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TABLE OF CONTENTS

EXECUTIVE SUMMARY

For decades "fair lending" issues have received attention in both public policy arenas and the popular press, but the release of 2004 Home Mortgage Disclosure Act (HMDA) data with loan pricing information has sparked a new round of discussion. Using these data, the paper seeks to better understand the rapid growth of subprime lending, the organization of U.S. capital markets, and the many distinct mortgage channels that link mortgage investors with mortgage borrowers. In particular, the paper seeks to advance the discussion by examining how the structure of the mortgage industry and the uneven application of mortgage market regulations combine to permit unfair mortgage pricing with respect to race and ethnicity.

Today's increasingly complex mortgage market includes a number of distinct mortgage delivery channels. Starting from the borrower and working toward the investor, these channels include three levels of activity: 1) the individuals (mortgage brokers, correspondent lenders and loan officers) that conduct the initial marketing and sales efforts to generate loan applications; 2) the organizations (bank or non-bank entities) that evaluate these applications, underwrite and initially fund the loans; and 3) the entities that purchase loans either to hold as investments or securitize and sell on national and international capital markets (Government Sponsored Entities (GSEs) or other mortgage conduits).

The various components of this complex mortgage delivery system are governed by an equally complex set of laws and regulations, as well as the "self- regulation" efforts of a range of mortgage industry organizations. Unfortunately, this complex regulatory structure has not adapted to the substantial changes in the mortgage industry that have occurred over the past quarter century, including the dramatic increase in subprime lending and the emergence of new organizations that specialize in subprime lending. The result is that many basic consumer protections commonly available in the prime segment of the market are absent or less diligently enforced in the subprime segment. The paper identifies these anomalies and presents a series of recommendations designed to create a more uniform and ultimately fairer regulatory structure.

KEY FINDINGS

The rise of subprime mortgage lending is linked to the rise of new mortgage banking organizations and delivery systems, including mortgage wholesale operations and their networks of mortgage brokers. 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 loans are called "rate-spread" or "higher-priced" mortgages and are roughly equivalent to what industry sources call non-prime or subprime loans. The findings based on these newly released HMDA data include:

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

- At the other end of the spectrum 905 lenders specialized in higher-priced lending, meaning that higher-priced loans accounted for more than 50 percent of their overall lending activity in 2004. Of these, 17 large independent mortgage companies collectively originated 506 thousand loans, or 39 percent of all higher-priced loans originated that year. As non-bank lenders, these independent mortgage companies are less closely monitored by the Community Reinvestment Act and other federal-level regulations that focus on banks and thrifts and their subsidiaries and affiliates.

- Channel specialization extends to secondary market outlets. For example, the GSEs (Fannie Mae and Freddie Mac) largely limit their purchase of whole loans to the prime segment of the 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-bank mortgage conduits.

- The general characteristics of the mortgage channel and the specific characteristics of the organization originating the loan are correlated with racial and ethnic difference 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 bank or thrift regulated by the Community Reinvestment Act (CRA). 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.

The lack of uniform regulations and the correlation of mortgage channels with race and ethnicity results in a situation where many of the nation's most vulnerable borrowers participating in the rapidly growing higher-priced market have less than equal access to the benefits of federally mandated consumer protections that are more commonly available in the lower-priced prime market. Recommendations designed to create the more uniform application of mortgage market regulations include:

- Recognizing the existing regulatory regime was insufficient to protect consumers from potentially abusive practices and maintain safety and soundness of banks and thrifts, federal regulators released a new "Interagency Guidance on Nontraditional Mortgage Product Risks" last fall. This Guidance mandates that banks and thrifts adopt a series of best practices that would help consumers obtain the information needed to better understand loan terms and associated risks prior to making a product choice. 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.

- CRA oversight should also 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. Not explicitly designed to enforce all elements of fair lending legislation, CRA was designed to halt neighborhood redlining or the denial of credit to borrowers living in lower-income and/or minority neighborhoods. Even so, since CRA loan-level reviews are typically accompanied by fair lending reviews, CRA oversight has emerged as an important component of fair lending enforcement as well.

- In addition to working to provide prime loans to all borrowers that qualify, CRA-regulated entities should be encouraged to serve the credit needs of 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 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. By mandating that all states incorporate these best practices into existing broker licensing and monitoring efforts, federal involvement would reduce the state by state variation in access to basic consumer protections that now exists in the mortgage market.

- To the extent that the Federal Government continues to delegate the significant responsibility for regulating key elements of the mortgage market to the states, the Federal Government should provide targeted grants and other forms of assistance to support state enforcement and monitoring of mortgage brokers, appraisers and mortgage professionals that play such key roles in today's mortgage market.

- Today, most funding for higher-priced loans flows through less regulated non-GSE channels. Efforts to strengthen SEC monitoring and oversight 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.

- Given that the GSEs are already subject to detailed loan-level review of their lending 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 practices to govern this important segment of the mortgage industry.

INTRODUCTION

Today's mortgage market bears little resemblance to the market of just a decade ago. Key changes include the widespread utilization of credit scoring and risk-based pricing, the development of a mortgage delivery system dominated by mortgage brokers, and the growing importance of secondary market activities. With new low downpayment products and a highly automated mortgage delivery system, the mortgage industry has dramatically expanded access to credit in the same low-income, low-wealth and minority neighborhoods that were once victimized by mortgage "redlining."

For decades "fair lending" issues have received attention in both public policy arenas and the popular press, but the release of 2004 Home Mortgage Disclosure Act (HMDA) data with loan pricing information has sparked a new round of discussion. While acknowledging the substantial progress that has been made in expanding access to mortgage capital to previously underserved communities, numerous housing policy analysts, advocates, and public officials point to disparate outcomes in mortgage pricing and terms with respect to race and/or ethnicity.[1] Most mortgage industry leaders concede that these differential lending outcomes may reflect the illegal actions of a few. They also contend that the largest share of observed differences in mortgage lending outcomes across racial/ethnic lines simply reflect systematic differences in borrower risk and other objective factors that legitimately should influence mortgage pricing and terms.

This paper builds on the Joint Center for Housing Studies' previous Ford Foundation funded study entitled *Credit Capital and Communities: The Implications of the Changing Mortgage Banking Industry* and evaluates the competing claims concerning the aforementioned issues. This is no easy task. Given the emotionally charged nature of the issues involved and the lack of one comprehensive set of data suitable for examining lending patterns across racial lines, current studies on the topic often generate conflicting results. These differing accounts hinder efforts to understand the current lending patterns and develop effective solutions to root out any remaining mortgage market practices that generate less than fair and efficient access to mortgage credit. As

[1] Here disparate outcomes are defined as situations where individuals of differing racial and ethnic characteristics, but otherwise similar economic, demographic and risk characteristics do not obtain mortgages at the same price and terms.

a result, public discourse on the "risk or race" question all too often devolves into a series of charges and counter charges that focus more heat than light on the topic.

Using 2004 HMDA data, this study seeks to better understand the organization of the U.S. capital markets and the many distinct mortgage channels that link mortgage investors with mortgage borrowers. These data suggest the existence of a segmented market in which funding for higher-priced mortgages flow in distinct channels from investors to borrowers. This raises questions as to whether the current structure of the mortgage market itself, along with the complex regulatory structures that oversee these different channels, may contribute to the persistence of disparate lending outcomes across racial and ethnic lines.

There are many honest differences of opinion about how best to interpret existing empirical evidence, and the goal of the study is not to come to a definitive conclusion or assign blame for the past activities of some market participants. Instead, the goal is to better understand how to make mortgage credit available on a fair and efficient basis in the future and to suggest a series of market interventions to ensure that borrowers with otherwise similar economic, demographic and risk characteristics have access to loans at the same price and terms.

This study uses readily available HMDA data to better understand mortgage market dynamics and to propose sensible solutions for eradicating any remaining disparate outcomes still present today. Admittedly, this study would benefit from having access to detailed loan-level information on individual credit characteristics and mortgage pricing, as well as more readily available information on other borrower and lender characteristics. Some mortgage industry leaders support efforts to promote greater transparency of their mortgage pricing activity, including public releases of detailed pricing data. Yet to date, there has been a general reluctance to share the data needed to support detailed econometric examination of racial patterns of mortgage pricing.

Project Background

In the early 1990s, the Federal Reserve Bank of Boston generated what many felt was the definitive study of racial and ethnic differences in the probability that a mortgage application would be accepted or rejected. At the time, there was considerable concern that banks and other lenders were systematically denying credit to residents of largely lower-income and minority communities. Using the best available data on mortgage applications, the Boston Fed presented detailed evidence that racial discrimination persisted in the mortgage market.[2] While the Boston Fed findings were vigorously debated,[3] there can be little doubt that the study sparked significant changes in the methods banks used to reach out to potential borrowers located in distressed neighborhoods. These efforts resulted in equally dramatic increases in mortgage lending activity in low-income and minority neighborhoods that were once victimized by mortgage "redlining."

Despite the substantial increase in overall access to mortgage capital, many policy analysts and housing advocates contend that racial and ethnic disparities persist in today's mortgage market. Undoubtedly there are different risks associated with lending to individuals with varied credit histories and levels of income and wealth. Yet, some may argue that many low-wealth and low-income borrowers are pushed into accepting non-prime mortgages, even when they have the credit history, income, wealth or other characteristics that would enable them to qualify for prime loans.

This "risk or race" question has been the subject of numerous empirical studies based on readily available HMDA data. In general, these studies documented the existence of a racial gap in mortgage lending between whites and minorities. Other studies support the notion

[2] Munnell, A.H., L.E.Browne, J. McEneaney and G.M.B. Tootel. 1992. Mortgage Lending in Boston: Interpreting HMDA Data. *Federal Reserve Bank of Boston* Working Paper 92-7.

[3] Not all policy analysts were convinced by the Boston Fed's analysis, and numerous subsequent have challenged the Boston Fed's methodology and data analysis. For a summary of various critiques see Goering, John and Ron Wienk. 1996. *Mortgage Lending, Racial Discrimination, and Federal Policy*. Washington D.C.: The Urban Institute Press; and The Urban Institute, 1998 *Mortgage Lending Discrimination: A Review of Existing Evidence*, A Report Prepared for the U.S. Department of Housing and Urban Development, Office of Policy Development and Research. February 1998. See also Ladd, Helen F. 1998. Evidence on Discrimination in Credit Markets. *Journal of Economic Perspectives*, Spring, 1998. Volume 12. .41-62.

that risk factors could explain most, if not all, of the racial variation in mortgage pricing.[4] This latter category of studies typically utilizes detailed proprietary data on loan-level risk factors and borrower characteristics that are provided to select researchers by lenders or other financial institutions.

While HMDA-based studies have been subject to extensive peer review, studies based on proprietary information have not. As a result, it is difficult to reconcile the different findings and form a common understanding of mortgage market dynamics that stand behind these conflicting views of the market. This, in turn, hinders efforts to identify sensible solutions to combat whatever unfair practices may persist in the market today.

This paper seeks to advance the discussion by examining how the structure of the mortgage industry and the uneven application of mortgage market regulations combine to permit disparate outcomes with respect to race and ethnicity. This paper presents new analysis of the 2004 Joint Center Enhanced HMDA database. The paper focuses on lending patterns for "higher-priced" loans, or loans that have an APR above a designated Treasury benchmark rate. Using these data, this study presents a detailed assessment of the spatial distribution of higher-priced loans, as well as an inventory of the characteristics of lending organizations and secondary market channels that provide funding to the higher-priced segment of the market. [5]

Existing federal oversight of mortgage lending seeks to preserve the safety and soundness of financial institutions and to insure that all borrowers receive fair treatment in the marketplace. This study suggests that funds for higher-priced loans flow through distinct and generally less regulated mortgage channels than lower-priced mortgages as they pass from investor to

[4] For a summary of this literature see Staten, Michael. 2005. *The New HMDA Pricing Data: What Can They Tell Us About Pricing Fairness?*, Washington, D.C.: Georgetown University, Credit Research Center.

[5] For a detailed discussion of the 2004 HMDA data used in this study see Avery, Robert B., Glenn B. Canner, and Robert E. Cook. 2005. New Information Reported under HMDA and Its Application in Fair Lending Enforcement. *Federal Reserve Bulletin,* September. As discussed more fully later, the 2004 HMDA identified "higher-priced" loans, or loans that have an Annual Percentage Rate (APR) above a designated Treasury benchmark rate. Though APR is just one factor that lenders may use to distinguish a prime from a non-prime loan, and admittedly the threshold will change from one year to the next along with shifts in the mortgage interest yield curve, the concept of "higher-priced" loans nevertheless provides a simple and objective benchmark for assessing lending patterns across borrowers of differing characteristics.

borrower. This lack of regulatory uniformity can distort market activity, as less regulated market segments exploit the advantage of reduced regulations over their more regulated competitors.

This lack of uniformity results in many low-wealth and low-income consumers, particularly African-Americans and Hispanics that receive higher-priced non-prime mortgage products, having unequal access to the basic consumer protections afforded lower-priced prime loan borrowers. Many African-Americans and Hispanics, along with other low-wealth and low-income borrowers, are most vulnerable to abusive practices. Though the magnitude of the impact is hard to judge, this uneven regulation of mortgage channels raises questions about the effectiveness of the mortgage market in enabling individual borrowers to obtain a mortgage at the best price for which they qualify.

Mortgage Channels and the Supply of Mortgage Capital

Each year, the U.S. residential mortgage market gathers trillions of dollars from investors around the world to meet the borrowing needs of millions of individual homebuyers and homeowners. In today's complex mortgage delivery system, investment dollars flow through a variety of distinct mortgage channels as they make their way from investors to borrowers. These channels are defined by the hundreds of thousands of professionals engaged in the marketing and sales of mortgage products, the thousands of organizations and individuals that comprise the primary and secondary mortgage market, and the laws and regulations that monitor the activity of mortgage industry participants.

