The Subprime Mortgage Market:

Implications for Managing Publicness

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Policy Design and the Subprime Mortgage Market:

Implications for Managing Publicness

> *There has been a bubble in the U.S. housing market, but the current crisis is not merely the bursting of the housing bubble.(…) It consists of a prevailing trend, credit expansion, and a prevailing misconception, market fundamentalism, which holds that markets should be given free rein. The current crisis constitutes the turning point when both the trend and the misconception have become unsustainable.*
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> -George Soros, *The New Paradigm for Financial Markets: The Credit Crisis of 2008 and What It Means* Public Affairs, New York, 2008, p. 3.

Introduction

The subprime market failed. There is no question that something went terribly wrong with the U.S. mortgage market in the beginning of this 21st century. Nearly **one in five** homeowners in the United States with a subprime mortgage was delinquent on their mortgage payment in the final quarter of 2007, and more than **one in ten** was in foreclosure, more than double the delinquency rate and nearly ten times the foreclosure rate of the average mortgage during the same period (Mortgage Bankers Association 2008) . Where did the subprime market fall short? While some might suggest that the subprime market was a market failure[2], we suggest that the deeper issue plaguing the US mortgage market over the past decade was a public value failure.

Since the inception of U.S. mortgage lending in the 1800's, access to capital for mortgage loans, and access to homeownership more broadly, have always had essential public value components (Collins 2007; Immergluck 2004; Hoffmann 2001). Policies and strategies responsible for a majority of the gains in homeownership over the past century have been the result of public and private actors and agencies

[2]As noted by economists and lending experts, the mortgage market may correct itself. Investors have, for the most part, learned that the risk of subprime loans is much higher than originally projected, and are no longer willing to invest as heavily as before (Gramlich 2007), thus drying up much of the liquidity that fueled the risky lending practices.

incrementally balancing political and market authority[3]. Even when using the mortgage market to stimulate the economy, as with the creation of the Federal Housing Administration during the Great Depression in the 1930's, core public values were still maintained in a Lindblomian fashion[4].

The recent gains in homeownership over the past decade, however, were facilitated in part through a much different strategy. While homeownership rates leveled off around 63 percent from 1960 to the1990, from the mid 1990's to 2005, homeownership rates rose to more than 69 percent nationwide. A majority of these gains in homeownership were made through loans to low income and previously "underserved" borrowers through high cost (subprime) loans (Belsky and Duda 2002; Immergluck & Smith 2004; Williams, Nesiba, & McConnell 2005; Shlay 2006). Subprime lenders are typically independently owned mortgage companies, and as such, fall outside the regulation of federal banking laws (Nothaft and Surette 2002). Also called "B" and "C" loans, subprime loans typically target borrowers with blemished credit, and compensate for the increased risk with higher fees and higher interest rates.

Years before the market crisis of 2007-2008, practitioners, policymakers and scholars raised serious concern with many of the practices of the subprime market (Carr and Schuetz 2001), referring to the increases such practices facilitated as the "American delusion" (in contrast to the "American dream"), and "the changing face of inequality in home mortgage lending" (Shlay 2006; Williams, Nesiba and McConnell 2005). We suggest that the primary difference with the subprime market strategy, compared with previous homeownership strategies in the U.S., was that it usurped the typical public private incremental development process in favor of elevating the free market- essentially isolated from political authority and influences of publicness. The net result was a crowding out of public values typically upheld in the mortgage lending market.

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[3]While it would be much simpler to evaluate the mortgage sector as being purely public or purely private, like most other sectors (and organizations) in the U.S., it is comprised of an incredibly complex mix of the market and government (Bozeman 1987).

4Lindblom suggested that while policymakers cannot often agree on the value(s) to be achieved, they can agree on a policy, or strategy, that achieves multiple (sometimes conflicting) values (1959).

We pursue two purposes here, one broad, the other broader. First, we critically examine high cost lending and its relationship to other more public lending strategies, drawing on the theory of dimensional publicness and its antecedents (Bozeman 1987; Bozeman 2007). Second, we use this analysis as a springboard to considering a key "meta-policy" issue, the interplay of politics, markets and values. The ubiquitous and often calamitous effects of the subprime crisis provide sufficient warrant for our analysis, indeed for scores of analyses. However, a crisis of great magnitude affords an opportunity to reflect not only on the immediate damage but also on the social and economic assumptions it has strewn asunder. We agree with Soros (2008) that the subprime crisis motivates reflection about "market fundamentalism," as well as a re-assessment of the limits of both markets and government institutions as guarantors of public value. Specifically, if we assume that most policies (public *and* private) have elements of political and economic authority is it possible to develop more systematic theory about the likely outcomes of any particular mix in given policy domains? In practice, practical policy-making is rarely either pure "command and control" or pure market fundamentalism. But practice outpaces theory. What might be the contours of a policy theory inured to the market dogma, skeptical of the potency of political action, but nonetheless determined to forge a theory-based approach to understanding policy design?

