these "stated-income" loans disclosed that 90 percent had inflated incomes compared to IRS documents, and "more disturbingly, almost 60 percent of the stated amounts were exaggerated by more than 50 percent."[58] It seems unlikely that all of these borrowers could not document their income, or that they would choose to pay up to 1.5 percent higher interest rate to get a stated-income loan.[59]

3. Predatory Lending: Harmful, Widespread, and Legal

In this report, we are not able to quantify the increased risk of subprime foreclosures that stems from predatory lending practices. However, because it is widely acknowledged that most predatory mortgage lending occurs in the subprime market, we include it here as a point of discussion.

Homeowners who are in default on subprime mortgages are particularly susceptible to foreclosure rescue scams.

During the early period covered by our data, industry representatives often commented that predatory lenders in the subprime market represented a few marginal players. However, in recent years, more subprime lenders with significant market share have been the subject of governmental enforcement and legal actions. Other subprime lenders have collapsed, often having been the subject of predatory lending allegations.[60] It no longer seems reasonable to assume that predatory lending is perpetuated by "a few bad apples."

Representatives of the subprime industry often assert that customers in the subprime market freely choose loans with risky features, such as deeply discounted initial interest rates on ARMs. But mortgage financing is a highly complex transaction, and lenders and brokers largely control the terms of the loan. Moreover, they control information about the pricing of a wide variety of loan options which typically is not disclosed to the consumer.[61] It would be highly unusual for a potential mortgage applicant to tell a lender what kind of loan they qualify for and under what terms; most often, the lender or broker makes that determination and presents it in the most appealing way possible.

Predatory practices may be particularly relevant to the high level of ARMs originated in the subprime market during recent times, when the rate differences between ARMs and fixed-rate loans have been narrow. For example, today it is possible for a subprime borrower to lock in a fixed rate for an additional 0.75%, or $93 a month, on a typical $175,000 loan. Credit-strapped borrowers understandably seek loans with a low monthly payment, and it is likely that unscrupulous lenders have been able to exploit the desire for manageable payments by using aggressive sales tactics to push-market ARMs with temporarily low interest rates, even if these ultimately will become unaffordable for the borrower.[62] Even in cases where borrowers understand they are receiving a loan with a variable rate, brokers or lenders can counter any hesitation by assuring them they will be able to refinance when the rate rises.

Not all predatory practices occur during loan origination: several subprime servicers have entered settlements with regulators or are under investigation for predatory servicing practices, including failure to post on-time borrower payments, charging excessive and unwarranted fees, prematurely referring accounts to collections, and forcing homeowners into default to generate fee income.[63] In addition, homeowners who are in default on subprime mortgages are particularly susceptible to foreclosure rescue scams. The perpetuators of these fraudulent transactions prey upon the vulnerability of distressed borrowers, claiming to offer assistance, but instead tricking the borrowers into giving up what little equity or cash they have left. The most common foreclosure rescue scams involve one of three fraudulent schemes: first, phantom help where the "rescuer" charges outrageous fees for services that it never provides; second, a variety of supposed bailout schemes that never work, frequently involving the homeowner's surrender of the property title to the "rescuer," and third, "bait and switch," in which the homeowner surrenders ownership without realizing it until it is too late.[64]

4. Third-Party Originators, the Secondary Market, and Lack of Oversight

Currently mortgage brokers originate about two-thirds of subprime mortgages.[65] Brokers market to prospective borrowers, assess a borrower's creditworthiness, recommend loan products, and prepare and submit loan applications to mortgage lenders, who fund the approved loans. When a loan closes, the broker collects a fee from the borrower, and may also collect a "yield-spread premium," which is a cash bonus a broker receives for charging a higher interest rate on a loan than the lender required.[66]

As a consequence, brokers have a direct incentive to steer borrowers into excessively high interest rates, since higher rates produce higher premiums for the broker. Advocates and policymakers have long expressed concerns about abusive broker practices and excessive fees.[67] Because brokers' compensation is based on making the loan, regardless of its risk of foreclosure, they have little incentive to focus on the likely performance of the loan in the future.[68]

At the end of the day, there is one party always on the hook for a mortgage default: the homeowner.

While brokers focus on delivering a high volume of loans to lenders, lenders typically sell these loans to investors, creating a "secondary market" in mortgage loans. The investor has the right to collect payments and enforce the loan terms, including foreclosing on the home if the borrower defaults. The majority of subprime loans are pooled together and then divided into tranches which are sold as securities to large numbers of investors. As of June 30, 2006, mortgage-backed securities were the largest segment of the United States bond market, accounting for 23 percent of all bond market debt outstanding.[69]

Like lenders, mortgage investors use sophisticated financial tools to limit their financial exposure to losses from foreclosures. First, pools of loans in mortgage-backed securities typically contain both high-risk and lower-risk loans, and the income on the better-performing loans subsidizes the losses on defaulted loans. Second, mortgage-backed securities are often over-collateralized; that is, the amount of the loans backing the investment is greater than its face value. Third, investors may demand a premium from the lender/seller for investing in its subprime securities. Fourth, investors are protected by a legal doctrine called "holder in due course" which prevents borrowers from making claims against the purchaser of their loan, even if, for example, that loan contained abusive features.

Further, the only "regulatory" oversight of the secondary market comes from third-party rating agencies, who evaluate the credit risk of mortgage-backed securities and award credit ratings that determine the market price for the security. However, rating agencies make no determination about "the suitability of the underlying loans for individual borrowers."[70] At the end of the day, there is one party always "on the hook" for a mortgage default: the homeowner.

As long as subprime foreclosures remain predictable, the secondary market structure helps brokers, lenders, and investors minimize their risk of loss from defaults. Still, it is possible significantly higher foreclosures than predicted could lead to investor losses, and a decline in their appetite for subprime loans.

VI. POLICY RECOMMENDATIONS

With billions of dollars in equity already lost, there is an urgent need to curtail foreclosures in the subprime market and mitigate homeowners' losses in the future on unsustainable mortgages. Here we offer recommendations to reduce the risk of foreclosure on new subprime loans, and help subprime borrowers who currently are struggling to keep their homes:

1. Establish that every borrower has the means to repay his/her loan—without resorting to selling the property or refinancing under pressure.

A fundamental purpose of loan underwriting is to confirm the borrower's ability to repay the loan. Without prudent underwriting, attempts to prevent foreclosure just rearrange the proverbial deck chairs on the Titanic. Unfortunately, when qualifying borrowers, many subprime lenders, do not

evaluate whether the applicant can afford the loan after introductory rates expire. This way of qualifying borrowers shows no concern for whether homeownership is sustainable. Since the dominant subprime loan product is an exploding ARM with a significant rate adjustment after two years, many borrowers with subprime mortgages will face insurmountable payment shock that could have been avoided with sound underwriting.

Federal and state banking regulators have recently issued guidance that, in the simplest terms, forbid banks from using artificially low teaser rates to qualify borrowers who cannot truly afford the mortgage. Their guidance also addresses concerns about negatively amortizing loans (when loan payments do not result in lowering the principal amount owed) and approving loans without adequately verifying the borrower s income. These principles should be applied to subprime loans, particularly exploding ARMs.[71]

Subprime lenders should consider the ability of the borrower to pay their mortgage payments after the initial teaser rate expires, taking into account projected interest rate increases that can occur. At a minimum, lenders should not be permitted to underwrite loans based on an amount below the expected fully-indexed, fully-amortizing monthly payment. In evaluating the borrower's ability to repay, lenders also should consider the given borrower's circumstances, including the borrower's debt-to-income ratio (taking account of property taxes and insurance premiums) and the loan-to-value ratio, as well as whether the loan combines multiple high-risk factors (e.g., a low down payment combined with an interest-only feature) that put the loan at a higher risk of foreclosure.

In addition, two other practices that compound the risks posed by loose underwriting practices should be curbed. First, subprime lenders should always escrow amounts for taxes and insurance. Borrowers often are under the impression that these costs are included in their mortgage payment, and are frequently unable to meet these significant additional costs when they come due as a lump sum. Second, when underwriting subprime loans, lenders should independently verify income to ensure that the borrower will be able to afford the payments.

2. Ensure that all parties operate in good faith, and that everyone, not just the borrower, has a stake in a successful loan outcome.

Mortgage Brokers: Investment professionals have long had an affirmative duty to ensure that the products they recommend are suitable for their customers. Buying a home is the biggest investment that most families ever make, and, since home equity is the major source of wealth for most families, refinancing is a more relevant investment decision to most families than stock purchases. Arguably today's mortgage transactions are at least as complicated as financial decisions made with investment professionals, yet families do not have a similar assurance that their lender or broker will deal fairly with them by offering them loans that are suitable given their needs and circumstances. A securities broker who steers a borrower into an inappropriate investment risks punishment; a mortgage broker who does the same may reap higher compensation with no negative consequences. To protect homebuyers and homeowners, lenders and brokers should be required to recommend loans that are suitable and reasonably advantageous for borrowers.[72]

Mortgage brokers, in particular, should have a fiduciary duty to use best efforts to obtain an appropriate loan for the borrower. Borrowers expect their brokers to represent their best interests, and brokers should be held to that standard. The stakes are too high to allow misplaced incentives to harm families' chances of paying a fair price for their home and building their net worth.

Appraisers: Inflated appraisals help trap borrowers in unaffordable loans they cannot refinance. A 2003 National Appraisal Survey found that 55 percent of licensed appraisers had felt pressure from a mortgage broker or lender to "hit a certain property value," with 25 percent of appraisers saying this happens almost half the time. Survey respondents also estimated that the majority of the appraisers in their market would go along with requests to exaggerate the value or conditions of property most of the time.[73] Clearly, independence of the appraisal process is critical. Federal regulators have issued guidance and other interagency statements over the last several years that provide sound appraisal standards.[74] Still, there remains room for tougher enforcement and greater regulatory oversight.

Secondary Market Investors: Investors should take reasonable steps to avoid supporting unsound lending, including refusing to purchase mortgages from lenders who make abusive loans and requiring that subprime lenders use appropriate underwriting standards to ensure that borrowers can repay the loan. Policymakers can encourage investors to support responsible lending by including reasonable assignee liability provisions in protections for borrowers. Without effective assignee liability provisions, a family that has been placed into an abusive loan in violation of the law often cannot stop the foreclosure of their home. After going through foreclosure, most families lack the resources necessary to pursue separate litigation. Policymakers can craft laws that balance protections for homeowners and ensure good-faith secondary market participants do not face potentially significant exposure. For example, New Mexico, New Jersey, Massachusetts, and Rhode Island all have adopted balanced regulations that provide appropriate liability limits for investors who take appropriate steps to avoid the purchase of loans from predatory lenders.

3. Curtail steering by requiring objective pricing standards.

As noted earlier in the report, the costs of subprime foreclosures fall heavily on African-American and Latino homeowners, since subprime mortgages are disproportionately made in communities of color. This impact is particular disturbing in light of earlier research by the Center for Responsible Lending and others that has demonstrated that African-American and Latino borrowers are at greater risk of receiving higher-rate loans than white borrowers, even after controlling for legitimate risk factors.[75] Today, through advances in technology, lenders have a stronger ability than ever to apply risk-based pricing. Increasing the fairness and objectivity of the subprime home loan origination process would significantly improve outcomes for all families. Given the many explicit ways that American public policy supports homeownership and the increased risk of foreclosure in the subprime market, it is especially important that borrowers representing equivalent risks receive similar treatment from mortgage professionals. We believe the best way to achieve this end is to eliminate discretionary pricing in the subprime loan market, prompting lenders to adopt transparent, market-driven prices for mortgages representing similar risks.[76]

4. Continue to curtail equity-stripping practices such as abusive prepayment penalties.

While this study does not quantify the increased risk of subprime foreclosures that stems from predatory lending practices, it is obvious that when abusive fees and prepayment penalties associated with predatory lending strip equity from the home, they limit borrowers' options to refinance and push borrowers into foreclosure more quickly. More steps should be taken to limit abuses related to equity-stripping. For example, subprime loans should not include abusive prepayment penalties.

Second, our previous research shows that state anti-predatory lending laws are working as intended, i.e., lenders have responded by making subprime home loans that do not contain predatory terms targeted by the laws.[77] Policymakers should support legislation that builds on the proven methods for protecting families from abusive lending. Recognizing that new lending abuses continue to emerge, such laws should also ensure that all those responsible for representing and protecting families have authority to act to address new problems.

5. Help subprime borrowers who are in danger of losing their homes.

Servicing and Loss Mitigation: Many homeowners can save their homes if given opportunities for reasonable work-out plans when they have trouble making their mortgage payments. However, investors who purchase subprime loans in the secondary market often limit the flexibility that loan servicers have to work with delinquent borrowers to avoid foreclosure, especially if this requires extra time or money. As one Wall Street professional put it, "The general feeling among investors is that they are not willing to trade . . . income for increased servicing costs."[78] In addition, settlements in 2004 between regulators and subprime servicers Fairbanks Capital Corporation and Ocwen Federal Bank disclosed numerous predatory servicing practices, including failure to post on-time borrower payments, charging excessive and unwarranted fees, prematurely referring accounts to collections, and forcing homeowners into default to generate fee income. Regulators had hoped these settlements would encourage other firms to establish servicing "best practices;" however, new FTC investigations indicate this has not happened.[79] Regulators must continue to focus on this area, especially on the way servicers handle adjustments of exotic ARM products and workout/collections practices for a growing number of delinquent subprime loans.

Home Preservation Programs: There are efforts underway in numerous markets, often as partnerships among community groups, lenders, and local or state governments, to help keep families in their homes. These include an array of interventions to assist borrowers in trouble, including (1) targeted outreach to delinquent borrowers, (2) financial counseling, (3) restructuring consumer debt, (4) funding unexpected home repairs (often the trigger for problems), (5) loan modifications, (6) short-term loans or grants to cover income shortfalls, (7) exit strategies if homeownership is unsustainable due to divorce, health crisis, etc., and, if all else fails, (8) managing repossessed property to avoid vacancies and maintain a stable neighborhood. Subsidies from state government can provide significant support to these kinds of programs, which often lack the scale to operate in an economically sustainable way on their own.[80] Even with public subsidy, however, these programs have a limited ability to assist homeowners, particularly on the scale of foreclosures anticipated by this report. Limiting abusive origination practices is critical to driving down the rate of foreclosure so that intervention programs can provide service to borrowers with exceptional circumstances.

Foreclosure Rescue Scams: As described in the Discussion section, rescue scams have proliferated, stripping home equity and financial security from vulnerable borrowers, and accelerating the cycle of decline that threatens whole communities.[81] The danger from these predators will only grow as delinquencies and foreclosures climb over the next few years. Several states, including California, Georgia, Maryland, Minnesota, and Missouri, have passed laws to protect homeowners from fraudulent foreclosure rescuers. Other states should follow suit.

NOTES

1 The rate of new foreclosures as a percent of all loans rose from .13 in 1980 to .42 in 2005, as reported in the *National Delinquency Survey,* Mortgage Bankers Association. 2005 new foreclosure filings statistic from Realty Trac in Home Foreclosures on the Rise, MoneyNews (February 23, 2006) at http://www.newsmax.com/archives/articles/2006/2/23/134928.shtml.

2 *National Foreclosures Increase 17 Percent In Third Quarter,* Realty Trac (November 1, 2006) at http://www.realtytrac.com/ContentManagement/PressRelease.aspx?ItemID=1362.

3 *See, e.g.,* Saskia Scholtes, Michael Mackenzie and David Wighton, US Subprime Loans Face Trouble, Financial Times (December 7, 2006); Nightmare Mortgages, Business Week (September 11, 2006).

4 Ira Goldstein, *Bringing Subprime Mortgages to Market and the Effects on Lower-Income Borrowers,* p. 2 Joint Center for Housing Studies, Harvard University (February 2004) at http://www.jchs.harvard.edu/publications/finance/babc/babc_04-7.pdf.

5 For most types of subprime loans, African-Americans and Latino borrowers are more likely to be given a higher-cost loan even after controlling for legitimate risk factors. Debbie Gruenstein Bocian, Keith S. Ernst and Wei Li, *Unfair Lending: The Effect of Race and Ethnicity on the Price of Subprime Mortgages,* Center for Responsible Lending, (May 31, 2006) at http://www.responsiblelending.org/issues/mortgage/reports/page.jsp?itemID=29371010. *See also* Darryl E. Getter, *Consumer Credit Risk and Pricing,* Journal of Consumer Affairs (June 22, 2006); Howard Lax, Michael Manti, Paul Raca, Peter Zorn, *Subprime Lending: An Investigation of Economic Efficiency,* 533, 562, 569, Housing Policy Debate 15(3) (2004).

6 *Subprime Mortgage Origination Indicators,* Inside B&C Lending (November 10, 2006).

7 *See* "Loan Purpose" statistics in Appendix 3.

8 Income figures from Isaac Shapiro, *What new CBO Data Indicate About Long-term Income Distribution Trends,* p. 1 Center on Budget and Policy Priorities, (March 7, 2005) at http://www.cbpp.org/3-7-05tax.pdf. Though 2006 Census data shows a very modest increase in median income nationally, it fell slightly among working-age households, and is $2000 below 2001 recession levels; *Poverty Remains Higher, and Median Income for Non-Elderly is Lower Than When Recession Hit Bottom,* p. 3 Center on Budget and Policy Priorities, (September 1, 2006), at http://www.cbpp.org/8-29-06pov.htm. Household expense data from Elizabeth Warren and Amelia Warren Tyagi, *The Two Income Trap: Why Middle-Class Mothers and Fathers Are Going Broke,* p. 51 Basic Books (2003).

9 Personal savings dipped into negative territory in late 2005 and remained there in 2006. Personal Savings Rate, U.S. Bureau of Economic Analysis (November 29, 2006) at http://bea.gov/briefrm/saving.htm. While the "dissavings" rate of the elderly affects that overall negative rate, it also appears to be the case that working age households save virtually nothing outside pension savings. Alicia H. Munnell, Francesca Golub-Sass, and Andrew Varani, *How Much Are Workers Saving?* p. 3, Center for Retirement Research Issue Brief # 34 (October 2005) at http://www.bc.edu/centers/crr/issues/ib_34.pdf.

10 Peter G. Gosselin, If America is Richer, *Why Are Its Families So Much Less Secure?* Los Angeles Times (October 10, 2004). The chances of a family experiencing an income drop of 50% or more grew from 7% in 1970 to nearly 17% in 2002. Jacob S. Hacker, *The Great Risk Shift,* p. 31 Oxford Univ. Press (2006).

11 Household Debt Service and Financial Obligations Ratios, Federal Reserve Board (October 12, 2006) at http://www.federalreserve.gov/releases/housedebt/. See also Dimitri B. Papadimitriou, Edward Chilcote, and Gennaro Zezza, *Are Housing Prices, Household Debt, and Growth Sustainable?* p. 4 Levy Economics Institute of Bard College (January, 2006) (debt-to-disposable income ratio - under 70% until 1985, today near 122%) at http://www.levy.org/modules/pubslib/files/sa_jan_06.pdf.

12 Lisa Prevost, *The Homeowner's Day of Reckoning,* Boston Globe Magazine (October 15, 2006), quoting Elizabeth Warren at http://www.boston.com/news/globe/magazine/articles/2006/10/15/the_homeowners_day_of_reckoning/?page=1.

13 2000 – 2004 figures from Alan Greenspan and James Kennedy, *Estimates of Home Mortgage Originations, Repayments, and Debt on One-to-Four-Family Residences,* Table 1, Line 23, p. 21, at http://www.federalreserve.gov/pubs/feds/2005/200541/200541pap.pdf. *See also* Damon Darlin, *Mortgage Lesson No. 1: Home is Not a Piggy Bank,* New York Times (November 4, 2006) at http://www.nytimes.com/2006/11/04/business/04money.html?ex=1165554000&en=2abbe04306345d11&ei=5070.

14 *See* Damon Darlin, note 13.

15 It should be noted that high appreciation is often accompanied by an increase in purchases of homes for investment purposes, rather than for owner-occupancy. Investors may be more likely to walk away from property where the value is less than the outstanding debt.

16 In theory, a foreclosure sale or "sheriff's sale" could bring a competitive price, and generally any surplus would have to be returned to the foreclosed homeowner. As a practical matter, a forced sale price is overwhelmingly a depressed price, and it is very rare for these sales to bring in enough to enable the homeowner to salvage any equity. *See, e.g.,* Debra Pogrund Stark, *Facing the Facts: An Empirical Study of the Fairness and Efficiency of Foreclosures and a Proposal for Reform,* p. 30 U. Mich. J. L. Reform 639, 692 (1997). (In the two study years, foreclosing lenders were winning bidders in 85-89% of sales, and only 4.3% to 11.8% of sales had a surplus.)

17 Michelle A. Danis and Anthony N. Pennington-Cross, *A Dynamic Look at Subprime Loan Performance,* Working Paper 2005-029A Federal Reserve Bank of St. Louis (May 2005) at SSRN: http://ssrn.com/abstract=761152

18 Regulators now use the Oil Patch ten-year default rate of 14.9 percent as the standard for determining whether government-sponsored mortgage enterprises (Fannie Mae and Freddie Mac) have enough capital to weather credit losses caused by a severe economic decline in the United States. This experience is now a key component in the risk-based capital standards established by the Federal Housing Enterprises Financial Safety and Soundness Act of 1992. These standards ensure that GSEs' portfolios can withstand a credit loss stress test using a 10-year cumulative default rate of 14.9%.

19 *See, e.g.,* Danis et al note 17; *see* also *Residential Mortgage Default,* p. 21 Business Review Q3 2006 at http://www.phil.frb.org/files/br/br_q3-2006-3_residential mortgage.pdf (Also, see Appendix 1 for a brief sampling of related research).

20 Mark Zandi, Celia Chen, Brian Carey, *Housing at the Tipping Point,* Moody's Economy.com (October 2006).

21 Projections are made through the 89th month of the loan life. At this point, the vast majority of subprime loans have typically terminated, though some small additional number of foreclosures are always possible. *See, e.g., U.S. R.M.B.S. Intel-Based Cash Flow Model,* Fitch Ratings Agency (2006) at http://www.fitchratings.com/corporate/reports/report_frame.cfm?rpt_id=282286 (showing subprime loss timing assumptions that 97.46% of losses have been occurred by month 89).

22 Anthony Pennington-Cross and Giang Ho, *The Termination of Subprime Hybrid and Fixed Rate Mortgages,* Working Paper 2006-042A Federal Reserve Bank of St. Louis (July 2006).

23 Pennington-Cross and Ho use a somewhat different definition for default than we use for foreclosed loans, designating a loan as in default once foreclosure is initiated or when it is deemed real-estate-owned by the lender (REO).

24 Roberto G. Quercia, Michael A. Stegman, and Walter R. Davis, *The Impact of Predatory Loan Terms on Subprime Foreclosures: The Special Case of Prepayment Penalties and Balloon Payments, Center for Community Capitalism,* Kenan Institute for Private Enterprise, University of North Carolina at Chapel Hill (January 25, 2005).

25 Five states should see modest decreases in foreclosure rates (Indiana, Mississippi, Oklahoma, Tennessee, and Utah); however, these rates will still be 16% or higher.

26 Marsha Courchane, Peter Zorn, Brian Surette, *Subprime Borrowers: Mortgage Transitions and Outcomes*, p. 365, 374-376 Journal of Real Estate Finance & Economics (2004).

27 Rapid growth in the Northeast led to overheated markets and high house prices, which in turn slowed housing demand and hurt many industries that were reliant on construction activity. In California, the aerospace industry stumbled, creating a disproportionate loss of jobs and substantially worse real median income and poverty levels in the state.

28 Mark Zandi, Celia Chen, Brian Carey, *Housing at the Tipping Point*, Moody's Economy.com (October 2006).

29 *See* Zandi et al, note 28.

30 *See*, e.g., Quercia, *et al*, note 24, esp. p. 27-30, Table 10 at p. 35 (January, 2005) (in addition to the two highlighted terms, also cites odds ratios for other terms, including ARMs); *see also* Danis *et al*, note 17 (equity status at origination and subsequently); *see generally* Interagency Guidance on Nontraditional Mortgage Product Risks, 71 Fed. Reg. 58609 (October 4, 2006); Conference of State Bank Supervisors/American Assoc. of Residential Mortgage Regulators, *Guidance on Nontraditional Mortgage Product Risks* (November, 2006); Appendix 1.

31 See note 30.

32 *See* Table 11 in the report. *Structured Finance: U.S. Subprime RMBS in Structured Finance CDOs*, Fitch Ratings Credit Policy p. 4 (August 21, 2006). Such loans weaken underwriting and facilitate the use of inflated incomes, an increasingly common phenomenon. The allegations in the States' action against Ameriquest, the nation's top subprime originator in 2003 - 2005, included "acts and practices which resulted in fabricated or inflated income information and/or non-existent or inflated amounts of assets" for applicants. *See, e.g.*, State of Iowa, ex rel Miller v. Ameriquest Mortgage Co. et al, Eq. No.EQCE-53090 Petition, at ¶ 16(F) (March 21, 2006). A lender review of 100 stated loan files found 60% of them included incomes exaggerated by more than 50%. Merle Sharick, Erin E. Omba, Nick Larson and D. James Croft, *MARI Eighth Periodic Mortgage Fraud Case Report to the Mortgage Bankers Association*, p. 12 (April, 2006) at http://www.mari-inc.com/pdfs/mba/MBA8thCaseRpt.pdf.

33 Michael Collins, *The Many Benefits of Homeownership*, Neighborhood Reinvestment Corporation (November 1998).

34 Donald R. Haurin and Stuart S. Rosenthal, *The Sustainability of Homeownership: Factors Affecting the Duration of Homeownership and Rental Spells*, p. 43 HUD Office of Policy Development, (December, 2004), at http://www.huduser.org/Publications/pdf/homeownsustainability.pdf.

35 During the study period, two of the biggest subprime servicers were the subject of regulatory actions, as well as significant private litigation. In 2002, Fairbanks Capital was the number three subprime servicer and Ocwen number four. Together they serviced 12 percent of the subprime market that year. *The 2006 Mortgage Market Statistical Annual, Vol. 1*, p. 210 Inside Mortgage Finance (2006). The FTC and HUD settled an enforcement action against Fairbanks in 2003. *Fairbanks Capital Settles FTC and HUD Charges*, FTC Press Release (November 12, 2003). The Office of Thrift Supervision entered into a supervisory agreement with Ocwen in 2004, OTS Docket No. 04592 (April 19, 2004). *See generally* Kurt Eggert, *Limiting Abuse and Opportunism by Mortgage Servicers*, Housing Policy Debate 15(3), p. 753 Fannie Mae Foundation (2004).

36 The Home Mortgage Disclosure Act requires most lenders to file annual reports containing specified information about the "higher-cost loans" they originated. "Higher-cost loans" are those for which the APR exceeds the rate on a Treasury security of comparable maturity by three percentage points for first liens, and five percentage points for second liens. FRB analysis of 2005 HMDA data indicates that non-Hispanic whites received over 1.2 million higher-cost loans, compared to 388,471 for African-Americans and 375,889 for Latinos. Authors' calculations from data reported in Robert B. Avery, Kenneth P. Brevoort, and Glenn B. Canner, *Higher-Priced Home Lending and the 2005 HMDA Data*, Federal Reserve Bulletin A123, A160-161 (Sept. 8, 2006), at http://www.federalreserve.gov/pubs/bulletin/2006/hmda/bull06hmda.pdf.

37 Dan Immergluck and Geoff Smith, *The External Costs of Foreclosure: The Impact of Single-Family Mortgage Foreclosures on Property Values*, p. 57, 69, 72, 75 Housing Policy Debate (17:1) Fannie Mae Foundation (2006) at http://www.fanniemaefoundation.org/programs/hpd/pdf/hpd_1701_immergluck.pdf.

38 *See* Immergluck *et al*, note 37.

39 William G. Apgar, Mark Duda, Rochelle Nawrocki Gorey, *The Municipal Cost of Foreclosures: A Chicago Case Study*, p. 24-26 Homeownership Preservation Fund (February 27, 2005) at http://www.nw.org/network/neighborworksProgs/foreclosuresolutions/documents/2005Apgar-DudaStudy-FullVersion.pdf.

40 *See Survey of Credit Underwriting Practices 2005* p. 5 Office of the Comptroller of the Currency, National Credit Committee. The agency commented, "ambitious growth goals in a highly competitive market can create an environment that fosters imprudent credit decisions." In fact, 28% of the banks eased standards, leading the 2005 OCC survey to be its first survey where examiners reported net easing of retail underwriting standards. The trend continued in 2006: *see Survey of Credit Underwriting Practices 2006*, Office of the Comptroller of the Currency (October 2006) at http://www.occ.treas.gov/cusurvey/2006UnderwritingSurvey.pdf.

41 *See* 71 Fed. Reg. 58609 (October 4, 2006) for the federal Interagency Guidance on Nontraditional Mortgage Product Risks, issued by the Office of the Comptroller of the Currency, the Federal Reserve Board, the Federal Deposit Insurance Corporation, the Department of the Treasury and the National Credit Union Administration. State regulators have indicated they will adopt the federal standards for lenders subject to their oversight in November 2006.

42 CSBS/AARMR Guidance on Nontraditional Mortgage Product Risks, at http://www.csbs.org/Content/NavigationMenu/RegulatoryAffairs/FederalAgencyGuidanceDatabase/CSBS-AARMR_FINAL_GUIDANCE.pdf. These standards apply generally to interest-only and payment option ARMs, not to other higher-risk products, such as hybrid ARMs.

43 *See* Interagency Guidance on Nontraditional Mortgage Product Risks, note 42.

44 A balloon loan is one that is not repayable in regular monthly installments, but rather requires repayment of the remaining balance in one large lump sum. While 2/28s are not balloon loans, the impact of higher interest rates at the end of the two-year teaser rate period, resulting in higher monthly payments, may force a borrower to seek refinancing.

45 *See, e.g., Structured Finance: U.S. Subprime RMBS in Structured Finance CDOs*, p. 2 Fitch Ratings Credit Policy (August 21, 2006).

46 *See Structured Finance*, note 45.

47 *See Structured Finance*, note 45.

48 Jonathan R. Laing, *Coming Home to Roost*, p. 26 Barron's (February 13, 2006).

49 *See Structured Finance*, note 45.

50 In June 2006, Fitch noted that "in the subprime sector, 8% of the total volume were 2/38 hybrid ARMs, up from less than 1% for all of 2005." Fitch also noted that approximately one quarter of subprime ARMs include an interest-only feature. *See Structured Finance: 40, 45-, and 50-Year Mortgages: Option ARMS, Hybrid ARMS and FRMS*, p. 2, 4 Fitch Ratings Credit Policy (June 19, 2006); *Structured Finance: U.S. Subprime RMBS in Structured Finance CDOs*, p. 2 Fitch Ratings Credit Policy (August 21, 2006).

51 *See* Option One Prospectus, Option One MTG LN TR ASSET BK SER 2005 2 424B5, p. S-50 Securities and Exchange Commission Filing 05794712 (May 3, 2005).

52 *See, e.g., B&C Escrow Rate Called Low,* Mortgage Servicing News Bulletin (February 23, 2005) "Servicers of subprime mortgage loans face a perplexing conundrum: only about a quarter of the loans include escrow accounts to ensure payment of insurance premiums and property taxes, yet subprime borrowers are the least likely to save money to make such payments….Nigel Brazier, senior vice president for business development and strategic initiatives at Select Portfolio Servicing, said only about 25% of the loans in his company's subprime portfolio have escrow accounts. He said that is typical for the subprime industry.

53 *See, e.g., Attractive Underwriting Niches,* Chase Home Finance Subprime Lending marketing flier, at http://www.chaseb2b.com/content/portal/pdf/subprimeflyers/Subprime_AUN.pdf http://www.chaseb2b.com/content/portal/pdf/subprimeflyers/Subprime_AUN.pdf (available 9/18/2006) stating " Taxes and Insurance Escrows are NOT required at any LTV, and there's NO rate add!" (suggesting that failing to escrow taxes is an "underwriting highlight" that is beneficial to the borrower). 'Low balling' payments by omitting tax and insurance costs were also alleged in states' actions against Ameriquest. See, e.g., State of Iowa, ex rel Miller v. Ameriquest Mortgage Co. et al, Eq. No. EQCE-53090 Petition, at ¶ 16(B) (March 21, 2006).

54 *Partnership Lessons and Results: Three Year Final Report,* p. 31 Home Ownership Preservation Initiative (July 17, 2006) at www.nhschicago.org/downloads/82HOPI3YearReport_Jul17-06.pdf.

55 In fact, Fannie Mae and Freddie Mac, the major mortgage investors, require lenders to escrow taxes and insurance.

56 *Structured Finance: U.S. Subprime RMBS in Structured Finance CDOs,* p. 4 Fitch Ratings Credit Policy (August 21, 2006).

57 *What Else Is New? ARMs Dominate Subprime Mix,* p. 4 Inside B&C Lending (January 20, 2006).

58 *See* Sharick, et al, note 32.