Historically, most residential mortgage funds flowed through deposit-taking institutions: thrifts and commercial banks. As recently as 1980, nearly half of all one-to-four home mortgages were originated by thrifts and another 22 percent by commercial banks. This distribution reflected the fact that deposits, and hence deposit-taking institutions, were the main source of funds for mortgage debt. The majority of loans that depository lenders originated were held in portfolio because underwriting standards and mortgage documents

varied considerably, and third party investors were reluctant to purchase mortgages that lacked adequate credit enhancement and standard features.[6]

The mortgage system has changed dramatically over the past quarter century. In addition to funding loans with deposits, deposit-taking institutions also package and sell mortgages to the growing secondary market. As access to non-depositary sources of residential mortgage capital has expanded, the growth of secondary market operations has fueled the rapid expansion of independent mortgage banking companies, as well as a host of mortgage banking subsidiaries and affiliates of traditional deposit-taking organizations. These secondary market players include: Ginnie Mae, an organization created to securitize the government insured portions of the market; Fannie Mae and Freddie Mac, two Government Sponsored Enterprises (GSEs) that securitize large shares of conventional conforming loans; and Wall Street investment houses that securitize a wide range of products including non-conforming mortgages (or jumbo's) and ever increasing volumes of higher-priced non-prime mortgages.

The rapid growth of these secondary market players has been matched by an equally dramatic consolidation of mortgage banking organizations. As recently as 1990, the top 25 mortgage lenders accounted for 28.4 percent of an industry total of less than $500 billion in home mortgages. By 2005, the top 25 lenders accounted for close to 85 percent of the 3.1 trillion dollar mortgage market. Included in the top 25 are many of the nation's largest deposit-gathering operations, such as Wells Fargo, Washington Mutual, JPMorganChase, Bank of America, and Citigroup.[7]

Lacking the economies of scale to compete with these financial services giants, many smaller banks and thrifts have scaled backed or entirely abandoned their mortgage origination, choosing instead to refer customers to other mortgage lenders. Meanwhile, several large independent mortgage and finance companies such as Countrywide and Ameriquest continue to compete head-to-head with large deposit-taking banking organizations in mortgage markets across the

[6] For a brief review of the evolution of mortgage lending in the United States see Apgar, William and Allegra Calder. 2004. *Credit, Capital and Communities*. Cambridge: Harvard University, Joint Center for Housing Studies.
[7] Inside Mortgage Finance. 2005. *The 2005 Mortgage Market Statistical Annual, Volume 1: The Primary Market.* Bethesda, MD: Inside Mortgage Finance Publications.

country. Augmenting this industry consolidation was the fact that many independent mortgage banking operations merged with or were acquired by large deposit-taking banking operations.

The emergence of mortgage industry giants has also spawned new approaches to the marketing and sales of mortgage products to individual borrowers. Traditionally, these sales and outreach efforts were conducted by loan officers that worked for the retail lending divisions of the deposit-taking organizations that funded the loans.[8] Over the past decade, increasing shares of loans were funded by large mortgage banking operations termed "wholesale lenders." These "wholesale lenders" include entities that are owned by deposit-taking banks and thrifts, as well as stand alone entities or other financial services companies owned by large Wall Street investment operations. In 2005, wholesale operations accounted for 56 percent of all prime loans, and 78 percent of all non-prime loans.[9]

Most wholesale lending operations include two distinct components: mortgage brokerage, and correspondent lending. Typically, correspondent lenders are smaller mortgage banks, thrifts, or community banks that operate much like retail lenders in that they take applications, underwrite and fund mortgages, and then sell these "whole loans" to a wholesale lender under prearranged pricing and delivery terms. In contrast, brokers are independent agents who identify customers and match them to mortgage products. The broker's role is to help the borrower submit the mortgage application to the wholesale lender, who then makes the decision to accept or reject the application and fund the mortgage.

The wholesale lender approach to mortgage marketing and sales, particularly the broker model, allows the industry to react in a quick and cost effective manner to mortgage volume changes due to interest rate and economic fluctuations. As a result, the profitability of wholesale mortgage lenders depends on the scalability of their operations. The broker model allows wholesale lenders to expand quickly during periods of increased demand, while limiting the need to hire additional permanent staff. This model also enables wholesalers to avoid the heavy cost

[8] Apgar and Calder. 2004. See also Apgar, William and Mark Duda. 2004. Preserving Homeownership: The Community Development Implications of the New Mortgage Market. A Report Prepared for the *Neighborhood Housing Services of Chicago.*

[9] Inside Mortgage Finance. 2005. *Top Subprime Mortgage Market Players & Key Subprime Data 2005.* Bethesda, MD: Inside Mortgage Finance Publications.

overhangs associated with layoffs and other operational cutbacks when loan volume subsequently declines.

The new mortgage delivery system has also introduced a significant element of discretion into the mortgage lending process. Individual mortgage brokers often work with multiple wholesalers in order to expand the available loan options for their customers. Many wholesalers provide mortgage brokers and loan correspondents, working on their behalf, with considerable discretion in the pricing of specific loan products. Often pricing decisions are guided by a menu of prices, or rate sheets, concerning the range of product choices. While rarely shared with customers, rate sheets are widely used to inform mortgage brokers, loan correspondents, and even some retail loan officers about the combinations of interest rate, points, fees, prepayment penalties and other features the wholesale lender or loan originator will offer based on the borrower's credit grade and the loan-to-value ratio. [10]

It is common practice for lenders to provide agents (brokers, correspondents, or retail loan officers) with financial incentives for selling specific products, placing a loan at a price above that stated on the rate sheet, or general loan production. To the extent that they generate loans that are more profitable to fund, these incentive systems benefit wholesale and retail lenders. In many instances, a lender will "pay up" to obtain applications that take advantage of a favorable cost of funds situation or meet other production quotas established for the organization. In these situations, the interests of the lender and the lending agent are aligned, in that both may benefit financially by the placement of a specific loan product or a loan made at a higher rate than suggested by the rate sheet.

While stimulating loan production and broad outreach to potential borrowers, providing lending agents significant pricing discretion and offering financial incentives to generate more profitable loans does pose significant risks to both the lender and the borrower. For lenders, the risk is associated with the potential for lending agents to falsify information on the borrower's application in an effort to maximize the agent's compensation. Alternatively, the agent may place the borrower into a mortgage with a price higher than the borrower's credit score and risk

[10] White, Alan. (2005). Price Discrimination in the Mortgage Market. *The Consumer Advocate,* 11(4).

profile warrant. Under the general notion "let the buyer beware," overcharging a borrower is generally legal. Such practices may nevertheless expose the lender or ultimate investor in the loan to unanticipated prepayments, delinquencies and defaults, or otherwise damage the lender's reputation in the marketplace. In situations where differential treatment is linked to borrowers defined by race, ethnicity, gender, or another protected class, this discretionary pricing risks violating applicable Fair Lending laws.[11]

Recognizing these risks, some wholesale and retail lenders are turning to sophisticated systems for monitoring both their own employees and third party agents. By carefully tracking the performance of loans submitted by individual agents, larger organizations have the capacity to identify and sanction agents who fail to adhere to company policies and practices. Through a series of cross-checks and file audits, the best lenders have the capacity to identify and reject problematic loans before they are funded. Unfortunately, these practices are not universally utilized in the industry. As a result, a mortgage broker can refrain from submitting loans to those lenders deploying the most sophisticated oversight tools and simply pass questionable loans along to other companies less able or willing to monitor broker behavior.

The incentive-based system of mortgage broker and loan officer compensation can present significant risks to mortgage borrowers. Numerous studies document that many consumers don't shop around for mortgages, but instead rely on mortgage brokers or loan agents to provide them with information.[12] In particular, even the most sophisticated borrowers find it difficult to evaluate the complexity of current mortgage products. Consumers often lack information on mortgage prices and have difficulty in assessing the benefits and costs of alternative mortgage products.

Under an incentive-based mortgage delivery system, some mortgage brokers or loan officers may steer borrowers to mortgage products with higher interest rates or less favorable terms than those products available to other equally situated borrowers. How frequently this occurs will

[11] Avery, Robert B., Kenneth P. Brevoort and Glenn B. Canner. 2006. Higher-Priced Home Lending and the 2005 HMDA Data. *Federal Reserve Bulletin*, September.
[12] See companion study to this paper: Essene, Ren S. and William Apgar. 2007. *Understanding Mortgage Market Behavior: Creating Good Mortgage Options for All Americans*. Cambridge: Harvard University, Joint Center for Housing Studies.

depend on several factors including the degree of competition in the marketplace, the nature and degree of lender monitoring, the effectiveness of regulatory oversight, and/or the ability of the consumer to negotiate for a loan with better rates or terms. To the extent that differences in the ability of borrowers to shop for and/or negotiate for a mortgage are correlated with race, ethnicity, or gender, the current system of incentive-based compensation could contribute to the apparent persistence of disparate outcomes along racial lines in today's mortgage market.

USING HMDA DATA TO MEASURE THE SIZE OF ALTERNATIVE MORTGAGE CHANNELS

Today's increasingly complex mortgage market combines a number of distinct mortgage delivery channels. Starting from the borrower and working up through the system, these channels are defined according to three levels of activity: 1) the individuals or firms (mortgage brokers, correspondent lenders and loan officers) that conduct the initial marketing and sales efforts to generate loan applications; 2) the organizations (the wholesale or retail originators) that evaluate these applications, underwrite and initially fund the loans; and 3) the various entities that purchase loans either to hold as investments or repackage and securitize for sale on national and international capital markets (GSEs or other Mortgage Conduits).

Though detailed data on the size of alternative mortgage channels is difficult to assemble, it is possible to use HMDA data to generate a rough picture of the way residential mortgage money flows from many disparate sources of funds to individual borrowers. Before presenting estimates of the size of various mortgage channels, the paper briefly describes the Joint Center Enhanced HMDA Database used in this analysis.

The Joint Center Enhanced HMDA Database

The quantitative analyses presented here utilize loan-level data submitted by financial institutions under the Home Mortgage Disclosure Act (HMDA) of 1975. As currently amended, HMDA requires mortgage lenders to report information about loan applicant race and income and the geographic location of the property included in the application. In 2004, lenders were required to disclose pricing information for loans with an Annual Percentage Rate (APR) above a designated threshold for the first time. For first-lien mortgages, this threshold is 3 percentage points higher than the rate charged on a Treasury Security of comparable maturity. These loans are characterized as "rate-spread mortgages" or "higher-priced" mortgages.

The Joint Center Enhanced Database combines HMDA data with information gathered from three sources: the Federal Reserve Board (FRB), the United States Department of Housing and Urban Development (HUD) and the U.S. Census Bureau (Census):

FRB Lender and Branch Location Files: The FRB Lender file contains information that facilitates aggregation of individual HMDA reporters into commonly-owned or controlled institutions that can be analyzed as integrated units. Assessment area definitions are based on FRB branch location data. As a reasonable approximation to true assessment areas, this report assumes that if a lending entity subject to CRA has a branch office in a particular county, then that county is part of the entity's assessment area. Loans made in counties where the lending entity does not have a branch office are assumed to be originated outside of the entity's assessment area.

HUD and Census Data: This report uses data developed by HUD to classify loans based on both the income of the loan applicant and the income of the census tract where the property is located, relative to the overall median income for the Metropolitan Statistical Area (MSA). In addition, the report utilizes data from the 2000 Census (such as the racial composition and income of neighborhoods) for each of the 45,000 census tracts included in the analyses presented in this paper.

To the extent possible, the 2004 HMDA data used here conform to the HMDA data used in previous Joint Center studies.[13] For example, this paper focuses only on first-lien mortgages to borrowers residing in one of the 734 counties that comprised 301 metro areas as defined in 1993. This geographic focus eliminated loans made to borrowers living in non-metro counties or in counties that were added to or dropped from the list of metro counties since 1993. Records with missing data were also eliminated from the analysis, including records with missing census tract information or missing or invalid loan information.

At the same time, it is important to note that the 2004 HMDA estimates of the share and composition of "higher-priced" rate spread mortgages are not strictly comparable to HMDA data

[13] See Apgar and Calder. 2004.

on these topics for 2005 and subsequent years. As noted earlier, for first-lien mortgages, HMDA defines a higher-priced loan as having an APR that is three percentage points higher than the rate charged on a Treasury Security of comparable maturity. As discussed fully in a recent article by Avery, the share of loans exceeding that standard will vary depending on the interest rate environment and mix of loans.[14] In particular, the flattening of the yield curve along with a shifting mix of adjustable rate and fixed rate loan products combined to raise the proportion of loans reported as having higher-prices in 2005, as opposed to 2004. This makes it difficult to compare "higher-priced" mortgages over time. Yet, HMDA data provide an accurate description for any given year of how the share of "higher-priced" loans varies (measured against a fixed standard for that year) across borrowers with differing demographic characteristics and living in different neighborhoods and metro areas across the country.

HMDA data for 2004 provided detailed information on the mortgage lending activities of over 8,000 separate reporting institutions. Some of these reporting institutions represent individual business units within larger corporations or bank holding companies. Using Federal Reserve Board data on corporate affiliations, these individual institutional reporters are combined into multi-part organizations. While these clusters allow for the fact that one organization may have several distinct institutional components including both affiliates and subsidiaries, these organizational groupings do not provide a complete picture of this phenomenon. For example, following the acquisition of an existing lending institution, the acquiring organization has the option of maintaining separate reporting identifications or merging the activity of a subsidiary under one reporting identification number. As a result, after acquisition many institutions are no longer uniquely identifiable in the HMDA database, but instead report their ongoing activity under the name of the acquiring institution or organization.

It is also important to note the differences between common industry practices and the way HMDA data identify correspondent lenders. Industry data presented earlier combined loan applications initiated by both mortgage brokers and correspondent lenders under the general category of "wholesale lending." HMDA data distinguish these two activities. HMDA requires all correspondent lenders to report their activities under their own name, rather than under the

[14] Avery et al. 2006.

name of the mortgage wholesaler buying the loan. By focusing on the initial originator of the loan, HMDA data give the appearance that the industry is somewhat less concentrated than is suggested by the common industry statistics.

Similarly, absent data on factors other than APR that generally combine to distinguish prime from non-prime lending, the HMDA concept of a "higher-priced" mortgage does not exactly align with how industry sources define a "non-prime" mortgage. Even so, the concepts non-prime and "higher-priced" are correlated enough to demonstrate how funding for "higher-priced" non-prime mortgages, as opposed to "lower-priced" prime mortgages, flow through a distinct series of channels that are subject to substantially different regulatory scrutiny.