Managing Publicness

A central assumption of our paper is that policy domains can be characterized by the mix of political and economic authority brought to bear on the social choices within the domains (Bozeman, 1987). Absent a domain ruled entirely by pure and unfettered markets (extremely rare in more complex social choice realms), we can think of policy-making as a matter of "managing publicness" (Bozeman, 2007; Bozeman and Straussman, 1990). In other words, policy-making entails striking a balance of economic authority and political authority, with the "optimal" balance depending upon the distinctive characteristics of the policy domain as well as the character and quality of the economic and political tools and resources available. Some public policy or social choice strategies are "more public" and others "more private;" a crucial challenge of public policy-making is ensuring the proper mix. As Lindblom

(2001) points out, both markets and political institutions achieve social and policy goals through cooperation and mutual adjustment. Neither the ideas of disconnected freedom of choice mediated only by markets nor the idea of command and control provide accurate depictions of real world policy choice processes.

The idea of managing publicness presents a quite different perspective than familiar dichotomous views of governance, with some scholars, dismissing the importance of the distinction between public and private management altogether (Simon 1995; Fottler 1981), and others suggesting that public and private management are so fundamentally different from one another that the two blend only at the policy-makers' hazard (e.g. Sayre 1953). But to an increasing extent, public management and policy-making have come to be viewed as a function of underlying political and economic influences that exhibit varying public control and private control over organizations or policy areas (Dahl and Lindblom 1953; Wamsley and Zald 1977; Bozeman 1987; Lindblom 2001; Bozeman 2007). Taking the latter approach, the question when designing or implementing policy is neither market pre-emption nor government monopoly but how to coordinate both public and private aspects to achieve particular desired outcomes. In much of the industrialized world, and especially in the United States, we live in a market dominated society with little prospect or apparent longing for fundamental systemic change. At the same time, we live in democracies that hold dear certain public values. Whether these public values are embodied in founding institutions, such as constitutions, statutes, political culture or long-standing tradition, they are, if not manifest or palpable, nonetheless identifiable (see Jorgensen and Bozeman 2007; Gaus 1990). The concept of managing publicness views one of the essential roles of government to be managing for public values, across varying (often market infiltrated) policy and organizational contexts (Bozeman 2002; Bozeman 2007; Moulton 2007).

Rather than assuming a priori that the government (political authority) or the market (economic authority) is the correct mechanism by which to implement a particular policy, the managing publicness approach starts with a set of public values to be achieved in a particular context, and considers the

appropriate mix of political and economic authority necessary to bring about a particular value outcome (Bozeman 2007; Moulton 2007). Further, public value attainment is not strictly of benefit to government or political interests; in fact, "when public values are realized they often benefit individual economic interests while advancing public interest ideals" (Bozeman 2007, 46). Public value failure is often enabled by assuming a priori that government or economic mechanisms are the end all be all method to provide for public values in a particular context, as has often been the case with the recent marketization of the public sector (Eikenberry & Kluver 2004; Box et al 2001), and may also be the case with government dominance in areas where the market would have actually been more efficient. The reality is that most often both are necessary, in varying degrees and for varying roles to bring about public value outcomes[5].

During the peak of the subprime boom, largely unfettered market approaches dominated the subprime lending environment. At the same time, however, other more "public" mortgage strategies were also in place, ones based on mortgage instruments developed by policy-makers and the mortgage loan industry to reach out to underserved populations. Our analysis focuses on the relationship between these "more public" mortgage instruments and the "more private" instruments represented by subprime mortgage instruments. As is the case with most policies (public and private), mortgage policies and institutions have both public and private authority elements. For example, subprime mortgages, similar to several more venerable instruments (e.g. FHA), have the consequent and sometimes the express public value of making homeownership affordable for a broader base of citizens. But subprime mortgages are, in general, "more private" because they have operated in a more private, less regulated market aimed

[5]The public management privatization and contracting literature provides an excellent depiction of this combined approach, rather than a strict either or strategy. In the heat of the privatization movement in the early 1990's, Wise cautioned that increased privatization of particular services did not obviate the need for government; rather, there was an ever greater role for coordination of public interests, the market and management strategies to ensure that essential public values were provided for in the decentralized structure (1990). In their article on public sector contracting, Brown, Potoski and VanSlyke (2006) purport that is it not just the presence of markets that determine a contracting decision, but also the need to balance public values and institutions as well as the market to bring about particular outcomes in a given context.

chiefly at achieving private values, especially profits for a food chain of banks, mortgage companies and bond holders.