59 Traditional Rate Sheet effective 12/04/06 issued by New Century Mortgage Corporation, a major subprime lender, shows that a borrower with a 600 FICO score and 80% LTV loan would pay 7.5% for a fully-documented loan, and 9.0% for a "stated wage earner" loan.

60 Associates, the target of an FTC enforcement action settled in September 2002, was number two and number three in market share in 1998 and 1999 respectively. (It was purchased by Citigroup in late 2000, and merged into CitiFinancial.) Household, the subject of a multi state enforcement action by state financial regulators and attorneys general, held either number one or number two position in market share from 1998 to 2002. (The settlement with the states was announced in October 2002). It was number four in 2003, before being purchased by HSBC. (It should be noted that these two lenders generally retained their own loans, rather than selling them on the secondary market.) Conseco (f/k/a Green Tree) was in the top ten in market share from 1998 to 2000. It filed bankruptcy in 2002. More recently, Ameriquest, which grew from number 11 in market share in 2000 to number six in 2002 to number one in 2003-2005 also settled allegations in early 2006 of predatory lending in an investigation by the states. United Companies Lending filed bankruptcy in 1999 amidst enough allegations of improper practices that legal services attorneys were on the creditors committee representing its borrowers as a class of creditors. This is not an exhaustive "where are they now" list of major lenders in this market during our seven year period, but it does indicate that problems in the market were not limited to fringe players during our study period.

61 Rate sheets provided by lenders to mortgage brokers show a wide and complex array of pricing options, and commonly include an admonition that the information is not for public (i.e., the home buyer's) consumption.

62 This was also an allegation made by the states against Ameriquest. See, e.g., State of Iowa, ex rel Miller v. Ameriquest Mortgage Co. et al, Eq. No. EQCE-53090 Petition, at ¶ 16(B) (March 21, 2006).

63 *See* note 35.

64 Steve Tripoli and Elizabeth Renuart, *Dreams Foreclosed: The Rampant Theft of Americans' Homes Through Equity-Stripping Foreclosure 'Rescue' Scams,* p. 8-9, National Consumer Law Center, (June 2005) at http://www.consumerlaw.org/news/ForeclosureReportFinal.pdf.

65 Mortgage brokers accounted for 59.3% of subprime originations in 2005. *Brokers Flex Their Muscle in 2005, Powering Record Subprime Year,* Inside B&C Lending (March 17, 2006). When a reporting institution makes loans through a mortgage broker, the institution rather than the broker reports the HMDA data. *A Guide to HMDA Reporting: Getting It Right!* p.6 Federal Financial Institutions Examination Council (January 1, 2004).

66 In theory, the higher rate purchased by the yield spread premium is a trade-off for lower up-front costs. However, empirical studies cast doubt on that ostensible benefit for the YSP. See, e.g., Howell E. Jackson and Jeremy Berry, *Kickbacks or Compensation: The Case of Yield Spread Premiums, Harvard Law School* (January 8, 2002) at http://www.law.harvard.edu/faculty/hjackson/pdfs/january_draft.pdf.

67 *See, e.g.,* William Apgar, Allegra Calder and Gary Fauth, *Credit, Capital and Communities: The Implications of the Changing Mortgage Banking Industry for Community Based Organizations,* Joint Center for Housing Studies, Harvard University (March 9, 2004).

68 *See e.g.,* Apgar et al, note 67; see also, Barrett A. Slade, Scott D. Grimshaw, Grant Richard McQueen and William P. Alexander, *Some Loans are More Equal than Others: Third-party Originations and Defaults in the Subprime Mortgage Industry* (July 2001) at SSRN: http://ssrn.com/abstract=281233. Under standard industry representations and warranties, a broker who sells a loan may be required to buy back the loan if there is an "early-payment default" within the first 90 days. However, this provision typically covers loans that default due to fraud, rather than because a borrower can no longer afford their loan payments.

69 By comparison, corporate bonds accounted for 20 percent of the market, and Treasury debt accounted for another 16 percent. U.S. Bond Market Debt, Bond Market Association (June 30, 2006) at http://www.bondmarkets.com/assets/files/Outstanding%20Level.pdf.

70 Kathleen C. Engel and Patricia A. McCoy, *Turning a Blind Eye: Wall Street Finance of Predatory Lending* (June 19, 2006) at SSRN: http://ssrn.com/abstract=910378.

71 Because the guidance can be read to narrowly define "nontraditional mortgages," regulators need to confirm that the guidance applies to subprime 2/28 ARMs and similar products. In addition, CRL strongly recommends that at least some of the underwriting standards apply to all mortgage lenders and brokers, not only to depository institutions. To accomplish this goal, the FRB could exercise its discretionary authority under 15 USC Section 1639(l)(2), a provision of the Home Ownership and Equity Protection Act (HOEPA) which provides the Board with broad authority to prohibit unfair or deceptive mortgage lending practices and to address abusive refinancing practices. Specifically:

"(l) DISCRETIONARY REGULATORY AUTHORITY OF BOARD

(2) PROHIBITIONS. The Board, by regulation or order, shall prohibit acts or practices in connection with--

(A) mortgage loans that the Board finds to be unfair, deceptive, or designed to evade the provisions of this section; and

(B) refinancing of mortgage loans that the Board finds to be associated with abusive lending practices, or that are otherwise not in the interest of the borrower."

While this grant of authority occurs in HOEPA, Congress granted this authority to the Board for all mortgage loans, not just loans that are governed by HOEPA that meet the definition of "high cost." Each of the substantive limitations that HOEPA imposes refer specifically to high-cost mortgages. By contrast, the discretionary authority granted by subsection (l) refers to "mortgage loans" generally.

72 For a thoughtful discussion of suitability standards in the securities framework and their adaptability to the mortgage context, see Kathleen C. Engel and Patricia A. McCoy, *A Tale of Three Markets: The Law and Economics of Predatory Lending* Vol. 80 Texas Law Review p. 1317-1363 (May 2002).

73 Julie Haviv, *Some US Appraisers Feel Pressure To Inflate Home Values,* The Wall Street Journal (February 10, 2004) at http://www.octoberresearch.com/ai_survey/in_the_news.html.

74 Office of the Comptroller of the Currency, Board of Governors of the Federal Reserve System, Federal Deposit Insurance Corporation, Office of Thrift Supervision and National Credit Union Administration, *Frequently Asked Questions on the Appraisal Regulations and the Interagency Statement on Independent Appraisal and Evaluation Functions* (March 21, 2005). *See also, Interagency Appraisal and Evaluation Guidelines* (October 27, 1994) *and the joint statement Independent Appraisal and Evaluation Functions* (October 28, 2003).

75 *See* Bocian et al, note 5.

76 *See the Bocian et al* report, note 5, for a more complete discussion of CRL's policy recommendations on discretionary pricing.

77 Wei Li and Keith S. Ernst, *The Best Value in the Subprime Market: State Predatory Lending Reforms*, Center for Responsible Lending (February 23, 2006).

78 Neil J. Morse, *The Sticky Business of Nonprime Servicing*, Mortgage Banking (February 2005).

79 Brian Collins, *FTC Eyes Servicers*, p. 1 Mortgage Servicing News (December 2006/January 2007).

80 J. Michael Collins and Rochelle Nawrocki Gorey, *Analyzing Elements of Leading Nonprofit Default Intervention Programs*, Fannie Mae Foundation (June 2005) at http://content.knowledgeplex.org/kp2/cache/documents/94953.pdf.

81 Steve Tripoli and Elizabeth Renuart, *Dreams Foreclosed: The Rampant Theft of Americans' Homes Through Equity-Stripping Foreclosure 'Rescue' Scams*, p. 8-9, National Consumer Law Center (June 2005) at http://www.consumerlaw.org/news/ForeclosureReportFinal.pdf.

Appendix 1: Previous Studies on Mortgage Delinquencies and Foreclosures

First-generation mortgage foreclosure studies[1] during the 1960s looked at foreclosures from the lenders' underwriting perspective; that is, how foreclosure risk was influenced by loan types, borrower characteristics, and the amount of equity in a home (as measured by the loan-to-value ratio, or LTV). Studies in the late 1970s through the 1980s further analyzed foreclosures based on borrower behavior, describing an "option" model where default and prepayment were rational decisions by the consumer based on their income, costs, and home equity. More recent studies incorporated the perspective of mortgage investors, who are concerned both with the rate of foreclosures and the expected default losses in a pool of loans.

Despite differences in perspective and approach, economic studies and empirical research have identified several common factors that increase the likelihood of default and foreclosure. A central role is played by the amount of equity a borrower has in his home, determined by the current loan-to-value ratio. For example, a study of conventional loans originated from 1975-1983 and purchased by Freddie Mac showed that loans with downpayments of five percent had default rates that were double those of loans with 10 or 15 percent downpayments.[2]

While home equity is a dominant factor in mortgage foreclosures, studies indicate borrower characteristics play a role as well, although there is some disagreement as to the level of importance for specific characteristics. (The fact that many of these characteristics—for example, the amount of other financial assets held by a borrower—must be deduced through proxy measurements rather than actual data makes this analysis quite difficult.) One factor, the variability of household income, consistently shows an effect on mortgage default and delinquency.[3] Further, studies of affordable housing loans made in the early 1990s demonstrated that "layered" mortgage risk factors could quickly escalate default rates: for example, high debt-to-income payment ratios (above the then-standard 33/38) multiplied the default rate 3.6 times, turning a typical 6 percent default rate on a conventional 5-percent down loan into a 20 percent default rate.[4]

The lender's cost to foreclose also affects whether they will opt for foreclosure or try to work with delinquent borrowers. Foreclosures are more likely to occur in states with shorter foreclosure periods, or where lenders can pursue non-judicial foreclosures or obtain deficiency judgments against borrowers to recover default losses.)[5]

1 Characterizations from *Residential Mortgage Default: A Review of the Literature*, Roberto G. Quercia and Michael A. Stegman, Journal of Housing Research - Volume 3 Issue 2 (1992).
2 Robert Van Order and Peter Zorn. *Income,Location and Default: Some Implications for Community Lending*, Real Estate Economics 28 (2000).
3 J.P. Herzog and J.S. Early, *Home Mortgage Delinquency and Foreclosure*, National Bureau of Economic Research (1970). T. Campbell and J. Dietrich, *The Determinants of Default on Conventional Residential Mortgages*, Journal of Finances 38 (5) (1983).
4 Michael K. Stamper, *Revisting Targeted-Affordable Lending, Secondary Mortgage Markets* (October 1997). Gordon H. Steinbach, *Ready to Make the Grade*, Mortgage Banking (June 1995).
5 T.M. Clauretie, *A Note on Mortgage Risk: Default vs. Loss Rate*, Journal of the American Real Estate and Urban Economics Association 18 (2) (1990).

Studies show that delinquencies and defaults occur on subprime loans for many of the same reasons as past-due prime loans: lower FICO scores and higher loan-to-value ratios—especially in markets with poor housing appreciation.[6] The presence of predatory loan terms such as prepayment penalties or balloon payments also increases odds that subprime loans will default.[7] Overall, subprime mortgage loans have much higher default rates than prime loans. One study reported that in the 28th month of a loan, a typical subprime loan defaults more than 8 times more often than a typical prime loan (with a range of 3.5 to 12 times more often, depending upon the credit score of the borrower).[8]

In two other recent analyses of subprime mortgages, researchers analyzed the propensity of subprime adjustable rate mortgages and fixed rate mortgages to foreclose. The first study examined a large set of subprime loans originated from 1998 to 2005, and reported that at the end of five years almost 18 percent of the loans had defaulted.[9] Similarly, using a large database of securitized subprime loans originated by retail lenders in 1999, other researchers reported that 20.7 percent of subprime loans they examined from that year had experienced a foreclosure at least once within five years of origination.[10]

6 Michelle A. Danis and Anthony N. Pennington-Cross, *A Dynamic Look at Subprime Loan Performance*, FRB St. Louis Working Paper No. 2005-029A (May 2005).
7 Roberto G. Quercia, Michael A. Stegman, Walter R. Davis, *The Impact of Predatory Loan Terms on Subrprime Foreclosures: The Special Case of Prepayment Penalties and Balloon Payments*, Center for Community Capitalism, Kenan Institute for Private Enterprise, University of North Carolina at Chapel Hill (January 2005).
8 Anthony Pennington-Cross, *Patterns of Default and Prepayment for Prime and Nonprime Mortgages*. OFHEO Working Paper 02-1 (2002).
9 Anthony Pennington-Cross and Giang Ho, *The Termination of Subprime Hybrid and Fixed Rate Mortgages*, Federal Reserve Bank of St. Louis Working Paper 042-A (July 2006). They define a loan as in default once foreclosure is initiated of when it is deemed real estate owned by the lender.
10 See Note 7.

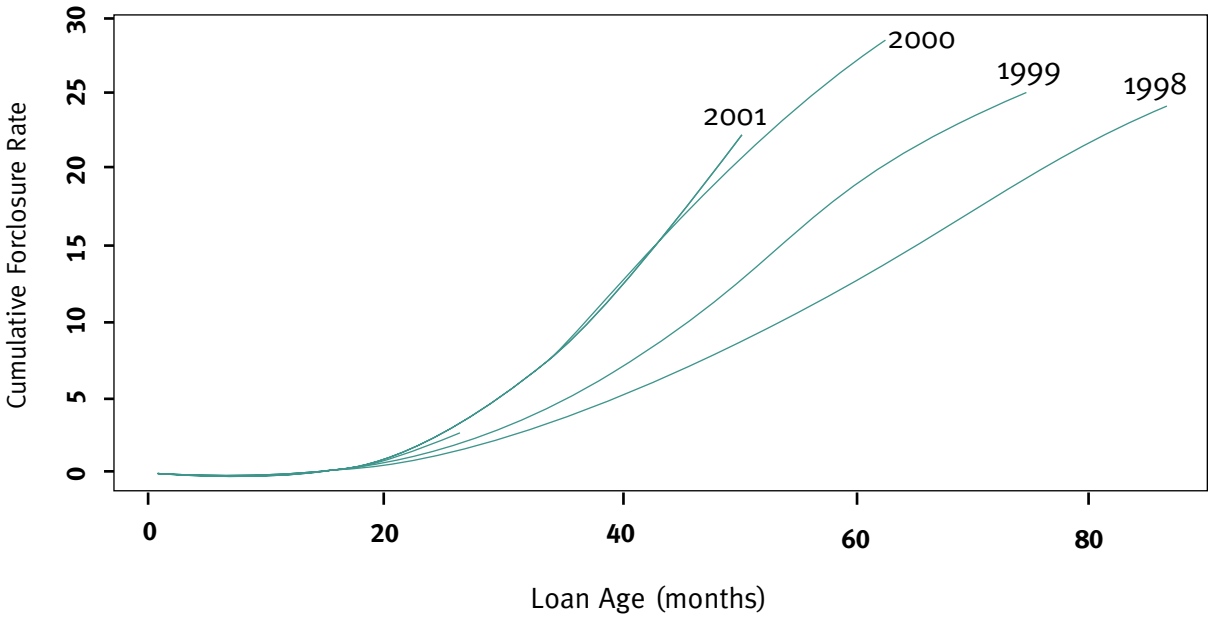
Appendix 2: Methods and Limitations

In this appendix, we describe the methods used to arrive at each finding and the limitations entailed in both the procedures and the data used. All statistical procedures were executed in SAS 9.1.3 SAS/STAT© and SAS/ETS© modules.

Finding A1.

Prepaid loans were defined as loans with a balance that went to zero when the preceding month showed that loan to have a status other than foreclosure, bankruptcy, or Real Estate Owned by the lender (REO). The latter category most commonly represents mortgages where the home has been signed over to the lender to avoid foreclosure, sometimes referred to as a deed-in-lieu of foreclosure. Foreclosed loans were defined as loans with a balance that went to zero when the preceding month showed the loan to have a status of foreclosure, bankruptcy, or REO. These definitions are imperfect in the sense that some small number of loans that are coded as foreclosures and associated with, for example, a bankruptcy status may actually represent refinances and, conversely, some loans that achieve a zero balance while, for example, 90 days delinquent may actually represent a foreclosure. Nevertheless, we believe these are reasonable standards for implementing generally understood definitions of prepayment and foreclosure.

Table 3 simply represents a tabulation of the incidence of these outcomes observed in the loan-level dataset used in this study. Figure 2 presents the cumulative accumulation of foreclosures for each annual cohort of subprime loans by the age of loans from that cohort at the time their balance is set to zero. We also include immediately below this paragraph a cumulative foreclosure curve conditional on non-prepayment. By drawing the foreclosure curves conditional on non-prepayment, the figure below is essentially presenting the cumulative foreclosure rate that would be expected if no loans prepaid and all loans experienced the odds of foreclosure associated with loans that did not prepay. This cumulative conditional curve is shown below and allows one to observe marked differences between the 1998 and 1999 loans, on one hand, and the loans from 2000 onward on the other:



Note: 2002 and 2003 curves are too short to depict here.

Finding A2.

In this section, we simply expand the range of measurements used to evaluate patterns of borrower distress. The definitions used are straightforward. A loan is counted as "ever delinquent" if, at any point, payment status was listed as 30 days past due. A loan is counted as "ever foreclosed" if it ever achieved a payment status of foreclosed, bankruptcy, or REO. It is worth noting that foreclosed here means that the loan entered foreclosure status and not that it finished foreclosure. A loan is counted as "prepaid in distress" if its balance went to zero when the preceding month showed a status of 30 or more days delinquent but not in foreclosure, bankruptcy, or REO.

Finding A3.

To develop the relationships in Table 5, we estimated robust regression models (PROC ROBUSTREG) for several annual cohorts of subprime loans. In each case, the dependent variable is the natural logarithm of the odds of a given outcome. For example, if the outcome of interest is foreclosure, the dependent variable is the log of the odds a loan will be foreclosed or, in other words, ln(P/(1-P)) where P is the probability that a loan will be foreclosed. The independent variable in all models is the average housing price appreciation in the MSA measured at the loan-level for loans belonging to the annual cohort being modeled from origination until time of termination or, if still outstanding at the time, until May 2005. The unit of observation for the regression is an MSA. The results presented in Table 5 have been transformed to odds ratios. The correct interpretation of the coefficients presented is that they show the expected change to the odds ratio that results from a one-percentage point change in annual house price appreciation (HPA). For example, for loans originated in 2000, let X_1 be the annualized HPA for MSA_1, X_2 be the annual HPA for MSA_2, Y_1 be the odds of foreclosure for loans in MSA_1, and Y_2 be the odds of foreclosure for loans in MSA_2. If X_2-X_1=1%, then (Y_2-Y_1)/Y_1=-8.32%.

The simplicity of this approach is one of its strengths. By observing outcomes on millions of subprime loans across hundreds of geographies and several annual cohorts, we essentially allow loan-level variations in credit quality to become random noise, allowing us to observe the correlation

between appreciation and a given outcome of interest. These findings, however, are not without their limitations. For example, we do not control for the effects of differing legal environments, the possibility that ineffective servicers may have a geographic nexus, or the effects from different interest rate environments. Nevertheless, since our results are largely consistent across multiple annual cohorts and highly significant, we believe that none of these limitations are fatal to our analysis.

Also, while option theory widely used to model prepayment and defaults in mortgages squarely suggests that lower appreciation rates should be associated with increased defaults, we also do not claim that our results purely represent the effects of such appreciation. Indeed, numerous factors such as unemployment and/or population change can be correlated with housing price appreciation rates and we include no such controls. In this case, however, our goal is not to understand the precise relationship of housing price appreciation to default, but rather to use it as an instrument for projections.

Finding A4.

The observed foreclosures presented in Table 6 are tabulated directly from the dataset. The projections presented in Table 6 are based on a modified life table method. Life tables are generally used to allow one to understand the probability of experiencing a given outcome. They are commonly used in the life insurance industry, for example, to estimate the risk of mortality for an insured.

To construct our life table, we used observations from all subprime loans originated at least 60 months prior to May 2005, following their performance for 89 months after origination. Fitch loss timing assumptions indicates that 97.5 percent of subprime loan losses will be incurred by 89 months of age.[1] We discarded any additional potential foreclosures as trivial additions and deem the experience through 89 months to be equivalent to the entire cumulative experience rate. There are three possible performance outcomes over this time period: outstanding, prepaid, or foreclosed. For any given month i, let a_i be the number of loans still outstanding at the beginning of the month. Let b_i be the number of loans foreclosed between month i and month 89. Then the probability of foreclosure after month i is given by

$$q_i = b_i / a_i$$

which is, in other words, the probability that a loan that has obtained a given month will be foreclosed by the 89th month.

The life table itself contains 5 columns. The first column is the age of the loan observed. The second column is the average housing appreciation associated with loans in our sample that obtained that age before foreclosing, measured at origination through the earlier of termination or May 2005. The third column presents the average proportion of original principal balance of loans in our sample that had obtained a given age by May 2005. The fourth column is the average age at foreclosure among loans that had foreclosed by May 2005 for loans that had obtained a given age in our sample. The fifth column is the probability that loans that have obtained that age will foreclose by month 89, as discussed above.

1 Projections are made through the 89th month of the loan life. At this point, the vast majority of subprime loans have typically terminated, though some small additional number of foreclosures are always possible. *See e.g.*, Fitch Ratings Agency, *U.S. R.M.B.S. Intex-Based Cash Flow* Model, 2006 (available at http://www.fitchratings.com/corporate/reports/report_frame.cfm?rpt_id=282286) (showing subprime loss timing assumptions that 97.46% of losses have been occurred by month 89).

Loan Age (months)	HPA	Original Principal Balance Remaining (%)	Average Age at Foreclosure (in Months)	Probability of Foreclosure
1	8.7	0.985	43	0.114
2	8.7	0.985	43	0.114
3	8.7	0.985	43	0.114
4	8.7	0.985	43	0.114
5	8.7	0.985	43	0.114
6	8.7	0.985	43	0.115
7	8.7	0.985	43	0.115
8	8.7	0.985	43	0.116
9	8.7	0.985	43	0.117
10	8.7	0.985	43	0.117
11	8.7	0.985	43	0.118
12	8.7	0.985	43	0.119
13	8.7	0.985	43	0.120
14	8.7	0.985	43	0.121
15	8.7	0.985	43	0.123
16	8.7	0.985	43	0.124
17	8.7	0.985	43	0.126
18	8.7	0.985	44	0.127
19	8.7	0.985	44	0.128
20	8.7	0.984	44	0.128
21	8.7	0.984	44	0.129
22	8.7	0.984	45	0.129
23	8.7	0.984	45	0.130
24	8.7	0.984	45	0.130
25	8.7	0.983	46	0.130
26	8.6	0.983	46	0.131
27	8.5	0.983	47	0.132
28	8.3	0.983	47	0.134
29	8.3	0.982	48	0.135
30	8.2	0.982	48	0.135
31	8.2	0.982	49	0.135
32	8.1	0.982	49	0.135
33	8.1	0.981	50	0.135
34	8.0	0.981	50	0.135
35	7.9	0.981	51	0.134
36	7.9	0.980	51	0.134
37	7.9	0.980	52	0.133
38	7.9	0.980	52	0.133
39	7.7	0.979	53	0.132
40	7.7	0.979	54	0.132
41	7.6	0.978	54	0.131
42	7.5	0.978	55	0.130
43	7.5	0.977	55	0.129
44	7.4	0.977	56	0.127
45	7.3	0.977	57	0.125

Loan Age (months)	HPA	Original Principal Balance Remaining (%)	Average Age at Foreclosure (in Months)	Probability of Foreclosure
46	7.2	0.976	57	0.124
47	7.1	0.976	58	0.122
48	7.1	0.975	58	0.120
49	7.0	0.975	59	0.117
50	6.8	0.974	59	0.115
51	6.7	0.974	60	0.112
52	6.7	0.973	61	0.109
53	6.6	0.973	61	0.106
54	6.6	0.972	62	0.103
55	6.5	0.972	62	0.099
56	6.5	0.971	63	0.096
57	6.4	0.971	64	0.093
58	6.3	0.970	65	0.088
59	6.3	0.970	65	0.084
60	6.3	0.969	66	0.079
61	6.2	0.968	67	0.075
62	6.2	0.968	68	0.072
63	6.2	0.967	68	0.070
64	6.2	0.966	69	0.067
65	6.2	0.966	70	0.065
66	6.2	0.965	71	0.062
67	6.2	0.964	71	0.059
68	6.2	0.963	72	0.056
69	6.2	0.962	73	0.053
70	6.2	0.962	73	0.051
71	6.2	0.961	74	0.048
72	6.2	0.960	75	0.045
73	6.2	0.960	76	0.041
74	6.2	0.959	77	0.037
75	6.2	0.958	78	0.034
76	6.2	0.957	79	0.032
77	6.2	0.957	79	0.030
78	6.2	0.955	80	0.027
79	6.2	0.955	81	0.025
80	6.2	0.954	82	0.023
81	6.3	0.953	83	0.020
82	6.3	0.953	83	0.017
83	6.3	0.952	84	0.015
84	6.3	0.951	85	0.012
85	6.3	0.952	86	0.010
86	6.3	0.953	86	0.008
87	6.3	0.954	87	0.004
88	6.1	0.959	88	0.002
89	6.1	0.959	89	0.000

Next, to apply the life table, we modified it to take into account the change in foreclosure rates that would be expected for differing housing price appreciation rates associated with annual cohort as follow:

Let Y_i be the projected probability of foreclosure for loans with age of month i, X_i be the observed odds of foreclosure for loans with age of month i, then,

$$Y_i = \frac{\mathrm{EXP}(\beta \times \Delta \mathrm{HPA}_i) \times X_i}{1 + \mathrm{EXP}(\beta \times \Delta \mathrm{HPA}_i) \times X_i},$$

where

$$\Delta \mathrm{HPA}_i = \frac{\mathrm{HPA}_{i\mathrm{projected}} - \mathrm{HPA}_{i\mathrm{observed}}}{\mathrm{HPA}_{i\mathrm{observed}}},$$

and ß is the coefficient obtained from our robust regression model for the year 2000 cohort.

Expectations for housing price appreciation used to modify the life table are drawn first from the Office of Federal Housing Enterprise Oversight (OFHEO) housing price index and then pegged to the average annual housing price appreciation based on a five-year MSA-level forecast from Moody's Economy.Com in its report "Housing at the Tipping Point" (October 2006). Loans outside of MSA were assigned a housing price appreciation equal to the average of appreciation in the state's MSAs. Projections for 2005 and 2006 also assume that the proportion of loans within each state's MSA and non-MSA areas remained constant from 2004 to 2006.

The modified life table was then applied to the loans not prepaid or foreclosed as of May 2005 to project future totals at the loan level. We then sum the observed foreclosures and projected foreclosures derived from the life table at the loan level to the geography of interest (e.g., MSA, state, or national level).

Losses were estimated at the loan level by multiplying the probability of default for each loan by the expected loss on foreclosure. The expected loss on foreclosure was based on three factors: the cost to dispose of the property, transaction costs, and a discount to the property's fair market value occasioned by the general desire to prioritize reselling a foreclosed loan quickly. Following Calem and LaCour-Little,[2] it is assumed that it costs 10 percent of unpaid balance to dispose the property and 5 percent of unpaid balance for foreclosure transaction costs. According to Christopher L. Cagan, "Foreclosing lenders do not want to incur extended additional costs of insurance, taxes, and maintenance for their foreclosed properties. They want to resell these properties quickly and recoup some money through the resale. Thus, lenders typically accept sale prices reduced by a percentage that will be called the *'foreclosure discount.'*"[3] In our study, foreclosure discount is estimated by using a regression model developed by Pennington-Cross.[4] We applied the findings from those authors' models in our estimation, and all independent variables are standardized to a zero-mean. The average of the estimated foreclosure discount for our data is higher than the average reported by Pennington-Cross, because our loans are all subprime, while his loans are prime loans oversampled toward higher interest loans. Pennington-Cross reported an average of 22 percent for a foreclosure discount. We standardized our estimate to this average. For all the loans observed foreclosed, equity loss is calculated directly. For loans projected to foreclose, we use the average age at foreclosure and associated balance at that age in the life table to project losses.

2 Paul S Calem and Michael LaCour-Little, Risk-Based Capital Requirements for Mortgage Loans, FEDS working paper 2001-60 (November 2001).
3 Christopher Cagan, *A Ripple Not a Tidal Wave: Foreclosure Prevalence and Foreclosure Discount,* First American Real Estate Solutions (November 16, 2006).
4 Anthony Pennington-Cross, *The Value of Foreclosed Property,* The Journal of Real Estate Research (April-June 2006).

The life table constructed here has limitations worth noting. Since only loans with more than 60 months' history are included in the life table and our observation data set ended in May 2005, only loans from 1998, 1999, and 2000 are included in the life table. Yet these cohorts are not identical to later years. For example, they have markedly fewer ARM and interest-only loans. Consequently, the life table constructed here will not fully capture the elevated risk posed by increased proportions of ARM loans, loans with an interest only feature, or by the growing acceptance on low and no documentation of income loans. We believe, based in part on Finding B and the descriptive statistics in Appendix 3, that these omissions tend to make our life tables conservative in that they tend to predict foreclosures based on a set of loans with features associated with lower risk of foreclosure.

We also note some limitations on the estimated losses associated with foreclosures. Our dataset does not provide a combined loan-to-value ratio that measures the total amount of debt on the secured property when borrowers hold both a first-lien mortgage and a subordinate lien. As a result, we cannot provide direct estimates of how much equity borrowers hold at the time their loans are terminated. This means that some unknown portion of the losses associated with foreclosures may exceed borrowers' net equity (down payment plus principal payments plus appreciation) at the time of foreclosure. In a number of jurisdictions, lenders who foreclose can pursue a deficiency judgment against borrowers to attempt to recover the amount of losses that exceed the available equity. However, we have no direct measurement of the proportion of foreclosures in which lenders pursue such judgments, and, consequently, throughout the report we qualify our loss estimates.

Finding A5.
The findings presented in Table 7 and Table 8 are straightforward attempts to develop expectations for cumulative foreclosure rates for *borrowers* who experience multiple subprime loan cycles. As detailed in the text and the referenced source, the assumptions underlying Table 7 are that (1) 60 percent of borrowers who refinance a subprime loan will receive another subprime loan; (2) using the 2005-2006 cumulative projected foreclosure rate 19.4 percent of loans are foreclosed; and (3) that these probabilities are constant for borrowers across multiple loans.

Finding B.
These MSA projections were made using the modified life table methodology discussed above for finding A4.

Finding C.
The findings presented in Table 9 are based on a series of proportional hazard models. In each model, our independent variables are a variable of interest (e.g., less than full documentation of income) and the borrower s credit score. The models are then developed as follows:

For a sample of n subprime loans, for each individual loan i, let t_i be the time of foreclosed or the time of censoring due to either prepaid or still outstanding as of May 2005, C_i be an indicator variable with a value of 1 if it is uncensored or a value of 0 if it is censored at t_i, x_i be a vector of k covariate values, and ß be a vector of coefficients.

The ratio of the hazard of foreclosure for two loans i and j, is given by

$$\frac{h_i(t)}{h_j(t)} = \exp\left[\beta_1(x_{i1} - x_{j1}) + \ldots + \beta_k(x_{ik} - x_{jk})\right]$$

The coefficients are estimated by maximizing the partial log likelihood, which is given by

$$\text{logPL} = \sum_{i=1}^{n} C_i \left[\boldsymbol{\beta}\mathbf{x_i} - \log\left(\sum_{j=1}^{n} y_{ij} \exp(\boldsymbol{\beta}\mathbf{x_j}) \right) \right]$$

where

$$y_{ij} = \begin{cases} 1, \text{if } t_j \geq t_i \\ 0, \text{if } t_j < t_i \end{cases}.$$

Appendix 3: Summary Statistics. Distribution of owner-occupied and 1st lien loans by year of origination in the proprietary dataset

(All figures are percentages except for last row in table.)