An Overview of HMDA Data

The HMDA database used for this report includes information on 9.2 million first-lien mortgages originated by over 8,000 lenders in 2004.[15] Exhibit 1 subdivides these loans by purpose (home acquisition or refinance) and type (government-backed including FHA, manufactured home loans, and conventional loans secured by site-built homes). In addition, Exhibit 1 further divides loans into two groups: loans originated by Deposit-Taking Organizations (Banks, Thrifts and Credit Unions) and loans originated by Independent Mortgage Companies. For Deposit-Taking Organizations, Credit Unions are then split off from Banks and Thrifts, since unlike Credit Unions, Banks and Thrifts are regulated by the Community Reinvestment Act (CRA).

[15] Since this paper focuses on "rate-spread" or "higher-priced" loans, loans that had an application date prior to January 1, 2004, and hence were not subject to the requirements mandating loan price reporting, were excluded.

Exhibit 1: HMDA Data Provides Information on Loan Types and Lending Channels

Total Number of Loans

	Home Purchase	Home Refinance	Total
Loan Type			
Government-Backed	381,324	230,173	611,497
Manufactured Homes	59,429	33,271	92,700
Site-Built Conventional	3,657,540	4,888,388	8,545,928
Organization Type			
Deposit-Taking Organizations			
Credit Unions	79,047	194,670	273,717
CRA-Regulated Lenders (Banks and Thrifts)			
Assessment Area Lenders	937,438	1,419,449	2,356,887
Outside Assessment Area	1,554,478	1,818,670	3,373,148
Independent Mortgage Bankers	1,527,330	1,719,043	3,246,373
Secondary Market Status			
Loan Closed/Not Sold in 2004	960,590	1,446,626	2,407,216
Loan Was Closed and Sold in 2004 to:			
Fannie Mae	590,931	810,147	1,401,078
Ginnie Mae	154,809	102,108	256,917
Freddie Mac	315,587	564,839	880,426
Private Placement	89,358	92,793	182,151
Bank or Thrift	271,105	279,673	550,778
Mortgage Banker	334,602	394,397	728,999
Affiliate Institution	297,873	338,996	636,869
Other Conduits	1,083,267	1,122,220	2,205,487
All Loans	**4,098,293**	**5,151,832**	**9,250,125**

Note: Data exclude those loans originated prior to January 1, 2004, but closed in 2004. These loans were excluded because they were not required to report mortgage pricing information. 204 Loans originated by the Federal Agricultural Mortgage Corporation are not shown separately but are included in the total.

Source: Joint Center for Housing Studies enhanced HMDA database.

Exhibit 1 further subdivides loans made by CRA-Regulated Banks and Thrifts into loans made to a borrower that lives in the lender's CRA-defined assessment area, generally defined as communities where the Bank or Thrift maintains a branch location. As reported by previous

Joint Center research, mortgages made by Banks and Thrifts to borrowers living in assessment areas are subject to the most detailed CRA review, including on-site reviews and file checks. Loans made by these same institutions to borrowers outside of the institution's assessment areas receive less scrutiny.[16] Finally, CRA regulations only apply to the lending activity of deposit-taking organizations or their subsidiaries (and, in some instances, their affiliates), but loans made by Independent Mortgage Companies fall outside the regulatory reach of CRA entirely.

Though inexact, the assessment area distinction does correlate with significant differences in the way mortgages are marketed and sold. For example, loans made to borrowers living inside the assessment areas are very likely to come through the institution's retail channel. In contrast, loans made to borrowers living outside of the organization's CRA-defined assessment area are more likely to flow through channels dominated by loan correspondents or mortgage brokers.

Finally, federally-regulated Deposit-Taking organizations are also governed by regulations designed to protect the "safety and soundness" of these entities. Significantly, Deposit-Taking organizations, their loan officers, and their mortgage broker networks are subject to the recently released "Interagency Guidance on Nontraditional Mortgage Product Risks" (Guidance.)[17] These best practices promote safety and soundness in the origination of certain new mortgage products. Again, Independent Mortgage Bankers and their broker networks are not covered by this federally mandated Guidance, but instead are subject to state licensing and monitoring requirements where they exist. [18]

Efforts are now underway to extend the reach of the Guidance to all segments of the industry. The Conference of State Bank Supervisors (CSBS) and the American Association of Residential Mortgage Regulators (AARMR) have announced that as of February 2007, twenty six states and

[16] Joint Center for Housing Studies. 2002. *The 25th Anniversary of the Community Reinvestment Act: Access to Capital in an Evolving Financial Services System*. Prepared for the Ford Foundation. Cambridge: Harvard University.

[17] Department of the Treasury. 2006. *Interagency Guidance on Nontraditional Mortgage Product Risks*. Department of the Treasury, Board of Governors of the Federal Reserve System, Federal Deposit Insurance Corporation, Department of the Treasury and National Credit Union Administration. 29, September.

[18] State level regulation of mortgage brokers varies widely from state to state. While some states may just require registration of brokers or brokerage offices, others do background checks, require surety bonds be posted and impose educational requirements.

the District of Columbia have agreed to work to adopt the Guidance to make state regulated non-bank lenders and mortgage brokers subject to the same best practices that now only apply to federally-regulated entities.[19] While such actions and their enforcement would go a long way toward creating a more uniform regulatory landscape, progress on enacting state level reforms has been slow to date.

HMDA data also provide a rough indication of whether a loan is held in portfolio or sold to another organization; and if sold, the type of organization that purchased the loan. Since HMDA only tracks those loans originated and sold in the same calendar year, HMDA data may overstate the share of loans held in portfolio by the originating lender. Alternatively, whole loans may be directly sold to finance companies, life insurance companies, and other entities to hold in portfolio. Similarly, once initially sold, for example to a GSE or mortgage conduit, mortgages may be pooled, securitized and sold as pieces of mortgage-backed securities (MBS).

While HMDA data have some shortcomings, they do provide a rough indication of how individual mortgage loans flow through differing secondary market channels on their way to the ultimate investor. They also show how these various secondary market channels are subject to differing degrees of regulatory oversight. For example, the loans purchased by Fannie Mae and Freddie Mac are governed by a specific set of Congressionally-mandated regulations implemented jointly by the Office of Federal Housing Enterprise Oversight (OFHEO) and the U.S. Department of Housing and Urban Development (HUD).[20] In contrast, Ginnie Mae, created to provide a secondary market outlet for loans insured by the Federal Housing Administration (FHA) and other government-backed loans, is governed by a separate set of Congressionally-mandated regulations. Finally, to the extent that some mortgages are packaged and sold to investors, these transactions generally fall under the purview of the Securities and Exchange Commission (SEC), charged by Congress more generally with oversight of capital market transactions.

[19] See Conference of State Bank Supervisors press release at http://www.prnewswire.com/cgi-bin/stories.pl?ACCT=104&STORY=/www/story/02-01-2007/0004518437&EDATE=

[20] Of course the details of this oversight function are now under review by Congress, a review that may lead to a new regulatory structure for the GSEs.

Many lending organizations offer a wide range of mortgage products, while others tend to specialize. As indicated in Exhibit 1, the largest share of HMDA reported, first-lien mortgages go to owners of site-built conventional homes, as opposed to manufactured homes or government-backed homes. In an effort to present a simple pair wise comparison of the factors influencing the spatial and racial allocation of higher-priced non-prime loans relative to lower-priced prime loans, the remaining portions of this paper exclude loans made to owners of manufactured homes and loans backed by FHA mortgage insurance or other forms of government-backed mortgage insurance.[21] Instead, the focus is on the 8.5 million first-lien conventional loans originated by 7,060 lending organizations in 2004.

Channel Specialization Creates a Segmented Market

Overall, higher-priced loans accounted for some 1.3 million (or 15 percent) of the over 8.5 million home purchase and refinance loans originated in 2004. As shown in Exhibit 2, close to half (or 605 thousand) of all higher-priced loans were originated by 905 organizations where higher-priced loans account for 50 percent or more of total loans. These higher-priced loan specialists include many industry giants, such as Ameriquest, Option One, and Fremont Investment. Several hundred smaller higher-priced loan specialists, that on average make fewer than 500 loans, also collectively account for over 70,000 loans.

At the other end of the spectrum, of the 7,060 organizations identified separately by HMDA, most make few higher-priced loans. In particular, Exhibit 2 shows that for 4,154 organizations in 2004, higher-priced mortgages accounted for less than 3 percent of total lending. These lower-priced loan specialists made 2.9 million lower-priced mortgages (or 40.7 percent of the total) but only 27 thousand higher-priced loans.

In between these two extremes are many organizations that provide a mix of both higher-priced and lower-priced mortgages. Collectively, the 2001 non-specialist organizations originated over half of both higher-priced and lower-priced mortgages.

[21] For a brief discussion of HMDA and manufactured housing and government-backed lending see Avery et al. 2005.

Exhibit 2: Most Lending Organizations Make Few Higher-Priced Loans

Organizations by Degree of Lending Specialization	Share of Organizations		Share of Lower-Priced Loans		Share of Higher-Priced Loans	
	Number	Percent Distribution	Number	Percent Distribution	Number	Percent Distribution
Less than 3% Higher-Priced	4,154	58.8	2,947,729	40.7	26,666	2.0
3 to 10% Higher-Priced	810	11.5	2,206,818	30.5	168,987	13.0
10 to 20% Higher-Priced	523	7.4	1,166,532	16.1	201,076	15.4
20 to 50% Higher-Priced	668	9.5	517,633	7.1	302,170	23.2
50% or more Higher-Priced	905	12.8	403,506	5.6	604,811	46.4
All Organizations	**7,060**	**100.0**	**7,242,218**	**100.0**	**1,303,710**	**100.0**

Source: Joint Center for Housing Studies enhanced HMDA database.

In considering these findings, recall that as each of the organizations depicted in Exhibit 2 combine the lending activity of all subsidiaries and affiliates operating under a single corporate structure. As such, Exhibit 2 reflects the impact of the numerous mergers and acquisitions on lender specialization that has reshaped the mortgage banking landscape over the past decade. Even as some predominately prime lending organizations have expanded into non-prime lending through merger and acquisition activities, the vast majority of all lending organizations (4154 out of 7060 or 58.8 percent) including the vast majority of banks and thrifts have little or no involvement in the market for first-lien conventional "higher-priced" mortgages.

Over the past decade many prominent non-prime lenders were acquired by largely prime lending organizations, yet many higher-priced lending specialists remain. As shown in Exhibit 3, independent mortgage companies still account for most (83.4 percent) of the lending of higher-priced specialists. This activity is dominated by two large higher-priced lending specialists: Ameriquest and Fremont Investment and Loan. Together, they originated just over a third of all loans made by higher-priced specialists. Some 14 smaller (with 10 to 75 thousand total originations) mortgage banking operations accounted for another 43.5 percent of all loans

originated by higher-priced specialists, while over 300 smaller (less than 10 thousand loans) higher-priced specialists contributed another 6.1 percent.[22]

Exhibit 3: Larger Independent Mortgage Bankers Account for Most of the Lending of Higher-Priced Loan Specialists
Percent Distribution

	Higher-Priced Specialized Lenders			
	Size of Lender (By Number of Loans)			
	Less than 10,000	10-75,000	More than 75,000	All Lenders
Credit Unions	0.5	0.0	0.0	0.5
CRA-Regulated Lenders				
Assessment Area Lenders	1.2	0.2	1.2	2.6
Outside Assessment Area	1.9	2.6	9.0	13.5
Independent Mortgage Bankers	6.1	43.6	33.7	83.4
All	9.7	46.4	43.9	100.0

	Lower-Priced Specialized Lenders			
	Size of Lender (By Number of Loans)			
	Less than 10,000	10-75,000	More than 75,000	All Lenders
Credit Unions	6.9	0.9	0.0	7.8
CRA-Regulated Lenders				
Assessment Area Lenders	12.3	7.8	16.9	37.0
Outside Assessment Area	4.6	8.6	15.9	29.0
Independent Mortgage Bankers	13.8	9.8	2.5	26.2
All	37.6	27.1	35.3	100.0

Note: For higher-priced specialized lenders, higher-priced loans account for more than 50% of all lending; for lower-priced lenders, lower-priced loans account for less than 3% of all lending.
Source: Joint Center for Housing Studies enhanced HMDA database.

[22] The 14 smaller mortgage banking operations as reported in the 2004 JCHS HMDA Database include: Aames Funding Corporation, Accredited Home Lenders, Inc., American Business Financial, Centex Home Equity Company, Delta Funding Corporation, Encore Credit Corp., Finance America, First NLC Financial Services, Franklin Financial Group, Mila, Inc., Mortgageit Inc., Novastar Home Mortgage, People's Choice Home Loan, Inc., and WMC Mortgage Corp.

In contrast, lower-priced specialists are most likely to be CRA-regulated banks. Together CRA-regulated banks and thrifts and their subsidiaries accounted for nearly two-thirds of all loan activity of lower-priced specialists, with assessment area lenders accounting for over a third. Many of these assessment area lenders were smaller banks and thrifts, including many that make fewer than 10 thousand total loans each year. Indeed, FRB researchers estimated that some 3,000 banking organizations reported making no higher-priced loans at all in 2004.[23] Mortgage companies specializing in lower-priced lending also tended to be smaller entities and included many small loan correspondents.

Also of interest is the fact that several of the nation's largest banking organizations (those in the top 50 of all mortgage lenders) make relatively few higher-priced loans. This group includes Bank of America, Royal Bank of Scotland, Suntrust, and World Savings Bank. For example, Bank of America was once an active player in the first-lien, non-prime market. Bank of America then exited the non-prime market to focus primarily on their retail banking operations and serving prime segments of the mortgage market.

Consistent with the characteristics of organizations that specialize in higher-priced lending, it follows that higher-priced mortgages are less likely to be examined under provisions of the Community Reinvestment Act (CRA). Only loans made within the assessment areas of CRA-regulated entities are subject to the detailed review of lending practices, including loan pricing. Overall, CRA-regulated assessment area lenders (including non-specialists not shown in Exhibit 3) make just 82,000 (or just 6.0 percent) of the all higher-priced loans.