Our approach is to estimate a change regression for "public" lending and high cost market shares by county using data on more than 4 million individual home purchases distributed among 247 counties in three states from 2004-2006. Second, we employ multi-level modeling techniques (HLM) to investigate the influence of county level mortgage publicness characteristics on the likelihood of a borrower receiving a high cost loan in 2006. Through both analyses, we find a crowding out effect between more public lending strategies and high cost lending. This is critical given that one of the economic justifications for the subprime market was that it was filling a void not being met by other mortgage strategies. The implications of these findings for managing publicness, or managing for public value outcomes, are discussed. With this underlying perspective in mind, we turn to the issue of managing publicness in the mortgage lending market, demonstrating the important role of public value coordination in a heavily market dominated environment.

Public Values & Mortgage Lending Strategies

Beginning substantially with Hoover's 1931 federal sponsorship of local Savings and Loan Associations through the creation of Federal Home Loan Banks, the public sector has been actively engaged with the private sector in regulating and incentivizing mortgage lending towards particular value outcomes. Numerous justifications for public involvement have been provided, including positive externalities for society, individual benefits for homeowners, and market stimulation and stabilization (Collins 2007). Regardless of the rationales for pursuing a particular strategy[6], core public values have been traditionally upheld through the incremental infusion of political authority, including ensuring the affordability of mortgages; ensuring the availability of mortgages to underserved individuals and areas

[6]Hoffman (2001) argues that different "ideas," or motivating principles, governed different strategies pursued in mortgage lending throughout history, where traditional banking was developed based on utilitarian ideals, savings and loans were based on progressive ideals, the credit union movement was based on populist ideals, and the subprime movement falls under "neoliberalism" ideals.

(i.e., increasing homeownership; and ensuring the sustainability of housing tenure (not only obtain access to affordable housing, but maintain it over time). The subprime market strategy that emerged in the 1990's, however, was largely sheltered from the infusion of political authority.

We will briefly consider the history and political authority influencing four strategies in mortgage lending that were in place prior to (and after) the emergence of subprime lending strategies: Federal Housing Administration (FHA) insured mortgages, Government Sponsored Entity (GSE) purchased mortgages, mortgages provided by local lenders often under the authority of the Community Reinvestment Act (CRA), and Mortgage Revenue Bond (MRB) subsidized mortgages. We will then introduce the potential clash with public values resulting from emergence of the subprime mortgage lending strategy and its lack of coordination with the other "more public" strategies.

The Federal Housing Administration (FHA)

Prior to 1934, mortgages to non-wealthy Americans were predominately provided through Building and Loan Associations (Savings & Loan Associations in 1934). Such associations were mutually held by individuals investing savings and using interest earned on deposits to finance mortgages. After the Depression, however, homeownership became increasingly viewed as a tool to stimulate the economy, and the volume of lending provided by Savings & Loan Associations was deemed inadequate (Hoffman 2001). Thus, the 1934 Housing Act authorized the Federal Housing Administration (FHA) insurance program to increase homeownership opportunities by stimulating investment in mortgages.

FHA mortgages carry a borrower paid mortgage insurance premium that insures the investor in the event of borrower default, thus encouraging investment. To incentivize borrowers to participate in the FHA insured program, FHA increased the affordability of mortgage financing. The government insured FHA product allowed up to 80 percent Loan To Value (LTV) financing (90% in 1938, and up to 97% today), allowing prospective homebuyers with less money saved to take advantage of mortgage financing (previously, homebuyers needed 25 to 50 percent of the value of the purchase saved prior to obtaining a mortgage). FHA insured loans were first targeted at new construction and were racially biased and not

targeted for low income borrowers. In 1962, Kennedy, by executive order, mandated equal opportunity of FHA lending (Carliner 1998). FHA mortgage insurance was explicitly aligned with the public values of affordability, and availability to underserved borrowers. While FHA underwriting standards have traditionally been more lenient than some conventional standards, credit quality and repayment ability remain critical components of the approval process to ensure long term sustainability of FHA insured mortgages

FHA mortgage insurance remains a critical component of the mortgage strategy quilt; however its overall use has been steadily decreasing as a percent of total market share. Maintaining the affordability of FHA mortgages continues to be a critical priority, with most recent debates considering the affordability of the required upfront Mortgage Insurance Premium (MIP) to offset the potentially higher risk of FHA borrowers (Collins 2007). Further, FHA insured mortgages remain a vital part of lending to first time homebuyers, particularly those who have been traditionally underserved. In 1999, FHA insured 42 percent of loans for Hispanic and African American mortgagors (HUD 2000).