VARIABLE	Value	1998	1999	2000	2001	2002	2003	2004
PURPOSE	Purchase	30.45	31.55	38.47	35.21	32.84	32.09	39.50
	Refi (Cash Out)	47.03	51.85	49.65	52.06	52.55	53.70	50.80
	Refi (No Cash Out)	20.12	15.06	11.75	12.71	14.61	14.20	9.68
	Other	2.39	1.54	0.12	0.03	0.01	0.01	0.02
PROP_TYPE	SFR	84.15	84.95	82.18	81.74	80.05	78.86	76.12
	CONDO/Townhouse	4.46	4.30	4.66	4.82	5.40	5.97	6.89
	Else	0.94	0.38	0.27	0.31	0.13	0.07	0.06
	2+Units	3.69	3.83	4.10	3.76	4.45	4.54	4.39
	PUD	5.36	4.39	5.99	7.23	8.52	9.65	11.72
	Manufactured Hsng	1.40	2.15	2.81	2.14	1.45	0.91	0.83
PROD_TYPE	Fixed	59.64	46.61	39.91	42.08	37.61	39.35	25.29
	IO	0.02	0.05	0.32	0.30	1.66	5.74	19.64
	ARM	32.28	41.97	52.73	52.52	58.60	54.15	54.93
	Balloon	8.04	11.27	6.95	5.08	2.14	0.75	0.14
DOCUMENT	Full	67.04	75.08	74.06	69.91	65.58	61.92	59.04
	Else	32.96	24.92	25.94	30.09	34.42	38.08	40.96
PP_PEN	No	45.63	33.92	31.37	31.59	28.30	31.26	34.77
	Yes	54.37	66.08	68.63	68.41	71.70	68.74	65.23
PMI	No PMI	89.28	80.99	73.25	65.56	69.35	76.62	86.66
	PMI	10.72	19.01	26.75	34.44	30.65	23.38	13.34
JUMBO	Below	90.56	93.55	91.27	85.79	86.89	88.13	85.96
	Above	9.44	6.45	8.73	14.21	13.11	11.87	14.04
STEER	Else	86.11	88.30	90.09	87.26	86.40	85.17	84.61
	FICO›=660 and Full Doc	13.89	11.70	9.91	12.74	13.60	14.83	15.39
LTV	‹65	14.70	12.71	11.27	10.72	11.11	12.16	10.72
	65-70	10.11	9.48	8.88	7.52	7.17	6.99	6.62
	71-75	13.94	12.65	11.25	9.82	9.25	8.50	8.16
	76-80	29.72	29.55	28.08	27.86	29.58	29.14	38.62
	81-85	12.67	14.78	13.84	13.96	12.47	10.28	8.74
	86-90	11.97	14.04	15.65	17.19	16.73	16.01	13.69
	91-95	2.53	2.97	4.84	6.85	7.75	9.06	7.93
	96-100	2.60	2.46	3.43	4.13	4.12	6.67	5.15
	›100	1.19	1.13	1.46	1.90	1.83	1.18	0.38
FICO	300-499	3.00	3.20	3.67	2.06	1.18	0.35	0.08
	500-549	13.78	17.10	19.85	16.46	14.77	12.25	11.48
	550-599	21.94	26.55	27.92	24.41	22.75	20.30	19.07
	600-649	22.03	25.37	24.85	26.24	26.82	27.52	26.74
	650-699	18.52	16.57	13.65	16.70	18.24	21.09	22.48
	700-850	20.51	11.21	10.07	14.13	16.23	18.48	20.15
REGION	FWST	21.65	17.86	18.22	22.82	26.88	29.59	31.38
	GLAK	17.10	19.63	19.04	17.41	15.44	13.81	12.75
	MEST	12.75	12.36	11.41	10.63	11.66	12.40	12.11
	NENG	3.90	4.41	4.42	4.57	5.03	5.55	4.96
	PLNS	5.23	5.62	6.02	5.98	5.88	5.24	4.66
	RKMT	5.99	4.73	4.44	4.67	4.38	3.77	3.88
	SEST	23.57	25.02	25.22	23.57	21.11	20.55	20.91
	SWST	9.80	10.38	11.24	10.36	9.63	9.09	9.35
TOTAL	Counts	429,025	513,434	449,401	587,942	866,019	1,405,931	2,172,465

Appendix 4: Projected Lifetime Foreclosure Rates by State for Subprime Loans Originated in 1998-2001 and 2006

	Cumulative Projected Foreclosure Rate (%)	
State	1998-2001	2006
Alaska	10.8	17.1
Alabama	16.2	16.5
Arkansas	16.4	18.8
Arizona	10.5	21.1
California	4.5	21.4
Colorado	13.2	19.6
Connecticut	8.2	13.9
District of Columbia	6.8	22.8
Delaware	9.2	14.5
Florida	10.1	16.9
Georgia	17.9	20.3
Hawaii	5.0	20.6
Iowa	16.5	18.5
Idaho	15.8	18.3
Illinois	13.3	19.2
Indiana	19.0	17.9
Kansas	15.3	19.9
Kentucky	16.4	18.9
Louisiana*	15.1	19.6
Massachusetts	5.6	17.6
Maryland	7.8	20.6
Maine	8.5	16.4
Michigan	14.4	18.1
Minnesota	10.0	20.0
Missouri	17.1	18.5
Mississippi*	18.6	18.3
Montana	12.5	18.3
North Carolina	15.5	17.5
North Dakota	15.4	17.8
Nebraska	16.2	18.3
New Hampshire	5.4	14.9
New Jersey	7.6	19.6
New Mexico	13.4	17.3
Nevada	11.5	23.7
New York	9.7	20.9
Ohio	16.2	18.1
Oklahoma	19.5	17.8
Oregon	14.3	19.6
Pennsylvania	11.2	17.1
Rhode Island	4.8	19.5
South Carolina	15.0	17.4
South Dakota	10.2	18.7
Tennessee	17.7	17.6
Texas	14.4	17.3
Utah	20.7	19.7
Virginia	8.3	20.9
Vermont	9.8	20.7
Washington	13.0	16.8
Wisconsin	12.6	19.6
West Virginia	14.3	19.2
Wyoming	10.1	17.5

* Our models do not account for the potential impact of Hurricane Katrina on foreclosure rates.

Appendix 5: Projected Lifetime Foreclosure Rates for 378 MSAs (Comparing 1998-2001 and 2006 Subprime Loans)

State	MSA	1998-2001 Loans	2006 Loans	Rank 2006	Change 1998-2001 to 2006	Rank by Change from 1998-2001 to 2006
Alabama	Anniston-Oxford, AL	12.5%	15.8%	299	27.1%	169
	Auburn-Opelika, AL	18.3%	17.6%	152	-3.7%	308
	Birmingham-Hoover, AL	15.2%	16.5%	258	8.8%	243
	Columbus, GA-AL	14.8%	17.0%	222	14.9%	210
	Decatur, AL	17.2%	14.9%	337	-13.3%	338
	Dothan, AL	21.2%	15.4%	321	-27.3%	371
	Florence-Muscle Shoals, AL	19.0%	14.0%	354	-26.3%	368
	Gadsden, AL	14.1%	15.8%	299	12.5%	224
	Huntsville, AL	15.4%	16.0%	293	3.5%	268
	Mobile, AL	15.4%	17.6%	152	14.4%	212
	Montgomery, AL	19.6%	16.9%	230	-13.6%	340
	Tuscaloosa, AL	13.9%	15.5%	315	11.3%	230
Alaska	Anchorage, AK	10.9%	17.1%	205	57.0%	103
	Fairbanks, AK	15.2%	16.7%	250	9.9%	236
Arizona	Flagstaff, AZ	6.9%	12.0%	368	75.4%	71
	Phoenix-Mesa-Scottsdale, AZ	9.9%	21.1%	26	113.5%	53
	Prescott, AZ	8.7%	19.6%	51	124.1%	48
	Tucson, AZ	9.3%	21.6%	19	132.4%	45
	Yuma, AZ	9.3%	16.7%	250	79.8%	68
Arkansas	Fayetteville-Springdale-Rogers, AR-MO	14.5%	18.4%	97	27.0%	170
	Fort Smith, AR-OK	21.5%	15.8%	299	-26.2%	367
	Hot Springs, AR	12.8%	17.1%	205	33.5%	150
	Jonesboro, AR	18.5%	15.2%	329	-18.2%	350
	Little Rock-North Little Rock, AR	15.4%	17.4%	182	12.9%	223
	Memphis, TN-MS-AR	18.9%	17.9%	129	-5.1%	312
	Pine Bluff, AR	15.0%	15.8%	299	5.7%	260
	Texarkana, TX-Texarkana, AR	19.6%	14.8%	339	-24.4%	364
California	Bakersfield, CA	9.3%	24.2%	2	159.8%	39
	Chico, CA	6.0%	20.2%	40	238.1%	25
	El Centro, CA	6.9%	13.5%	360	96.2%	62
	Fresno, CA	8.3%	23.5%	5	185.0%	36
	Hanford-Corcoran, CA	8.9%	17.6%	152	98.4%	61
	Los Angeles-Long Beach-Glendale, CA	6.0%	22.0%	15	268.5%	22
	Madera, CA	6.4%	20.9%	29	227.0%	28
	Merced, CA	6.4%	25.0%	1	288.6%	20
	Modesto, CA	5.9%	17.1%	205	189.4%	35
	Napa, CA	2.6%	16.4%	267	526.5%	5
	Oakland-Fremont-Hayward, CA	4.6%	21.3%	24	358.9%	11
	Oxnard-Thousand Oaks-Ventura, CA	3.2%	17.6%	152	453.1%	7
	Redding, CA	8.7%	19.7%	47	127.4%	46
	Riverside-San Bernardino-Ontario, CA	7.0%	22.6%	11	224.0%	29
	Sacramento-Arden-Arcade-Roseville, CA	4.8%	21.0%	28	338.5%	14
	Salinas, CA	4.0%	20.4%	34	413.1%	9
	San Diego-Carlsbad-San Marcos, CA	3.2%	21.4%	21	567.4%	3
	San Francisco-San Mateo-Redwood City, CA	3.0%	16.7%	250	462.1%	6
	San Jose-Sunnyvale-Santa Clara, CA	4.3%	19.3%	60	352.3%	13
	San Luis Obispo-Paso Robles, CA	2.6%	13.6%	359	415.6%	8
	Santa Ana-Anaheim-Irvine, CA	3.0%	22.8%	9	668.3%	1

State	MSA	1998-2001 Loans	2006 Loans	Rank 2006	Change 1998-2001 to 2006	Rank by Change from 1998-2001 to 2006
	Santa Barbara-Santa Maria, CA	2.8%	19.6%	51	595.5%	2
	Santa Cruz-Watsonville, CA	3.2%	14.5%	347	356.3%	12
	Santa Rosa-Petaluma, CA	3.4%	21.1%	26	526.9%	4
	Stockton, CA	6.7%	23.4%	7	249.8%	24
	Vallejo-Fairfield, CA	4.7%	23.8%	3	404.9%	10
	Visalia-Porterville, CA	10.8%	22.2%	13	105.9%	55
	Yuba City, CA	8.0%	17.6%	152	120.1%	50
Colorado	Boulder, CO	6.6%	16.8%	238	153.4%	42
	Colorado Springs, CO	11.4%	18.4%	97	61.5%	98
	Denver-Aurora, CO	10.3%	20.6%	30	100.0%	60
	Fort Collins-Loveland, CO	7.0%	15.8%	299	127.0%	47
	Grand Junction, CO	8.9%	19.2%	63	116.7%	51
	Greeley, CO	10.4%	19.5%	57	87.7%	66
	Pueblo, CO	16.4%	17.5%	165	6.9%	255
Connecticut	Bridgeport-Stamford-Norwalk, CT	6.7%	10.5%	377	56.4%	104
	Hartford-West Hartford-East Hartford, CT	10.0%	14.2%	352	42.1%	131
	New Haven-Milford, CT	12.1%	16.0%	293	31.6%	154
	Norwich-New London, CT	10.2%	15.1%	332	47.6%	122
Delaware	Dover, DE	11.8%	17.6%	152	49.1%	118
	Wilmington, DE-MD-NJ	10.9%	14.1%	353	28.7%	165
D.C.	Washington-Arlington-Alexandria, DC-VA-MD-WV	8.2%	22.8%	9	177.9%	38
Florida	Cape Coral-Fort Myers, FL	13.3%	14.4%	349	8.3%	245
	Deltona-Daytona Beach-Ormond Beach, FL	12.4%	15.4%	321	24.1%	179
	Fort Lauderdale-Pompano Beach-Deerfield Beach, FL	9.5%	17.9%	129	88.4%	64
	Fort Walton Beach-Crestview-Destin, FL	10.8%	15.6%	310	44.5%	127
	Gainesville, FL	11.3%	18.0%	122	60.1%	99
	Jacksonville, FL	15.8%	16.1%	287	1.8%	278
	Lakeland, FL	16.8%	10.9%	375	-35.1%	375
	Miami-Miami Beach-Kendall, FL	12.0%	19.6%	51	63.5%	94
	Naples-Marco Island, FL	7.5%	13.2%	364	74.9%	73
	Ocala, FL	13.2%	17.0%	222	28.9%	164
	Orlando-Kissimmee, FL	12.2%	18.8%	80	54.6%	108
	Palm Bay-Melbourne-Titusville, FL	11.6%	16.4%	267	42.0%	132
	Panama City-Lynn Haven, FL	15.6%	9.9%	378	-36.6%	377
	Pensacola-Ferry Pass-Brent, FL	16.0%	14.0%	354	-12.8%	336
	Port St. Lucie-Fort Pierce, FL	9.8%	11.5%	373	16.9%	199
	Punta Gorda, FL	12.4%	15.3%	325	23.6%	182
	Sarasota-Bradenton-Venice, FL	8.9%	15.6%	310	75.1%	72
	Tallahassee, FL	13.4%	14.0%	354	4.1%	266
	Tampa-St. Petersburg-Clearwater, FL	12.4%	16.8%	238	35.6%	148
	West Palm Beach-Boca Raton-Boynton Beach, FL	8.5%	14.4%	349	68.8%	82
Georgia	Albany, GA	15.9%	16.1%	287	0.8%	281
	Athens-Clarke County, GA	11.8%	17.3%	192	45.8%	125
	Atlanta-Sandy Springs-Marietta, GA	15.1%	16.2%	283	7.4%	252
	Augusta-Richmond County, GA-SC	17.0%	16.7%	250	-1.9%	297
	Brunswick, GA	14.4%	16.3%	277	13.5%	218
	Chattanooga, TN-GA	17.4%	18.1%	112	4.2%	265
	Columbus, GA-AL	14.8%	17.0%	222	14.9%	210
	Dalton, GA	16.6%	18.0%	122	8.8%	244
	Gainesville, GA	11.4%	19.1%	69	67.3%	86

State	MSA	1998-2001 Loans	2006 Loans	Rank 2006	Change 1998-2001 to 2006	Rank by Change from 1998-2001 to 2006
	Hinesville-Fort Stewart, GA	17.1%	18.3%	104	6.7%	256
	Macon, GA	18.8%	16.5%	258	-11.9%	330
	Rome, GA	18.3%	16.3%	277	-10.9%	327
	Savannah, GA	12.2%	18.7%	84	53.0%	110
	Valdosta, GA	22.7%	16.5%	258	-27.1%	370
	Warner Robins, GA	15.3%	17.1%	205	12.1%	225
Hawaii	Honolulu, HI	7.9%	20.6%	30	158.9%	41
Idaho	Boise City-Nampa, ID	17.2%	18.5%	90	8.0%	248
	Coeur d'Alene, ID	16.4%	17.9%	129	9.1%	240
	Idaho Falls, ID	17.1%	17.1%	205	0.5%	282
	Lewiston, ID-WA	23.3%	19.6%	51	-16.0%	347
	Logan, UT-ID	16.9%	17.1%	205	1.4%	280
	Pocatello, ID	22.6%	16.9%	230	-25.1%	366
Illinois	Bloomington-Normal, IL	13.4%	18.8%	80	40.0%	136
	Champaign-Urbana, IL	15.4%	21.3%	24	38.4%	140
	Chicago-Naperville-Joliet, IL	14.0%	19.2%	63	37.0%	144
	Danville, IL	18.1%	18. 0%	122	-0.5%	288
	Davenport-Moline-Rock Island, IA-IL	16.1%	18.9%	75	17.8%	195
	Decatur, IL	22.3%	16.0%	293	-28.6%	373
	Kankakee-Bradley, IL	25.5%	20.4%	34	-19.7%	355
	Peoria, IL	21.8%	18.8%	80	-13.8%	341
	Rockford, IL	18.2%	21.4%	21	17.5%	196
	Springfield, IL	19.0%	18.7%	84	-1.8%	296
	St. Louis, MO-IL	17.4%	17.5%	165	0.5%	283
Indiana	Anderson, IN	24.1%	18.1%	112	-24.7%	365
	Bloomington, IN	16.5%	17.1%	205	3.7%	267
	Cincinnati-Middletown, OH-KY-IN	16.1%	17.4%	182	8.2%	246
	Columbus, IN	16.7%	17.1%	205	2.8%	272
	Elkhart-Goshen, IN	18.2%	18.7%	84	2.6%	274
	Evansville, IN-KY	21.0%	17.6%	152	-15.8%	346
	Fort Wayne, IN	21.7%	17.4%	182	-19.9%	357
	Gary, IN	16.6%	17.9%	129	8.0%	247
	Indianapolis-Carmel, IN	22.1%	16.9%	230	-23.6%	363
	Kokomo, IN	17.1%	19.1%	69	11.5%	229
	Lafayette, IN	17.9%	17.4%	182	-2.7%	301
	Louisville-Jefferson County, KY-IN	16.3%	18.5%	90	13.9%	215
	Michigan City-La Porte, IN	14.6%	18.5%	90	26.8%	171
	Muncie, IN	19.5%	17.9%	129	-8.0%	321
	South Bend-Mishawaka, IN-MI	20.5%	16.7%	250	-18.8%	352
	Terre Haute, IN	21.4%	17.5%	165	-18.2%	351
Iowa	Ames, IA	11.1%	17.5%	165	58.1%	101
	Cedar Rapids, IA	15.4%	17.8%	141	15.2%	207
	Davenport-Moline-Rock Island, IA-IL	16.1%	18.9%	75	17.8%	195
	Moines-West Des Moines, IA	14.6%	18.9%	75	29.9%	157
	Dubuque, IA	15.0%	16.7%	250	11.0%	231
	Iowa City, IA	15.5%	18.1%	112	17.2%	197
	Omaha-Council Bluffs, NE-IA	15.3%	17.5%	165	14.1%	213
	Waterloo-Cedar Falls, IA	18.4%	17.9%	129	-2.9%	303
Kansas	Kansas City, MO-KS	16.0%	18.7%	84	16.9%	198
	Lawrence, KS	10.7%	18.7%	84	74.9%	74

State	MSA	1998-2001 Loans	2006 Loans	Rank 2006	Change 1998-2001 to 2006	Rank by Change from 1998-2001 to 2006
	St. Joseph, MO-KS	17.6%	18.1%	112	3.1%	270
	Topeka, KS	14.1%	18.3%	104	29.4%	161
	Wichita, KS	17.7%	17.8%	141	0.1%	286
Kentucky	Bowling Green, KY	22.3%	15.8%	299	-29.0%	374
	Cincinnati-Middletown, OH-KY-IN	16.1%	17.4%	182	8.2%	246
	Clarksville, TN-KY	20.1%	17.1%	205	-14.9%	344
	Elizabethtown, KY	15.9%	17.5%	165	10.5%	234
	Evansville, IN-KY	21.0%	17.6%	152	-15.8%	346
	Huntington-Ashland, WV-KY-OH	15.1%	16.3%	277	8.0%	249
	Lexington-Fayette, KY	13.5%	19.6%	51	44.8%	126
	Louisville-Jefferson County, KY-IN	16.3%	18.5%	90	13.9%	215
	Owensboro, KY	15.9%	16.8%	238	5.9%	259
Louisiana*	Alexandria, LA	18.8%	15.1%	332	-19.9%	356
	Baton Rouge, LA	17.4%	18.5%	90	6.4%	257
	Houma-Bayou Cane-Thibodaux, LA	16.8%	16.0%	293	-4.9%	310
	Lafayette, LA	14.9%	16.8%	238	13.0%	222
	Lake Charles, LA	16.8%	14.6%	345	-13.2%	337
	Monroe, LA	13.5%	15.4%	321	13.7%	216
	New Orleans-Metairie-Kenner, LA	14.7%	21.6%	19	47.1%	124
	Shreveport-Bossier City, LA	17.8%	17.3%	192	-3.1%	304
Maine	Bangor, ME	17.1%	13.3%	362	-22.5%	361
	Lewiston-Auburn, ME	13.6%	13.5%	360	-0.9%	291
	Portland-South Portland-Biddeford, ME	6.8%	17.8%	141	159.8%	40
Maryland	Baltimore-Towson, MD	12.8%	19.3%	60	50.5%	116
	Bethesda-Gaithersburg-Frederick, MD	5.1%	20.4%	34	297.4%	17
	Cumberland, MD-WV	12.4%	10.9%	375	-12.0%	333
	Hagerstown-Martinsburg, MD-WV	12.4%	20.6%	30	66.5%	91
	Salisbury, MD	17.7%	14.7%	343	-16.6%	349
	Wilmington, DE-MD-NJ	10.9%	14.1%	353	28.7%	165
Massachusetts	Barnstable Town, MA	4.8%	19.9%	46	313.0%	15
	Boston-Quincy, MA	5.2%	18.5%	90	257.9%	23
	Cambridge-Newton-Framingham, MA	4.2%	16.5%	258	291.0%	18
	Essex County, MA	4.3%	16.9%	230	289.1%	19
	Pittsfield, MA	12.7%	12.0%	368	-5.5%	314
	Providence-New Bedford-Fall River, RI-MA	6.7%	19.5%	57	190.8%	34
	Springfield, MA	15.1%	15.4%	321	1.6%	279
	Worcester, MA	6.1%	17.3%	192	181.1%	37
Michigan	Ann Arbor, MI	9.7%	19.6%	51	101.8%	57
	Battle Creek, MI	15.5%	19.2%	63	23.6%	181
	Bay City, MI	16.4%	18.9%	75	15.3%	206
	Detroit-Livonia-Dearborn, MI	16.9%	17.8%	141	5.4%	261
	Flint, MI	18.9%	19.7%	47	4.3%	264
	Grand Rapids-Wyoming, MI	14.2%	17.8%	141	25.5%	175
	Holland-Grand Haven, MI	11.4%	19.2%	63	67.8%	85
	Jackson, MI	15.9%	20.0%	45	25.9%	173
	Kalamazoo-Portage, MI	15.2%	17.5%	165	15.0%	209
	Lansing-East Lansing, MI	13.5%	20.6%	30	51.8%	114
	Monroe, MI	12.4%	20.2%	40	62.6%	96
	Muskegon-Norton Shores, MI	18.8%	17.4%	182	-7.4%	319
	Niles-Benton Harbor, MI	15.8%	15.7%	307	-0.7%	290

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	Saginaw-Saginaw Township North, MI	17.4%	22.0%	15	26.7%	172
	South Bend-Mishawaka, IN-MI	20.5%	16.7%	250	-18.8%	352
	Warren-Troy-Farmington Hills, MI	10.5%	17.5%	165	66.3%	92
Minnesota	Duluth, MN-WI	12.9%	16.2%	283	25.8%	174
	Fargo, ND-MN	10.6%	17.9%	129	68.5%	83
	Grand Forks, ND-MN	13.6%	17.5%	165	29.1%	162
	La Crosse, WI-MN	18.6%	18.9%	75	1.9%	277
	Minneapolis-St. Paul-Bloomington, MN-WI	10.0%	20.2%	40	100.6%	58
	Rochester, MN	11.2%	18.3%	104	63.1%	95
	St. Cloud, MN	12.4%	18.4%	97	48.0%	121
Mississippi*	Gulfport-Biloxi, MS	17.8%	20.2%	40	13.4%	219
	Hattiesburg, MS	15.4%	16.4%	267	6.4%	258
	Jackson, MS	19.2%	18.0%	122	-6.2%	318
	Memphis, TN-MS-AR	18.9%	17.9%	129	-5.1%	312
	Pascagoula, MS	17.2%	18.0%	122	5.1%	262
Missouri	Columbia, MO	17.6%	18.1%	112	3.2%	269
	Fayetteville-Springdale-Rogers, AR-MO	14.5%	18.4%	97	27.0%	170
	Jefferson City, MO	17.3%	16.8%	238	-3.3%	306
	Joplin, MO	21.8%	17.5%	165	-19.6%	354
	Kansas City, MO-KS	16.0%	18.7%	84	16.9%	198
	Springfield, MO	20.6%	17.1%	205	-16.6%	348
	St. Joseph, MO-KS	17.6%	18.1%	112	3.1%	270
	St. Louis, MO-IL	17.4%	17.5%	165	0.5%	283
Montana	Billings, MT	11.4%	17.4%	182	53.2%	109
	Great Falls, MT	12.9%	16.1%	287	24.7%	178
	Missoula, MT	11.0%	17.1%	205	55.9%	106
Nebraska	Lincoln, NE	14.0%	18.7%	84	33.0%	151
	Omaha-Council Bluffs, NE-IA	15.3%	17.5%	165	14.1%	213
	Sioux City, IA-NE-SD	20.2%	17.4%	182	-13.9%	342
Nevada	Carson City, NV	5.6%	22.5%	12	298.5%	16
	Las Vegas-Paradise, NV	14.2%	23.7%	4	66.7%	89
	Reno-Sparks, NV	6.1%	23.2%	8	279.8%	21
New Hampshire	Manchester-Nashua, NH	4.9%	14.3%	351	192.1%	33
	Rockingham County-Strafford County, NH	4.7%	15.6%	310	234.2%	26
New Jersey	Allentown-Bethlehem-Easton, PA-NJ	12.2%	20.4%	34	66.8%	88
	Atlantic City, NJ	10.0%	22.2%	13	122.0%	49
	Camden, NJ	9.8%	16.8%	238	71.7%	79
	Edison, NJ	6.5%	21.4%	21	230.9%	27
	White Plains-Wayne, NY-NJ	8.7%	21.7%	18	148.4%	44
	Newark-Union, NJ-PA	10.5%	18.3%	104	73.5%	77
	Ocean City, NJ	7.8%	23.5%	5	202.1%	32
	Trenton-Ewing, NJ	11.6%	15.3%	325	31.7%	153
	Vineland-Millville-Bridgeton, NJ	13.0%	15.2%	329	16.6%	200
	Wilmington, DE-MD-NJ	10.9%	14.1%	353	28.7%	165
New Mexico	Albuquerque, NM	15.2%	17.3%	192	13.3%	220
	Farmington, NM	10.9%	17.0%	222	55.6%	107
	Las Cruces, NM	10.4%	16.9%	230	61.8%	97
	Santa Fe, NM	9.7%	17.3%	192	77.4%	70
New York	Albany-Schenectady-Troy, NY	13.5%	17.4%	182	28.5%	166
	Binghamton, NY	13.1%	15.7%	307	19.7%	190

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	Buffalo-Niagara Falls, NY	17.5%	15.6%	310	-11.0%	328
	Elmira, NY	17.9%	15.5%	315	-13.4%	339
	Glens Falls, NY	12.3%	11.6%	371	-5.6%	315
	Ithaca, NY	11.6%	17.8%	141	52.8%	111
	Kingston, NY	9.2%	17.5%	165	89.6%	63
	Nassau-Suffolk, NY	7.2%	22.0%	15	204.4%	31
	New York-White Plains-Wayne, NY-NJ	8.7%	21.7%	18	148.4%	44
	Poughkeepsie-Newburgh-Middletown, NY	8.1%	17.1%	205	111.2%	54
	Rochester, NY	16.5%	16.9%	230	2.3%	275
	Syracuse, NY	15.3%	16.4%	267	7.1%	253
	Utica-Rome, NY	15.5%	14.6%	345	-5.6%	316
North Carolina	Asheville, NC	12.5%	17.6%	152	41.4%	135
	Burlington, NC	12.1%	17.1%	205	41.6%	134
	Charlotte-Gastonia-Concord, NC-SC	15.3%	18.4%	97	20.1%	188
	Durham, NC	13.2%	16.8%	238	27.3%	168
	Fayetteville, NC	17.7%	15.5%	315	-12.5%	334
	Goldsboro, NC	14.1%	15.5%	315	9.7%	238
	Greensboro-High Point, NC	14.1%	17.5%	165	23.8%	180
	Greenville, NC	13.5%	16.1%	287	18.9%	192
	Hickory-Lenoir-Morganton, NC	16.5%	17.6%	152	7.1%	254
	Jacksonville, NC	10.6%	15.7%	307	48.1%	120
	Raleigh-Cary, NC	14.1%	17.3%	192	22.8%	185
	Rocky Mount, NC	16.2%	16.3%	277	0.4%	284
	Virginia Beach-Norfolk-Newport News, VA-NC	13.0%	18.0%	122	38.8%	139
	Wilmington, NC	15.3%	16.8%	238	9.9%	235
	Winston-Salem, NC	14.8%	16.9%	230	14.0%	214
North Dakota	Bismarck, ND	11.9%	17.5%	165	47.5%	123
	Fargo, ND-MN	10.6%	17.9%	129	68.5%	83
	Grand Forks, ND-MN	13.6%	17.5%	165	29.1%	162
Ohio	Akron, OH	17.6%	17.3%	192	-1.7%	295
	Canton-Massillon, OH	17.5%	17.1%	205	-2.2%	300
	Cleveland-Elyria-Mentor, OH	15.6%	17.0%	222	9.3%	239
	Columbus, OH	15.8%	17.6%	152	11.5%	228
	Dayton, OH	18.8%	17.8%	141	-5.4%	313
	Huntington-Ashland, WV-KY-OH	15.1%	16.3%	277	8.0%	249
	Lima, OH	22.9%	17.5%	165	-23.3%	362
	Mansfield, OH	16.4%	18.4%	97	12.1%	226
	Parkersburg-Marietta-Vienna, WV-OH	13.3%	15.3%	325	15.1%	208
	Sandusky, OH	17.0%	15.3%	325	-10.1%	326
	Springfield, OH	19.8%	17.3%	192	-12.8%	335
	Toledo, OH	16.9%	18.1%	112	7.6%	251
	Weirton-Steubenville, WV-OH	14.6%	18.3%	104	24.8%	177
	Wheeling, WV-OH	16.6%	16.1%	287	-3.2%	305
	Youngstown-Warren-Boardman, OH-PA	17.6%	16.2%	283	-8.1%	322
Oklahoma	Fort Smith, AR-OK	21.5%	15.8%	299	-26.2%	367
	Lawton, OK	26.7%	16.8%	238	-37.1%	378
	Oklahoma City, OK	16.1%	18.3%	104	13.7%	217
	Tulsa, OK	18.2%	17.3%	192	-4.9%	311
Oregon	Bend, OR	8.7%	14.8%	339	71.1%	80
	Corvallis, OR	16.2%	16.2%	283	0.0%	287

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	Eugene-Springfield, OR	16.2%	18.8%	80	15.7%	204
	Medford, OR	7.6%	19.2%	63	151.0%	43
	Portland-Vancouver-Beaverton, OR-WA	14.9%	20.4%	34	36.7%	146
	Salem, OR	16.9%	18.5%	90	9.8%	237
Pennsylvania	Allentown-Bethlehem-Easton, PA-NJ	12.2%	20.4%	34	66.8%	88
	Altoona, PA	9.2%	16.0%	293	74.0%	75
	Erie, PA	9.3%	15.5%	315	67.0%	87
	Harrisburg-Carlisle, PA	12.6%	18.1%	112	43.8%	129
	Johnstown, PA	12.2%	15.1%	332	23.5%	183
	Lancaster, PA	11.1%	19.3%	60	73.6%	76
	Lebanon, PA	12.3%	17.8%	141	44.3%	128
	Newark-Union, NJ-PA	10.5%	18.3%	104	73.5%	77
	Philadelphia, PA	10.1%	16.7%	250	65.3%	93
	Pittsburgh, PA	11.8%	16.3%	277	38.4%	142
	Reading, PA	14.7%	19.1%	69	30.1%	156
	Scranton-Wilkes-Barre, PA	12.7%	16.4%	267	29.5%	159
	State College, PA	9.0%	16.8%	238	86.4%	67
	Williamsport, PA	14.7%	14.5%	347	-1.3%	293
	York-Hanover, PA	11.4%	19.1%	69	66.6%	90
	Youngstown-Warren-Boardman, OH-PA	17.6%	16.2%	283	-8.1%	322
Rhode Island	Providence-New Bedford-Fall River, RI-MA	6.7%	19.5%	57	190.8%	34
South Carolina	Anderson, SC	23.0%	17.9%	129	-22.3%	360
	Augusta-Richmond County, GA-SC	17.0%	16.7%	250	-1.9%	297
	Charleston-North Charleston, SC	10.9%	18.3%	104	68.0%	84
	Charlotte-Gastonia-Concord, NC-SC	15.3%	18.4%	97	20.1%	188
	Columbia, SC	15.1%	17.50%	165	16.2%	201
	Florence, SC	16.2%	16.7%	250	2.7%	273
	Greenville, SC	17.9%	17.8%	141	-0.6%	289
	Myrtle Beach-Conway-North Myrtle Beach, SC	12.8%	12.7%	366	-0.9%	292
	Spartanburg, SC	19.7%	18.5%	90	-5.8%	317
	Sumter, SC	19.6%	17.3%	192	-11.9%	331
South Dakota	Rapid City, SD	8.8%	18.0%	122	104.5%	56
	Sioux City, IA-NE-SD	20.2%	17.4%	182	-13.9%	342
	Sioux Falls, SD	13.6%	18.9%	75	39.0%	138
Tennessee	Chattanooga, TN-GA	17.4%	18.1%	112	4.2%	265
	Clarksville, TN-KY	20.1%	17.1%	205	-14.9%	344
	Cleveland, TN	18.6%	17.1%	205	-7.7%	320
	Jackson, TN	16.7%	16.3%	277	-2.1%	298
	Johnson City, TN	15.5%	17.5%	165	13.3%	221
	Kingsport-Bristol-Bristol, TN-VA	17.4%	17.9%	129	2.9%	271
	Knoxville, TN	16.2%	19.1%	69	17.9%	194
	Morristown, TN	17.2%	16.5%	258	-3.8%	309
	Nashville-Davidson-Murfreesboro, TN	15.4%	17.0%	222	10.6%	232
Texas	Abilene, TX	21.9%	16.0%	293	-27.0%	369
	Amarillo, TX	13.9%	17.8%	141	27.7%	167
	Austin-Round Rock, TX	10.8%	17.0%	222	58.2%	100
	Beaumont-Port Arthur, TX	17.1%	17.9%	129	4.7%	263
	Brownsville-Harlingen, TX	12.5%	12.5%	367	0.2%	285
	College Station-Bryan, TX	13.1%	15.2%	329	15.9%	202