Exhibit 4 shows that the largest share of loans originated by lower-priced loan specialists are made by banking organizations and subsequently sold to the GSEs (Fannie Mae and Freddie Mac). In contrast, loans made by higher-priced specialists are generally not sold to the GSEs and instead are sold to a variety of other secondary market outlets. Given that GSEs have traditionally focused on the prime market, this is not surprising. While the GSEs have acquired some less risky traunches of mortgage securities, backed in whole or part by higher-priced loans, HMDA data suggest that the GSEs purchased only 22 thousand (or just 1.7 percent) of the nearly

[23] Ibid.

1.3 million higher-priced loans originated and closed in 2004. By not directly engaging in the purchase of higher-priced first-lien whole mortgages, the GSEs' state-of-the-art loan underwriting and monitoring capabilities are not extended to consumers participating in the higher-priced segment of the market. Further, the protection afforded by extensive federal loan level monitoring of the GSE loan acquisition activity is also not present.

Exhibit 4: Channel Specialization Extends to Secondary Market Outlets
Percent Distribution

	Higher-Priced Specialized Lender							
	Not Sold	Sold in 2004						Total
		GSE	Private	Bank or Thrift	Mortgage Company	Affiliate Institution	Other Conduits	
Deposit-Taking Organizations								
Credit Unions	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.5
CRA-Regulated Lenders								
Assessment Area Lenders	1.4	0.0	0.0	0.1	0.0	0.0	1.0	2.6
Outside Assessment Area	4.1	0.0	0.0	0.7	0.0	0.3	8.3	13.5
Independent Mortgage Bankers	12.6	0.1	1.7	0.6	12.4	1.6	54.4	83.4
All Loans	18.4	0.1	1.7	1.5	12.5	1.9	63.8	100.0

	Lower -Priced Specialized Lender							
	Not Sold	Sold in 2004						Total
		GSE	Private	Bank or Thrift	Mortgage Company	Affiliate Institution	Other Conduits	
Deposit-Taking Organizations								
Credit Unions	5.6	1.3	0.0	0.1	0.3	0.1	0.4	7.8
CRA-Regulated Lenders								
Assessment Area Lenders	18.8	11.6	0.0	0.9	0.5	2.3	2.9	37.0
Outside Assessment Area	8.6	10.1	0.1	1.0	1.0	2.8	5.4	29.0
Independent Mortgage Bankers	1.5	5.6	0.5	2.1	6.0	0.2	10.4	26.2
All Loans	34.5	28.5	0.6	4.0	7.8	5.5	19.1	100.0

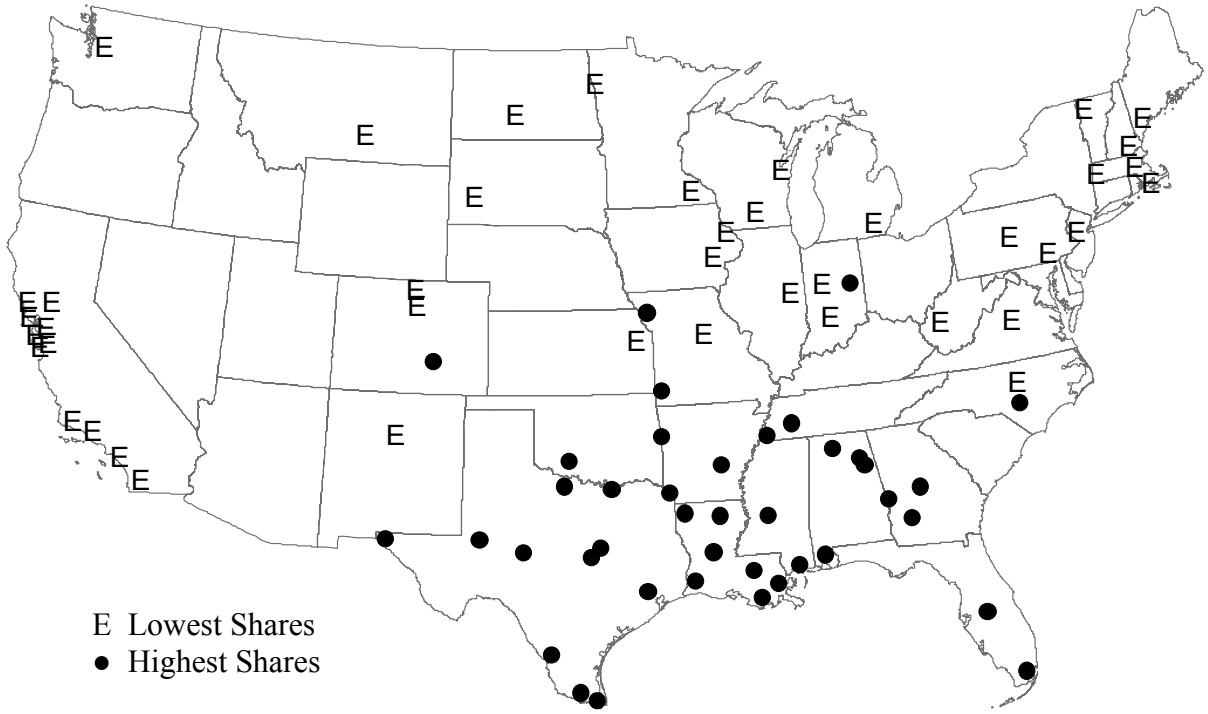
Note: For higher-priced specialized lenders, higher-priced loans account for more than 50% of all lending; for lower-priced specialists, lower-priced loans account for less than 3% of all lending.
Source: Joint Center for Housing Studies enhanced HMDA database.

Mix of Mortgage Channels Varies by Metropolitan Area

Reflecting differences in a variety of mortgage supply and demand factors, the share of higher-priced loans varies from one metro area to the next, as does the relative share of mortgage capital that flows through the different mortgage channels. Exhibit 5 maps the 40 metro areas with the highest share of higher-priced loans and the 40 metro areas with the lowest share. Overall, the share of higher-priced loans by Metropolitan Statistical Area (MSA) reflects factors such as the area credit scores, state regulations and foreclosure speeds, and the spatial variation in the structure of the mortgage banking industry.

Exhibit 5: Highest and Lowest Shares of High Cost Loans

Top 40 Highest and Lowest Share Metros



The share of higher-priced loans tends to be higher in metro areas with a higher proportion of individuals with low credit scores. Brookings Institution researchers reported that average credit scores are lowest in the South, particularly in those regions of the South with highest proportions

of African-Americans and Hispanics.[24] State level regulations may matter as well. As depicted in Exhibit 5, a relatively large number of metro areas (29 of 40) with the highest shares of higher-priced mortgages are located in so-called "quick foreclosure states" (including Alabama, Arkansas, Colorado, Georgia, Mississippi, Missouri, North Carolina, Tennessee, and Texas). These are among the 28 states that use a non-judicial form of foreclosure that can substantially reduce the timing and lender cost of completing a foreclosure action.[25] In these nine states, for example, it takes just 4 months on average to complete a foreclosure which is about half the national average of 8 months.

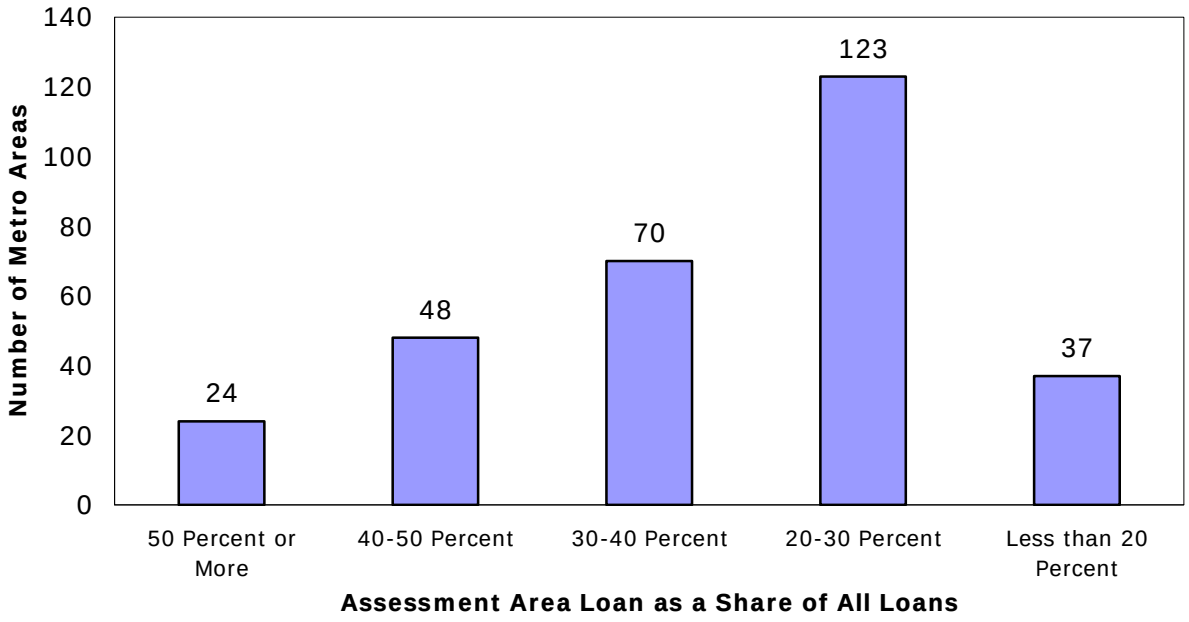
There are also three states employing a "judicial" form of foreclosure that have one or more metro areas with high shares of higher-priced mortgages (Florida, Indiana and Louisiana). Louisiana — home to seven of the 40 metro areas with the highest share of higher-priced mortgages — is notable here. Even though Louisiana is a "judicial" foreclosure state, it takes just 6 months on average to complete a Louisiana foreclosure, the fastest timeline among the states using a judicial foreclosure process. Once again, there appears to be a relationship between mortgage foreclosure timelines and the presence of higher-priced lending in particular locations.

Undoubtedly, many factors influence the relationship between the speed of foreclosure and the presence of high shares of higher-priced lending. First, within the broad categories of "judicial" and "non-judicial" there is substantial variation in legislative details, along with equally significant variation in other aspects of state level regulations that may influence higher-priced lending patterns.[26] Faster foreclosures may lower the costs associated with failed mortgages. This, in turn, may reduce the costs to the lender (and the ultimate note holder) of making riskier loans and increase the probability that borrowers with similar risk profiles will be offered a higher-priced loan in one state, but not in another. The apparent correlation between state level foreclosure laws, particularly the time it takes to complete a foreclosure, warrants further review.

[24] For a discussion of the distribution of credit score by geography see Matt Fellows. 2006. *Credit Scores, Reports, and Getting Ahead in America*. Washington, D.C.: Brookings Institution.
[25] For a more complete discussion of "judicial" versus "non-judicial" foreclosure process see Pence, Karen M. 2003. Foreclosing on Opportunity: State Laws and Mortgage Credit. *Board of Governors of the Federal Reserve Board*, September.
[26] For a more complete discussion of the relationship between state mortgage market regulations in general and higher-priced lending see Li, Wei and Keith S. Ernst. 2006. *The Best Value in the Subprime Market: State Predatory Lending Reforms.* Durham, N.C.: Center for Responsible Lending.

Other state and metro area factors may influence the supply of higher-priced loans as well. A particularly noteworthy factor is the metro area variation in the share of mortgages that flow through CRA-regulated assessment area lenders. As indicated in Exhibit 6, assessment area lenders can account for more than 50 percent of all mortgage loans made in some metro areas and less than 20 percent in others. As described in a previous Joint Center report, these differences appear to result from differences in the economic characteristics of metro areas, the strength and ambitions of locally based banks and thrifts, the demand for mortgage credit, and state-level banking regulations, among other factors.[27]

Exhibit 6: Assessment Area Loan Share Varies By Metro Area



Source: Joint Center for Housing Studies enhanced HMDA

The spatial variation across metro areas in assessment area lending has implications for borrowers and lenders alike. The CRA was designed to expand access to credit to low- and moderate-income borrowers, and/or borrowers living in low- and moderate-income neighborhoods, in a manner that is consistent with the safety and soundness of the bank or thrift originating the loan. Though not explicitly designed to promote fair lending, CRA has

[27] Joint Center for Housing Studies. 2002. *The 25th Anniversary of the Community Reinvestment Act: Access to Capital in an Evolving Financial Services System*. Prepared for the Ford Foundation.

nevertheless been effective in expanding lending to African-Americans and Hispanics due to the fair lending reviews that often accompany CRA examinations. Most recently, federal regulators stated that lending in violation of federal law can reduce a lending institution's CRA rating. In this manner, CRA plays a key role in protecting borrowers from abusive mortgage lending practices by CRA-regulated entities, including redlining and other forms of racial discrimination. In contrast, non-bank independent mortgage companies do not have to meet CRA requirements. These companies may even gain a market advantage by not having to comply with requirements to reach out to historically underserved communities.

These regulatory variations extend to metro areas as well. The fact that CRA's regulatory reach varies from one metro area to the next may alter the competitive dynamics of individual metro level mortgage markets. One important consequence of this shifting competitive balance is that consumers living in areas with a limited presence of CRA assessment area lenders do not have access to the same degree of CRA-based consumer protection as those living in areas where assessment area lenders retain a more substantial market presence. This includes the consumer benefits that derive from CRA-mandated oversight of lending in low- and moderate-income communities and CRA linked engagement with fair lending monitoring and enforcement activities.

In addition to the varied intensity of CRA oversight, mortgage channels vary across metro areas in other dimensions. For example, GSEs are significantly more likely to purchase loans originated in smaller as opposed to larger metro areas (see Appendix 2.)[28] Although there is little variation in the metro area share of loans made by lenders operating outside their assessment area, there is considerable variation across metropolitan areas in terms of the share of loans made by independent mortgage companies. For example, in larger metro areas, independent mortgage companies account for over 36.9 percent of all mortgage originations compared with only 22.5 percent in smaller areas.

[28] Here smaller metro areas are the 40 metro areas with the least loan volume in 2004, while larger metro areas are the 40 largest in terms of loan volume.