State	MSA	1998-2001 Loans	2006 Loans	Rank 2006	Change 1998-2001 to 2006	Rank by Change from 1998-2001 to 2006
	Corpus Christi, TX	10.9%	16.4%	267	50.9%	115
	Dallas-Plano-Irving, TX	12.8%	16.9%	230	32.2%	152
	El Paso, TX	10.7%	15.8%	299	48.3%	119
	Fort Worth-Arlington, TX	13.6%	16.8%	238	23.2%	184
	Houston-Sugar Land-Baytown, TX	12.6%	17.6%	152	39.8%	137
	Killeen-Temple-Fort Hood, TX	13.0%	15.8%	299	21.6%	187
	Laredo, TX	11.9%	13.0%	365	8.9%	242
	Longview, TX	11.3%	14.8%	339	31.5%	155
	Lubbock, TX	10.4%	16.4%	267	57.3%	102
	McAllen-Edinburg-Mission, TX	13.7%	11.6%	371	-15.3%	345
	Midland, TX	14.2%	16.4%	267	15.9%	203
	Odessa, TX	18.1%	16.4%	267	-9.4%	324
	San Angelo, TX	19.3%	16.4%	267	-14.7%	343
	San Antonio, TX	13.5%	17.4%	182	29.0%	163
	Sherman-Denison, TX	14.3%	16.5%	258	15.4%	205
	Tyler, TX	13.2%	16.1%	287	22.1%	186
	Victoria, TX	16.4%	13.3%	362	-18.9%	353
	Waco, TX	14.3%	17.1%	205	19.8%	189
	Wichita Falls, TX	17.7%	15.6%	310	-12.0%	332
Utah	Logan, UT-ID	16.9%	17.1%	205	1.4%	280
	Ogden-Clearfield, UT	22.9%	17.9%	129	-22.0%	359
	Provo-Orem, UT	16.5%	18.4%	97	11.6%	227
	Salt Lake City, UT	19.0%	17.4%	182	-8.3%	323
	St. George, UT	20.0%	19.7%	47	-1.3%	294
Vermont	Burlington-South Burlington, VT	8.0%	15.1%	332	87.8%	65
Virginia	Blacksburg-Christiansburg-Radford, VA	12.0%	17.0%	222	42.4%	130
	Charlottesville, VA	5.6%	18.1%	112	223.1%	30
	Danville, VA	17.2%	17.5%	165	2.0%	276
	Harrisonburg, VA	13.5%	18.1%	112	34.8%	149
	Kingsport-Bristol-Bristol, TN-VA	17.4%	17.9%	129	2.9%	271
	Lynchburg, VA	12.7%	17.3%	192	35.7%	147
	Richmond, VA	11.6%	20.2%	40	73.0%	78
	Roanoke, VA	14.4%	16.5%	258	14.8%	211
	Virginia Beach-Norfolk-Newport News, VA-NC	13.0%	18.0%	122	38.8%	139
	Winchester, VA-WV	8.0%	17.1%	205	115.1%	52
Washington	Bellingham, WA	15.1%	14.7%	343	-2.2%	299
	Bremerton-Silverdale, WA	12.8%	16.5%	258	29.4%	160
	Kennewick-Richland-Pasco, WA	11.4%	14.8%	339	29.9%	158
	Lewiston, ID-WA	23.3%	19.6%	51	-16.0%	347
	Longview, WA	21.1%	13.7%	358	-35.2%	376
	Mount Vernon-Anacortes, WA	15.6%	13.9%	357	-11.1%	329
	Olympia, WA	14.2%	15.5%	315	9.1%	241
	Portland-Vancouver-Beaverton, OR-WA	14.9%	20.4%	34	36.7%	146
	Seattle-Bellevue-Everett, WA	11.0%	16.8%	238	52.0%	112
	Spokane, WA	19.1%	17.3%	192	-9.5%	325
	Tacoma, WA	17.0%	16.5%	258	-2.7%	302
	Wenatchee, WA	14.4%	11.3%	374	-21.3%	358
	Yakima, WA	16.8%	12.0%	368	-28.2%	372
West Virginia	Charleston, WV	13.9%	15.1%	332	7.90%	250
	Cumberland, MD-WV	12.4%	10.9%	375	-12.0%	333

State	MSA	1998-2001 Loans	2006 Loans	Rank 2006	Change 1998-2001 to 2006	Rank by Change from 1998-2001 to 2006
	Hagerstown-Martinsburg, MD-WV	12.4%	20.6%	30	66.5%	91
	Huntington-Ashland, WV-KY-OH	15.1%	16.3%	277	8.0%	249
	Morgantown, WV	15.4%	14.9%	337	-3.3%	307
	Parkersburg-Marietta-Vienna, WV-OH	13.3%	15.3%	325	15.1%	20
	Washington-Arlington-Alexandria, DC-VA-MD-WV	8.2%	22.8%	9	177.9%	38
	Weirton-Steubenville, WV-OH	14.60	18.3%	104	24.8%	177
	Wheeling, WV-OH	16.6%	16.1%	287	-3.2%	305
	Winchester, VA-WV	8.0%	17.1%	205	115.1%	52
Wisconsin	Appleton, WI	12.9%	17.8%	141	37.3%	143
	Duluth, MN-WI	12.9%	16.2%	283	25.8%	174
	Eau Claire, WI	15.5%	18.4%	97	18.9%	193
	Fond du Lac, WI	13.3%	18.1%	112	36.9%	145
	Green Bay, WI	12.0%	17.0%	222	41.8%	133
	Janesville, WI	17.2%	19.1%	69	10.6%	233
	La Crosse, WI-MN	18.6%	18.9%	75	1.9%	277
	Lake County-Kenosha County, IL-WI	11.3%	19.2%	63	70.6%	81
	Madison, WI	12.7%	19.7%	47	55.9%	105
	Milwaukee-Waukesha-West Allis, WI	13.5%	20.4%	34	51.8%	113
	Minneapolis-St. Paul-Bloomington, MN-WI	10.0%	20.2%	40	100.6%	58
	Oshkosh-Neenah, WI	14.3%	17.9%	129	25.1%	176
	Racine, WI	14.1%	19.5%	57	38.4%	141
	Sheboygan, WI	12.2%	18.3%	104	49.8%	117
	Wausau, WI	14.8%	17.6%	152	19.0%	191
Wyoming	Casper, WY	9.6%	17.3%	192	79.30	69
	Cheyenne, WY	8.8%	17.6%	152	100.3%	59

* Our models do not account for the potential impact of Hurricane Katrina on foreclosure rates.

UNDERSTANDING MORTGAGE MARKETS

PROJECT SUMMARY AND PRINCIPAL FINDINGS

Over the last two decades the emergence of new mortgage products, the growing importance of the secondary mortgage markets, and the rise of mortgage brokers in the marketing and sales of residential home mortgages have sparked a virtual revolution in U.S. financial markets. The resulting increase in mortgage lending – especially in sub-prime lending – has expanded access to credit by consumers who have not traditionally been well served by the mortgage market.

Despite the many benefits of the new mortgage market, there are nevertheless areas of concern. The recent rise in foreclosures suggests that some households are taking on debt that they have limited capacity to repay. Additionally, there is evidence that many families are obtaining mortgages that they do not understand or are not suitable for their needs. The fact that delinquencies are higher within non-traditional products may not be a surprise, as these products are designed for higher risk borrowers. Even so, the concentration of foreclosures in many of the nation's lowest-income and economically vulnerable minority neighborhoods threatens to reverse recent gains in efforts to expand housing opportunities for all.

Funded by a Ford Foundation grant to Harvard's Joint Center for Housing Studies, this research initiative includes two related studies of the new mortgage market. The first examines the behavior of market participants, while the second examines the emergence of new mortgage delivery channels linked to the rapid growth of subprime mortgages. Together, these papers provide a comprehensive assessment of mortgage market dynamics and a basis for developing workable solutions to address the ongoing problems faced by many consumers that continue to struggle to obtain mortgage finance on terms that they can both afford and understand.

The first paper, ***Understanding Mortgage Market Behavior: Creating Good Mortgage Options for All Americans*** prepared by Ren S. Essene and William Apgar looks at consumer behavior in the mortgage marketplace as well as the behavior of those engaged in the marketing and sales of mortgage products.

KEY FINDINGS INCLUDE:

- **The ability of consumers to make informed choices is limited.** Behavioral economics and market research suggest that consumers often make choices that may not be in their best interests and that they may later regret. Even the most sophisticated borrowers find it difficult to shop effectively in today's complex market.

- **Consumer preferences are malleable, not fixed.** Consumers often enter the market not knowing exactly what kind of mortgage they want or need, and therefore are vulnerable to outside influence.

- **Consumers often lack awareness of mortgage prices.** Given the complexity of loan pricing and the variation of loan features, consumers have difficulty understanding alternative mortgage products.

- **Consumers particularly struggle with choices that involve payments over time. C**onsumers have difficulty assessing future situations (including changes in house prices, interest rates and income.) This multi-period decision making problem is particularly difficult to evaluate and "short cuts" methods often lead to costly mistakes.

- **Consumers are vulnerable to "push marketing."** Mortgage sales and marketing efforts may exploit various consumer decision making weaknesses. In particular, some mortgage market participants use their knowledge of consumer decision making tendencies to aggressively market specific mortgage products that may not be in the best interest of the borrower.

- **The structure of the mortgage market creates additional challenges.** The widespread use of targeted incentives designed to encourage mortgage brokers and loan officers to convince consumers to select specific and often higher-priced mortgage products further stimulates aggressive "push marketing" efforts.

- **New "affordability" loan products pose significant risks.** Many of today's non-traditional loan products seek to help prospective homebuyers overcome affordability barriers, or enable existing homeowners to utilize equity in their homes for a variety of purposes. Yet inappropriate marketing of these products can saddle low-income and low-wealth individuals with mortgage debt that they are unable to pay, and in doing so simply worsen their economic circumstances.

Consumer and lender behavior may also contribute to differences in mortgage outcomes by race and ethnicity. For decades "fair lending" issues have received attention in both public policy arenas and the popular press. The release of Home Mortgage Disclosure Act (HMDA) data with mortgage

pricing information has sparked a new round of discussion. In 2004, HMDA required lenders to disclose pricing information for first lien mortgages with an Annual Percentage Rate (APR) that is three percentage points above a typical prime loan for the first time. These "higher-priced" mortgages are roughly equivalent to what mortgage industry analysts call subprime loans.

Using these data, the second paper entitled ***Mortgage Market Channels and Fair Lending: An Analysis of HMDA Data*** prepared by William Apgar, Amal Bendimerad and Ren S. Essene examines rapid growth of subprime lending, the changing structure of the mortgage market, and the general failure of mortgage regulations to adapt to this changing environment.

KEY FINDINGS INCLUDE:

- **Higher-priced loans flow through new mortgage market channels**. The rise of subprime mortgage lending is linked to the rise of new mortgage delivery systems, including independent mortgage companies and their networks of mortgage brokers, as well as new mortgage conduits that securitize and sell mortgages on the secondary market.

- **Most lending organizations make relatively few higher-priced mortgages**. For example in 2004, 58.8 percent of all lenders (or 4,154 organizations) made 40.7 of lower-priced prime loans (or 2.7 million loans), while these same organizations made just 2% of higher priced loans (or 27 thousand loans).

- **A few higher-priced loan specialists dominate this market**. Over 900 lenders specialize in higher-priced lending, where higher-priced loans are more than 50 percent of their overall lending activity. Of these, 17 large independent mortgage companies originated 39 percent of all higher-price loans (or 506 thousand loans) that were originated in 2004. As non-bank lenders, these independent mortgage companies are less closely monitored by Community Reinvestment Act (CRA) and other federal regulations that focus on deposit-taking organizations and their subsidiaries and affiliates.

- **Channel specialization extends to secondary market outlets.** The GSEs (Fannie Mae and Freddie Mac) largely limit their purchase of whole loans to the prime market. In 2004, HMDA data suggest that the GSEs directly purchased only 22 thousand (or 1.7 percent) of the nearly 1.3 million higher-priced loans originated. In contrast, the bulk of higher-priced mortgages flow through less heavily regulated non-GSE conduits.

- **Loan supply characteristics are correlated with outcomes.** The general characteristics of the mortgage channels and the specific characteristics of the originating lender are correlated with racial and ethnic differences in the share of borrowers obtaining higher-priced mortgages. For example white borrowers are 50 percent more likely (28.5 versus 17.4 percent) than black borrowers to obtain a loan from a CRA regulated entity operating in their assessment area. In contrast some 44.2 percent of all blacks (versus 30.1 percent of whites) obtain a loan from a less heavily regulated independent mortgage companies.

Both papers argue that because consumers have difficulty in shopping for mortgage products and that existing market dynamics raise fair lending concerns, new initiatives are needed to overcome today's aggressive marketing practices.

SUGGESTIONS FOR NEW APPROACHES INCLUDE:

- **Efforts must be expanded to guide consumers to "good loans."** The idea of individual choice is a deeply held value in the U.S., yet "letting the consumer decide" has distinct limitations. Building on socially motivated CBOs and national scale organizations, it is important to affirmatively steer consumers to "good loan" choices that are transparent and fairly priced and that on net provide net benefit to the consumer.

- **Mortgage industry participants and consumer groups should establish a trusted advisors network.** The widespread use of mortgage broker incentives that are linked to specific loan products and terms may result in consumers not obtaining the best mortgage for which they qualify. A third party advice system could provide a network of "trusted advisors" with interests aligned with the borrower's interest. One form of this idea is a "buyer's broker," or a broker that works explicitly for the borrower for a flat fee and is legally required to represent the buyer's best interests.

- **A second opinion hotline would be a useful tool.** Building on the buyer's broker concept, a national organization such as NeighborWorks America could establish a phone-based second opinion hotline to help consumers navigate through the complexity of both the mortgage process and products. This hotline could be especially useful in helping consumers assess the risks of payment shocks arising from many of the new adjustable rate loan products available today.

- **A web-based pricing guide would assist trusted advisors.** The creation of an automated pricing guide would assist consumer's working with a trusted advisor to understand the costs and benefits of specific mortgage options. For example, many borrowers may feel that submitting mortgage documents is a hassle, and mortgage brokers often inappropriately steer consumers to "no-doc" products. What the consumer may fail to appreciate is that "no doc" loans increase the cost of the mortgage and expose the consumer to a variety of mortgage fraud schemes. In the hands of an experienced and trusted advisor, a pricing guide may help consumers understand the tradeoffs involved in the "no-doc" option.

- **Behavioral principles can increase the effectiveness of outreach efforts.** Using the "opt-in/opt-out" principle can expand the capacity of homebuyer counseling organizations to help consumer's obtain a "good loan" products. For example, this could be accomplished by pre-approving participants attending a homebuyers' fair or a homeownership counseling program for a loan product that is fairly priced and easily understood. Rather than sending the consumer home with information about loans in general, consumer research suggests that signing up the consumer "on-the-spot" will increase the chance that the consumer will actually select this product and resist any future efforts of a "push marketer" to sell them a product that is "too good to be true."

- **Changing disclosure regulations could enhance consumer shopping.** To allow consumers more time to shop, lenders could be required to provide TILA disclosures 3 to 7 days prior to closing and to extend the "right of rescission" period. By further modifying applicable TILA regulations, it would be possible to require "high risk" borrowers to seek a second opinion. Other useful changes include adding a requirement that the Good Faith Estimates (GFE) "go hard" earlier in the process and expanding efforts to monitor "bait and switch practices" that can render GSEs meaningless.

In addition to efforts to help consumers be better able to resist aggressive "push marketing" efforts, there is a need to consider other market interventions. These reflect the fact that the existing regulatory structure has not adapted to the substantial changes in the mortgage industry that have occurred over the past quarter century. Under the existing regulatory framework, higher-priced loans flow through mortgage channels that are subject to the least regulatory scrutiny. As a result, the most vulnerable borrowers are less likely to benefit from federally mandated consumer protections that are generally present in the prime market. Identifying new and innovative legislative and regulatory approaches to improving the efficiency and fairness of the nation's mortgage markets is critical.

REGULATORY AND COLLECTIVE ACTION APPROACHES INCLUDE:

- **Collective action needed to eliminate "low roaders."** To eliminate abusive and deceptive practices, the industry must have the will and the mechanisms in place to sanction or otherwise force out of the market those "low roader" participants unwilling to adhere to industry "best practices."

- **Recently released Interagency Guidance should be extended to cover non-banks**. Recognizing the existing regulatory regime was insufficient to protect consumers from potentially abusive practices and to maintain the safety and soundness of banks and thrifts, last fall federal regulators released a new Interagency Guidance. Since this Guidance generally only applies to federally-regulated deposit-taking institutions, the federal government should consider extending the guidance to all lenders, including non-bank independent mortgage companies.

- **New legislation should extend CRA reviews to all lenders**. Not explicitly enacted as a fair lending law, CRA was designed to halt redlining or the denial of credit to borrowers living in lower-income neighborhoods. Even so, CRA loan-level reviews are typically accompanied by fair lending reviews, and CRA oversight has emerged over the years as an important component of fair lending enforcement. CRA should be extended to cover the activity of all deposit-taking organizations wherever they originate loans, as well as those non-bank mortgage lenders currently not covered by CRA

- **Regulators should encourage all CRA-regulated entities to serve higher risk borrowers**. In addition to working to provide prime loans to all that qualify, CRA-regulated entities also should be encouraged to serve the credit needs of all borrowers, including those borrowers unable to qualify for prime credit. Doing this would expand competition in the

market for higher-priced mortgages and bring a larger share of higher-priced mortgages under the watchful eye of more comprehensive fair lending reviews.

- **The Federal Government should license brokers**. Monitoring of the activities of mortgage brokers is largely a state function. Given that the nature and extent of state involvement in these matters varies widely, the Federal Government should assume responsibility for licensing and establishing minimum standards for acceptable mortgage broker behavior, and in doing so reduce the state by state variation that now exists in access to basic consumer protections against broker abuse.

- **The Federal Government should support state mortgage market oversight activities.** To the extent that the Federal Government continues to delegate to the states significant responsibility for regulating key elements of the mortgage market, the Federal Government should provide targeted grants and other forms of assistance to support state enforcement and the monitoring efforts in these areas as well.

- **More uniform oversight of secondary market participants is important**. Today, most funding for higher-priced lending loans flows through less regulated non-GSE channels. Efforts to strengthen SEC monitoring of securities involving higher-priced mortgages are needed as are efforts to hold secondary market investors accountable for their actions by eliminating or modifying existing legislation and regulations that limit assignee liability. Such actions would substantially increase the incentives of secondary market investors to more carefully evaluate the loans that they purchase for fair lending and other abuses of best lending practices.

- **The GSEs should take a more active role non-prime market.** Given that the GSEs are already subject to detailed loan-level review of their activities for compliance with fair lending requirements, the GSEs should be encouraged to take a more active role in the acquisition of higher-priced whole loans and in doing so help establish a series of industry best practice standards to govern this important segment of the mortgage industry.

ABOUT THE STUDIES:

Harvard University's Joint Center for Housing Studies is the nation's leading center for information and research on housing in the United States. Established in 1959, the Joint Center is a collaborative unit affiliated with the Harvard Design School and the Kennedy School of Government. The two reports ***MM07-1: Understanding Mortgage Market Behavior: Creating Good Mortgage Options for all Americans*** by Ren S. Essene and William Apgar and ***MM07-2: Mortgage Market Channels and Fair Lending: An Analysis of HMDA Data*** by William Apgar, Amal Bendimerad and Ren S. Essene, along with additional information about the Center and its programs and activities are available at www.jchs.harvard.edu**.**

For copies of the complete studies, please go to:
http://www.jchs.harvard.edu/understanding_mortgage_markets/

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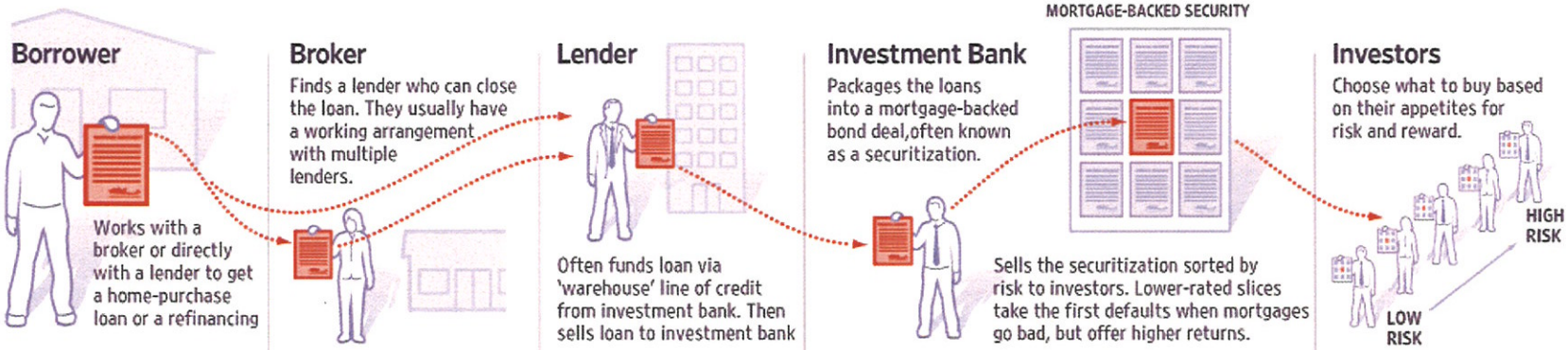
Follow the Mortgage What happens to your mortgage after you sign on the dotted line



	Borrower	Broker	Lender	Investment Bank	Investors
		Finds a lender who can close the loan. They usually have a working arrangement with multiple lenders.		Packages the loans into a mortgage-backed bond deal, often known as a securitization.	Choose what to buy based on their appetites for risk and reward.
	Works with a broker or directly with a lender to get a home-purchase loan or a refinancing		Often funds loan via 'warehouse' line of credit from investment bank. Then sells loan to investment bank	Sells the securitization sorted by risk to investors. Lower-rated slices take the first defaults when mortgages go bad, but offer higher returns.	
What they get	Financing needed to purchase a home or cash from refinancing	Takes fees for doing the preliminary sales and paperwork	Takes up-front fees for making the loan	Collects fees for packaging the loans into bond deal	Earn interest on the bonds and absorb any gain or loss in price of the bond.
If the loan goes bad	House can be repossessed	May get cut from lender's approved broker list	Can be forced to take back loan if there's an early default or documentation is questionable	May push back loan to lender, or be forced to eat any loss	May have legal recourse against bank if they can show the quality of the loan or loan documentation was misrepresented.

Source: WSJ Reporting

CDO Boom Masks Subprime Losses, Abetted by S&P, Moody's, Fitch

By Richard Tomlinson and David Evans

May 31 (Bloomberg) -- The numbers looked compelling. Buy this investment-grade collateralized debt obligation and you'll get a return of up to 10 percent, Credit Suisse Group said. That was almost 25 percent more than the average yield on a similarly rated corporate bond.

Investors snapped up the $340.7 million CDO, a collection of securities backed by bonds, mortgages and other loans, within days of the Dec. 12, 2000, offering. The CDO buyers had assurances of its quality from the three leading credit rating companies --Standard & Poor's, Moody's Investors Service and Fitch Group Inc. Each had blessed most of the CDO with the highest rating, AAA or Aaa.

Investment-grade ratings on 95 percent of the securities in the CDO gave no hint of what was in the debt package -- or that it might collapse. It was loaded with risky debt, from junk bonds to subprime home loans. During the next six years, the CDO plummeted as defaults mounted in its underlying securities. By the end of 2006, losses totaled about $125 million.

The failed Credit Suisse CDO may be an omen of far worse to come in the booming market for these investments.

Sales of CDOs worldwide have soared since 2004, reaching $503 billion last year, a fivefold increase in three years, according to data compiled by Morgan Stanley.

CDO holdings have already declined in value between $18 billion and $25 billion because of falling repayment rates by subprime U.S. mortgage holders, Lehman Brothers Holdings Inc. estimated on April 13. In many cases, investors don't even know that values have dropped.

`We Can't Get There'

In this secretive market, there is no easy way for them to find out what their CDOs are worth.

The uncharted slide of the Credit Suisse CDO points to the critical and little-understood-role played by rating companies in assessing risk and acting as de facto regulators in a market that has no official watchdogs.

Many of the world's CDOs are owned by banks and insurance companies, and the people who regulate those firms rely on the raters to police the CDOs.

``As regulators, we just have to trust that rating agencies are going to monitor CDOs and find the subprime," says Kevin Fry, chairman of the Invested Asset Working Group of the U.S. National Association of Insurance Commissioners. ``We can't get there. We don't have the resources to get our arms around it."

The three leading rating companies, all based in New York, say that policing CDOs isn't their job. They just offer their educated opinions, says Noel Kirnon, senior managing director at Moody's.

`Little New Information'

``What we're saying is that many people have the tendency to rely on it, and we want to make sure that they don't," says Kirnon, whose firm commands 39 percent of the global credit rating market by revenue.

S&P, which controls 40 percent, asks investors in its published CDO ratings not to base any investment decision on its analyses. Fitch, which has 16 percent of the worldwide credit rating field, says its analyses are just opinions and investors shouldn't rely on them.

The rating companies apply their usual disclaimer about the reliability of their analyses to CDOs. S&P says in small print: ``Any user of the information contained herein should not rely on any credit rating or other opinion contained herein in making any investment decision."

Joseph Mason, a finance professor at Philadelphia's Drexel University and a former economist at the U.S. Treasury Department, says the ratings are undermined by the disclaimers. ``I laugh about Moody's and S&P disclaimers," he says. ``The ratings giveth and the disclaimer takes it away. Once you're through with the disclaimers, you're left with very little new information."

Credit Raters Participate

When it comes to CDOs, rating companies actually do much more than evaluate them and give them letter grades. The raters play an integral role in putting the CDOs together in the first place.

Banks and other financial firms typically create CDOs by wrapping together 100 or more bonds and other securities, including debt investments backed by home loans.

Credit rating companies help the financial firms divide the CDOs into sections known as tranches, each of which gets a separate grade, says Charles Calomiris, the Henry Kaufman professor of financial institutions at Columbia University in New York.

Credit raters participate in every level of packaging a CDO, says Calomiris, who has worked as a consultant for Bank of America Corp., Citigroup Inc., UBS AG and other major banks. The rating companies tell CDO assemblers how to squeeze the most profit out of the CDO by maximizing the size of the tranches with the highest ratings, he says.

`Not a Passive Process'

``It's important to understand that unlike in the corporate bond market, in the securitization market, the rating agencies run the show," he says. ``This is not a passive process of rating corporate debt. This is a financial engineering business."

Credit raters consult with bankers in determining the makeup of a CDO, and banks make the final decisions, says Gloria Aviotti, Fitch's global head of structured finance.

As home buyers and investors grapple with the subprime mortgage crisis, many haven't yet realized the extent to which that turbulence is spilling into CDOs. Foreclosure filings in the U.S. surged to 147,708 in April, up 62 percent from April 2006, as subprime borrowers stopped making mortgage payments, research company RealtyTrac Inc. said on May 15.

As foreclosures increase, the subprime-backed securities in CDOs begin to crumble. Subprime mortgage securities make up about $100 billion of the $375 billion of CDOs sold in the U.S. in 2006, according to data from Moody's and Morgan Stanley.

Subprime Debt Holdings

Seventy-five percent of global CDO sales are in the U.S. Moody's reported in March that about half of the CDOs sold in the U.S. last year contained subprime debt. On average, 45 percent of the contents of those CDOs consisted of subprime home loans, Moody's said.

In a certain class of CDOs, the concentration of subprime is even higher. S&P and Fitch estimate that subprime mortgage securities make up more than 70 percent of the debt in so-called mezzanine asset-backed CDOs, a type of CDO that repackages bonds, mostly mortgage debt, with low credit ratings.

Investors bought $59.5 billion of these CDOs in 2006, according to Morgan Stanley. On average, as with all CDOs, more than 90 percent of the value in them is rated investment grade.

Bankers call the bottom sections of a CDO -- the ones that are the most vulnerable to subprime and other junk -- the equity tranches. They also have another, more-emotive phrase for them: toxic waste.

`The First Loss'

As more home buyers default on their subprime loans, the waste in CDOs becomes more poisonous. ``If anything goes badly, the investors in toxic waste take the first loss," says Satyajit Das, a former Citigroup Inc. banker who has written 10 books on debt analysis.

``Let's put it this way," he says. ``There's a revolution. If you don't win, you're going to be the first one in line for the firing squad."

Investors have little idea how toxic some of these CDOs are, Drexel's Mason says.

``We compose CDOs with a bunch of this stuff," he says. ``Now we just jack up the risk, jack up the misunderstanding. We're throwing our money to the wind. We now know the defaults are in the mortgage pools and it's only a matter of time before they accumulate to levels that will threaten the CDO market."

In times of uncertainty, CDO ratings take on even less meaning, says Brian McManus, head of CDO research at Charlotte, North Carolina-based Wachovia Corp. Investors may not know what hit them because there won't be a sudden CDO crash, he predicts.

``They don't blow up," McManus says of CDOs. ``They just kind of melt."

No Regulation

This is not what investors envisioned in 2004 when they started the CDO bull run. In an era of low interest rates, CDOs offered juicy yields.

With defaults at historic lows, the risk of something going drastically wrong seemed remote. Why buy a corporate bond yielding 5 percent when you can invest in a CDO with the same credit rating and the promise of a return twice as high?

There are two caveats: It's nearly impossible to find out exactly what's in a CDO, and CDOs aren't regulated.

Almost all CDOs are sold in private placements, and their current values aren't posted anywhere. ``There is absolutely no transparency,'' Das says. ``It's difficult to get current values or information about the underlying assets in the CDO.''

Financial regulators have effectively outsourced the monitoring of CDOs to the rating companies. No less an authority than the U.S. Office of the Comptroller of the Currency, which regulates banks, depends on the rating firms to assess the quality of CDOs.

Bonanza for Raters

U.S. banks have invested as much as 10 percent of their assets in CDOs, and the OCC requires that all of those CDOs be investment grade, says Kathryn Dick, deputy comptroller for credit and market risk. ``We rely on the rating agencies to provide a rating,'' she says.

CDOs have been a bonanza for the rating companies. In the past three years, S&P, Moody's and Fitch have made more money from evaluating structured finance -- which includes CDOs and asset- backed securities -- than from rating anything else, including corporate or municipal bonds, according to their financial reports.

The companies charge as much as three times more to rate CDOs than to analyze bonds, published cost listings show. The companies say these fees are higher because CDOs are so complex compared with a single bond.

Structured finance is the largest and fastest-growing source of credit rating revenue. Moody's reported revenue of $1.52 billion in 2006 for credit rating. Structured finance accounted for 44 percent, or $667 million. Company credit ratings were the second-largest source of revenue, drawing $485 million.

`A Gold Mine'

In the first quarter of 2007, structured finance rose to 46 percent of Moody's rating revenue.

``CDOs are the cash cow for rating agencies,'' says Frank Partnoy, a former bond trader, now a University of San Diego law professor and author of `Infectious Greed: How Deceit and Risk Corrupted the Financial Markets' (Henry Holt & Co., 464 pages, $27.50). ``They're clearly a gold mine. Structured finance is making a lot of Moody's shareholders and managers wealthy.''

Shares of Moody's, which is the only stand-alone publicly traded rating company, have more than tripled to $68.60 on May 9 from $20.65 at the beginning of 2003.

S&P charges as much as 12 basis points of the total value of a CDO issue compared with up to 4.25 basis points for rating a corporate bond, company spokesman Chris Atkins says. (A basis point is 0.01 percentage point.)

Shares Almost Tripled

That means S&P charges as much as $600,000 to rate a $500 million CDO. Fitch charges 7-8 basis points to rate a CDO, more than its 3-7 basis point fee to rate a bond, based on the company's fee schedule. Moody's doesn't publish its pricing for any ratings.

Fitch, which is 80 percent owned by Paris-based Fimalac SA, a publicly listed investment company, says that rating structured finance accounted for 51 percent of total revenue of $480.5 million in the fiscal year ended on Sept. 30, 2006.

Fimalac's share price has almost tripled in value since the start of 2003, trading at 80 euros ($108.40) on May 9.

New York-based McGraw-Hill Cos., which owns S&P, reports that in 2006, the credit rating company's revenue rose by 20 percent to $2.7 billion. Almost half of that growth was from increased sales of structured finance ratings, it says.

McGraw-Hill's shares have more than doubled in value since 2003, trading at $68.97 on May 9.

The First CDOs

Michael Milken, the junk bond king, created the first CDO in 1987 at now-defunct Drexel Burnham Lambert Inc., says Das, author of `Credit Derivatives: CDOs & Structured Credit Products' (John Wiley & Sons Inc., 850 pages, $120). Until the mid-1990s, CDOs were little known in the global debt market, with issues valued at less than $25 billion a year, according to Morgan Stanley.

Drexel and other investment banks realized that by bundling high-yield bonds and loans and slicing them into different layers of credit risk, they could make more money than they could from holding or selling the individual assets.

Investment-grade CDOs that include subprime assets offer debt returns that exceed yields on junk bonds. In May, BBB-rated portions of CDOs -- the lowest investment grade -- paid 7-9 percentage points above the London interbank offered rate, according to Morgan Stanley.

That amounted to an annual return of about 13 percent, based on May bank lending rates.

Most CDO tranches promise returns at a fixed spread over Libor. That means their value isn't affected by changes in interest rates the way the value of a fixed-rate bond would be, says Arturo Cifuentes, a managing director at R.W. Pressprich & Co., a New York- based fixed income brokerage that buys and sells CDOs.

`A Happy One'

``CDOs offer you a possibility to invest in risk which you cannot do in any other way," he says. Cifuentes says CDOs have been good for investors and financial markets. ``For the most part, the CDO experience has been a happy one," he says.

That euphoria has blinded investors -- and the rating companies -- to the true risk of CDOs, Partnoy says.

A $1 billion CDO named Timberwolf, sold in March by New York- based Goldman Sachs Group Inc., included a $30 million tranche. It's rated investment grade, BBB, by S&P and Moody's and pays 1,000 basis points, or 10 percentage points, more than the three-month forward Libor.

That's more than double the return on corporate bonds with the same rating. Timberwolf's offering statement warns that the CDO may include subprime mortgage debt.

``When you see something that's priced at a 1,000 basis point spread, you know it's pretty risky," Partnoy says. ``The rating agencies might not figure that out for a while."

CDO ratings may mislead investors because they can obscure the risk of default, especially compared with similar ratings for bonds, says Darrell Duffie, a professor of finance at Stanford Graduate School of Business in California, who's paid by Moody's to advise the company on credit risk.

`Can't Compare'

``You can't compare these CDO ratings with corporate bond ratings," Duffie says. ``These ratings mean something else -- entirely."

Corporate bonds rated Baa, the lowest Moody's investment rating, had an average 2.2 percent default rate over five-year periods from 1983 to 2005, according to Moody's. From 1993 to 2005, CDOs with the same Baa grade suffered five-year default rates of 24 percent, Moody's found.

Non-investment-grade CDOs, rated Ba, had an almost identical default rate of 25.3 percent in the same period. ``In CDO-land, there's almost no difference between Baa and Ba," says Cifuentes, a former Moody's vice president who helped develop the company's original method of rating CDOs in the late 1990s.

American Express Loss

Cifuentes highlighted this point when he ran a daylong seminar for 45 U.S. bank regulators in Washington on April 10.

American Express Co. learned about risky CDOs the hard way. The New York-based company invested in high-yield CDO transactions starting in 1998. By 2001, American Express reported losses of more than $1 billion from those investments.

Chief Executive Officer Kenneth Chenault told shareholders in a July 2001 conference call that the company didn't understand CDO risk. He said when his traders first bought CDOs, defaults were at historically low levels.

``Many of the structured investments were investment grade, so they thought they had a reasonable level of protection against loss," he told investors. ``It is now apparent that our analysis of the portfolio did not fully comprehend the risk underlying these structures during a period of persistently high default rates."

As a result, he said, American Express would stop buying CDOs. Chenault declined to comment for this story.

Some investors have always been wary of CDOs. Joe Biernat, head of research at London-based European Credit Management Ltd., says he avoids CDOs. The investment firm, owned by Wachovia, specializes in mortgage- and asset-backed securities and manages about 21 billion euros for institutional clients.

`We Like Clarity'

``We have never invested in CDOs because we like clarity," Biernat says. ``You may be buying more of the worst stuff to get the kind of yield that you want."

Because there are so many moving parts to a CDO, rating companies have to assess not only the chance that something may go wrong with one piece but also the possibility that multiple combinations of things could falter. To do that, S&P, Moody's and Fitch use a mathematical technique called Monte Carlo simulation, named after the Mediterranean gambling city.

The rating companies take all the data they have on a CDO, such as information about specific bonds and securitizations and the remaining types of loans to be purchased for the package.

The firm enters data into a software program, which calculates the probability that a CDO's assets will default in hypothetical situations of financial and commercial stress. The program effectively rolls the dice more than 100,000 times by running the information randomly.

`False Sense of Security'

The rating companies base their simulations and ratings of each tranche on assumptions about default and recovery rates that may be incorrect, Cifuentes says.

``The danger with Monte Carlo is that it gives you a false sense of security," he says. ``If the input data that you use is a little bit uncertain, your numbers are going to be trash, but they will look convincing."

Credit rating companies may have miscalculated the potential toxicity of securities backed by subprime loans, McManus says. ``With CDOs, they underestimated the volatility of the subprime asset class in determining how much leverage was OK," he says.

The rating firms use irrelevant or incomplete data to calculate the probability, or so-called correlation risk, that various assets in a CDO will default at the same time, Das says.

``The models are fine," he says. ``But they have an input problem. It becomes a number we pluck out of the air. They could be wrong, and the ratings could be misleading. I'm not even sure we understand the networks of links between the subprime tranches."

`Not an Exact Science'

Stephen McCabe, a London-based managing director at S&P in charge of rating structured finance, defends his firm's evaluations, which are based in part on Monte Carlo simulation. ``It's always an opinion, but it's based on some very deep mathematical analysis and some quite-complicated modeling."

Kimberly Slawek, group managing director at Derivative Fitch, the subsidiary of Fitch that rates CDOs, says her firm does the best it can. ``It's not an exact science," she says. ``This is very much our opinion as to the creditworthiness."

Kevin Kendra, London-based managing director at Derivative Fitch, says he runs a two-year training course on the rating firm's model for analyzing CDOs. In the first year, he teaches recruits about Monte Carlo simulation, including the use of correlation variables in determining risk.

Correlations mean, for example, that when a German auto company defaults, other German car manufacturers suffer a higher chance of failing.

`Understand the Strengths'

``I spend the second year teaching them how to not believe the outputs of these models," Kendra says. ``I want them to understand the strengths of the model, but also why the model may or may not apply to the assets that they're trying to analyze."

Kendra says he's not telling them to ignore the computer model; rather, he's suggesting that they should understand it and also use their own judgment.

S&P's McCabe says his company's model is valuable, even if it isn't perfect. ``There can be times when the model will spit out something and the people on our credit rating committee will just say, `We're not comfortable with that,'" he says.

Complicating the rating companies' challenges in evaluating CDOs is the unusual role they play in putting them together. Potential conflicts of interest in the ratings game aren't new. The three largest raters are always paid by the issuers of the debt they're rating.

Rating Conflicts

Conflicts in rating CDOs are more acute because the raters work with financial firms in creating these debt packages, says Karl Bergqwist, a senior manager at Gartmore Investment Management Plc in London.

``When you assign a traditional rating on a company or a bank, it is as it is, and you just make an assessment," says Bergqwist, who worked at Moody's until 1994. ``When you move into structured finance, the agencies are effectively involved in structuring these transactions."

Fitch rates the top tranches AAA. The riskier mezzanine tranches usually get investment grades down to BBB-. The lowest portions, the toxic waste, which offer the highest potential return and biggest risk for investors, go unrated.

These sections are also known as equity because their holders are the first to suffer losses and the last in line to collect in the case of a collapse triggered by defaults of the underlying debt, just as shareholders stand behind bondholders when a public company goes bust.

`An Active Role'

Fitch's role in helping to put together a CDO came to light in a civil court case. American Savings Bank of Hawaii Inc. sued UBS PaineWebber Inc. in 2001, claiming that in 1999 UBS had incorrectly said a CDO it had sold was investment grade when it wasn't.

In the lawsuit, American Savings challenged Fitch's ratings of Zurich-based UBS's CDO. The 2nd U.S. Circuit Court of Appeals required Fitch to turn over internal documents. The court found in 2003 that Fitch had advised UBS on how to structure the CDO to get the ratings the bank wanted. Fitch itself was not a party to the lawsuit.

``Fitch played an active role in helping PaineWebber decide how to structure the transaction," the court found. ``Correspondence indicates a fairly active role on the part of the Fitch employee in commenting on proposed transactions and offering suggestions about how to model the transactions to reach the desired ratings."

The case was settled out of court, says UBS spokesman Doug Morris. Fitch's Aviotti says that although her company talks with financial firms as they create CDOs, Fitch doesn't structure CDOs. ``We do as we do, which is not advise," she says.

`The Nirvana'

Yuri Yoshizawa, group managing director for structured finance at Moody's, says a credit rating company's close relationship with CDO issuers doesn't compromise objectivity.

``I think if we have the ratings wrong, we don't have a business," she says. ``If we put something out there just because the issuer wants it and it's wrong, then there's absolutely no reason for anybody to rely on or give voice to our opinions."

The banks and rating companies have stretched the frontiers of CDOs with products known as CDO squareds and CDO cubeds.

As the names suggest, a CDO squared is formed by bundling together a bunch of CDOs, and a CDO cubed, which can contain thousands of different securities, is formed by lashing together a bunch of CDO squareds.

Some investors love these fat packages of CDOs because they offer even higher returns than plain CDOs. ``The nirvana is higher risk-adjusted returns,'' says Andrew Donaldson, CEO of CPM Advisers Ltd., a London-based credit investment firm that manages about $2 billion.

`Smoke and Mirrors'

CPM buys and sells CDOs, including CDO squareds. ``CDO squareds give another dimension to achieve portfolio diversification,'' Donaldson says.

Investors shouldn't put much credence in the risk that rating companies assign to CDO squareds and cubeds, says Stanford's Duffie. ``The complexity of analyzing that is beyond current methodology,'' he says.

The grades that rating companies give CDO squareds and cubeds are worthless, says Janet Tavakoli, founder of Chicago-based consulting firm Tavakoli Structured Finance Inc., which advises investors on CDO purchases.

``Ratings on these products are based on smoke and mirrors,'' Tavakoli says.

The inner workings of CDOs are normally invisible to the public. The demise of the $340.7 million CDO Credit Suisse sold in December 2000 was documented in a 38-page report dated March 26 that Moody's stamped as confidential.

CDO Collapse

The Enhanced Monitoring Report, which is written for clients who pay an extra $10,000 to $130,000 for such studies, provided further background about the CDO called SPA.

This ill-fated CDO included a collection of subprime mortgage- backed securities and junk bonds. S&P, Moody's and Fitch stamped 85 percent of the CDO with an AAA or Aaa rating because that portion was guaranteed by bond insurer MBIA Inc.

On April 24, Moody's withdrew its rating on the major part of SPA, saying in a two-sentence note that investors in this tranche had been paid in full.

What Moody's didn't say was that Armonk, New York-based MBIA paid the investors after the CDO had collapsed because many of its underlying securities had defaulted. MBIA spokesman Michael Ballinger says the insurer paid investors in the AAA or Aaa tranche $177 million.

The tranche had suffered about $73 million in losses, which MBIA covered. Moody's spokesman Anthony Mirenda and Credit Suisse spokesman Pen Pendleton declined to comment on SPA.

Total Loss

Moody's also didn't say what became of SPA's uninsured mezzanine tranches, which the credit rating company had rated as investment grade. Investors in these tranches lost all of their money, Ballinger says.

The losses totaled $38.5 million including unpaid accrued interest, based on the numbers in the Moody's report. The unrated equity, or toxic tranches, also lost everything -- $17.2 million. Moody's estimated that SPA's remaining assets, which MBIA took over, were worth $104 million.

``Because of the difficulty in obtaining accurate and timely market prices, some of the prices may be inaccurate or stale," Moody's wrote in a footnote in the confidential report. Mirenda declined to comment on the report.

With no regulation and little transparency, the CDO market thrives, and credit raters are helping lead the way, the University of San Diego's Partnoy says.

Investors haven't been deterred by American Express's $1 billion loss. Nor have the March and April studies by Moody's and Lehman showing the concentration of subprime debt in CDOs slowed down CDO sales.

Former banker Das wonders why few people are probing the potential dangers for CDO investors. ``I think the regulators seem to be fairly sanguine about all of this," he says. ``The thing that I find quite bewildering is the lack of urgency and focus."

He says subprime mortgage defaults have just started to soar. ``The fuse has been lit," Das says. ``Somebody should be trying to find where this wire is running to."

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How Wall Street Stoked The Mortgage Meltdown

By Michael Hudson
From *The Wall Street Journal Online*

Twelve years ago, Lehman Brothers Holdings Inc. sent a vice president to California to check out First Alliance Mortgage Co. Lehman was thinking about tapping into First Alliance's lucrative business of making "subprime" home loans to consumers with sketchy credit.

The vice president, Eric Hibbert, wrote a memo describing First Alliance as a financial "sweat shop" specializing in "high pressure sales for people who are in a weak state." At First Alliance, he said, employees leave their "ethics at the door."

The big Wall Street investment bank decided First Alliance wasn't breaking any laws. Lehman went on to lend the mortgage company roughly $500 million and helped sell more than $700 million in bonds backed by First Alliance customers' loans. But First Alliance later collapsed. Lehman landed in court, where a federal jury found the firm helped First Alliance defraud customers.

Today, Lehman is a prime example of how Wall Street's money and expertise have helped transform subprime lending into a major force in the U.S. financial markets. Lehman says it is proud of its role in helping provide credit to consumers who might otherwise have been unable to buy a home, and proud of the controls it has brought to a sometimes-unruly business.

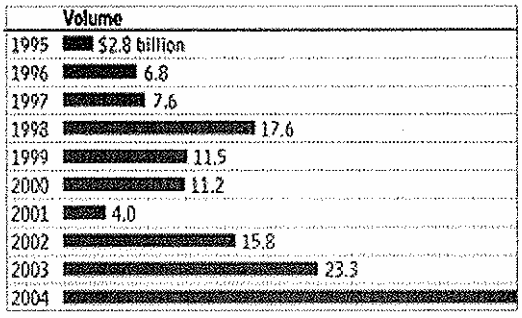
Now, however, that business is in deep trouble, and some consumer advocates and policy makers are pointing the finger at Wall Street. Roughly 13% of subprime loans stand in or near foreclosure, bringing turmoil and sometimes eviction to tens of thousands of homeowners. Dozens of lenders have gone out of business. Bear Stearns Cos. is trying to bail out a hedge fund it manages that was hurt by subprime mortgage losses.

Critics say Wall Street firms helped create the mess by throwing so much money at the market that lenders had a growing incentive to push through shaky loans and mislead borrowers.

At a hearing in April, Sen. Robert Menendez (D., N.J.), said Wall Street firms "looked the other way" as they profited from questionable loans, "fueling a market that has very little discipline over itself."

SEE MORE SUBPRIME MARKET DATA

BUILDING A SUBPRIME GIANT



Federal Reserve chief Ben Bernanke said in a May speech that some lenders focused more on feeding the marketplace than on the quality of loans, in part because most of the risks that loans would go bad were passed to investors. As a result, "mortgage applications with little documentation were vulnerable to misrepresentation or overestimation of repayment capacity by both lenders and borrowers," he said.

A generation ago, housing finance was different. Bankers took in deposits, lent that money to home

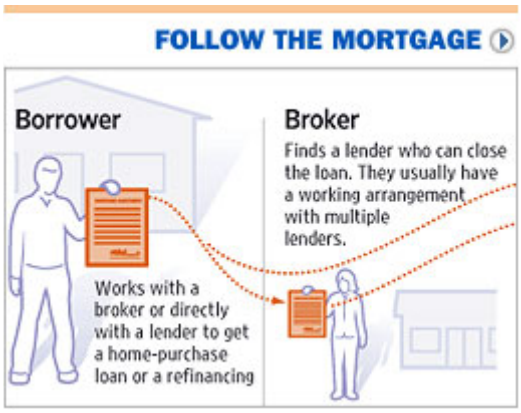
buyers and collected interest and principal until the mortgages were paid. Wall Street wasn't much involved.

Now it plays a central role. Wall Street firms provide working capital that allows thousands of mortgage firms to make loans. After lenders sign up consumers for home loans, investment banks pool the income streams from these loans into bonds known as mortgage-backed securities. The banks sell them to yield-hungry investors around the world.

Before the mid-1990s, mortgage-backed securities consisted mostly of loans to borrowers with good credit and cash to make ample down payments. Then investment banks found they could do the same with riskier loans to borrowers with modest incomes and flawed credits. Pooling the loans created a cushion against defaults by diversifying the risk. The high interest rates on the loans made for bonds with high yields that investors savored. New technology helped make it easier for lenders to collect and collate mounds of information on borrowers.

Lehman, one of Wall Street's biggest players in the subprime boom, says it has gone to great lengths to screen loans for fraud and vet the lenders it works with. "No financial institution would knowingly want to make or securitize a loan that it expected would later go into default," David Sherr, Lehman's head of securitized products, told Mr. Menendez and other senators. "Rather, the success of mortgage-backed securities as an investment vehicle depends upon the expectation that homeowners generally will make their monthly payments, since those payments form the basis for the cash flows to bondholders."

At the sector's peak in 2005, with the housing market booming, loan defaults remained low. Wall Street pooled a record $508 billion in subprime mortgages in bonds, up from $56 billion in 2000, according to trade publication Inside Mortgage Finance. The figure slid to $483 billion last year as the housing market slumped and subprime defaults picked up.



Lehman topped other Wall Street firms over the past two years, packaging more than $50 billion in subprime-mortgage-backed securities in both 2005 and 2006. Overall, Lehman officials say the subprime business has accounted for 3% of the firm's overall revenues in recent quarters, or roughly $500 million in 2006.

Lehman has also been a leader in investment banks' push to buy their own lenders. Through its subprime unit BNC Mortgage Inc., it lends directly to consumers, bringing in more fees and giving it more control over the quality of the loans.

Lehman's deep involvement in the business has also made the firm a target of criticism. In more than 15 lawsuits and in interviews, borrowers and former employees have claimed that the investment bank's in-house lending outlets used improper tactics during the recent mortgage boom to put borrowers into loans they couldn't afford.

Twenty-five former employees said in interviews that front-line workers and managers exaggerated borrowers' creditworthiness by falsifying tax forms, pay stubs and other information, or by ignoring inaccurate data submitted by independent mortgage brokers. In some instances, several ex-employees said, brokers or in-house employees altered documents with the help of scissors, tape and Wite-Out.

"Anything to make the deal work," says Coleen Columbo, a former mortgage underwriter in California for Lehman's BNC unit. She and five other ex-employees are pursuing a lawsuit in state court in Sacramento that claims BNC's management retaliated against workers who complained about fraud.

Lehman officials say there's no evidence to support such claims. They say the firm has tough antifraud controls and goes to great lengths to ensure that it works with mortgage brokers and lenders who meet high standards and that loans are based on accurate information.

Lehman says company records clearly refute specific details of the accounts given by these former employees. It says most of them never raised concerns during their tenures at Lehman lending units, even though that was a requirement of their jobs. Some employees contacted by The Wall Street Journal said they weren't aware of improper practices.

"We think it is misleading to extrapolate from a handful of cases, in each of which we have a strong defense, and make a judgment about the way we conduct our business," Lehman says.

Wall Street Primer

• The Issue: Wall Street firms helped turn the subprime business into a mortgage powerhouse.

• The Situation: Critics say big players such as Lehman Brothers showered so much money on the market that lenders cut corners.

• What's Next: Lehman says it has instituted strong controls on its own lending units and remains committed to the business.

Lehman's history in subprime goes back to the mid-1990s, when the sector was still tiny. Back then, Lehman established itself as a leader in the market for subprime-mortgage-backed securities. It built a staff of experts who had worked at other securities firms and established relationships with subprime-mortgage lenders.

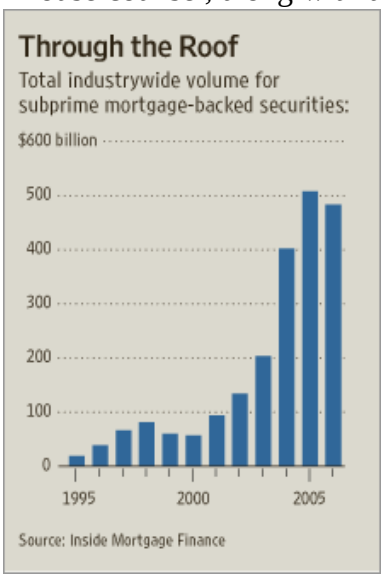
One of them was First Alliance. Mr. Hibbert, the Lehman vice president, traveled to Orange, Calif., in June 1995 to help decide whether Lehman should provide financing to First Alliance and underwrite its mortgage-backed bonds. In his memo, Mr. Hibbert reported back that there was "little risk of fraud or impropriety" at First Alliance. But he also said it was clear it made some loans "where the borrower has no real capacity for repayment."

Lehman officials say Mr. Hibbert ultimately supported going forward with First Alliance, a decision the investment bank made on the basis of extensive discussions and a 140-page memo. They also note that the $25 million line of credit that Lehman initially wrote for First Alliance was small compared with what other firms were putting up to finance the lender.

By late 1998, Prudential Securities and other investment banks had abandoned First Alliance. Federal regulators and seven states were investigating allegations it used deceptive sales tactics to get borrowers into loans with excessive upfront fees. First Alliance trained loan officers to use a sales pitch designed to "confuse and mislead" borrowers and disguise fees, U.S. District Judge David Carter in California found in a 2003 bankruptcy-related proceeding.

During the turmoil, Lehman helped keep First Alliance afloat with more loans. In early 1999, an internal Lehman memo noted the proliferation of government probes targeting the lender -- and the possibility that involvement with the lender might produce bad publicity for the investment bank. But the memo recommended going forward, arguing that First Alliance's borrowers rarely defaulted on their loans and noting that Lehman stood to earn millions in fees by managing the lender's mortgage-backed securities deals.

Lehman officials say they took close account of First Alliance's practices. Its reviews showed the lender was committed to improving its practices -- it hired a new in-house counsel, along with a chief financial officer who once worked at Lehman.



First Alliance shut down in March 2000 as pressure from lawsuits and investigations grew. In 2003 a federal jury in California delivered a $50.1 million verdict in a class action against First Alliance, attributing 10% of the damages -- $5.1 million -- to Lehman. (A federal appeals panel upheld the jury's decision but instructed the trial court to recalculate the dollar award. That decision is pending.) Lehman also settled a lawsuit filed in Broward Country Circuit Court by Florida authorities who said Lehman was an "accomplice" in First Alliance's frauds. The investment bank admitted no wrongdoing but agreed to pay $400,000 and review its practices.

Lehman calls the First Alliance saga an aberration, and says it is unfair to use it to draw conclusions about how it does business more than a decade later.

The subprime market contracted between 1999 and 2001, as continuing ripples from that era's Russian debt crisis and the collapse of hedge fund Long-Term Capital Management prompted investors to pull back from riskier markets. The crisis also presented a buying opportunity.

In 1999 Lehman started operating its own subprime lending unit, Finance America, as a joint venture with an ailing subprime lender named Amresco Inc. as a minority partner. It bought out Amresco in 2001 and another minority investor in 2004. Lehman also took an ownership stake in California-based BNC Mortgage in 2000 after helping management take the company private. It bought out management's remaining stake in 2004 and last year merged Finance America into BNC. Earlier this month, it said it would merge BNC with its Aurora Loan Services unit.

With interest rates low and the economy recovering, the market took off, and BNC and Finance America grew quickly. They ballooned from $3 billion in total loan originations in 2001 to $24 billion in 2005, ranking Lehman No. 11 among all subprime lenders.

As subprime grew, Lehman officials say, fraudulent schemes pushed by rogue mortgage brokers and others became more sophisticated throughout the industry. By taking full ownership of BNC and Finance America, the firm says, it was in a better position to combat these practices.

When Lehman consolidated its control of the two companies in 2004, Lehman officials say, the lenders' practices were consistent with industry standards. But they acknowledge the lenders --

like others in the subprime industry -- had problems with loan quality and fraud prevention. "Since then, we have worked long and hard, as we have taken control, to make these companies models for the industry on best practices for fraud detection and borrower protection," the firm says.

Since the start of 2004, BNC has nearly doubled the size of its staff devoted to quality control, fraud investigations and other jobs that help ensure the lender makes good loans.

Some former employees claim, however, that the pressure to boost loan volume during the boom years of 2004 and 2005 prompted some workers at the lending units to step over the line and push through questionable loans.

Dena Ivezic, a mortgage underwriter for both companies in Downers Grove, Ill., in late 2005 and early 2006, says some staffers at her branch used "cut and paste" techniques to fabricate documents they needed to get loans approved. Some workers tried "to take a stand" against such practices, she says, but "they were reprimanded for not being cooperative -- not wanting to be creative about making deals work....Everybody else just kind of bottled up and just never said anything, because you needed a job."

Cedric Washington, a former regional sales manager for Finance America in California, contended that employees at the lender actively pushed through questionable loans. In a 2005 employment-discrimination lawsuit in state court in Sacramento, Mr. Washington said he witnessed a fellow manager alter a loan document by forging a borrower's initials. Later, he said, he discovered Finance America employees forged borrowers' signatures on credit disclosures and used falsified documents to inflate loan applicants' incomes.

In one instance, the lawsuit said, a loan officer submitted a loan on a duplex that was "not a home or duplex at all but merely a greenhouse." Mr. Washington complained the loan was backed by falsified collateral, the suit said, but a Finance America executive refused to pull the loan.

BNC officials said Mr. Washington himself was complicit in fraud, which he denied, according to the lawsuit. Lehman officials say his lawsuit "had no merit" and was "not brought in good faith." It was settled last year for an undisclosed sum. As for Ms. Ivezic, Lehman says she worked at BNC for just 4½ months and her experiences are "hardly representative of BNC's employee base."

Other former employees contacted by the Journal said that fraud wasn't a problem at the lenders. They say their managers didn't hesitate to reject fishy loans. "Everything we did was by the guidelines," says Barbara Webb, a loan underwriter for both Finance America and BNC in Texas from 2004 into 2006.

Lehman officials say they have procedures in place to prevent mortgage brokers and others in the loan process from bending rules. BNC reviews brokers before putting them on its approved list and rechecks them annually, searching state licenses and lawsuits and making sure they're not on federal officials' watch list for problem brokers.

BNC says it has stopped doing business with more than 900 since 2003, largely because of fraud. It works with an average of about 1,800 brokers a month.

At BNC's headquarters in Irvine, Calif., officials say they've designed their business with an eye to weeding out bad loans. Mortgage underwriters and loan processors -- who make sure loan-application data is accurate -- get extensive training in how to spot fraud. Under BNC's organizational chart, they're set apart from sales, to avoid pressure to let problem loans slip through, BNC officials say.

Lehman notes the Office of Thrift Supervision, BNC's regulator, received just three complaints about the company from April 2006 through March 2007, a tiny fraction of the roughly 60,000 loans it made during that span.

Some complaints have surfaced in court. Borrowers' lawsuits in Pennsylvania, Louisiana, Mississippi and other states have alleged Finance America and BNC took advantage of unsophisticated borrowers or used falsified information to approve loans.

A lawsuit in state court in Saginaw, Mich., by UAW/GM Legal Services Plan, which serves auto workers and retirees, alleges a mortgage broker "confused and pressured" an elderly couple into signing up for a BNC loan that obligated them to pay as much as 17.5% as the interest rate adjusted upward. The suit says BNC was aware of "the seamy details of what happened here" because it prepared the documents, vetted the application and gave the broker "a set of instructions for how to proceed."

George and Evelyn Lee's July 2006 loan was pooled by Lehman with nearly 4,000 other subprime home loans from BNC into a securities deal that produced more than $800 million in mortgage-backed bonds.

The broker in the case, Real Financial LLC, has been the subject of 25 complaints to Michigan financial regulators and a fraud lawsuit that's pending in federal court in Michigan. State regulators dismissed many of the complaints, but have upheld eight of them and referred others for investigation.

Real Financial's attorney says the allegations stem from an unfavorable economy that's sparked rising foreclosures and unjustified complaints against lenders and brokers.

Lehman says it wasn't aware of complaints about Real Financial until the lawsuit was filed, but has since removed the firm from its broker list. "BNC was not aware of anything wrong with the Lees' loan because all it saw was the loan application which was in good order," Lehman said. "Real Financial was not BNC's agent, and BNC gave it no 'instructions' whatsoever. We strongly believe BNC has been added to this case only as a 'deep pocket.'"

Despite the controversy that's emerged in the subprime business, Lehman officials say they're proud of their role in helping the market grow and offering access to credit for consumers who might not otherwise have the chance.

"We think it's a business we should all be working to improve, not diminish," the firm says.

Write to Michael Hudson at Michael.hudson@wsj.com

'Subprime' Aftermath: *Losing the Family Home*

By Mark Whitehouse
From *The Wall Street Journal Online*

For decades, the 5100 block of West Outer Drive in Detroit has been a model of middle-class home ownership, part of an urban enclave of well-kept Colonial residences and manicured lawns. But on a recent spring day, locals saw something disturbing: dandelions growing wild on several properties.

"When I see dandelions, I worry," says Sylvia Hollifield, an instructor at Michigan State University who has lived on the block for more than 20 years.

Ms. Hollifield's concern is well-founded. Her neighbors are losing interest in their lawns because they're losing their homes -- a result of the recent boom in "subprime" mortgage lending. Over the past several years, seven of the 26 households on the 5100 block have taken out subprime loans, typically aimed at folks with poor or patchy credit.

Some used the money to buy their houses. But most already owned their homes and used the proceeds to pay off credit cards, do renovations and maintain an appearance of middle-class fortitude amid a declining local economy. Three now face eviction because they couldn't meet rising monthly payments. Two more are showing signs of distress.


April Williams

"This has stripped us of our whole pride," says April Williams, 47 years old, who has until August to pay off her mortgage or vacate the two-story Colonial at 5170, where she and her husband have lived for 11 years. "There's going to be no people left in Detroit if they keep doing this to them."

The fate of people on West Outer Drive offers a glimpse of a drama that is playing out in middle- to lower-income, often minority-dominated communities across the country. In addition to putting families into homes, subprime mortgages and the brokers who peddle them are helping to take families out of homes in which they've lived for years, eroding the benefits that proponents on Wall Street and in Congress have long touted.

The borrowers' difficulties raise questions about how the extension of easy credit to large swaths of the U.S. population will ultimately affect people and the broader economy -- questions that have gained in urgency as a sharp rise in defaults has policy makers wondering what, if anything, they can or should do.

Much of the focus in the subprime debacle has been on the demise of bubble markets in balmy locales such as California and Florida. But the subprime market has also channeled a surprising amount of money into some of America's poorer and more-troubled local economies.

In 2006 alone, subprime investors from all over the world injected more than a billion dollars into 22 ZIP Codes in Detroit, where home values were falling, unemployment was rising and the foreclosure rate was already the nation's highest, according to an analysis of data from First

American LoanPerformance. Fourteen ZIP Codes in Memphis, Tenn., attracted an estimated $460 million. Seventeen ZIP Codes in Newark, N.J., pulled in about $1.5 billion. In all of those ZIP Codes, subprime mortgages comprised more than half of all home loans made.

The figures show the extent to which the new world of mortgage finance has made the American dream of homeownership accessible to folks in previously underserved communities. By some estimates, subprime lending has accounted for as much as half of the past decade's rise in the U.S. homeownership rate to 69% from 65%. But as the experience of West Outer Drive illustrates, the flood of cash has also encouraged people to get into financially precarious positions, often precisely at the time when they were least able to afford it. In doing so, it may have temporarily alleviated -- but ultimately worsened -- some of the nation's most acute economic problems.

"The market was feeding an addict at its neediest point," says Diane Swonk, who spent 19 years analyzing consumer credit in the Midwest and now serves as chief economist at Chicago-based financial-services firm Mesirow Financial. "Individuals will resist reductions in their standard of living with everything in their power, including mortgaging their futures."

If events unfold as some predict, subprime lending could end up eliminating more homeowners than it created. One study by the Center for Responsible Lending, a nonprofit that focuses on abusive lending practices, forecasts that the subprime boom will result in a total of 2.4 million foreclosures nationwide, most of them on homes people owned before taking out the loans. That outweighs even the most optimistic estimates of the number of homeowners created, which don't exceed two million.