Mix of Mortgage Channels Varies By Race and Ethnicity

On average, African-American and Hispanic borrowers have lower incomes, less wealth, and lower credit scores than whites.[29] Since income, wealth, and credit history are three important determinants of access to prime loans, African-American and Hispanic borrowers on average are more likely to obtain higher-priced non-prime mortgages, even before taking into account any possible fair lending violations linked to race and ethnicity.[30] The question is not whether African American or Hispanic borrowers are more or less likely than others to obtain higher-priced mortgages, but whether or not individual African-American or Hispanics obtain mortgages at prices comparable to white borrowers with similar credit scores, incomes, and downpayments. Given the importance attached to the public policy goal of making fair lending a reality, it is somewhat distressing to observe that African-Americans and Hispanics in particular, and people living in minority communities in general, are more likely to obtain mortgages that flow through less regulated channels. These less heavily regulated channels include independent mortgage banking organizations that are not subject to CRA regulatory review, as well as loans that enter the secondary market through means other than a direct sale to one of the GSEs.

Exhibit 7 demonstrates that on average, white borrowers are 50 percent more likely than black borrowers (28.5 versus 17.4 percent) to obtain a loan that was originated by a CRA-regulated bank or thrift operating inside their CRA-defined assessment area. Similarly, whites are also more likely than blacks to obtain a loan that was sold to a GSE (29.7 to 17.1 percent). For Hispanics, the gaps are slightly lower but still significant.

Similar disparities exist between loans originated in lower-income minority neighborhoods and higher-income white areas, as well as for loans originated in largely minority metro areas versus loans originated in largely white metro areas. For example, a loan made to a borrower living in a higher-income white neighborhood is twice (32.0 versus 17.5 percent) as likely to be initially

[29] See for example data on the variation in FICO scores by race and ethnicity presented in Marsha Courchane and Peter Zorn presented in "Consumer Literacy: What Price Perceptions?" a paper delivered to the Homer Hoyt Research Institute, January 20, 2006.

[30] This analysis focuses on the borrowing patterns of African-Americans and Hispanic borrowers. For a similar assessment of the borrowing patterns of Asians, Pacific Islanders, American Indian and Alaska Natives and other minority groups. See Avery, et al. 2005.

sold to a GSE as opposed to a loan originated in a lower-income minority area. The gap in GSE loan share between largely minority metro areas and largely white metro areas is almost as large (31.5 versus 21.6 percent). Similar racial gaps also exist between the share of loans that flow through CRA-regulated assessment area lenders for lower-income minority versus higher-income white neighborhoods, and highly minority and highly white metro areas.

Exhibit 7: Lending To Minority Borrowers and Communities Flows Through Different Channels

Percent Distribution

	By Borrower Race/Ethnicity				By Metro Area		By Neighborhood	
	White	Black	Hispanic	All	High Minority	Low Minority	Low-Income, Minority	High-Income, White
By Secondary Market Source								
Not Sold	27.4	26.5	26.4	27.0	25.7	38.6	27.2	28.3
Sold to:								
GSEs	29.7	17.1	19.4	26.6	21.6	31.5	17.5	32.0
Private Placement	1.7	2.5	3.0	2.0	2.8	0.9	2.8	1.6
Bank or Thrift	5.7	6.4	6.7	5.9	6.8	3.9	6.5	5.3
Mortgage Banker	7.2	9.2	8.9	7.9	8.2	5.1	9.1	6.5
Affiliate Institution	7.1	6.9	5.7	7.2	7.6	3.9	6.6	7.6
Other Conduits	21.2	31.4	29.9	23.4	27.3	16.0	30.3	18.7
All Loans	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
By Organization Type								
Credit Union	3.4	2.3	1.6	3.1	2.3	7.6	1.8	3.3
CRA-Regulated Lenders								
Assessment Area Lenders	28.5	17.4	22.6	26.0	25.6	42.3	21.5	29.8
Outside Assessment Area	38.0	36.1	31.1	36.6	33.6	30.8	31.1	40.2
Independent Mortgage Bankers	30.1	44.2	44.7	34.3	38.5	19.2	45.6	26.7
All Loans	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
By Lender Specialization								
Less than 3% Higher-Priced	38.4	21.7	24.2	34.8	30.7	40.7	23.7	43.6
3-10% Higher-Priced	29.3	22.5	24.4	27.8	28.2	31.6	23.0	29.7
10-20% Higher-Priced	15.8	16.6	17.0	16.0	16.9	12.7	15.7	14.7
20-50% Higher-Priced	8.0	16.3	14.0	9.6	10.4	8.2	14.6	6.3
More than 50% Higher-Priced	8.5	23.0	20.4	11.8	13.7	6.8	23.0	5.7
All Loans	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
By Lender Size								
Less than 10,000 Loans	24.6	15.6	16.5	22.1	18.5	41.4	16.5	26.4
10-75,000 Loans	21.8	25.9	23.6	23.2	22.0	20.3	24.6	22.7
More than 75,000 Loans	53.6	58.5	59.9	54.7	59.5	38.4	58.9	50.9
All Loans	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Notes: For metro areas, high minority refers to the top 40 MSAs with the highest share of minority population; low minority refers to the bottom 40. Low-income minority neighborhoods have median incomes less than 80% of MSA median, and over 50 percent minority; high-income white neighborhoods have a median income 120% above MSA median and less than 10 percent minority.

Source: Joint Center for Housing Studies enhanced HMDA database.

Of course, these patterns could be a simple extension of the fact that blacks and Hispanics on average have lower credit scores, lower incomes, lower wealth and a more limited ability to make down payments and pay closing costs. In this view, new lending organizations along with new secondary market institutions have emerged in recent years to efficiently and effectively raise investment funds for higher-priced loans and channel these funds to groups of higher-risk borrowers that only a few decades ago went largely under-served.

Given the uneven presence of regulatory oversight and safeguards, an alternative and more likely possibility is that the observed disparities reflect a less than well-functioning marketplace in which minorities obtain loans at prices higher than warranted by their credit characteristics or risk profiles. This outcome could result from a relative absence of lenders offering prime products in individual communities with higher proportions of minority households. Such a situation would increase the difficulty for a well-qualified minority to obtain a lower-priced mortgage. Alternatively, a market area could contain a range of both prime and non-prime lenders, but some minority borrowers may be steered to lenders that typically offer higher-priced loans, while others are persuaded unknowingly to accept higher-priced loans by a mortgage broker or loan agent that receives compensation for placing such loans.[31]

While sorting out these alternative explanations is difficult, one thing is clear – the market is segmented and serves the needs of borrowers differently based on neighborhood, metropolitan and borrower characteristics. In addition to raising potential fair lending concerns, the observed patterns of channel segmentation also raise questions about the existing regulatory structure. In particular, the concern is that under the current regulatory system not all consumers in the country are afforded equal access to the same basic level of federal oversight of lending practices, consumer protections and safeguards that are available to others. To further explore these matters, the next section deploys multivariate analysis techniques to help to sort out the complex relationship between mortgage channels and the allocation of higher-priced lending across borrower, neighborhood and metropolitan area locations.

[31] See companion study to this paper: Essene, Ren and William Apgar. 2007. *Understanding Mortgage Market Behavior: Creating Good Mortgage Options for All Americans.* Cambridge: Harvard University, Joint Center for Housing Studies

MULTI-VARIATE ANALYSIS CONFIRMS THE SEGMENTATION OF MORTGAGE DELIVERY CHANNELS

This section presents the results of a multivariate analysis of various loan supply and demand variables that appear to influence the probability that a particular borrower will obtain a higher-priced mortgage. This econometric analysis confirms that many factors contribute to the relatively high share of higher-priced mortgages issued to African-Americans and Hispanics, to those living in predominately African American and Hispanic neighborhoods, and those living in metro areas with high shares of minority and lower-income borrowers. Building on the Federal Reserve Board's assessment of the impact of mortgage channels on higher-priced lending,[32] the analysis includes a series of mortgage supply variables. This paper seeks to examine whether racial disparities still exist in today's marketplace and assess the extent to which any remaining disparities are linked to elements of the segmented mortgage delivery system discussed earlier.

Admittedly, the analysis does not include specific controls for individual loan level risk and as a result is unable to come to any definitive conclusion as to whether the observed variations in the share of higher-priced lending to African-Americans or Hispanics results from the discriminatory or abusive practices of individual mortgage market participants. Yet in demonstrating that various supply side variables are highly inter-correlated with measures of the racial and spatial pattern of higher-priced lending, the results suggest that further examination is warranted. In particular, the results provide amble support for the importance of conducting a more extensive examination of the uneven nature of existing mortgage market regulations and an assessment of whether this lack of uniformity enables some market participants to commit fair lending violations.

The Basic Model

Using a logistic transformation, the Joint Center estimated a model that assumes that the log of the odds that a borrower obtains a higher–priced conventional mortgage versus a lower-priced mortgage is a linear function of borrower and neighborhood characteristics, characteristics of the mortgage delivery channel, as well as a series of metro area and lending organization dummy

[32] Avery et al. 2005.

variables. As explained earlier, to better focus on a simple pair wise comparison of the probability that a borrower obtains a higher-priced as opposed to a lower-priced mortgage, this analysis excluded manufactured housing and government backed loans, including FHA. Using data on site-built conventional first-lien mortgages, the model tested the impact of several hundred explanatory variables grouped according to five categories or blocks:

Borrower: This block includes a series of dummy variables, such as race/ethnicity, income as a percent of area median income, and gender, derived from the basic HMDA data.

Neighborhood: HMDA data report on the census tract of the home being financed, along with the tract income as a percentage of area median income. In addition, by linking HMDA data with 2000 census tract identifiers, the analysis includes measures of the racial composition of the neighborhood and the share of owner occupied units. Finally, the analysis includes a variable designed to measure the risk associated with making a loan in a particular census tract, defined here as the share of loan applications for a prime conventional mortgage that were denied over the period 1998 to 2002. This last variable provides a measure of the average credit quality of residents living in and or seeking to move into a specific neighborhood.

Metro Area: As shown earlier, higher-priced lending will vary from one metro area to the next, much as it does within a single metro area by neighborhood characteristics. Potential explanatory factors include the impact of systematic variation in relevant mortgage lending risk factors along with variation in the nature and extent of state and local area mortgage market regulations. Rather than attempt to isolate these individual factors, this report uses a dummy variable for each of the 301 metro areas included in the analysis. This in turn permits an examination of how other determinants of mortgage lending may vary from one metro area to the next.

Loan Channel: This report has argued that lending to low-income and/or minority borrowers is characterized by a segmented mortgage market where higher-priced mortgages (as opposed to lower-priced mortgage) tend to flow through distinct channels.

Variables in this block account for whether or not the loan is made by a CRA-regulated deposit-taking entity (bank or thrift) to a borrower living in that organization's assessment area. In addition, the block includes a series of dummy variables that identify whether or not the loan was sold by the originator, and if so what type of organization purchased the loan.

Lending Organization: This report argues that knowing the name of the lending organization provides important information about the outcome of the loan process, since the individual organizations differ with respect to their product mix, their mortgage sales and marketing activities, and the nature and extent of the regulations that they face. The analysis included a separate dummy variable to identified loans made by each of the 108 largest organizations, defined as those organizations that made more than 10,000 loans in 2004. In addition, smaller organizations are grouped according to organizational types (whether they were a credit union, a CRA-regulated deposit-taking entity (bank or thrift) or an independent mortgage company) and the degree to which the organization as a whole specialized in higher-priced lending.

Regression Results

Exhibit 8 presents estimates of the complete model for both home purchase and home refinance lending, including the coefficients on the dummy variables for five organizations and five metro areas. Not shown in the exhibit are the coefficients for the rest of the 301 metro area dummy variables, the individual dummy variables for each of the nation's 108 largest lending organizations and 15 dummy variables that account for the lending of smaller organizations grouped by type (Credit Union, CRA-Regulated Bank or Thrift, or Independent Mortgage Banker) and three classes of lender specialization. Recall also that these models include only conventional first-lien loans made to purchase and/or refinance a site-built home, and thus exclude loans that the HMDA data identify as being government-backed, secured by manufactured homes, or provide home equity lines of credit or second mortgages. In addition to the coefficient estimates, Exhibit 8 also presents Chi-Square measures of the statistical significance of individual coefficients.

In general, the model performed quite well. The vast majority of coefficients are statistically significant as measured by the probability of Chi-Square and most have the anticipated sign. For each dummy variable group, the coefficients measure the impact relative to the "omitted dummy." For metro areas, Chicago is the base area, while the coefficients for lenders measure the log odds of making a higher-priced loan relative to a group of smaller (less than 10 thousand loans), CRA-regulated lower-priced specialists (lenders for whom lower-priced loans accounted for more than 97 percent of total loans).

Even after controlling for a relatively detailed list of variables, African-Americans are shown to be more likely than whites to receive higher-priced loans. While Hispanic borrowers are also more likely to receive higher-priced loans, even after controlling for the range of other variables included in the model, the magnitude of this impact is smaller that it was for African-Americans. Further complicating this picture is the fact that borrowers with "race not reported" were also more likely to obtain a higher-priced conventional loan, suggesting that the failure to obtain racial information from all borrowers is likely not a random phenomenon.