To understand how the legacy of subprime lending looks on the ground, take a ride around the West Outer Drive area with Carlton McBurrows, who grew up in the neighborhood and now works as a community organizer for Acorn, an advocacy group that provides financial counseling to lower-income families. On one recent spring day, he counted four empty houses with big red refuse bins outside -- a sign that banks, having taken possession of the homes, were tossing out all the belongings and debris left behind by the previous inhabitants.

"This is a phenomenon that I've never seen before, and I've lived here all my life," he says. "I think this is just the beginning."

As opposed to other parts of urban Detroit, which tend to be plagued by burned-out homes, the area around the 5100 block of West Outer Drive has remained a place where people try hard to keep up appearances. Originally largely Jewish, the neighborhood became a bastion of home ownership for upwardly mobile blacks beginning in the late 1960s. Though the area's fortunes have slipped somewhat as people have moved out to the suburbs, it has boasted such famous residents as Aretha Franklin, Marvin Gaye and Berry Gordy, the founder of the Motown record label.

"It was like when you made it to Outer Drive, you'd made it," says Deborah Herron, 52, a former administrative assistant who lived in the area for 35 years.

Back in its heyday, the idea that West Outer Drive could suffer from a glut of credit would have seemed far-fetched. Many blacks moving into the neighborhood had to either depend on federal

mortgage programs or buy their homes outright. That's because banks actively avoided lending to them, a practice known as "redlining" -- a reference to maps that designated certain neighborhoods as unduly risky. Various attempts to get the money to flow, such as the Community Reinvestment Act of 1977, which pushed banks to do more lending in the communities where they operated, had only a limited effect.

But beginning in the mid-1990s, the evolution of subprime lending from a local niche business to a global market drastically rearranged lenders' incentives. Instead of putting their own money at risk, mortgage lenders began reselling loans at a profit to Wall Street banks. The bankers, in turn, transformed a large chunk of the subprime loans into highly rated securities, which attracted investors from all over the world by paying a better return than other securities with the same rating. The investors cared much more about the broader qualities of the securities -- things like the average credit score and overall geographic distribution -- than exactly where and to whom the loans were being made.

"You have no time to look really deeply at every single borrower," says Michael Thiemann, chief investment officer at Collineo Asset Management GmbH, a Dortmund, Germany-based firm that invests on behalf of European banks and insurance companies. "You're looking at statistical distributions."

Suddenly, mortgage lenders saw places like West Outer Drive as attractive targets for new business, because so many families either owned their homes outright or owed much less on their mortgages than their homes were worth. Lenders seeking to tap that equity bombarded the area with radio, television, direct-mail advertisements and armies of agents and brokers, often peddling loans that veiled high interest rates and fat fees behind low introductory payments. Unscrupulous players had little reason to worry about whether or not people could afford the loans: The more contracts they could sign, the more money they stood to make.

"The pendulum has swung too far in the other direction," says Dan Immergluck, a professor of urban planning at Georgia Institute of Technology who has written a book on redlining. "We have too much credit, and too much of the wrong type of credit."

Minority-dominated communities attracted more than their fair share of subprime loans, which carry higher interest rates than traditional mortgages. A 2006 study by the Center for Responsible Lending found that African-Americans were between 6% and 29% more likely to get higher-rate loans than white borrowers with the same credit quality.

Subprime mortgages accounted for more than half of all loans made from 2002 though 2006 in the 48235 ZIP Code, which includes the 5100 block of West Outer Drive, according to estimates from First American LoanPerformance. Over that period, the total volume of subprime lending

in the ZIP Code amounted to more than half a billion dollars -- mostly in the form of adjustable-rate mortgages, the payments on which are fixed for an initial period then rise and fall with short-term interest rates.

"A lot of people were steered into subprime loans because of the area they were in, even though they could have qualified for something better," says John Bettis, president of broker Urban Mortgage in Detroit. He says a broker's commission on a $100,000 subprime loan could easily reach $5,000, while the commission on a similar prime loan typically wouldn't exceed $3,000.

The boom in subprime lending paved the way to home ownership for many people: Over the past three years, three people on the 5100 block have used subprime loans to buy homes. In at least two of those cases, though, the experience has not gone well. Raymond Dixon, a 36-year-old with his own business installing security systems, borrowed $180,000 from Fremont Investment & Loan in 2004 to buy a first home for himself, his wife and six children, across the street from Ms. Hollifield at 5151 West Outer Drive. After all the papers had been signed, he says, he realized that he had paid more than $20,000 to the broker and other go-betweens. "They took us for a ride," he says.

Bishop Charles Ellis, senior pastor of the Greater Grace Temple in Detroit, says he has heard many similar complaints from people in the area who, either because they were new to the process or had good experiences in the past, had put too much trust in subprime-mortgage brokers. Still, he believes many bear responsibility for their predicaments. "If you have a contract in front of you, you have to read that contract," he says.

Mr. Dixon defaulted on the loan after the monthly payment jumped to more than $1,500 from $1,142 -- a rise he says put too much strain on his income from his security business. The foreclosure process began in late November, and Mr. Dixon says he expects an eviction notice this week. A spokesman for Fremont said the company, which is in the process of exiting the residential mortgage business, has taken measures to reduce defaults but does not comment on specific customers.

Up at the north end of the block, Jennifer Moore and her husband, John, bought a two-story beige-brick house in December 2004. She says her husband had excellent credit, but in the rush to buy his "dream house" he agreed to take out two subprime loans from EquiFirst Corp., one for $164,000 and the other for $41,000 -- a "piggyback" arrangement that allowed him to avoid a down payment. Ms. Moore said the real-estate agent told them they could refinance into a fixed-rate loan within two years, after which the payments on the larger loan were scheduled to reset.

Mr. Moore's death in 2006 scuttled the refinancing plans. Now Ms. Moore, a 56-year-old clerical worker for Wayne County, has fallen behind on the monthly mortgage payments, which she says rose earlier this year to $2,200 from about $1,450. After more than 30 years as a homeowner, she now expects to lose the house -- including the back porch she built to take in the sun and the library she decorated with her son's baseball and basketball trophies. "I'll get an apartment," she says. "I'm not going to buy another place." An EquiFirst spokeswoman said the company doesn't comment on specific customers.

For many who already owned their homes, offers of easy credit came at a time when a severe economic downturn had left them in need of money to maintain middle-class lifestyles. Since the year 2000, the decline of the auto industry has cost the Detroit metropolitan area about 20,000 jobs a year, helping turn the shopping areas near West Outer Drive into scenes of defunct businesses, payday lenders and liquor stores. According to the latest data from the Internal Revenue Service, households in the 48235 ZIP Code reported an average adjusted gross income of $32,902 in 2004, up slightly from $32,817 in 2001 but down 6% in inflation-adjusted terms.

April Williams was feeling the pain of the downturn back in 2002, when she saw an ad from subprime lender World Wide Financial Services Inc. offering cash to solve her financial problems. At the time, production slowdowns at Ford Motor Co. were squeezing her husband's income from an assembly-line job, and they'd heard rumors that more cutbacks were coming. Still, after a loan officer from World Wide paid a visit, they became convinced they could afford stainless-steel appliances, custom tile, a new bay window, and central air-conditioning -- and a $195,500 loan to retire their old mortgage and pay for the improvements. The loan carried an interest rate of 9.75% for the first two years, then a "margin" of 9.125 percentage points over the benchmark short-term rate at which banks lend money to each other -- known as the London interbank offered rate, or Libor. The average subprime loan charges a margin of about 6.5% over six-month Libor, which as of Tuesday stood at 5.38%.

"I knew better than to be stupid like that," she says. "But they caught me at a time when I was down."

She wasn't alone. Locals say West Outer Drive became a beehive of renovation activity in the first half of the decade, even as the economy sagged. Up the block from Ms. Williams, Ordell Walker, who says he left a job at DaimlerChrysler several years ago, put in a new driveway, glass-brick windows on the basement and stairwell, and much more. To get the cash, he jacked up his mortgage to $205,000 from $108,000 in 2002, partly with the help of World Wide. "A lot of people took the cash," he says. "I wish I'd never done it myself."

Last year, the Michigan Office of Financial and Insurance Services revoked World Wide's license amid allegations of fraud. Jeff Arnstein, who was a team leader at World Wide in 2002 and who Ms. Williams says processed her loan, said he didn't remember the specific case but he believed the loan was properly underwritten. "My heart goes out to them," he said. "But it's not the fault of the mortgage company that put them in their loan." Mr. Arnstein now works for First Mortgage Corp. near Phoenix.

Both Ms. Williams and Mr. Walker have found themselves in a predicament now common among homeowners in Detroit: They've tried to sell their houses, but can't find buyers willing to pay what they owe on their mortgages. After two years on the market, Ms. Williams says her house has attracted a high bid of $140,000, nowhere near the $211,000 debt she must settle to avoid eviction. That leaves her with no option but to abandon the house -- the worst possible outcome for the neighborhood, because it means the property could end up gutted with a big red debris bin out front.

Kevin Lightsey, a local agent at Keller Williams Realty, says he doubts such foreclosed homes are likely to find new owners willing to live there. "Nobody's going to want to buy into a

neighborhood with 20% foreclosures," he says. "You end up with no neighborhood." First American LoanPerformance estimates that, as of March, about one in three subprime loans made from 2002 through 2006 in the 48235 ZIP Code were more than 60 days in arrears, meaning they were either already in foreclosure or well on their way there. Even loans made in 2006 had a delinquency rate of about 17%.

Some subprime borrowers on the 5100 block of West Outer Drive say they are doing fine and planning to stay put. Kevin Ransom, a 42-year-old investment banker who grew up in the area, moved into the red-brick Colonial across from Ms. Hollifield in 1999, leaving behind a job in New York. He bumped up his mortgage debt to $208,250 from $170,100 back in 1999, and put the money into a new roof, marble floors, custom ceilings and a finished basement. He says his income has grown enough to make the monthly payment, which has risen to about $1,700, from $1,200 when he took out the most recent loan in 2002.

"I always had a desire to come back home and try to be in a community," says Mr. Ransom.

Still, he's worried about the way some of his neighbors are losing interest in their homes. Consider Jacqueline McNeal, a school principal who has lived in the house two doors north of Mr. Ransom since 1995. In 2002, she says, she took out a $112,700 loan from Full Spectrum Lending, a subprime arm of Countrywide Financial Corp., to pay off department-store bills, provide financial help to some out-of-work relatives and retire her old fixed-rate mortgage. But last year, as the interest rate on her loan rose to 12% from an initial 8.75%, she fell behind amid a litany of difficulties, including a teachers' strike and problems with the payment of her back property taxes. A Countrywide spokesman said there was nothing inappropriate in the origination or the servicing of the loan.

Now in foreclosure, Ms. McNeal has until early July to come up with the money or be evicted. She doubts she can sell the house, and the missed payments have dented her credit to the point where she can't get another loan. So she's letting the dandelions grow.

"You have two options -- to sell it or to refinance it," she says. "But if you can't do either, what can you do?"

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Collateral Damage:

The Municipal Impact of Today's Mortgage Foreclosure Boom

by
William C. Apgar and Mark Duda

May 11, 2005

A report prepared for the

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Preface

The recent rise in foreclosures has opened a new and costly chapter in the troubled history of America's distressed urban neighborhoods. One key aspect of the story emerging from this trend is the fact that foreclosures impose significant costs not only on borrowers and lenders, but also on municipal governments, neighboring homeowners, and others with a financial stake in nearby properties. This is particularly true of nonprime mortgage foreclosures because of their spatial concentration.

Using the City of Chicago as an example, this report documents for the first time the municipal costs of foreclosure, including both direct municipal expenditures for foreclosure related services and indirect costs linked to the blighting effect that foreclosures have on urban neighborhoods. After detailing the negative effects that foreclosures have on communities, the paper discusses steps that Chicago and other municipalities are taking to reduce the impact of foreclosures, both by engineering them out of the system and by limiting the negative spillovers that arise from foreclosures that are not preventable.

The report was prepared by William Apgar and Mark Duda. Mr. Apgar is a Senior Scholar at the Joint Center for Housing Studies of Harvard University, and a Lecturer in Public Policy at Harvard's John F. Kennedy School of Government. He previously served as the Assistant Secretary for Housing/Federal Housing Commissioner at the U.S. Department of Housing and Urban Development, and also Chaired the Federal Housing Finance Board. Mr. Apgar holds a PhD in Economics from Harvard University. Mr. Duda is a Research Fellow at the Joint Center for Housing Studies. He consults and has written widely on issues relating to single family mortgage finance in both the U.S. and China. Mr. Duda holds a PhD in Urban Geography from Clark University.

The cost estimates presented here were first described in a study entitled “The Municipal Cost of Foreclosure: A Chicago Case Study,” prepared by Mr. Apgar, Mr. Duda, and Chicago-based community development expert Rochelle Nawrocki Gorey. This longer study includes a more extensive discussion of the methodology utilized to estimate cost figures used in both reports. The earlier report is available on the Homeownership Preservation Foundation’s website at www.hpfonline.org.

Support for the paper was provided by the Homeownership Preservation Foundation, and it is endorsed by NeighborWorks America and the Financial Services Roundtable.

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Executive Summary

The recent debate over abusive lending practices has focused squarely on damages to individual borrowers. While understandable, this view overlooks the significant costs of loan failures to municipalities that, in their role as guardians of public safety and quality of life, must foot the bill for foreclosure-related services—including remedying the many social ills that foreclosures themselves spawn. A single mortgage failure, especially one that leaves the home vacant and unsecured, can impose tens of thousands of dollars of costs on cash-strapped public agencies.

And municipal governments are just one of the many parties that pay the price for loans made to high-risk borrowers that result in foreclosures. Indeed, anyone invested in nearby homes and businesses stands to lose if a rash of foreclosures brings down property prices, accelerating the decline of an entire neighborhood. Along with local agencies, it is these area homeowners, business owners, landlords, and other investors who shoulder a burden that rightfully belongs to the parties directly involved in failed mortgages.

Overextending credit to high-risk borrowers also leads to perverse market effects. In today's competitive mortgage industry, a race to the bottom ensues when lenders lower their underwriting standards to reach ever less qualified borrowers in ever more vulnerable neighborhoods. As a result, lenders willing to underprice their products at origination gain market share while leaving others to pick up a portion of the costs generated when loans go bad.

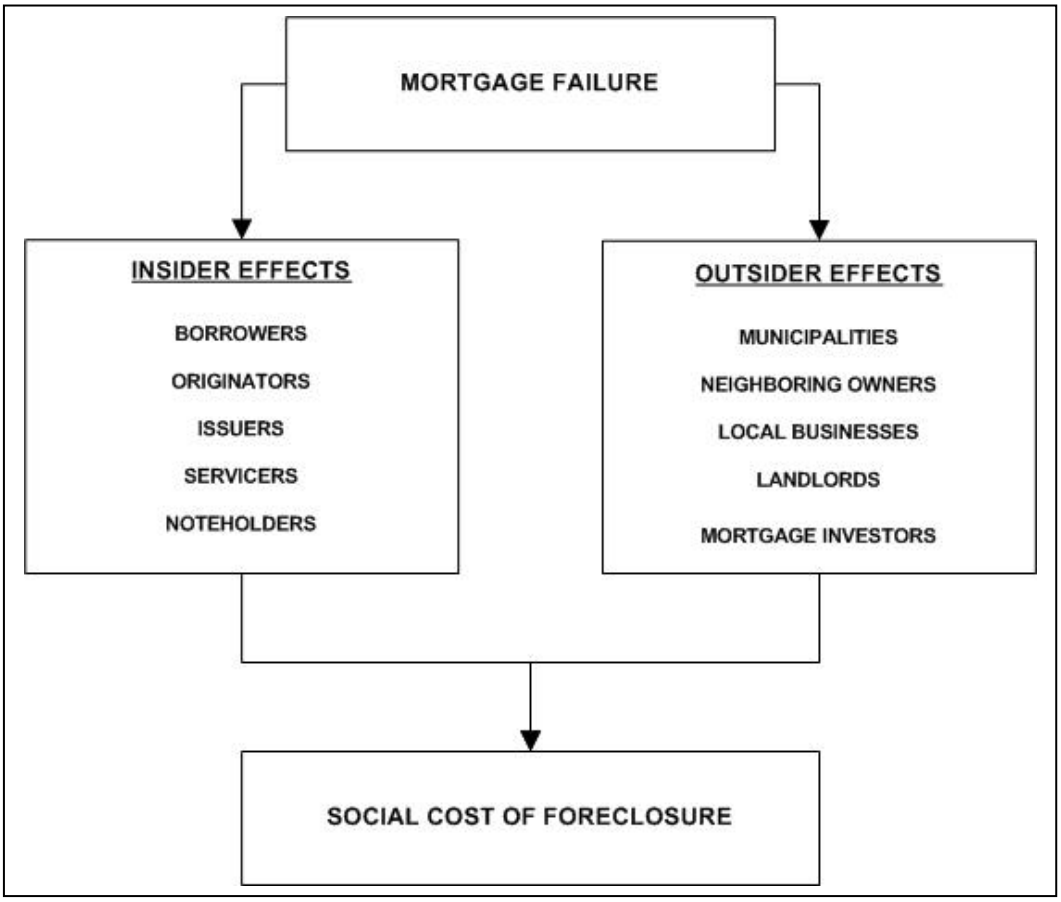
Until now, no study has examined the full social costs of foreclosures. This report begins to quantify the fallout from high-risk mortgage lending by developing a typology of these costs based on the foreclosure process in the City of Chicago. Foreclosures are not only expensive to borrowers and lenders, but they involve more than a dozen agencies and twice as many specific municipal activities, and generate direct municipal costs that in some cases exceed $30,000 per property.

Fortunately, Chicago and other municipalities are making important strides in not only limiting the fallout from poorly underwritten and/or fraudulent loans in distressed neighborhoods, but also helping borrowers resolve problems well before foreclosure becomes inevitable. Municipalities are also working to streamline the foreclosure process and ensure that lenders pay their fair share of foreclosure-related costs. These and other policies summarized in this report have been successful in combating the contagion of mortgage foreclosures.

Loan Insiders and Outsiders

The negative impacts of foreclosures extend far beyond the parties to a failed mortgage contract (Figure 1). While "insiders" (those directly involved in the transaction) incur various types of losses in the event of a default, the costs to "outsiders" (entities that are not party to the mortgage transaction) are also substantial.[1] In particular, proximity to problem buildings makes the area less desirable and slows the rate of house price appreciation, leaving nearby homeowners with much less housing wealth. Local landlords may also be forced to charge lower rents, and local businesses may see weaker sales. Even other mortgage industry participants, including noteholders for nearby properties, are likely to see the value of their investments fall as the risk of loan failure spreads.

Figure 1: The Social Impacts of Foreclosure



For municipalities, foreclosures trigger significant direct expenditures for increased policing and fire suppression, demolition contracts, building inspections, legal fees, and expenses associated with managing the foreclosure process (*e.g.*, recordkeeping/updating). Police officials interviewed for this study also cited the damage to quality of life from empty, foreclosed properties, including gang activity, drug dealing, prostitution, arson, rape, and murder. Even after the foreclosure process is completed, costs continue to accrue in cases where the municipality inherits responsibility for securing and/or demolishing the unit, clearing trash from the lot, and keeping weeds under control.

Meanwhile, borrowers in financial distress frequently stop paying property taxes. As a result, foreclosures reduce municipal tax revenues and hence the resources cities have to mitigate the negative impacts. Although authorities can issue a tax lien against the property, this process takes years to complete and, even then, does not guarantee the municipality will receive full repayment.

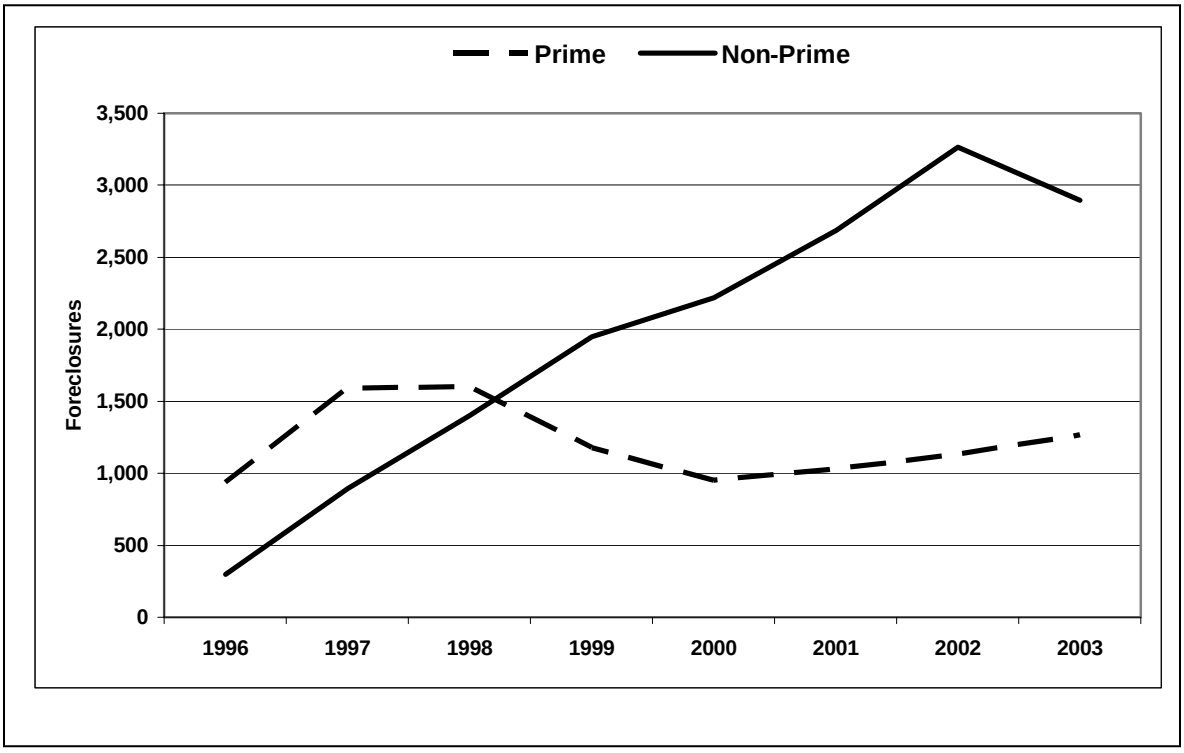
When foreclosure leads to demolition, the municipality faces additional property tax losses because it must remove the assessed value of the structure from its tax roles. Municipal revenues are also reduced by delayed and uncollected taxes and unpaid service fees for water, gas, and electricity. More generally, to the extent that foreclosures make urban neighborhoods less attractive to households and businesses, municipal sales and income tax receipts also suffer.

The first step in addressing these concerns and ensuring the efficient functioning of the nonprime mortgage market is to assess the true social cost of foreclosures. Using the City of Chicago as a case study, the following sections begin this analysis.

Nonprime Foreclosures on the Rise

From almost nothing a decade ago, nonprime loans now capture an astounding 20 percent share of the home loan market. Although this long-awaited mortgage capital has benefited many underserved neighborhoods, higher-risk lending has also sparked a substantial increase in foreclosures. The City of Chicago has seen the total number of foreclosures double since 1996, despite relative stability on the prime loan side (Figure 2). Serious delinquencies and foreclosures for nonprime loans can easily be ten times higher than for prime loans.[2]

Figure 2: Nonprime Lending Has Driven up Chicago Foreclosures



Source: D. Rose, *Preying on Neighborhoods: Community Partners Turn the Tide against Predatory Lending*, 2004 (www.nticus.org/currentevents/press/pdf/preyingonneighborhoods2.pdf)

Complicating matters is the fact that nonprime foreclosures tend to cluster in ways that generate significant spillover effects as vacant properties become magnets for crime and other social ills. [3] In fact, extreme rates of loan failure suggest that foreclosures are "contagious," with one loan failure increasing the likelihood of another. Take the case of a single block in Chicago's Auburn–Gresham neighborhood, where 14 foreclosures occurred among the block's 37 properties in just a decade. The one vacant and subsequently demolished home on this block also destroyed approximately $220,000 in housing wealth for 13 neighboring homeowners (see Appendix A).

The fact that foreclosures on failed nonprime loans impose un-recovered costs on entities outside the mortgage transaction means that higher-risk lending practices impose a greater burden on society than prime lending. Given that foreclosures tend to cluster in low-income and/or minority neighborhoods, many of the outsider effects are concentrated among the nation's most vulnerable households.[4]

Five Common Foreclosure Scenarios

The complex foreclosure process in Chicago involves the coordination of more than a dozen city and county agencies. The depth of local government involvement depends on whether the foreclosure action is contested, if the house is vacant and open, visibly deteriorates, and/or becomes a public nuisance during the foreclosure process.

To assess the range of costs that arise from the foreclosure process, this study calculated the costs of five typical scenarios using Chicago and Cook County budget and administrative data for 2003 and 2004. The estimated prices for each of 26 individual foreclosure-related activities are listed in Figure 3.

Figure 3. Foreclosure-Related Municipal Costs

Activity	Agency	Cost
1. Lis Pendens Filing	Recorder of Deeds	$ (13)
2. Operate Chancery Court	Multiple County Agencies	$ (43)
3. Register Sale and New Owner	Recorder of Deeds	$ (13)
4. Delegate Agency Foreclosure Prevention Funding	Dept. of Administrative Hearings (DOAH)	$ 96
5. Vacancy Intake	Department of Buildings (DOB) and Others	$ 3
6. Building Inspections	DOB	$ 364
7. Maintain Vacant Building Registry	DOB	$ 36
8. Serving Notice to Secure	Department of Law (DOL) and Sheriff	$ 715
9. Boarding, Lien Issuance	DOB, DOL	$ 1,445
10. Prepare Case for Administrative Hearing	DOL	$ 2,690
11. Administer DOAH	DOAH	$ 78
12. Prepare Housing Court Case	DOL	$ 4,203
13. Administer Housing Court	Multiple County Agencies	$ 228
14. Police Call	Police Department	$ 315
15. Police Make Arrests	Police Department	$ 180
16. Initial Notice of Demolition	DOB	$ 165
17. Notice of Impending Demolition	DOB	$ 75
18. Demolition by Contractor, Lien Issued	DOB, DOL	$ 6,000
19. Property Tax Losses from Demolition	n/a	$ 4,307
20. Prepare and Try Demo Case	DOL, DOB	$ 5,884
21. Administer Demo Court	Multiple County Agencies	$ 228
22. Unpaid Property Tax Losses	n/a	$ 506
23. Unpaid Utility Tax Losses	n/a	$ 51
24. Unpaid Water Usage	Water Department	$ 162
25. Mow Lawn/Remove Trash	Department of Streets and Sanitation	$ 5,000
26. Fire Suppression	Fire Department	$ 14,020

It is important to note that the costs presented here are net of any funds recovered for foreclosure-related services. While municipalities can and do recover some share of the cost, the amount is often modest. For example, fees charged by the Cook County Recorder of Deeds for filing documents appear to cover the County's administrative costs. In contrast, the $15 fee that the Department of Buildings is currently authorized to charge for serving an initial notice of demolition is well below the average $180 cost of this service to the city.

Of course, not all foreclosures generate substantial municipal or other third-party costs. In the simplest cases, the unit transfers smoothly from the borrower into the portfolio of the noteholder or to a foreclosure investor. Such transfers involve no vacancy, no additional policing, demolition, boarding, or other foreclosure support services from the City or County. In these instances, the municipal loss per foreclosure net of fees recovered is just $27. If the unit becomes vacant, however, the City's foreclosure costs mount rapidly.

Scenario A: Vacant and Secured Properties

Municipal Cost = $430

The basic foreclosure process for vacant properties involves seven agencies. Reports of vacant foreclosed properties to the Department of Buildings (DOB) typically come from aldermen, the mayor's office, the 311 information system (the city's non-emergency call system), concerned neighbors, community groups, police and fire officials, or building inspectors in the field. DOB responds by sending inspectors out to confirm the structure's vacant status and to document code violations for which the city issues fines. Cook County departments incur expenses for administering Chancery Court and for maintaining the foreclosure-reporting infrastructure.

Scenario B: Vacant and Unsecured Properties

Municipal Cost = $5,358

When the unit is unsecured and the building inspector's report favors conservation over demolition, DOB contacts the owner regarding failure to comply with regulations for vacant and open buildings and issues fines for the code violations to encourage compliance. If the owner responds by properly securing the unit, registering it as vacant, and posting an official notice, the property can remain in this state until it is sold or becomes a threat to public safety. If the owner fails to comply, however, the case goes to the Department of Administrative Hearings (DOAH) or to Housing Court, either of which incur the costs of legal notification, securing the vacant unit, and issuing and collecting on liens. Legal expenses alone exceed $2,500 in a straightforward case and can easily go much higher. A typical case of this type adjudicated in DOAH involves nine municipal agencies and expenses of more than $5,000 per problem property.

Scenario C: Vacant, Unsecured Properties Tracked for Demolition

Municipal Cost = $13,452

If the inspector determines the building is "vacant, open, and constitutes a hazard to the community," the City moves toward demolition. Under Fast Track Demolition (FTD), the City notifies legally interested parties that they must secure, repair, or demolish the structure or else it will be razed at City expense. The DOB issues a lien, which is enforced by the Department of Law (DOL), to cover the City's costs and can either leave the ultimately vacant lot in the owner's possession or acquire it by foreclosing on the demolition lien.

Non-FTD cases are tried in Demolition Court, which is part of the Housing Court section of the Circuit Court of Cook County. Based on the building inspector's report, the DOL drafts a formal complaint and issues summons to all interested parties. If the City can prove the structure is a threat to public safety and beyond reasonable repair, DOB hires a contractor to demolish the building and DOL issues and

enforces a lien to cover the cost. If the owners contest demolition, they are given a time-limited opportunity to bring the building up to code.

In the meantime, vacant, unsecured buildings are a magnet for intruders. Police are called upon to evict squatters, chase away vandals, and arrest drug dealers. Depending on the severity of the problems and the frequency with which they must be addressed, increased policing can easily add between $300 and $1,100 to the municipal foreclosure bill.

Regardless of whether they go through Fast Track Demolition or through Demolition Court, these cases impose similarly large costs that often go un-recovered. In FTD cases, the City is not always able to collect the full amount on demolition liens. In Demolition Court cases, preparing and trying these relatively complex proceedings is expensive. In either situation, the City's property tax base decreases when the value of the demolished structure is removed from the tax roles. The estimated cost presented here is based on Fast Track Demolition and only modest need for additional policing at the property before demolition.

Scenario D: Properties Abandoned Before Foreclosure Is Completed

Municipal Cost = $19,227

Situations where the noteholder or noteholder's agent does not complete the foreclosure process—often because the cost of restoring the property to minimally adequate standards exceeds its value—are called "walkaways." Because the original mortgage borrower has long since left and the noteholder is not required to take possession of the unit, the structure ends up vacant and in legal limbo. Not surprisingly, walkaways cause immense problems for nearby residents, businesses, and neighborhoods.

For municipalities, these cases involve property tax losses because unpaid bills technically remain the responsibility of the homeowners, who clearly have no ability to pay. Uncollected taxes are ultimately put through a tax sale, which allows the City

to recoup some share of the outstanding balance. Meanwhile, the City also loses revenue from unpaid water bills and overdue utility payments (which carry municipal taxes). And because the deteriorating properties are untended, they often require periodic maintenance such as garbage removal and mowing weeds.[5] Because of the extended period of vacancy, the lack of oversight from any party with the resources to address problems, and the legal ambiguity in which these properties are left, walkaways can push municipal expenditures up by thousands of dollars more than in cases where the noteholder completes the foreclosure process.

Scenario E: Abandoned Properties Damaged by Fire
Municipal Cost = $34,199

In long vacant buildings, a host of problems can arise or intensify and push foreclosure-related costs even higher. For example, the likelihood of serious criminal activity, higher trash removal costs, and illegal reconnection of utilities all increase dramatically. The risk of fire damage—whether at the hands of vandals, squatters, or owners seeking to make insurance claims—also rises sharply.

These fires often decimate the structure because no one calls the Fire Department while the blaze is still small enough to be suppressed. Once firefighters are called in, a fire in an abandoned building imposes not only significant costs on the City ($14,000 on average), but also risks to the health and welfare of these public employees. Burned buildings often constitute a threat to public safety, requiring immediate demolition. Given a long period of vacant/open status, a fire, and eventual demolition of the remaining structure, the total cost to the municipality is more than $34,000.

What Public-Private Partnerships Can Do

With foreclosures on the rise in communities across the country, it is essential to find ways to minimize the potential fallout on all stakeholders. As an important first step, municipalities must work with responsible mortgage industry and community leaders to reduce the incidence of poorly underwritten and/or fraudulent high-risk loans in distressed neighborhoods. This must be reinforced with efforts to improve financial literacy by providing access to counseling for distressed borrowers. Municipalities should also simplify the foreclosure process and work to ensure that lenders pay their fair share of foreclosure-related costs. The following recommendations cite measures that the City of Chicago and other municipalities have taken, or are considering, to meet the foreclosure challenge.