Exhibit 8: Logistic Models of Probability of a Higher-Priced Loan Origination

		Home Purchase		Refinance	
Regression Block	Variable	Coefficient	Pr> ChiSq	Coefficient	Pr> ChiSq
	Constant	-5.13	0.3620	-4.71	<.0001
Borrower	Hispanic Borrower	0.41	<.0001	0.13	<.0001
Borrower	Black Borrower	0.58	<.0001	0.35	<.0001
Borrower	Native American Borrower	0.39	<.0001	0.24	<.0001
Borrower	Asian Borrower	-0.03	0.0003	-0.09	<.0001
Borrower	Hawaiian Borrower	0.28	<.0001	0.23	<.0001
Borrower	Missing Race Borrower	0.23	<.0001	0.25	<.0001
Borrower	Female Applicant	0.10	<.0001	0.15	<.0001
Borrower	Gender Missing	0.01	0.4686	-0.14	<.0001
Borrower	Low Income	0.13	<.0001	0.07	<.0001
Borrower	High Income	-0.16	<.0001	-0.22	<.0001
Borrower	Income Missing	-0.07	<.0001	-1.07	<.0001
Neighborhood	Low Income, Predominantly White	0.25	<.0001	0.09	<.0001
Neighborhood	Low Income, Mixed Race	0.16	<.0001	0.07	<.0001
Neighborhood	Mid Income, Predominantly White	-0.04	0.0005	-0.12	<.0001
Neighborhood	Mid Income, Mixed Race	0.01	0.1423	-0.06	<.0001
Neighborhood	Mid Income, Predominantly Minority	-0.04	<.0001	-0.09	<.0001
Neighborhood	High Income, Predominantly White	-0.32	<.0001	-0.40	<.0001
Neighborhood	High Income, Mixed Race	-0.20	<.0001	-0.32	<.0001
Neighborhood	High Income, Predominantly Minority	-0.18	<.0001	-0.21	<.0001
Neighborhood	Share Owner Occupied	0.23	<.0001	0.20	<.0001
Neighborhood	Principal City	-0.03	<.0001	-0.03	<.0001
Neighborhood	Denial Rate 1998-2002	3.29	<.0001	2.80	<.0001
Metro, Selected	Boston, MA PMSA	-0.19	<.0001	-0.40	<.0001
Metro, Selected	Detroit, MI PMSA	0.30	<.0001	0.18	<.0001
Metro, Selected	Houston, TX PMSA	0.13	<.0001	0.36	<.0001
Metro, Selected	Minneapolis-St. Paul, MN-WI	-0.21	<.0001	0.01	<.0001
Metro, Selected	San Francisco, CA PMSA	-0.83	<.0001	-1.51	<.0001
Loan Channel	Fannie Mae	-1.71	<.0001	-3.90	<.0001
Loan Channel	Freddie Mac	-3.15	<.0001	-5.25	<.0001
Loan Channel	Federal Agricultural Mortgage Corp	-1.27	0.2400	-0.79	0.3297
Loan Channel	Private securitization	-0.48	<.0001	-0.93	<.0001
Loan Channel	Bank and Thrift	-0.10	<.0001	-0.42	<.0001
Loan Channel	Mortgage Company	0.35	<.0001	-0.62	<.0001
Loan Channel	Affiliate institution	-0.37	<.0001	-0.68	<.0001
Loan Channel	Other type of purchaser	0.06	<.0001	-0.37	<.0001
Loan Channel	Inside assessment area	-0.59	<.0001	-0.78	<.0001
Selected Lender	Fremont Investment and Loan	5.79	<.0001	5.83	<.0001
Selected Lender	Delta Funding Corporation	5.72	<.0001	5.56	<.0001
Selected Lender	JP Morgan Chase	1.86	<.0001	2.19	<.0001
Selected Lender	Bank of America Corporation	-0.72	<.0001	0.27	<.0001
Selected Lender	Royal Bank of Scotland Group	0.01	<.0001	-1.17	<.0001

Note: Percent concordant home purchase model is 90.8% and refinance model is 92.6%. Estimated for3,657,540 home purchase loans and 4,888,388 refinance loans. Includes only conventional site build loans.
Source: Joint Center for Housing Studies enhanced HMDA database.

Exhibit 9 translates model coefficients into predicted probabilities for various demographic characteristics and compares these results to the probabilities obtained by simply tabulating the "raw" Joint Center Enhanced HMDA data. Note that variables included in the model serve to reduce the magnitude of the racial gap on higher-priced lending by a factor of five and yielded even more substantial reduction in the racial gap in higher-priced lending for home refinance. The results also suggest that female borrowers and lower-income borrowers are more likely to receive a higher-priced loan. Here borrower income is measured relative to area median, with lowest income borrowers having incomes less than 80 percent of the area median, while highest income borrowers have incomes 120 percent or more than the area median. In interpreting the coefficients on borrower income, note that the effect of metro income (along with other factors that vary at the metro level) is captured in the coefficients for each of the metro area dummies.

Exhibit 9: Probability of Obtaining a Higher-Priced Loan Varies by Race, Ethnicity, Gender and Income

Percent of Higher-Priced Loans

	Home Purchase		Home Refinance	
	HMDA Estimate	Full Model	HMDA Estimate	Full Model
Race				
White	10.8	14.1	11.9	14.3
Black	37.4	19.1	33.4	17.0
Gap	26.6	5.0	21.5	2.6
Ethnicity				
White	10.8	14.1	11.9	14.3
Hispanic	28.7	17.5	19.1	15.3
Gap	17.9	3.4	7.2	1.0
Gender				
Male	14.2	15.2	13.4	14.7
Female	19.0	16.1	19.6	15.9
Gap	4.8	0.8	6.2	1.1
Income				
High	12.0	15.8	10.5	15.7
Low	19.3	16.9	19.4	16.2
Gap	7.3	1.1	8.9	0.5

Note: Low income borrowers have less than 80 percent of metro area median income. High income borrowers have more than 120 percent of metro area median income.
Source: Joint Center for Housing Studies enhanced HMDA database.

The model also generates insights about the neighborhood variation in the log odds that a borrower will obtain a higher-priced loan. Neighborhood credit quality (measured here as the share of prime conventional mortgage applications to purchase and or refinance homes in the census tract that were denied over the period 1998 to 2002) appeared to have a statistically significant and important impact on the higher-priced lending. In the case of continuous variables, impact is best measured as the change in the probability of obtaining a higher-priced mortgage that results from a one standard deviation in the variable in question holding all other variables constant. This exercise suggests that a variation of this magnitude could result in a 4.1 percentage point increase in the probability of obtaining a higher-priced home purchase loan (3.5 percentage points for refinance) in neighborhoods with relatively lower credit quality as opposed to areas with higher quality.

The coefficient on the census tract level homeownership rate, a widely utilized variable in many HMDA based assessments, has an unexpected sign and a more modest impact. For both the home purchase and home refinance model the coefficient on the homeownership rate was positive, indicating that a higher homeownership rate was associated with a higher probability that homeowners in the tract obtain a higher-priced loan. In any event, the magnitude of this effect is modest. For homeownership, a one standard deviation swing (from a lower rate to a higher rate) results in only a 0.7 percentage point increase in the probability of obtaining a higher-priced mortgage for home purchase and a 0.6 percentage point increase for refinance loans.

Loan Channel Correlated With Higher-Priced Lending

The logistic regressions support the notion that loan channel matters. In particular, regressions affirm the "assessment area effect." For example, even controlling for borrower, neighborhood, and metro area effects, the logistic regressions show that assessment area lenders (bank or thrift, including their subsidiaries) operating within their assessment area are less likely to make a higher-priced loan than a CRA-regulated lender operating outside their assessment area. As shown in Exhibit 8, the assessment area effect is somewhat more pronounced for home refinance loans than for home purchase loans. For refinanced loans, the gap between out of assessment area and in assessment area higher-priced share is 5.5 percentage points (share higher-priced

lending falls from 15.8 percent to 10.3 percent). For home purchase loans, the gap is 4.4 percentage points (15.9 percent versus 11.5 percent).

Next, though largely invisible to the borrower, the ultimate funder of the loan matters as well. As noted earlier, only a relatively small share of loans originated by higher-priced lending specialists flow through Fannie Mae or Freddie Mac, at least relative to flows of other conduits. In many ways, these differences simply reflect the structure of the secondary market, where some types of entities – for example Fannie Mae and Freddie Mac – historically have specialized in creating a secondary outlet for lower-priced prime loans. Even so, the results provide evidence that despite controlling for a range of borrower, neighborhood, and metro area attributes, there remain distinct differences in the secondary market channels used to fund higher-priced loans, a result that is consistent with the existence of a segmented mortgage market.

Metro Area Variation

As noted previously, the basic logistic models contain a series of dummy variables for each of the 301 metro areas. Rather than attempt to capture metro area effects by using a series of explanatory variables (metro area median income, unemployment rate, average house price appreciation, metro area market structure etc.) the dummy variable approach captures in a single variable all the ways that metro area variation influences the probability that a household receives a higher-priced loan. For the logistic equations depicted in Exhibit 8, the coefficient for individual metro areas show how the log of the odds of obtaining a higher-priced mortgage differs from that in the base metro area – Chicago. Of the five metro areas depicted, a positive coefficient (Detroit and Houston) in the home purchase equation indicates that the log odds of obtaining a higher-priced mortgage is greater than for Chicago, while a negative coefficient (Minneapolis, Boston and San Francisco) indicates that the log odds of obtaining a higher-priced mortgage are lower. Note that the metro area coefficients in the home refinance coefficient display a similar pattern, with the exception that the coefficient for Minneapolis switches sign, but in this instance the difference between Chicago and Minneapolis is not statistically significant.

Of course using a single national equation to capture the cross metro area variation in the probability of borrowers obtaining a higher-priced loan is a heroic undertaking. Implicit in the approach is the assumption that in addition to the ways that metro areas effects vary in a linear additive manner, the model assumes that the impact of each of the other variables does not vary from one metro area to the next. To relax that restrictive assumption, the Joint Center estimated separate equations for each of 16 separate metro areas and used these equations to explore the extent to which the racial gaps varied from one metro area to the next. Once again, it is important to note that each of these individual metro areas do not include variables that reflect loan-level variation in credit scores or other borrower specific credit scores, even though they do capture whatever differences may exist in the overall metro area average of these effects, as well as tract level measures of credit quality.

As indicated in Exhibit 10, the remaining racial gaps show significant variation from one metro area to the next. Recalling that the national average black/white gap for home purchase borrowers was estimated to be 5.0 percentage points, the estimated gap for five of the metro areas depicted in Exhibit 10 is noticeably higher. In contrast, the estimated gap in many metropolitan areas for African Americans is significantly lower, particularly in the home refinance equations, and for Hispanic borrowers the gap disappears entirely.

Exhibit 10: Estimated Racial and Ethnic Gaps Varies By Metro Area
Share of Higher-Priced Loans (Percent)

	Home Purchase					
	Black	White	Racial Gap	Hispanic	White	Ethnic Gap
Salt Lake City, UT	28.7	19.9	8.9	22.4	19.9	2.6
Birmingham, AL	21.6	14.6	7.0	21.0	14.6	6.4
Memphis, TN	25.1	19.2	5.9	25.9	19.2	6.7
Houston, TX	26.1	20.3	5.9	25.0	20.3	4.8
Chicago, IL	20.9	16.0	5.0	18.2	16.0	2.3
National	**19.1**	**14.1**	**5.0**	**17.5**	**14.1**	**3.4**
Portland, OR	16.6	11.7	4.9	14.0	11.7	2.2
St. Louis, MO	20.5	16.0	4.5	18.6	16.0	2.7
Detroit, MI	23.7	19.9	3.8	24.5	19.9	4.6
Minneapolis, MN	14.2	10.7	3.4	13.5	10.7	2.8
Milwaukee, WI	15.1	12.7	2.4	14.8	12.7	2.1
San Jose, CA	11.0	9.1	2.0	10.3	9.1	1.2
Cleveland, OH	15.2	13.4	1.7	15.6	13.4	2.1
Boston, MA	12.4	11.2	1.2	12.5	11.2	1.3
San Francisco, CA	6.0	5.1	0.9	6.4	5.1	1.3

	Home Refinance					
	Black	White	Racial Gap	Hispanic	White	Ethnic Gap
Birmingham, AL	30.4	25.4	5.0	27.4	25.4	2.0
Salt Lake City, UT	18.0	13.8	4.1	14.7	13.8	0.9
Memphis, TN	32.1	29.1	3.0	25.4	29.1	-3.6
Minneapolis, MN	14.9	12.2	2.7	11.9	12.2	-0.3
Houston, TX	23.7	21.0	2.7	25.2	21.0	4.2
National	**17.0**	**14.3**	**2.7**	**15.3**	**14.3**	**1.0**
St. Louis, MO	21.1	18.7	2.4	20.3	18.7	1.6
Portland, OR	11.8	9.8	2.1	10.0	9.8	0.2
Cleveland, OH	18.0	16.1	1.9	17.3	16.1	1.2
Milwaukee, WI	19.7	17.9	1.8	16.7	17.9	-1.2
Chicago, IL	15.6	14.5	1.1	14.1	14.5	-0.4
Detroit, MI	17.9	17.0	0.9	18.4	17.0	1.4
San Francisco, CA	3.3	2.6	0.6	2.8	2.6	0.2
Boston, MA	9.0	8.7	0.3	8.2	8.7	-0.5
San Jose, CA	3.6	3.4	0.2	3.7	3.4	0.3

Source: Joint Center for Housing Studies enhanced HMDA database.

Assessing the Racial Gaps

As noted, critics of HMDA-based studies of the type presented here are quick to point out that they fail to account for influence of borrower-specific credit scores and other risk factors not included in the HMDA data. According to this view, the "left out variable problem" can bias the coefficients on race/ethnicity to the extent that the omitted variable is correlated with race. By examining how the estimated racial and ethnic lending gaps vary as additional blocks of data are added to the equation, Exhibit 11 confirms that the concern over left out variables is warranted. For example, the coefficients on the black and Hispanic variables become noticeably smaller, as does the magnitude of the estimated racial and ethnic gap, when variables designed to control for neighborhood characteristics are added. Although these are not the only variables that matter, it seems reasonable that the share of higher-priced lending should depend on neighborhood characteristics such as the measure of average income of the neighborhood and average neighborhood credit quality. Since these variables are highly correlated with race, their exclusion tends to falsely attribute to race causation more appropriately linked to other attributes.

Exhibit 11 presents evidence that loan channel influences the size of the racial gap. For example, the addition of the block of variables that identify where the loan was first sold reduces the estimated black/white gap in the home purchase equation from 15.9 percent to 11.4 percent. Similarly, addition of the dummy variables identifying the organization making the loan further reduces the estimated gap to 5.0.