1. Support Foreclosure Prevention Initiatives

Since some municipal expenditures are unavoidable once the process begins, investing resources to avoid foreclosures should be a priority. Clearly, the savings from heading off future foreclosure costs and the spillover effects on distressed neighborhoods are substantial. Chicago's Department of Housing now spends nearly $1 million of its Community Development Block Grant funds working with community-based nonprofit organizations on preventative programs. Innovative programs now in place in cities across the country demonstrate that partnering with the mortgage industry and community-based organizations is an effective way to stem the problems from foreclosures, in particular by:

- **Connecting borrowers to credit counseling**.
  Many distressed borrowers could save their loans, homes, and credit standing if they knew where to turn for help. Effective counseling can make the difference between saving and losing their homes.

The City of Chicago provides this information through its 311 call center. To help build public trust in the 311 approach, Chicago Mayor Richard Daley led a highly visible campaign to introduce the system and encourage distressed borrowers to seek help before it becomes too late. Callers have the opportunity to receive counseling from the Credit Counseling Resource Center (CCRC), a national alliance of HUD Certified Housing Counseling agencies operated by the Homeownership Preservation Foundation, and then be put in contact with the loan servicer to explore a potential workout or be referred to other available local resources or assistance if appropriate.[6] Funded by both the City and its lender-partners, the counseling service is free to borrowers.

- **Helping servicers contact distressed borrowers.**
  Despite great efforts, mortgage servicers are often unable to reach delinquent borrowers. In fact, it is not uncommon for delinquent nonprime loans to go to foreclosure without the borrower ever speaking to a servicer or learning that workout opportunities are available.

  To address this problem, GMAC-RFC's Homecomings Financial Network now works with Neighborhood Housing Services of Chicago (NHSC) in an effort to contact unresponsive borrowers and offer them access both to their servicer and to free credit counseling. The organizations work together to arrive at appropriate workout solutions, and provide borrowers a trusted advisor to guide them through a difficult and potentially intimidating process. Initial results suggest that as many as half of program participants achieve successful outcomes (*i.e.*, any resolution that does not result in the property becoming vacant and abandoned).

2. Reform the Foreclosure Process

The increase in nonprime foreclosures has tested local governments' ability to efficiently provide foreclosure-related services. The process needs to be simpler and better coordinated, particularly in the following areas.

- **Streamline legal procedures**.
  While borrowers must have every reasonable opportunity to cure defaults, foreclosure should be a speedy and predictable process once failure is inevitable. Regulatory reform should focus on standardizing and updating the legal process, with an eye to eliminating provisions that delay foreclosures even as the negative impacts on neighborhoods continue to mount.[7]

- **Coordinate foreclosure service provision.**
  Better coordination among municipal service providers is also essential to minimize the spillover effects of mortgage failures. Chicago's Troubled Building Initiatives (TBI) provides a model of what can be achieved by coordinating city resources and activities across all agencies involved in problem buildings. Once a property is identified, staff from the agencies involved in TBI assess available resources (*e.g.*, laws, fines/fees, coercive mechanisms, and other signals) and outline an action plan. These plans include tactics such as foreclosing on an existing municipal lien or bringing administrative or judicial action against the lender and/or property owner. The goal is first and foremost to get the attention of interested parties and reach resolution quickly.

- **Close the walkaway loophole**.
  No outcome of the foreclosure process deserves more attention than walkaways. When both the borrower and lender abandon their interests in

the property, they leave municipalities and other local stakeholders with a problem building whose title status may take years to resolve.

Neighborhood Housing Services of Chicago is now working with the City and responsible lender partners to accelerate the transfer of potential walkaway properties to either the City or a designated nonprofit. Such a solution reduces municipal costs and safety problems from vacant properties languishing in legal limbo. Early intervention—before the arrival of squatters or illegal activities—is a high priority.

- **Develop a foreclosure hotspot protocol**.
  In neighborhoods where foreclosures concentrate, a protocol should guide remediation efforts and minimize the adverse effects on outside parties. For example, municipal tax collection agencies might refrain from foreclosing on tax liens against owner-occupants in foreclosure hotspots if this would help borrowers and lenders resolve the delinquency. Alternatively, if the owner of a hotspot home has already vacated the property, is not contesting the foreclosure, and/or lacks the financial stability to remain in the home, the municipality could work with lenders to accelerate the foreclosure and the transfer to a new owner. Again, while it is important to protect the interests of low-income homeowners, streamlining the foreclosure process in many cases can help stabilize a distressed area and reduce foreclosure-related costs for insiders and outsiders alike.[8]

3. Allocate Service Costs More Fairly

Many of the social costs of foreclosures fall on taxpayers who must foot the bill for delivery of foreclosure-related municipal services. To relieve the public burden associated with the municipal costs of foreclosures, and re-establish efficient pricing in this segment of the mortgage market, municipalities might:

- **Raise the fees on foreclosure-related services**.
  As municipalities reevaluate how to set fees for their services, they must honor the principle that taxpayers should not subsidize services that largely benefit specific, identifiable private parties. Providing foreclosure infrastructure and remediation services violates this principle. Despite the fundamental lack of information on the specific activities involved in the foreclosure process and on their individual costs, current pricing policies can clearly be improved.

  Some may worry that raising lender fees will push the costs of nonprime credit even higher, making housing even less affordable. Although this concern has merit, it suggests two counter-arguments. First, if costs are tied to risk level, they fall primarily on the most problematic, foreclosure-prone loans. If this eliminates the market for highly default-prone lending, then borrowers, investors, and many outside the mortgage transaction all benefit. Second, implicitly subsidizing mortgage prices—which is what municipalities now do by undercharging for foreclosure-related services—is a poor substitute for explicitly designing policies to increase ownership opportunities and sustainability among targeted groups of low-income borrowers.

- **Establish an industry fund to help offset municipal costs**.
  In theory, correctly pricing municipal services should promote efficient resource allocation. In practice, however, the cost of collection may be higher than the fees generated. One solution to this problem builds on a proposal by the Coalition for Fair and Affordable Lending, a national organization representing nonprime lenders. Under this approach, Congress would require that nonprime lenders pay a reasonable fee into a central fund when they originate a mortgage.[9] This fund could then be used to defray the municipal costs associated with foreclosure, support state and local efforts to streamline the foreclosure process, and expand local foreclosure avoidance initiatives.

Summary

As the City of Chicago's example demonstrates, the high costs of foreclosures make it imperative that municipal, mortgage industry, and community leaders join the effort to stop the problem where it starts—poorly underwritten and/or fraudulent high-risk loans. Because even legitimate nonprime loans are more failure-prone, however, these groups must also support foreclosure avoidance programs that educate distressed borrowers about loan restructuring options.

Municipalities themselves have numerous opportunities to make delivery of foreclosure-related services more efficient and to reevaluate laws and regulations that may unintentionally add to the overall social cost of foreclosures. Recognizing that they will inevitably bear some of the costs, however, municipalities must be prepared to use their own community development resources to advance foreclosure avoidance efforts, both to reduce their own exposure and to help families in distress.

In addition, municipalities should carefully review the costs of providing foreclosure-related services and, when appropriate, ask the mortgage industry to share the burden of paying these costs. Municipalities can work with mortgage industry leaders to ensure that they recover a greater share of outlays from user fees or proceeds from the foreclosure sale. In combination, all of these initiatives will limit the disproportionate burden municipalities now carry for the rising rate of foreclosures, while also helping to preserve the homeownership gains achieved by extending credit to higher-risk borrowers.

Appendix A. Brief Note on Methodology

The following section summarizes the methodology used to estimate the direct municipal costs and the indirect costs to property owners from foreclosures. A full discussion is available in the background report entitled "The Municipal Cost of Foreclosures: A Chicago Case Study," prepared by William C. Apgar, Mark Duda, and Rochelle Nawrocki Gorey, and available on the Housing Policy Foundation's website (www.hpfonline.org).

Direct Municipal Costs

The report estimates the municipal costs of providing 26 distinct foreclosure-related services provided by 15 separate agencies. Individual cost estimates are then combined to compute the direct municipal costs associated with five increasingly complex foreclosure scenarios. These estimates are based on a detailed examination of City of Chicago and Cook County budgets for 2003 and 2004, and on a series of interviews with key informants in various municipal departments between August and November 2004.

Specific estimates were derived in one of four ways:

(1) Respondents directly provided costs.

(2) Respondents provided hourly wages, which were then multiplied by the number of hours necessary to complete the task (also provided by the respondents).

(3) Per-event costs were calculated by dividing budget numbers by the share of a department or section's activity involved in a foreclosure-related service, and then dividing by the number of times the activity was performed.

(4) Hourly wages were derived from budget information and combined with respondent data on the number of hours required to perform each task.

Indirect Costs on Neighboring Property Owners

Although difficult to measure, indirect costs to neighboring property owners add significantly to the overall social costs of foreclosure. This is particularly true in the case of vacant units, making the area less desirable to prospective homebuyers and thereby bringing down home price appreciation.

In the only published effort to measure the magnitude of these effects, a Temple University study found that Philadelphia properties located within 150 feet of an abandoned unit sold for $7,627 less than those not located near abandoned units, with the effect tapering off to $3,543 at distances of 300-450 feet and becoming negligible beyond 450 feet (the length of a typical block).[10] These findings are consistent with the general literature on the impact of so-called negative externalities on house price appreciation, which suggest that the presence of a deteriorated structure can reduce area property values by as much as 10 percent, and that the largest impacts are on homes located closest to the blighted property.[11]

Applying the same logic to the sample block in Chicago mentioned in this report, the negative spillover from the vacant foreclosed unit affected 13 homeowners within 150 feet of the property. Assuming that loss rates as a share of house value are the same in both cities and given that Chicago's median house price is 2.2 times higher than Philadelphia's, the average property value loss in the Chicago case is $16,915. This figure, when multiplied by 13, yields $219,893.

Appendix B. Municipal Costs for Specific Foreclosure Scenarios

Activity	Scenario A: Vacant & Secured	Scenario B: Vacant & Unsecured	Scenario C: Demolished	Scenario D: Abandon-ment	Scenario E: Fire Damage
1. Lis Pendens Filing	X	X	X	X	X
2. Operate Chancery Court	X	X	X		
3. Register Sale and New Owner	X	X	X		
4. Delegate Agency Fcl. Prevention Funding	X	X	X	X	X
5. Vacancy Intake	X	X	X	X	X
6. Building Inspections	X	X	X	X	X
7. Maintain Vacant Building Registry	X	X	X	X	X
8. Serving Notice to Secure		X	X	X	X
9. Boarding, Lien Issuance		X			
10. Prepare Case for Administrative Hearing		X			
11. Administer DOAH		X			
12. Prepare Housing Court Case					
13. Administer Housing Court					
14. Police Call			X	X	X
15. Police Make Arrests					X
16. Initial Notice of Demolition			X	X	
17. Notice of Impending Demolition			X	X	
18. Demolition by Contractor, Lien Issued			X	X	
19. Property Tax Losses from Demolition			X	X	X
20. Prepare and Try Demo Case					X
21. Administer Demo Court					X
22. Unpaid Property Tax Losses				X	X
23. Unpaid Utility Tax Losses				X	X
24. Unpaid Water Usage				X	X
25. Mow Lawn/Remove Trash				X	X
26. Fire Suppression					X

End Notes

1 Economists typically refer to these effects as external costs or externalities. The social cost is the combination of these external costs and the costs incurred by the borrower and lender in the private transaction of securing a mortgage loan.

2 A. Cutts, R. Van Order, and P. Zorn, *On the Economics of Subprime Lending*, Freddie Mac Working Paper 04-01, 2004. http://www.freddiemac.com/news/pdf/subprime_012704.pdf.

3 See D. Immergluck and G. Smith, "The Impact of Single-Family Mortgage Foreclosures on Neighborhood Crime," (manuscript version dated January 31, 2005) for a discussion of the relationship between mortgage foreclosures and criminal activity.

4 See M. Duda and W. Apgar, *Mortgage Foreclosure Trends in Los Angeles: Patterns and Policy Issues.* Report prepared for Los Angeles Neighborhood Housing Services, July 2004.

5 The cost of these activities is significant, as evidenced by a study in Buffalo that puts the municipal cost of trash removal alone at $5,000 per lot. For further discussion of the Buffalo study see B. Anderson, "New Jersey Fights Blight," *Affordable Housing Finance*, June 2004: 78-79.

6 CCRC was founded in 2002 to provide point-of-sale counseling for borrowers at risk and, along with its partners, has counseled more than 40,000 homeowners since that time. For additional information and links to participating counseling agencies see http://www.hpfonline.org/processPrograms/ccrc.html.

7 For a discussion of how recent reforms in Michigan are enabling the City of Flint to address issues relating its growing inventory of vacant and abandoned homes, see D. Kildee, "Reusing Forgotten Urban Land: The Genesee County Urban Land Redevelopment Initiative," *Housing Facts and Findings,* Volume 6, Number 2, June 2004: 1-3.

8 For a discussion of these issues, see W. Apgar and M. Duda, *Preserving Homeownership: Community Development Implications of the New Mortgage Market,* a report prepared for Neighborhood Housing Services of Chicago, March 2004. http://www.nw.org/network/pubs/studies/documents/preservingHomeownershipRpt2004_000.pdf.

9 See point 12 of CFAL's "Twelve Key Proposals for Reasonable Compromise" in *National Standards for Mortgage Lending Gain Momentum; Industry Outline 'Reasonable Compromise' Proposals*, press release dated November 17, 2003. http://www.cfal.ws/Directory/CFAL-Materials/CFAL%20Press%20Release%2011-18-03.pdf.

10 A. Shlay and G. Whitman, *Research for Democracy: Linking Community Organizing and Research to Leverage Blight Policy*, University of Toledo COMM-ORG working paper, 2004. http://commorg.utoledo.edu/papers2004/shlay/shlay.htm.

11 For a summary of the literature on the housing spillover effects, see A. Schwartz, I. Ellen, I. Voicu, and M. Schill, *Estimating the External Effects of Subsidized Housing Investments on Property Values*, paper prepared for the Federal Reserve System Conference on Sustainable Community Development, 2003.

The External Costs of Foreclosure: The Impact of Single-Family Mortgage Foreclosures on Property Values

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Abstract

To measure the impact of foreclosures on nearby property values, we use a database that combines data on 1997 and 1998 foreclosures with data on neighborhood characteristics and more than 9,600 single-family property transactions in Chicago in 1999. After controlling for some 40 characteristics of properties and their respective neighborhoods, we find that foreclosures of conventional single-family (one- to four-unit) loans have a significant impact on nearby property values. Our most conservative estimates indicate that each conventional foreclosure within an eighth of a mile of a single-family home results in a decline of 0.9 percent in value.

Cumulatively, this means that, for the entire city of Chicago, the 3,750 foreclosures that occurred in 1997 and 1998 are estimated to have reduced nearby property values by more than $598 million, for an average of $159,000 per foreclosure. This does not include effects on the value of condominiums, multifamily rental properties, and commercial buildings.

Keywords: Foreclosure; Homeownership; Mortgages

Introduction

Since at least the late 1960s, foreclosures of single-family homes (one- to four-unit) have been viewed as a serious threat to neighborhood stability and community well-being. Foreclosures, particularly in lower-income neighborhoods, can lead to vacant, boarded-up, or abandoned properties. These properties, in turn, contribute to physical disorder in a community, create a haven for criminal activity, discourage the formation of social capital, and lead to further disinvestment. If foreclosures lead to such negative effects, then we would expect them to also lead to lower property values in the immediate vicinity, especially for residential property.

In this article, we measure the impact of foreclosures on nearby property values by using a unique database that combines data on 1997 and 1998 foreclosures with data on neighborhood characteristics and more than 9,600 single-family property transactions in Chicago in 1999. Even after controlling for over 40 characteristics of properties and their respective neighborhoods, we find that foreclosures of conventional single-family loans have a significant impact on nearby property values. Our most conservative estimates indicate that each conventional foreclosure within an eighth of a mile of a single-family home results in a 0.9 percent decline in the value of that home. Cumulatively, this means that for the entire city of Chicago, the 3,750 foreclosures that occurred in 1997 and 1998 are estimated to have reduced nearby property values by more than $598 million, or an average of $159,000 per foreclosure. This does not include effects on the value of condominiums, larger multifamily rental properties, and commercial buildings.

Less conservative estimates suggest that each conventional foreclosure within an eighth of a mile of a property results in a 1.136 percent decline in that property's value and that each foreclosure between an eighth and a quarter of a mile away results in a 0.325 percent decline in value. This less conservative finding corresponds to a citywide loss in property values (again, not considering multifamily or commercial values) of just over $1.39 billion—or an average of more than $371,000 per foreclosure.

The private and social costs of foreclosures

Foreclosures can mean significant costs and hardships for those most directly affected in that they can involve not only the loss of accumulated home equity and the cost of acquiring the home, but also access to stable, decent housing. Moreover, foreclosures can damage credit ratings, hurting owners' prospects in credit, labor and insurance, and rental housing markets. There are potential psychological and emotional costs as well. For the holders of the loan, foreclosures are estimated to cost an average of $58,792 and take 18 months to resolve (Cutts and Green 2004).

But economic and social costs can have implications for surrounding neighborhoods and for larger communities as well as the parties directly involved. (For example, cities, counties, and school districts may lose tax revenue from abandoned homes.) The neighborhood and municipal costs of concentrated foreclosures are beginning to be recognized and quantified. These costs increase significantly for properties that are not quickly returned to the market via regular mechanisms.

In examining Federal Housing Administration (FHA) foreclosures, Moreno (1995) estimated average city costs of $27,000 and neighborhood costs of $10,000 for a foreclosure. Apgar and Duda (2005) found that the direct costs to Chicago city government involve more than a dozen agencies and two dozen specific municipal activities, generating government costs that exceed $30,000 per property in some cases.

One potential impact of increased foreclosures in a community is crime. Vacant and abandoned buildings are often considered a component of neighborhood physical disorder (as opposed to social disorder). Physical disorder involves "signs of negligence and unchecked decay" in a neighborhood (Skogan 1990, 4). Several observers and researchers have argued that physical and social disorder causes crime (Kelling and Coles 1996; Wilson and Kelling 1982) and that disorder undermines the ways in which communities maintain social control. Fewer residents are concerned about or take responsibility for disorder in public spaces outside their own households. Criminals flock to such communities because they do not fear being caught. Thus, social and physical disorder leads to more serious crime.

Skogan (1990) argues that abandoned buildings can harm a neighborhood in various ways. First, they can harbor decay. They may be havens for trash, rats, or other stray animals; squatters; or even criminals. Abandoned houses may also serve as places where drugs are sold and used or can be taken over by criminals who may attack neighborhood residents. Finally, abandoned or vacant homes may be targets for vandalism, the theft of wiring or other building components, or arson. Moreover, theft of property from such ostensibly unoccupied buildings may be less likely to be reported. Indirectly, the presence of boarded-up and abandoned buildings may lead neighborhood residents to exhibit a lack of collective concern over neighborhood crime.

In examining the relationship between neighborhood foreclosures and crime, Immergluck and Smith (2006) find that higher levels of foreclosures do contribute to higher levels of violent crime, although the results for property crime are not statistically significant. An increase of one standard deviation in the foreclosure rate (about 2.8 foreclosures for every 100 owner-occupied properties in one year) corresponds to an increase in neighborhood violent crime of approximately 6.7 percent.

Despite the persistence of the problem of concentrated foreclosures and their perceived ill effects, little systematic research has directly measured their impact on nearby property values. Some recent literature has addressed the impact of deteriorated or vacant residential buildings on property values or, conversely, the impact of rehabilitation on property values. Shlay and Whitman (2004) examined the impact of vacant housing units on nearby home values in

Philadelphia and found that properties located within 150 feet of an abandoned unit sold for over $7,000 less than other properties. Ding, Simons, and Baku (2000) found that housing rehabilitation and, especially, new construction have a positive effect on nearby property values and that this effect is larger in lower-income neighborhoods and in predominantly white neighborhoods.

In assessing the societal, as well as the individual, risks and costs of mortgage lending policies and programs, regulators and policy makers need to have better information on the spillover costs of foreclosures on neighborhoods and communities. A significant portion of the neighborhood costs of foreclosures should be capitalized into local property values. In this article, we seek to estimate such capitalized impacts.

Short- and long-term increases in foreclosures

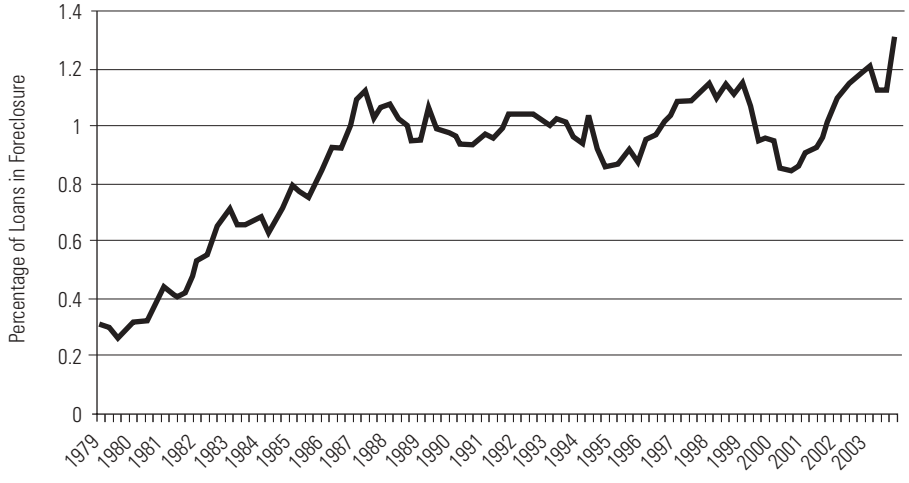
In the past decade, many cities have experienced substantial growth in foreclosures, with particularly large increases occurring during recent economic downturns. These increases have been particularly steep in low- and moderate-income and minority neighborhoods.

Nationally, foreclosure rates have ebbed and flowed, but over the long term, the trend has been decidedly upward. Figure 1 tracks foreclosure rates on all mortgage loans since 1979. In the early 1980s, foreclosure rates on conventional loans were on the order of 0.3 to 0.4 percent. They rose significantly over that decade to exceed 1 percent. Even as the economy grew in the late 1990s, foreclosure rates increased, exceeding 1.1 percent by late 1997. In the late 1990s and early 2000s, foreclosure levels reached historic highs (1.3 percent in late 2003) (Federal Deposit Insurance Corporation [FDIC] 2004).

At the state level, 23 states saw foreclosures increase more than 24 percent from the end of 2001 to the end of 2003, and 8 saw increases of more than 50 percent over the same period (FDIC 2004). States like Indiana, Ohio, Kentucky, South Carolina, Pennsylvania, and Mississippi all had foreclosure rates above 2 percent in late 2003. Increases have been particularly large in regions with weak economies. In Indiana, rates climbed steadily from less than 0.5 percent in 1995 to over 2 percent by 2003. In Pennsylvania, rates increased from less than 1 percent in 2000 to more than 1.5 percent by 2003 (National Association of Realtors, Research Division 2004).

However, economic conditions do not provide a sufficient explanation for why some regions and cities have experienced particularly severe increases. Using multiple regression to identify factors that explain state-level foreclosure rates for prime and subprime loans, Goldstein et al. (2005) found that income, average credit score, unemployment rate, owner-occupancy rate, and a number

Figure 1. Percentage of Outstanding Mortgages in Foreclosure at End of Quarter, 1979 to 2003

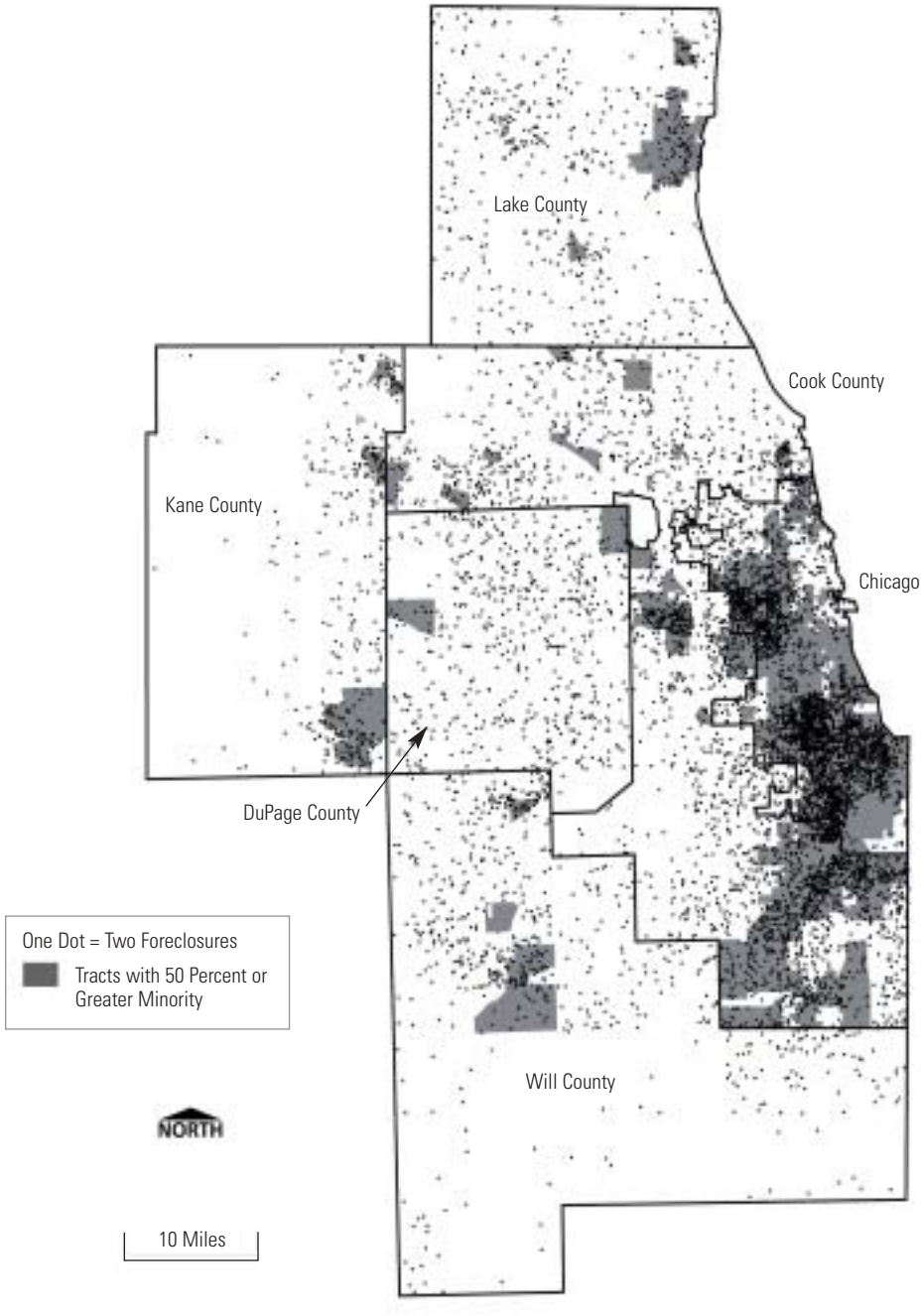


Source: National Association of Realtors, Research Division 2004.

of other demographic factors all have predictable impacts on the rate. But even after accounting for many independent variables, there was still substantial unexplained variance among state foreclosure rates, although the model explained a greater proportion of the variance among prime rates than among subprime rates (0.595 versus 0.453). States with large, positive standardized residuals (the standardized difference between the actual and predicted foreclosure rates) included Ohio, Indiana, Pennsylvania, Georgia, Maryland, South Dakota, and Missouri; there, the standardized residuals exceeded 1.0.

Cities, and especially lower-income and minority neighborhoods, have accounted for a disproportionate share of the increase in foreclosures. In the Chicago area, total foreclosures rose 238 percent from 1995 to 2002. In census tracts where less than 10 percent of the 2000 population consisted of minorities, there was an increase of 215 percent, while in tracts where 90 percent or more of the population consisted of minorities, there was an increase of 544 percent. Specifically, tracts with 90 percent or more minority residents in 2000 accounted for 40 percent of the 1995–2002 increase in conventional foreclosures. These same tracts represent only 9.2 percent of the owner-occupied housing units in the region. Tracts with minority populations of 50 percent or more accounted for over 61 percent of the increase in conventional foreclosures. Figure 2 illustrates the distribution of foreclosures in the Chicago metropolitan area in 2002.

Figure 2. Foreclosure Starts in the Chicago Area, 2002



Subprime lending and foreclosures

More than 30 years ago, when the FHA's loan programs began experiencing large increases in defaults, community activists recognized foreclosures as a threat to neighborhood and community stability. Despite some well-intentioned efforts to reverse the FHA redlining practices of previous decades, neglect and hostility toward the agency by various administrations and fundamental design flaws in its programs led to high levels of foreclosures in many older, working-class, and inner-city neighborhoods. FHA programs that worked fairly well when borrowers had options in the conventional lending market broke down in a system of "reverse redlining."

Unlike the FHA's earlier problems, today's foreclosures—and particularly the growth in foreclosures—are increasingly driven by conventional loans. In particular, high-risk subprime lending is resulting in substantially higher levels of foreclosures, with much of the increase concentrated in minority and lower-income communities. In the Chicago area, while foreclosures of government-guaranteed mortgages rose by 105 percent from 1995 to 2002, foreclosures of conventional mortgages increased 350 percent. As a result, while conventional loans accounted for only slightly more than half of foreclosures in 1995, they accounted for almost three out of four just seven years later.

Quercia, Stegman, and Davis (2005) found that 20.7 percent of all first-lien subprime refinancing loans originated in 1999 had entered foreclosure by December 2003 and that the rate at which subprime loans entered foreclosure in late 2003 was more than 10 times the rate for prime loans. In examining foreclosures in Philadelphia, Goldstein et al. (2005) estimated that some 40 percent of subprime loans made in 1998 or 1999 were in foreclosure between 2000 and 2003, compared with less than 3 percent of prime loans. In neighboring Montgomery County (PA), approximately 20 percent of subprime loans made in 1998 or 1999 were in foreclosure during the same period, compared with less than 0.4 percent of prime loans.

In the case of refinance lending, for example, Immergluck and Smith (2005) found that, other things being equal, 100 more subprime loans in a census tract over a five-year period led to almost eight foreclosures in a single year following this period. They also found that the effect of subprime lending on foreclosures is generally on the order of 20 to 30 times the effect of prime lending.

While the specific magnitude of foreclosure rates varies by the type of data, the way they are measured, and the timeframes and geographies involved, it is clear that in recent years, subprime loans had a propensity for foreclosure 10 to 40 times higher than prime loans did, with the lower differential frequently occurring in areas where prime foreclosure rates were already quite high.

Measuring the effect of foreclosures on nearby property values

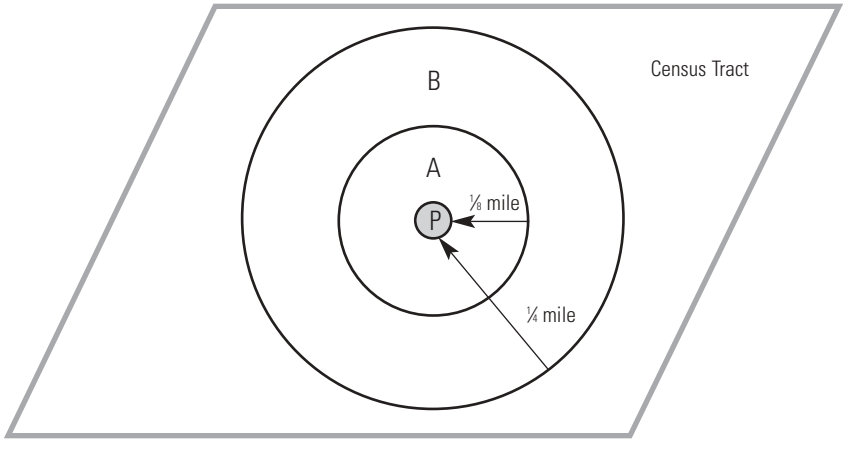
We use a hedonic regression model to estimate the impact of foreclosures on the value of nearby single-family properties and to discern the independent effect (that is, controlling for other explanatory variables) of a change in an attribute or location of a property on its price. Figure 3 provides a schematic representation of our hedonic model of housing values and nearby foreclosures. In this model, each property sale, p, is situated in 1 of the more than 800 census tracts in Chicago. Around each property, we draw two buffer areas, one with a radius of an eighth of a mile and one with a radius of a quarter of a mile. From the literature on the effects of proximate phenomena on property values, we assume that significant impacts of foreclosures on property values will occur within a quarter of a mile or less. We then measure the number of foreclosures within a buffer distance of an eighth of a mile (area A) and the number of foreclosures between a radius of an eighth of a mile and a quarter of a mile (area B).