Exhibit 11: Alternate Specifications Shrink Apparent Racial Gap
Share of Higher-Price Loans (Percent)

	Home Purchase					
	White	Black	Racial Gap	White	Hispanic	Ethnic Gap
HMDA Estimate	10.8	37.4	26.6	10.8	28.7	17.9
Controlling For:						
Borrower Characteristics	10.7	34.6	24.0	10.7	28.2	17.5
Borrower and Neighborhood	11.8	27.7	15.9	11.8	23.2	11.4
Borrower, Neighborhood, and MSA	11.7	27.6	15.9	11.7	23.0	11.3
Borrower, Neighborhood, Loan Channel, and MSAs	12.4	23.8	11.4	12.4	21.4	9.0
Borrower, Neighborhood, Loan Channel, MSAs, and Lenders	14.1	19.1	5.0	14.1	17.5	3.4

	Home Refinance					
	White	Black	Racial Gap	White	Hispanic	Ethnic Gap
HMDA Estimate	11.9	33.4	21.5	11.9	19.1	7.2
Controlling For:						
Borrower Characteristics	11.8	29.0	17.2	11.8	18.0	6.2
Borrower and Neighborhood	12.8	22.4	9.6	12.8	15.7	2.9
Borrower, Neighborhood, and MSA	12.5	21.1	8.6	12.5	16.6	4.1
Borrower, Neighborhood, Loan Channel, and MSAs	13.3	19.2	5.9	13.3	16.4	3.1
Borrower, Neighborhood, Loan Channel, MSAs, and Lenders	14.3	17.0	2.6	14.3	15.3	1.0

Source: Joint Center for Housing Studies enhanced HMDA database.

As noted earlier, these supply side effects could simply reflect that some lenders specialize in higher-priced lending and have developed specialized products and capital market access strategies best designed to meet the needs of borrowers unable to qualify for lower-priced mortgages. Alternately, this segmented marketplace could be caused by borrower self-selection of the product-lender-secondary market combination that best matches their needs and credit histories.

The fair lending concern is triggered by a third and more likely possibility given the lack of uniform regulatory oversight -- namely the concern that minority borrowers are incurring prices on their loans that are higher than warranted by their credit characteristics. This could result, for example, from a relative absence of lenders offering prime products in individual neighborhoods or entire metro areas with higher proportions of minorities. Such a situation would increase the difficulty for a well-qualified minority to obtain a lower-priced mortgage. Alternately, a market area could contain a range of both prime and non-prime lenders, but as a result of the push marketing of financially incentivized mortgage brokers or loan officers, some minority borrowers that would qualify for a lower-priced mortgage, nevertheless are steered to a higher-priced loan product.

Often, discussions of the "risk or race" question end with the observation that it is impossible with the available data to distinguish between the various supply-side effects outlined above. Yet, this paper argues that even without agreeing on the nature and extent of disparate lending outcomes, it is still important to discuss required mortgage market reforms. In particular, basic fairness alone supports the idea that all consumers in the higher-priced loan market are entitled to equal access to basic federal oversight and consumer protections available in the lower-priced market. As this paper has demonstrated, higher-priced non-prime loans in general, including non-prime loans made to the most vulnerable segments of the population, are more likely to flow through less regulated channels than loans serving prime borrowers. The failure to focus regulatory attention on the most vulnerable borrowers in the marketplace makes no sense. In an attempt to move beyond the "risk or race" debate, the final section of this paper identifies concrete steps that could help create a more uniform system of regulations to better serve all market participants.

RECOMMENDATIONS

As argued throughout this paper, fundamental fairness suggests that the nature and extent of federal oversight and consumer protection should not depend on the details of which particular mortgage broker or loan officer takes the mortgage application, which particular retailer or wholesaler originates the mortgage, and which secondary market channel is tapped to secure the investment dollars that ultimately funds the loan. While distinct mortgage channels have a clear role to play in creating an efficient mortgage market, they should not influence access to consistent and fair regulations and oversight. This section suggests some potential areas for reform.

CRA Reform Is A Good Place to Start

When Congress modernized financial services through the Gramm-Leach-Bliley Act of 1999 (GLBA), it did little to bring the CRA (or other regulations governing the mortgage banking industry) into conformance with the rapidly evolving financial services world. In addition to evaluating whether covered institutions and loans are meeting the credit needs of all communities they serve, CRA reviews are an important method for ensuring that regulated entities are in compliance with other elements of fair lending law. Reform would involve expanding the current onsite reviews and detailed file checks, currently performed on assessment area lending, to all the lending of CRA-regulated entities whether or not it occurs in an area that the bank or thrift maintains a deposit gathering operation.

The CRA should also be expanded to cover independent mortgage banking operations and other newly emerging non-bank lenders. Noted earlier, when the CRA was initially enacted, deposits were the principle source of funding for home mortgage loans. Since the deposit gathering activities of banks and thrifts benefited from federal deposit insurance efforts, federal regulators had a compelling reason to take an active role in monitoring the safety and soundness of covered institutions. Recognizing this history of federal engagement, the CRA was designed to expand access to credit to low- and moderate-income borrowers, and/or borrowers living in low- and moderate-income neighborhoods, in a manner consistent with the safety and soundness of the bank or thrift originating the loan.

As funds raised on the secondary market steadily replaced deposits as the main source of mortgage capital, independent mortgage companies and other non-banks have emerged as the fastest growing segment of the mortgage industry. As a result, the CRA's continued focus on banks and assessment area lenders increasingly makes little sense. As the recent turmoil in the non-prime markets suggests, the performance of non-bank lenders has important implications for the safety and soundness of the overall financial services sector that extend beyond issues relating to the presence or absence of federal deposit insurance. Moreover, failure to regulate banks and non-banks in a uniform manner, can distort competition in the banking and mortgage industry, as market participants shift business from one market segment to the next to avoid regulation.

Finally, and perhaps most importantly, fundamental fairness provides yet another rationale for extending CRA coverage to independent mortgage companies and other non-bank lenders. Though not explicitly designed to promote fair lending, the CRA has nevertheless been effective in expanding lending to thousands of low-income and low-wealth communities and to millions of African-American and Hispanic borrowers. The fact that independent mortgage banks, the very segment of the market most engaged in the rapid expansion of higher-cost non-prime lending, fall out of the CRA framework, therefore, denies many of the nation's most vulnerable borrowers equal access to the benefits of federal oversight that are widely present in the lower-priced prime market.

Encourage all Lenders to Engage in Both Prime and Non-Prime Lending

As noted in this paper, the current segmented nature of mortgage delivery channels raises concerns about the effectiveness of the mortgage market in enabling individual borrowers obtain a mortgage at the best price for which they qualify. Recall that the CRA was designed to insure that regulated banks and thrifts worked to meet the credit needs of all residents of communities where they operated. At the time, the law was specifically enacted to prohibit the practice of redlining, or the denial of access to prime loans to particular groups or individuals living in underserved communities.

The times and the mortgage delivery systems have changed, and it is now time to rethink how best to meet the credit needs of all residents. As noted earlier, the largest share of regulated banks and thrifts specialize in prime lending and make no or only a few higher-priced non-prime loans. Of course, all lenders must continue to be held accountable for insuring that all qualified borrowers have access to prime loans on fair and equal terms. Yet, guaranteeing fair and equal access to higher-priced non-prime mortgages for credit impaired borrowers is an equally worthy goal. This suggests a need to modify the CRA implementation to insure that regulated entities do not opt out of the responsibility of meeting the needs of all borrowers, including credit impaired low-income and low-wealth borrowers that participate in the non-prime market. As was the case with redlining of past decades, by choosing not to compete in the non-prime marketplace today, many CRA-regulated banks and thrifts are similarly drawing a line around a group of borrowers they choose not to serve.

Admittedly, mandating that any particular market participant engage in non-prime lending is fraught with peril. Over the years, non-prime lending specialists have developed considerable expertise in how best to match non-prime borrowers to specific higher-priced mortgage loans. The fact that many regulated thrifts and banks have developed the capacity to participate in non-prime markets outside their own assessment areas suggests that the banks and thrifts, now largely specializing in only prime lending could also acquire the needed expertise. Minimally, each regulated entity should be required to serve the full range of the credit needs of the community (including those unable to qualify for prime credit) by offering referrals to other entities that provide non-prime mortgages on a fair and non-discriminatory basis.

Expand the Interagency Guidance beyond Regulated Banks and Thrifts

Recognizing that the existing regulatory regime is insufficient to protect consumers from potentially abusive practices, the recently released Interagency Guidance attempted to provide consumers with the information needed to better understand loan terms and associated risks prior to making a product choice.[33] While the Guidance does not prohibit specific practices, it does

[33] Federal Reserve Board. 2006. *Interagency Guidance on Nontraditional Mortgage Product Risks*. Department of the Treasury, Board of Governors of the Federal Reserve System, Federal Deposit Insurance Corporation, Department of the Treasury and National Credit Union Administration. 29, September.

discuss which practices generate the greatest problems. For stronger quality control and risk management, for example, the Guidance suggests that lenders consider a borrower's repayment capacity and exercise appropriate due diligence in their dealings with third party originators. Specifically, it recommends that monitoring of third-party originators track the origination source and borrower characteristics of loans to identify problems early on, with the potential for remedial action.

Though imperfect, the Guidance represents an important step in advancing many of the "best practices" that are too often ignored by many of the industry's most irresponsible entities. At the same time, it is important to note that the Guidance, as currently implemented, only applies to federally-regulated depositories, and therefore does not reach the independent mortgage banking companies that make the lion's share of all higher-priced mortgages. Extending the reach of the Guidance would not only offer basic consumer protection to a wider range of potential borrowers, it would also limit the potentially adverse consequences that differences in regulation across market participants have on the competitive dynamics of the mortgage industry.

As was true with the proposed modification of the CRA, extending the reach of the Guidance would most likely call for Congressional action, and require a complete examination of the rationale for expanding federal involvement in the activities of independent mortgage companies. Arguably there is precedence for the federal regulators to act under existing authorities. Note that the Federal Trade Commission Act provides federal regulators the authority to declare many of the practices identified as problematic by the Guidance as "deceptive practices," and in doing so, effectively ban them industry wide. Similarly HOEPA also contains authority that would allow the Federal Reserve of Board of Governors to extend the Guidance to cover the activities of non-banks. Absent such steps to create a more uniform application of federal oversight, consumers will once again lack fair and equal access to the consumer protections contained in the Guidance.

It is also possible to work through the states to expand the reach of the Guidance to all segments of the industry. This is already underway. The Conference of State Bank Supervisors (CSBS) and the American Association of Residential Mortgage Regulators (AARMR) have announced

that as of February 2007, twenty six states have agreed to adopt the new Guidance on nontraditional mortgage product risks.[34] The goal is for all states to adopt the guidelines so that all consumers will be equally protected and all originators of residential mortgages will be subject to similar supervisory guidance.

Unfortunately efforts to implement the proposed reforms at the state level have been slow, and many states still have not even committed to join in the effort to try. 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 could still assist by providing funding to support the states in this role. This could come in the form of targeted grants to support state and local enforcement efforts, or through assistance to states and localities to better monitor the activities of mortgage brokers, appraisers and mortgage professionals that play such key roles in today's mortgage market.

The Federal Government Should Assume Responsibility for Broker Licensing

While today much of the discussion is focused on expanding the Guidance to include "2/28" loans or implementing a new federal suitability standard, it is important to note that neither of these efforts focus on the mortgage broker networks of independent wholesale mortgage bankers. As noted earlier, broker monitoring and licensing is largely a state function, and that nature and extent of state involvement in these matters varies widely. History suggests that the failure to apply regulations uniformly to all market participants may simply shift the very practices that are the target of more stringent regulations into other less regulated corners of the industry.

Adopting a federal mortgage broker licensing law to establish a minimum standard of broker behavior is critical for better monitoring of this important component of the overall mortgage market. Given the fact that states have experimented with a variety of approaches, any new federal regulation should be done in conjunction with existing state efforts. Some states have passed licensing laws for mortgage bankers, mortgage brokers and mortgage loan officers. Some state requirements include an application process, education and experience requirements,

[34] See Conference of State Bank Supervisors press release at http://www.prnewswire.com/cgi-bin/stories.pl?ACCT=104&STORY=/www/story/02-01-2007/0004518437&EDATE=

"bricks and mortar" requirements, and bond requirements. Further, some states impose specific duties on mortgage brokers including making a reasonable effort to secure a loan that is reasonably advantageous to the borrower. Others states specifically outlaw specific acts, such as certain levels of broker incentives, excessive points and fees and misrepresentation and fraud and some state laws have new enforcement mechanisms. For example, the North Carolina law also gives enforcement powers to the Commissioner of Banks to suspend licenses and impose penalties and begin investigations.

These state laws provide a framework for what an effective regulation could be. Though federal broker licensing requirements and associated oversight activities would provide for more uniformly regulated brokers, it is important that any licensing requirement does not preempt good, existing state laws and allows for states to continue innovating in this arena. In addition, care must be exercised to ensure that any new federal standards do not undermine the activity of brokers that already meet high standards of professionalism and conduct. Such a change could inadvertently create a new competitive advantage for loan officer's already working for regulated banks. Though important legally, the distinction between mortgage brokers and retail loan officers is subtle at best, especially in situations where both brokers and loan officers receive financial compensation linked to the price or other features of the loan products being offered to potential borrowers. In developing new national standards one key goal is to require that they apply evenly to all those individuals (mortgage brokers and loan officers alike) that conduct the initial marketing and sales efforts to generate loan applications.

A Thorough Review of Secondary Market Oversight Is Important

As was the case with the CRA, the Interagency Guidance, and other regulations of the primary market, it is important to take note of the lack of uniformity in the regulation of secondary market participants. The GSE Act of 1992 established a complex regulatory framework for Fannie Mae and Freddie Mac. Under this system, OFHEO was created to oversee safety and soundness regulation of the GSEs. HUD, on the other hand, was charged with so-called "mission regulation," or the task of overseeing the extent to which the GSEs contributed to expanding access to affordable housing for the nation's lower-income individuals and communities.

At the time the legislation was enacted, the non-prime sector barely existed and it made sense that the GSE response to the affordable housing goals involved expanding access to conventional, conforming prime loans. Further, the secondary market was just emerging. Many of the new secondary market institutions and capital market access instruments that are now the mainstay of funding for non-prime mortgages didn't exist. Similar to changes for regulation of the primary market, changes in the mortgage industry structure and the emergence of new mortgage delivery channels implies that federal oversight of the secondary markets must adjust as well.

Congress is now debating a series of GSE reform measures designed to address concerns raised by the recent wave of GSE accounting scandals. It would be wise to use this opportunity to look at broader issues relating to secondary market access in general. As noted earlier, most of the funds flowing into the higher-priced segment of the primary mortgage market come through non-GSE channels. Though the SEC is charged with the responsibility of monitoring the wide range of security transactions linked to the non-prime sector, the degree of due diligence in this sector falls short of the more extensive HUD review of the "affordable lending" initiatives of the GSEs or OFHEO's review of whether newly developed mortgage products pose safety and soundness risks.