To estimate the value of a property, p, we develop a pricing model as follows:

$$\begin{aligned} \text{Ln}(p_i) = \alpha + \boldsymbol{\beta}_1\mathbf{X}_i + \boldsymbol{\beta}_2\mathbf{Z}_i + \beta_3\text{AC}_i + \beta_4\text{BC}_i + \beta_5\text{AG}_i + \beta_6\text{BG}_i \\ + \beta_7\text{AO}_i + \beta_8\text{BO}_i + \varepsilon_i \end{aligned} \quad (1)$$

where Ln(p) is the natural log of the price of the property, $\mathbf{X}$ is a vector of property characteristics (e.g., square footage, garage, construction, etc.), and $\mathbf{Z}$ is a vector of neighborhood characteristics (population density, income, race, etc.,

Figure 3. Modeling the Impact of Forecosures on Property Values



as well as locational measures such as longitude and latitude), as measured by 2000 census tract data. The remaining variables measure the phenomena of interest—foreclosures. Specifically we disaggregate the following types:

1. AC is the number of foreclosures of conventional single-family loans within an eighth of a mile from the property.
2. BC is the number of foreclosures of conventional single family loans between an eighth and a quarter of a mile from the property.
3. AG is the number of foreclosures of government-insured single-family loans within an eighth of a mile from the property.
4. BG is the number of foreclosures of government-insured single-family loans between an eighth and a quarter of a mile from the property.
5. AO is the number of other foreclosures (multifamily and commercial property) within an eighth of a mile from the property.
6. BO is the number of other foreclosures (multifamily and commercial property) between an eighth and a quarter of a mile from the property.

To estimate equation (1), we were able to obtain property characteristics and sales prices for over 9,600 detached, single-family properties that were sold in Chicago in 1999. These data do not include all single-family transactions in the city. The data were originally assembled by the Illinois Department of Revenue, which obtains them from state real estate transfer tax records. The department cleaned the data, eliminated transactions that have extreme ratios of sales price to assessed value, and then provided a 50 percent random sample of the remaining residential property sales.

Data on property characteristics are from the Cook County Assessor's office and are for the 1999 assessment year. Because we expect a lag between foreclosures and their effect on property values, we gathered data on foreclosures in the city in 1997 and 1998.

Before we estimate equation (1), it is helpful to examine the average values of the independent variables of interest for different types of neighborhoods. Table 1 breaks these variables out by the income level of the census tract. It shows that the average number of foreclosures surrounding a property within a radius of an eighth of a mile drops from 2.07 conventional and 1.08 government foreclosures in low-income tracts to 0.38 conventional foreclosures and 0.09 government foreclosures surrounding properties in upper-income tracts. Between an eighth and a quarter of a mile, the average number of conventional foreclosures drops from 5.49 for low-income tracts to 1.03 for upper-income tracts, and the average number of government-guaranteed foreclosures drops

Table 1. Average Number of Nearby Foreclosures (1997 and 1998) by Neighborhood Income, Chicago

Number of Foreclosures by Type and Radius	Income of the Census Tract, 1999			
	Low	Moderate	Middle	Upper
Conventional, within 1/8 mile	2.07	1.74	0.78	0.38
Government, within 1/8 mile	1.08	0.99	0.37	0.09
Conventional, 1/8 to 1/4 mile	5.49	4.50	2.23	1.03
Government, 1/8 to 1/4 mile	2.79	2.69	1.04	0.23
Other, within 1/8 mile	0.13	0.14	0.06	0.03
Other, 1/8 to 1/4 mile	0.60	0.46	0.18	0.15
Average sales price	$99,117	$113,286	$147,987	$294,408

Note: Low-income tracts are those where median family income is below 50 percent of the metropolitan median income. Moderate-income tracts are those where median family income is between 50 and 79 percent of the metropolitan median. Middle-income tracts are those where median family income is between 80 and 119 percent of the metropolitan median. Upper-income tracts are those where median family income is 120 percent or more of the metropolitan median.

from 2.79 to 0.23, respectively. Multifamily and commercial foreclosures (grouped here as "other") exhibit similar patterns.

On average, the number of conventional foreclosures within a block (an eighth of a mile) of properties in low-income tracts is more than five times the number of conventional foreclosures within a block of properties in upper-income tracts. In the case of government-guaranteed loans, the difference is more than 11-fold. Similar differences occur when foreclosures between one and two blocks away are considered.

Results of the multivariate analysis

The estimation of equation (1) is presented in table 2. Results are given for two versions of the equation. The first model includes all available property characteristics, neighborhood characteristics expected to influence property values, and the foreclosure variables. The second includes an additional independent variable: the median home value for the census tract in which the property is located. This variable, which is added to control for the possible effect of nearby property values on the central property value, p, also reduces the vulnerability of the results to concerns that there may be important variables that change across neighborhood space, that these are unmeasured or unobserved, and that they influence p.

The first model (without tract median property value) gives results for most property and neighborhood characteristics that are generally consistent with previous research on property values, as well as with theory. Most, but

Table 2. Regression Results for Estimation of Single-Family Property Values

	Without Tract Median Property Value		With Tract Median Property Value	
	Coefficient	Standard Error	Coefficient	Standard Error
(Constant)	8.20622	0.12882***	7.20178	0.12346***
LN(LAND AREA)	0.17683	0.01157***	0.21856	0.01088***
LN(BLDNG AREA)	0.46189	0.01668***	0.41050	0.01566***
AGE	–0.00205	0.00017***	–0.00210	0.00016***
# of BEDROOMS	0.00711	0.00562	0.01609	0.00526***
TWO STORY+ ?	–0.03792	0.00879***	–0.04633	0.00822***
MASONRY?	–0.01300	0.00863	0.00445	0.00808
FRAME/MASONRY?	–0.01795	0.01285	–0.00589	0.01202
SLAB?	0.02307	0.01017**	0.01771	0.00951*
BASMNT FINSHED?	0.01476	0.00809*	0.01199	0.00756
FULLATTIC?	–0.00301	0.00908	–0.00826	0.00849
PARTIAL ATTIC?	0.02498	0.01041**	0.00939	0.00974
ATTICFINISHED?	0.01077	0.01090	0.00385	0.01020
CENTRAL AIR?	0.02882	0.00897***	0.01686	0.00839**
1-CAR GARAGE?	0.03690	0.00859***	0.02222	0.00804***
2-CAR GARAGE?	0.07122	0.00843***	0.05355	0.00789***
FIREPLACE?	0.12510	0.01184***	0.08725	0.01112***
RAIL W/IN 1/8 ML?	–0.01845	0.00785***	–0.02662	0.00735***
MILES TO EL TRAIN	–0.04954	0.00567***	–0.04948	0.00530***
MILES TO HIWAY	0.00621	0.00367*	0.01130	0.00344***
APRL_JUN?	0.04891	0.00927***	0.04941	0.00867***
JULY_SEP?	0.07850	0.00921***	0.07393	0.00861***
OCT_DEC?	0.07465	0.01019***	0.07359	0.00953***
LATITUDE	2.22553	0.15494***	1.47511	0.14629***
LONGITUDE	–2.59858	0.23966***	–2.02806	0.22463***
LAT*LAT	–3.31249	0.77186***	0.88124	0.73055
LONG*LONG	5.52803	1.47679***	9.88299	1.38592***
LAT*LONG	–13.08793	1.43754***	–11.86481	1.34465***
POPDENSITY	3.649E-06	6.288E-07***	3.633E-06	5.880E-07***
LOWINCOME	–0.53197	0.02574***	–0.26993	0.02509***
MODINCONE	–0.37888	0.01624***	–0.13476	0.01654***
MIDDLEINCOME	–0.20987	0.01065***	–0.03843	0.01097***
PPUBASSISTNCE	–1.42312	0.13112***	–1.01365	0.12310***
PPOWNOCC	–0.34445	0.03045***	–0.21342	0.02869***
VCRIME/CAPITA	–3.71817	0.66097***	–3.15170	0.61826***
PPBLACK	–0.41891	0.02535***	–0.25280	0.02412***
PPHISPANIC	–0.43438	0.02405***	–0.21386	0.02326***
CNVL_1/8	–0.01136	0.00291***	–0.00907	0.00272***
CNVL_1/8-1/4	–0.00325	0.00158**	–0.00189	0.00148

Table 2. Regression Results for Estimation of Single-Family Property Values *Continued*

	Without Tract Median Property Value		With Tract Median Property Value	
	Coefficient	Standard Error	Coefficient	Standard Error
GOV_1/8	–0.00299	0.00422	–0.00331	0.00394
GOV_1/8-1/4	0.00063	0.00233	–0.00131	0.00217
OTHER_1/8	–0.05745	0.01042***	–0.04672	0.00975***
OTHER_1/8-1/4	–0.01618	0.00592***	–0.01015	0.00554*
Median home value			2.963E-06	7.977E-08***
R^2	0.727		0.761	
N = 9,642				

Note: The dependent variable is the natural log of the sales price of a single-family property.
*$p < 0.10$. **$p < 0.05$. ***$p < 0.01$.

not all, property characteristics are measured by dummy variables, with a 1 indicating the presence of the feature (e.g., masonry construction) and a zero indicating its absence. (Dummy variables are followed by a question mark.) An increase in the square footage of the home itself, or the land, results in increased value. Other things being equal, single-story buildings are more valuable than multistory ones. Amenities such as a finished basement, central air conditioning, a fireplace, and a one- or two-car garage add value. On the one hand, being located within a block or so of a railroad track reduces property values, while on the other, value declines as the distance from an elevated train or subway stop increases. The regression also controls for seasonality effects on prices, which prove to be significant.

Neighborhood characteristics prove to be quite significant predictors of property values. Lower incomes among residents, higher percentages of residents on public assistance, and higher levels of violent crime are among the variables that have negative effects on property values.

Four variables are included to control for the possibility that the impacts of the neighborhood and property characteristics on value vary across space. It may be that the attributes of a property contribute differently to value in some parts of the city as opposed to others. This phenomenon, sometimes called spatial submarket segmentation, can be accounted for by an econometric technique that controls for spatial location throughout the city.[1]

[1] This technique is referred to as spatial contextual expansion with quadratic trend. See Galster et al. (2004).

This method entails including the latitude, the longitude, the latitude squared, the longitude squared, and the product of the latitude and longitude as independent variables. They are generally highly significant, indicating the presence of spatial submarkets within the city.

The variables that indicate the effect of foreclosures on property values are the last six in the first regression (CNVL_1/8 through OTHER_1/8-1/4). The results of the first model indicate that nearby foreclosures generally have significant, negative effects on property values. However, the results for foreclosures of government-guaranteed loans are not significant, and the sign is somewhat ambiguous. Moreover, while the magnitude of the coefficients for the multifamily and commercial foreclosures combined is somewhat larger than for single-family foreclosures, table 1 shows that the incidence of such foreclosures is much lower, so that as a group, they are less important than single-family foreclosures.

When other things are held constant, for each additional conventional foreclosure within an eighth of a mile of a house, property value is expected to decrease by 1.136 percent. Given an average sales price of $164,599 for homes in the city, this amounts to a decrease in value of approximately $1,870 per property because of a single foreclosure within an eighth of a mile. For foreclosures in the band from an eighth to a quarter of a mile from a property, the effect is 0.325 percent per foreclosure. The marginal effect of a multifamily or commercial foreclosure is somewhat larger than the effect of a conventional single-family foreclosure simply because these buildings tend to be much larger and therefore have significantly more capacity for physical disorder.

In the second, expanded regression, most variables that were significant in the first regression remain so and tend to carry the same sign. In this more conservative estimate, the coefficient on conventional foreclosures within an eighth of a mile is somewhat smaller, but the impact of an additional foreclosure on property value remains close to a 1 percent reduction (0.9 percent). In this specification, the effect of foreclosures in the second band (an eighth to a quarter of a mile) remains negative, but becomes statistically insignificant. Government foreclosures are still statistically insignificant.

It is important to point out that the methods used in this analysis have certain limitations. First, while we have included a wide variety of structural and neighborhood characteristics, especially those that are found to be important in the literature on property values, the data on structural characteristics are limited by what the county assessor collects and reports. Second, while we did run a model using a regular, nonlogged version of sales prices and found similar results, there are other possible sensitivities to functional form that might be worth additional exploration. In particular, problems of multicollin-

earity prohibited us from testing for interactions between neighborhood attributes such as race and income. A larger, broader data set might reduce such problems.

Finally, there remains a possibility that the negative relationship between foreclosures and property values is as much the effect of property values on foreclosures as the other way around. If the lower value of the observed property (the centroid in figure 3) is highly correlated with those of nearby properties, then we may be measuring the impact of lower value on the likelihood of foreclosure. Other things being equal, a lower property value and, more important, lower owner equity are likely to positively affect the probability of foreclosure because the owner has less equity at risk.

We attempt to minimize the problem of reverse causation in two ways. First, the spatial structure of our model, as illustrated by figure 3, measures the effects of surrounding foreclosures on the value of a single property at the central focus of the foreclosures. Second—and related to the first point—is the addition of neighborhood median property value as an additional independent variable. Because nearby property values may affect foreclosures in areas A and B in figure 3, we control for such values, although perhaps imperfectly, via the median tract value.

The use of the median home value for the tract is by no means a perfect method for dealing with the potential endogeneity of the nearby foreclosures. Our data on nearby property values are measured at the census-tract level, which is larger than the eighth of a mile radius around each property. However, it was the best method available. We could not identify any appropriate instruments with which to address endogeneity via an instrumental variables approach. In addition, change-over-time analysis was precluded by the limited sales and property data available. Future research should aim to address these limitations.

Effects of foreclosures on property values in low- and moderate-income tracts

Given that low- and moderate-income neighborhoods experience a substantially higher level of foreclosures and given that such foreclosures may be more likely in vacant, abandoned, or blighted property than in property in more affluent areas, it is useful to determine whether the effects of foreclosures in such neighborhoods differ from the effects for all transactions. To do this, we estimate equation (1), both the basic and expanded versions, for only the 2,265 property transactions in low- and moderate-income tracts in the city.

As seen in table 3, the results of the regression without median home value indicate that for each additional foreclosure within an eighth of a mile of a

Table 3. Regression Results for Estimation of Single-Family Property Values: Low and Moderate-Income Tracts Only

	Without Tract Median Property Value		With Tract Median Property Value	
	Coefficient	Standard Error	Coefficient	Standard Error
(Constant)	7.37096	0.34354***	6.99667	0.32539***
LN(LAND AREA)	0.30429	0.03274***	0.31818	0.03095***
LN(BLDNG AREA)	0.38210	0.04555***	0.26966	0.04358***
AGE	–0.00259	0.00042***	–0.00249	0.00040***
# of BEDROOMS	0.00451	0.01480	0.01623	0.01400
TWO STORY+ ?	–0.02011	0.02771	–0.02561	0.02619
MASONRY?	0.05343	0.02370**	0.05471	0.02239**
FRAME/MASONRY?	0.06078	0.03804	0.05468	0.03594
SLAB?	0.06074	0.02743**	0.04441	0.02594*
BASMNT FINSHED?	0.00628	0.02452	0.00517	0.02317
FULLATTIC?	–0.01264	0.02568	–0.02741	0.02428
PARTIAL ATTIC?	0.07808	0.03145**	0.03821	0.02982
ATTICFINISHED?	0.03305	0.03073	0.01771	0.02905
CENTRAL AIR?	0.05745	0.03678	0.05179	0.03475
1-CAR GARAGE?	0.04872	0.02279***	0.03378	0.02155
2-CAR GARAGE?	0.05765	0.02303***	0.04827	0.02177**
FIREPLACE?	0.20408	0.04046***	0.14086	0.03843***
RAIL W/IN 1/8 ML?	–0.07384	0.02051***	–0.05962	0.01939***
MILES TO EL TRAIN	–0.04295	0.01880**	–0.04099	0.01776**
MILES TO HIWAY	–0.03628	0.01670**	0.01183	0.01605
APRL_JUN?	0.06782	0.02606***	0.05872	0.02462**
JULY_SEP?	0.09813	0.02599***	0.08662	0.02456***
OCT_DEC?	0.08820	0.02754***	0.07850	0.02603***
LATITUDE	2.63795	0.58542***	1.96816	0.55464***
LONGITUDE	–0.22046	0.89249	–1.06925	0.84485
LAT*LAT	4.17514	2.53047*	6.58625	2.39543***
LONG*LONG	–2.65742	6.13045	7.36781	5.82458
LAT*LONG	–4.68975	7.56949	–10.11835	7.15967
POPDENSITY	–5.522E-07	1.310E-06	8.400E-07	1.241E-06
LOWINCOME	–0.06440	0.03031**	–0.08024	0.02866***
PPUBASSISTNCE	–0.35926	0.24600	0.19156	0.23485
PPOWNOCC	–0.07457	0.09109	0.03952	0.08634
VCRIME/CAPITA	–4.92566	1.24905***	–3.72182	1.18244***
PPBLACK	–0.77435	0.08212***	–0.49459	0.07945***
PPHISPANIC	–0.66048	0.08150***	–0.36556	0.07908***
CNVL_1/8	–0.01792	0.00594***	–0.01442	0.00561***
CNVL_1/8-1/4	–0.00033	0.00321	0.00045	0.00304
GOV_1/8	0.00709	0.00810	0.00446	0.00766

Table 3. Regression Results for Estimation of Single-Family Property Values: Low and Moderate-Income Tracts Only *Continued*

	Without Tract Median Property Value		With Tract Median Property Value	
	Coefficient	Standard Error	Coefficient	Standard Error
GOV_1/8-1/4	0.00500	0.00466	0.00175	0.00440
OTHER_1/8	–0.03761	0.02242*	–0.02923	0.02119
OTHER_1/8-1/4	–0.01350	0.01213	–0.00981	0.01146
Median home value			4.098E-06	2.502E-07***
R^2	0.538		0.588	
N = 2,265				

Note: The dependent variable is the natural log of the sales price of a single-family property.
*$p < 0.10$. **$p < 0.05$. ***$p < 0.01$.

house, property value drops by almost 1.8 percent. The average selling price in low- and moderate-income tracts is $111,002, so this effect amounts to approximately $1,989 for such a property. The more conservative estimate of the effect of close-in foreclosures, obtained in the expanded regression with median tract value included, is 1.44 percent or about $1,600 for the average property.

Summing up the effects of foreclosures and property values

The marginal impact on property values from one additional foreclosure on one nearby property can be used to estimate the cumulative effects of increased foreclosures on single-family property values throughout the city. We begin by estimating the impact of foreclosures at the tract level. For each tract, the impact of conventional single-family (one- to four-unit) foreclosures on the value of single-family (one- to four-unit) buildings is calculated. (These estimates do not include any effects on the value of condominiums, multifamily rental properties, or commercial properties.) We use the marginal effects (coefficient values) from table 2. For each tract, the cumulative effect of 1997 and 1998 foreclosures on property values within a quarter of a mile is then estimated as follows:

> Cumulative tract-level decline in the values of single-family properties = [Number of foreclosures in the tract]*[median home value in the tract]*[(average number of single-family properties in the ring with the ⅛-mile radius)*(1.136% value effect) + (average number of single-family properties in the rings with the ⅛-mile and ¼-mile radii)*(0.325% value effect)] (2)

The rings are assumed to have the same single-family housing densities as the tract as a whole.[2] Because foreclosures are more likely to occur in those parts of tracts where owner-occupied housing is denser, this assumption yields a conservative estimate of the number of homes that are close to foreclosures.

To provide an even more conservative estimate of the impact of foreclosures on property values, we also performed another calculation that assumes first that there is no effect on properties more than an eighth of a mile from a foreclosure and second that the effect on properties within an eighth of a mile is the smaller 0.907 percent effect shown in the expanded (right-hand side) results of table 2.

Equation (2) and its more conservative counterpart are calculated for every census tract in Chicago. The aggregate impact of foreclosures on one- to four-unit single-family properties in Chicago alone is then estimated by summing these values for all tracts. Under the less conservative assumption, the cumulative impact is estimated to exceed $1.39 billion. The more conservative assumption yields an impact of more than $598 million. Given that there were 3,750 conventional single-family foreclosures in the city in 1997 and 1998, this corresponds to average losses of between $159,000 and $371,000 per foreclosure.

Again, these estimates are only for the effects of 1997 and 1998 foreclosures. Levels have risen considerably since then. Also, these figures do not reflect the effects of foreclosures on all properties, particularly on condominiums, multifamily rental properties, and commercial buildings.

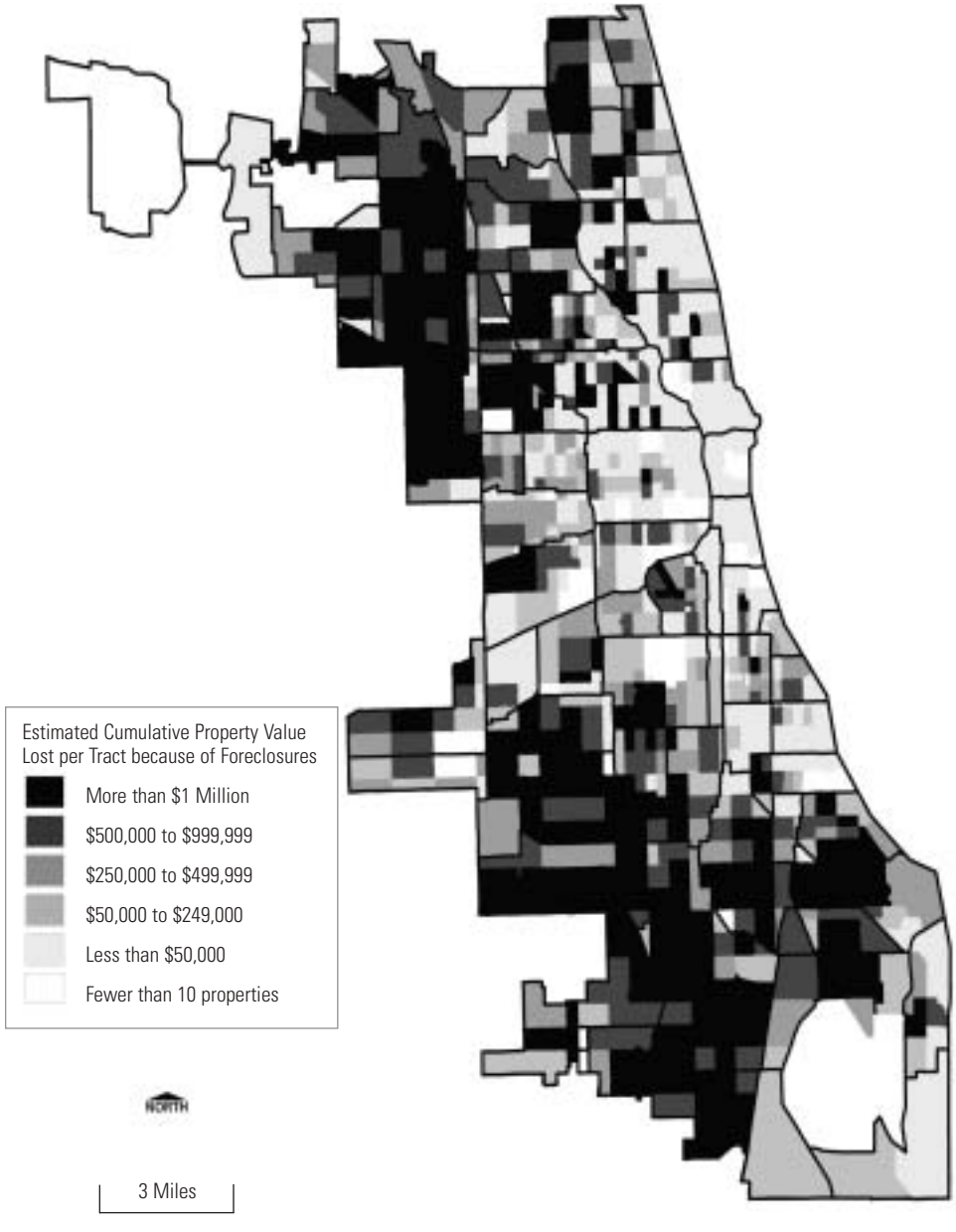
Figure 4 uses the more conservative figure to plot the estimated loss in the value of single-family properties by census tract because of 1997 and 1998 conventional single-family foreclosures. It shows that tracts with the highest levels of lost value tend to be in the south, southwest, and northwest parts of the city. Given the fact that these communities tend to be highly residential and contain mostly detached, single-family homes, this is not surprising. The building stock of neighborhoods closer to the lake and the central city tends to be more dominated by large, multifamily residential buildings and large commercial and industrial structures.

Policy implications and discussion

Foreclosures, particularly in lower-income neighborhoods, can lead to vacant, boarded-up, or abandoned properties that in turn contribute to physi-

[2] The inner ring has an area of 0.04908 square miles, while the outer ring has an area of 0.14727 square miles. The number of properties in these rings is estimated by multiplying the density of the properties in the tract by the corresponding area.

Figure 4. Cumulative Effect of 1997–1998 Foreclosures on Single-Family Property Values, City of Chicago



cal disorder in a community—disorder that can create a haven for criminal activity, discourage the formation of social capital, and lead to more disinvestment. Since foreclosures lead to such negative effects, we would expect them to also lead to lower property values in their immediate vicinity, especially for residential property.

Our findings demonstrate that conventional foreclosures have a statistically and economically significant effect on property values. We provide a relatively conservative measure of such effects by estimating only the effects on single-family properties and excluding condominiums, multifamily rental properties, and commercial buildings. The magnitude of the impact for Chicago is between $598 million and $1.39 billion.

These findings have implications for the regulation of subprime mortgage lending, the regulation of the growing segment of exotic mortgage products in the prime market, and policies that aim to expand homeownership to include a broader segment of lower-income households. There are also implications for community reinvestment policy and foreclosure law itself.

First, our findings have clear implications for the regulation of subprime mortgage lending. A variety of recent research demonstrates that foreclosures have been increasingly driven by subprime lending (Goldstein et al. 2005; Immergluck and Smith 2005; Quercia, Stegman, and Davis 2005). Moreover, such foreclosures are exacerbated by the highly concentrated nature of subprime lending in neighborhoods with large minority populations.

If policy makers are to make wise decisions about whether and how much to regulate subprime lending, they must consider not only any benefits or costs that might accrue to the lenders or borrowers who are directly involved, but also the significant costs of foreclosures borne by communities. Most of the residents of the affected communities—many of them lower-income and working-class neighborhoods—have no direct role in the foreclosures occurring around them. There are, of course, strong arguments for regulating market activity when poorly informed or unsophisticated borrowers are harmed by particular lending products or practices. The history of federal and state policy is full of precedents for protecting vulnerable citizens in economic transactions, especially ones as important as mortgage loans. However, when a certain outcome is shown to hurt parties external to the transaction, the arguments for policy intervention and for more direct policy intervention (e.g., limiting or outlawing certain practices versus simply requiring disclosure) become even more robust. Justification no longer depends on the limited financial literacy or impaired understanding of the borrowers. The substantial neighborhood harm caused by high-risk lending should be considered an important cost, regardless of the borrower's ability to make an informed financial decision.

Second, the negative impact of foreclosures on neighborhoods and cities also has implications for the regulation of the exotic, higher-risk prime mortgage products that have grown increasingly popular over the past few years. Interest-only loans, negative amortization products, and combinations of these and other higher-risk loan terms can increase the risk of default even for borrowers with strong credit histories. Moreover, the experience of the subprime market has shown that some of this risk may not be well understood until such loans are exposed to increasing interest rates, a weaker economy, or other adverse conditions.

Third, as Schwartz (2006) and others have argued, U.S. federal housing policy over the past 10 or 15 years has increasingly focused on expanding homeownership opportunities for lower-income and minority households. While this is a laudable goal from several perspectives, one risk of pushing homeownership too hard is that such policies may encourage higher-risk lending and borrowing to the point where costs outweigh benefits. Moreover, the distribution of the costs of higher-risk lending may be disproportionately borne by certain communities or neighborhoods. Of course, the challenge is to develop regulatory regimes that reduce such costs while preserving as many of the benefits of increased homeownership opportunities as possible. In the end, however, some limits on access to homeownership may have to be tolerated if concentrated foreclosures and their impacts are to be held to tolerable levels. The neighborhood costs of foreclosures we have noted suggest that policy makers would be wise to emphasize the sustainability and preservation of homeownership as much as its short-term growth.

Community reinvestment policy can be used to encourage lenders to address the problem of concentrated foreclosures. A number of activities that can be rewarded under the Community Reinvestment Act (CRA) could prove helpful in reducing foreclosures, especially those concentrated in lower-income areas. First, banks can be rewarded in their CRA examinations for offering or participating in the various types of anti–predatory lending programs being offered around the country. Such programs are usually organized by neighborhood-based community development organizations (Higgins 2005). Among those receiving the most attention is the NORMAL program of Chicago's Neighborhood Housing Services. In this program, borrowers at severe risk of foreclosure are provided with more affordable loans to refinance a predatory loan. To compensate for any predatory terms or fees, the payoff to the original lender is less than the outstanding balance. Banks can also receive credit under the CRA Investment or Service Test for supporting foreclosure prevention programs, including postpurchase counseling.

Second, CRA regulators can encourage more responsible lending and thus reduce local foreclosure rates by considering not only the quantity of lending that banks and their affiliates make in lower-income and minority neighborhoods, but also the nature and performance of those loans in bringing about sustainable homeownership. Of course, care should be taken not to adopt practices that might inadvertently discourage responsible lending in lower-income communities.

Reducing high and concentrated foreclosures is a policy objective that will serve the interests not only of consumers and neighborhoods, but of the mortgage banking industry as well. Such an objective is a natural target of bank regulatory policy in that it combines reinvestment and safety and soundness goals. For banks that make loans in impacted communities, concentrated foreclosures could adversely affect their lending markets and their collateral base by depressing property values.

Finally, the impact of foreclosures on property values and neighborhood vitality generally suggests that the nature of the default and foreclosure process itself should be considered. For example, the time that elapses between filing the foreclosure notice and the completed foreclosure sale varies greatly across states. In some states, such as Texas and Georgia, foreclosure periods can be as short as 25 to 35 days, while in others, they can last more than a year. In studying the costs of foreclosures to municipal governments, Apgar and Duda (2005) suggest that streamlining might reduce the negative effects of foreclosures by reducing opportunities for property deterioration and vandalism. Given the potential costs to individual homeowners, more research is needed to determine whether speedier or simpler foreclosure processes are likely to have the desired effects.

This article represents an initial attempt to measure the likely costs of foreclosures on neighborhood property values. More work is needed, including the development of larger databases that include more robust sales data over time. Moreover, additional program and policy development work is needed to identify the most promising methods to reduce foreclosures and to limit the negative impacts of mortgage defaults on neighborhoods and communities. Notwithstanding the need for additional research and program development, the existing evidence on the personal and social costs of foreclosures strongly suggests that policy makers should act aggressively in the near term to stem the continuing problem of high levels of foreclosures that plague so many communities around the country.

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Top 5 foreclosure areas in the City	2005 Mortgage Lending		Demographics				Foreclosure Petitions 1/06-5/07		BCC Active Loans	DND Investment $	State Investment $	Total Project Costs	Units of Housing Impacted	Top 5 Lenders by Foreclosure Petition	
	Total # loans	% HAL's	Income Level	White Population	Black/African American	Hispanic	#	% of City total						Name	% of foreclosures
Dorchester	1,668	43.6%	$39,856	32%	36%	11%	735	**47%**	$ 13,656,855	$ 24,732,996	$ 28,858,557	$188,033,994	1,528	Deutsche Bank	14.9%
														Wells Fargo Bank	12.3%
														US Bank	8.6%
														HSBC	4.9%
														Fremont Investment & Loan	4.4%
														% total of 86 foreclosing lenders	**45.0%**
Mattapan	479	58.0%	$38,463	4%	77%	13%	160	10%	$ 1,250,000	$ 12,640,903	$ 11,447,185	$131,793,384	957	Deutsche Bank	22.15%
														Wells Fargo Bank	12.66%
														US Bank	7.59%
														HSBC	6.33%
														Bank Of New York	4.43%
														% total of 37 foreclosing lenders	**53.16%**
Hyde Park	694	50.1%	$54,666	43%	39%	13%	139	9%	$ -	$ 2,392,856	Unavailable	$ 21,514,367	276	Deutsche Bank	20.9%
														Wells Fargo Bank	15.8%
														US Bank	7.9%
														Fremont Investment & Loan	5.0%
														HSBC	4.3%
														% total of 34 foreclosing lenders	**54.0%**
Roxbury	801	41.6%	$30,358	5%	63%	24%	133	9%	$ 9,977,126	$ 33,033,859	$ 22,004,129	$307,915,996	1,823	Deutsche Bank	12.0%
														Wells Fargo Bank	10.5%
														Bank Of New York	6.8%
														Fremont Investment & Loan	5.3%
														JP Morgan Chase	4.5%
														% total of 40 foreclosing lenders	**39.1%**
Boston	11,117	24.6%	$44,151				1,560	100%			$ 99,820,636	$649,257,740	4,584		

Sources:

Foreclosure Petitions: Warren Group Data from 1/1/06-5/29/07

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2005 Mtg Data: Borrowing Trouble VII

Income Demographics: Borrowing Trouble VII

State Investment Data: DHCD