Even as they are mired in the midst of the recent accounting scandal, the GSEs could nevertheless play a positive role in the higher-priced loan segment. Of all the secondary market participants, GSEs are subject to the most extensive regulatory scrutiny both in terms of safety and soundness and in terms of meeting the affordable housing needs of lower-income communities. Reform legislation now pending before Congress will most likely further strengthen GSE oversight. Moreover, the GSEs arguably have the best capacity to hold their seller/servicers accountable to the highest standards of all secondary market makers. These factors could help bring some market discipline to the "higher-priced" mortgage segment that has all too frequently been home to abusive mortgage practices.

Developing a new and comprehensive regulatory structure for the non-GSE segment of the secondary mortgage market is equally important. One approach would be to enhance the capacity of the rating agencies charged with the responsibility of conducting effective due diligence on behalf of investors. Another approach would be to consider ways to expand and strengthen SEC

oversight of non-GSE secondary market players, particularly those entities that specialize in securitizing non-prime loans.

Equally important would be Federal legislation 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 problems and violations of best lending practices. One approach would be to fashion national level legislation modeled after New Jersey's recently enacted anti-predatory lending legislation that appears to provide an effective balance between protecting the legitimate interests of both secondary market investors and mortgage borrowers.

In considering how best to regulate the GSEs or other secondary market participants, it is important to place these issues in the boarder context of how the capital markets channel investment dollars into the non-prime mortgage market. Just as is the case in the primary market, development of detailed secondary market regulations that apply to only one segment of the marketplace can be both counterproductive and unfair. Considering how best to reduce the tendency for capital used to fund higher-priced mortgages to flow through less regulated capital market channels is a worthy addition to the current debate on GSE reform in particular, and capital markets in general.

APPENDIX

Appendix A-1: Means and Standard Deviation for Selected Variables from Model

		Home Purchase		Home Refinance	
Block	Variable	Mean	Standard Deviation	Mean	Standard Deviation
Dependent Variable	High-Priced Loan	0.16	0.36	0.15	0.36
Borrower	Hispanic Borrower	0.13	0.34	0.10	0.30
Borrower	Black Borrower	0.07	0.26	0.07	0.26
Borrower	Native American Borrower	0.00	0.06	0.00	0.06
Borrower	Asian Borrower	0.06	0.24	0.04	0.20
Borrower	Hawaiian Borrower	0.00	0.07	0.00	0.07
Borrower	Missing Race Borrower	0.09	0.29	0.14	0.34
Borrower	Female Applicant	0.30	0.46	0.28	0.45
Borrower	Gender Missing	0.04	0.19	0.06	0.23
Borrower	Low Income	0.24	0.43	0.26	0.44
Borrower	High Income	0.45	0.50	0.41	0.49
Borrower	Income Missing	0.04	0.20	0.05	0.23
Neighborhood	Low Income, Predominantly White	0.01	0.10	0.01	0.11
Neighborhood	Low Income, Mixed Race	0.05	0.22	0.05	0.22
Neighborhood	Mid Income, Predominantly White	0.14	0.34	0.16	0.37
Neighborhood	Mid Income, Mixed Race	0.24	0.43	0.23	0.42
Neighborhood	Mid Income, Predominantly Minority	0.07	0.26	0.08	0.28
Neighborhood	High Income, Predominantly White	0.14	0.34	0.14	0.34
Neighborhood	High Income, Mixed Race	0.23	0.42	0.21	0.41
Neighborhood	High Income, Predominantly Minority	0.03	0.16	0.03	0.17
Neighborhood	Share Owner Occupied	0.72	0.20	0.73	0.19
Neighborhood	Principal City	0.43	0.49	0.40	0.49
Neighborhood	Denial Rate 1998-2002	0.15	0.08	0.16	0.08
Loan Channel	Fannie Mae	0.16	0.37	0.17	0.37
Loan Channel	Freddie Mac	0.09	0.28	0.12	0.32
Loan Channel	Federal Agricultural Mortgage Corp	0.00	0.00	0.00	0.00
Loan Channel	Private securitization	0.02	0.15	0.02	0.13
Loan Channel	Bank and Thrift	0.07	0.25	0.05	0.23
Loan Channel	Mortgage Company	0.08	0.27	0.08	0.27
Loan Channel	Affiliate institution	0.08	0.27	0.07	0.25
Loan Channel	Other type of purchaser	0.26	0.44	0.21	0.41
Loan Channel	Inside assessment area	0.23	0.42	0.28	0.45

Source: Joint Center for Housing Studies enhanced HMDA database.

Appendix A-2: Channel Flow by Size of Metro Area

Percent Distribution

	Size of Metro Area					
	40 Smallest MSAs	Next 60	Middle 101	Next 60	40 Largest MSAs	Total
By Secondary Market Source						
Not Sold	36.4	33.5	29.3	28.8	25.5	27.0
Loan Was Closed and Sold in 2004 to:						
GSEs	31.1	32.3	30.9	28.5	24.7	26.6
Private Placement	0.8	1.1	1.5	1.7	2.3	2.0
Bank or Thrift	3.6	4.8	5.2	5.4	6.2	5.9
Mortgage Banker	5.0	5.6	6.8	7.5	8.3	7.9
Affiliate Institution	5.1	4.7	6.2	6.6	7.8	7.2
Other Conduits	18.0	18.1	20.1	21.4	25.1	23.4
All Loans	100.0	100.0	100.0	100.0	100.0	100.0
By Organization Type						
Credit Union	4.0	6.8	4.6	3.5	2.5	3.1
CRA-Regulated Lenders						
Assessment Area Lenders	39.9	38.0	29.9	27.1	24.1	26.0
Outside Assessment Area	33.6	32.4	37.1	37.0	36.5	36.5
Independent Mortgage Bankers	22.5	22.8	28.4	32.3	36.9	34.3
All Loans	100.0	100.0	100.0	100.0	100.0	100.0
By Lender Specialization						
Less than 3% Higher-Priced	34.9	37.7	35.8	37.3	33.6	34.8
3-10% Higher-Priced	31.4	30.1	28.8	26.5	27.9	27.8
10-20% Higher-Priced	15.7	14.8	15.6	16.0	16.2	16.0
20-50% Higher-Priced	8.7	9.3	9.6	9.3	9.7	9.6
More than 50% Higher-Priced	9.3	8.2	10.2	10.9	12.6	11.8
All Loans	100.0	100.0	100.0	100.0	100.0	100.0
By Lender Size						
Less than 10,000 Loans	39.2	36.9	27.6	23.5	19.7	22.1
10-75,000 Loans	19.5	19.9	21.4	23.8	23.5	23.2
More than 75,000 Loans	41.3	43.2	50.9	52.7	56.9	54.7
All Loans	100.0	100.0	100.0	100.0	100.0	100.0

Source: Joint Center for Housing Studies enhanced HMDA database.

Appendix A-3: Channel Flow by Minority Share of Metro Area

Percent Distribution

	Minority Share of Metro Area					
	40 MSAs with Lowest Share Minority	Next 60	Middle 101	Next 60	40 MSAs with Highest Share Minority	Total
By Secondary Market Source						
Not Sold	38.6	32.8	27.7	25.2	25.7	27.0
Loan Was Closed and Sold in 2004 to:						
GSEs	31.5	31.9	30.1	26.3	21.6	26.6
Private Placement	0.9	1.1	1.6	1.9	2.8	2.0
Bank or Thrift	3.9	4.3	5.3	6.1	6.8	5.9
Mortgage Banker	5.1	5.5	7.6	8.6	8.2	7.9
Affiliate Institution	3.9	6.1	7.1	7.5	7.6	7.2
Other Conduits	16.0	18.3	20.7	24.2	27.3	23.4
All Loans	100.0	100.0	100.0	100.0	100.0	100.0
By Organization Type						
Credit Union	7.6	5.6	3.5	2.6	2.3	3.1
CRA-Regulated Lenders						
Assessment Area Lenders	42.3	34.8	25.0	24.2	25.6	26.0
Outside Assessment Area	30.8	36.3	39.9	36.2	33.6	36.5
Independent Mortgage Bankers	19.2	23.3	31.6	37.0	38.5	34.3
All Loans	100.0	100.0	100.0	100.0	100.0	100.0
By Lender Specialization						
Less than 3% Higher-Priced	40.7	41.9	38.2	33.1	30.7	34.8
3-10% Higher-Priced	31.6	25.8	26.7	28.9	28.2	27.8
10-20% Higher-Priced	12.7	15.6	15.5	15.9	16.9	16.0
20-50% Higher-Priced	8.2	8.0	9.1	9.8	10.4	9.6
More than 50% Higher-Priced	6.8	8.8	10.5	12.3	13.7	11.8
All Loans	100.0	100.0	100.0	100.0	100.0	100.0
By Lender Size						
Less than 10,000 Loans	41.4	30.9	24.3	20.0	18.5	22.1
10-75,000 Loans	20.3	22.1	23.9	24.2	22.0	23.2
More than 75,000 Loans	38.4	47.0	51.8	55.9	59.5	54.7
All Loans	100.0	100.0	100.0	100.0	100.0	100.0

Source: Joint Center for Housing Studies enhanced HMDA database.

Appendix B: Blue Ribbon Advisory Committee Members

Adam Bass
Ameriquest Mortgage Company

Steve Brobeck
Consumer Federation of America

Glenn Canner
Federal Reserve Board

James Garner
CitiGroup

Edward Gramlich
Urban Institute

Bill Longbrake
WaMu/
Financial Services Roundtable

Moises Loza
Housing Assistance Council

Patricia McCoy
University of Connecticut

Marc Morial
National Urban League

Samuel Myers
University of Minnesota

Sandy Samuels
Countrywide Financial Services

Ellen Seidman
ShoreBank Corporation/New America Foundation

Michael Staten
George Washington University

Eric Stein
Self-Help/Center for Responsible Lending

John Taylor
National Community Reinvestment Coalition

Terry Theologides
New Century Financial

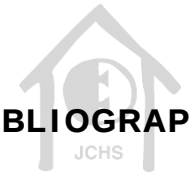
H. Robert Tillman
Federal Reserve Bank of Philadelphia

Susan Wachter
University of Pennsylvania

Ken Wade
NeighborWorks America

Elizabeth Warren
Harvard University

Mark Willis
JPMorganChase



BIBLIOGRAPHY

Apgar, William and Allegra Calder. 2004. *Credit, Capital and Communities: The Implications of the Changing Mortgage Banking Industry for Community Based Organizations.* Cambridge: Harvard University, Joint Center for Housing Studies.

Apgar, William and Mark Duda. 2004. Preserving Homeownership: The Community Development Implications of the New Mortgage Market. A Report Prepared for the *Neighborhood Housing Services of Chicago.*

Avery, Robert B., Glenn B. Canner, Robert E. Cook. 2005. New Information Reported under HMDA and Its Application in Fair Lending Enforcement. *Federal Reserve Bulletin,* September.

Avery, Robert B., Kenneth P. Brevoort and Glenn B. Canner. 2006. Higher-Priced Home Lending and the 2005 HMDA Data. *Federal Reserve Bulletin*, September.

Courchane, Marsha and Peter Zorn. 2006. Presented in "Consumer Literacy: What Price Perceptions?" a paper delivered to the Homer Hoyt Research Institute, January 20, 2006.

Department of the Treasury. 2006. *Interagency Guidance on Nontraditional Mortgage Product Risks*. Department of the Treasury, Board of Governors of the Federal Reserve System, Federal Deposit Insurance Corporation, Department of the Treasury and National Credit Union Administration. 29, September.

Essene, Ren S. and William Apgar. 2007. *Understanding Mortgage Market Behavior: Creating Good Mortgage Options for All Americans*. Cambridge: Harvard University, Joint Center for Housing Studies.

Federal Reserve Board. 2006. *Interagency Guidance on Nontraditional Mortgage Product Risks*. Department of the Treasury, Board of Governors of the Federal Reserve System, Federal Deposit Insurance Corporation, Department of the Treasury and National Credit Union Administration. 29, September.

Fellows, Matt. 2006. *Credit Scores, Reports, and Getting Ahead in America*. Washington, D.C.: Brookings Institution.

Goering, John and Ron Wienk. 1996. *Mortgage Lending, Racial Discrimination, and Federal Policy*. Washington D.C.: The Urban Institute Press.

Inside Mortgage Finance. 2005. *The 2005 Mortgage Market Statistical Annual, Volume 1 The Primary Market.* Bethesda, MD: Inside Mortgage Finance Publications.

Inside Mortgage Finance. 2005. *Top Subprime Mortgage Market Players & Key Subprime Data 2005.* Bethesda, MD: Inside Mortgage Finance Publications

Joint Center for Housing Studies. 2002. *The 25th Anniversary of the Community Reinvestment Act: Access to Capital in an Evolving Financial Services System*. Prepared for the Ford Foundation. Cambridge: Harvard University.

Ladd. Helen F. 1998. Evidence on Discrimination in Credit Markets. *Journal of Economic Perspectives*, 12. Spring, 1998. pp. 41-62.

Li, Wei and Keith S. Ernst. 2006. *The Best Value in the Subprime Market: State Predatory Lending Reforms.* Durham, N.C.: Center for Responsible Lending.

Munnell, A.H., L.E. Browne, J. McEneaney and G.M.B. Tootel. 1992. Mortgage Lending in Boston: Interpreting HMDA Data. *Federal Reserve Bank of Boston* Working Paper 92-7.

Pence, Karen M. 2003. Foreclosing on Opportunity: State Laws and Mortgage Credit. *Board of Governors of the Federal Reserve Board*, September.

Staten, Michael. 2005. *The New HMDA Pricing Data: What Can They Tell Us About Pricing Fairness?* Washington D.C.: Georgetown University, Credit Research Center.

Urban Institute. 1998. *Mortgage Lending Discrimination: A Review of Existing Evidence*. A Report Prepared for the U.S. Department of Housing and Urban Development, Office of Policy Development and Research. February 1998.

White, Alan. 2005. Price Discrimination in the Mortgage Market. *The Consumer Advocate,* 11(4).