Government Sponsored Entities (GSE's)

Congress initiated the modern "secondary market" of mortgage lending with the creation of the Government Sponsored Entities (GSE's) in 1968 (Lea 1996). The secondary market model separates the lender, the secondary market purchaser and the investor. Specifically, the lender originates the mortgage and sells it to the GSE (thus freeing up capital to make more mortgages), the GSE packages the mortgage in mortgage backed securities (MBS), and investors invest in the securitized MBS. While Fannie Mae was initially created alongside the FHA insured mortgage program to encourage investment in FHA products, in 1968 it became privately owned, and Ginnie Mae was created as the secondary market for FHA loans. Freddie Mac was initially created as the secondary market arm of the Savings & Loan Associations (through the Federal Home Loan Bank), but today Freddie Mac and Fannie Mae activities are virtually indistinguishable (Van Order 2000). GSE's are frequently referred to as "quasi-governmental" entities; while that are owned privately, they are congressionally chartered to carry out

public purposes for mortgage lending, and receive public benefits such as tax exemption and access to a line of credit from the U.S. Treasury Department (Moe 2001; HUD 2008).

The primary purposes behind creating the secondary market was to add liquidity to the mortgage lending market, make mortgage lending funds available evenly across the country, and to protect investor credit risk (as the GSE's assume the credit risk), thus stimulating more investment activity and more funds available for mortgage lending (Van Order 2006). Further, GSE's encourage standardized practices among lenders, producing "conforming" loan applicants who meet certain credit and affordability underwriting criteria.

While sustainability has always been a critical component of GSE insured mortgages (GSE's traditionally purchase "conforming" mortgages with low credit risk to investors), increasing the availability of mortgages for underserved borrowers has recently been integrated into the GSE strategy. Growing concern that Fannie Mae and Freddie Mac were not reaching out to low-income borrowers and neighborhoods led to Congress passing the Federal Housing Enterprises Financial Safety and Soundness Act of 1992. Specifically, under this legislation, Congress established three specific affordable housing goals for the GSE's relating to both loans made to low income borrowers, and loans made in specific geographically targeted areas, that are to be adjusted and enforced by HUD (Ambrose and Thibodeau 2004; HUD 2008). For 2006, 53 percent of the mortgages purchased by GSE's were to be for low and moderate income homebuyers; 38 percent of the mortgages were to be in "underserved areas" identified by HUD; and 23 percent of the mortgages were to be for very low income families, or families with low incomes living in low income areas (HUD 2008). Research has demonstrated that GSE's have been generally effective at achieving the affordable housing goals (Bunce & Scheessele 1996; Bunce 2002; Manchester 1998), though others note that there is considerable room for improvement (Williams, McConnell, & Nesiba 2001).

Finally, GSE's traditionally purchase prime mortgage loans, with competitive interest rates and fees. Recent research by An and Bostic (2006) suggests that GSE targets passes down to lenders, who are

encouraged to serve marginal "underserved" borrowers (who may otherwise have received high cost subprime loans) with prime loans to meet the GSE target goals, thereby promoting affordable mortgages to underserved populations. With the increase in subprime lending, there was some concern that GSE's used subprime loans to meet their HUD targets; however, such purchases remained a very small portion of the total GSE portfolio (Williams, McConnell & Nesiba 2001).

Community Lending & the Community Reinvestment Act (CRA)

In the traditional lending model, lenders were by design "local". Homes purchased using Building & Loan Association mortgages in the late 1800's and early 1900's, for example, had to be within a few miles of the association. The rationale was that borrowers would be more invested in making their payments if they were accountable to the local community (Hoffmann 2001). Soon after the emergence of the secondary market, lending became much more "national" in scope. Concern mounted that lenders were no longer being held accountable to local communities for their lending behavior. The allocation of capital to communities is as much a political matter as an economic matter; denying a community access to capital (for example by diverting resources to more profitable areas elsewhere, or by discriminating based on racial composition through "redlining") can essentially dry up the viability of the community (Immergluck 2004; Shlay 2006).

The Home Mortgage Disclosure Act (HMDA) of 1975 was the result of a grassroots effort to increase the exposure of lenders to their local communities. Under HMDA, lenders are required to publicly disclose information about the location of the loans that they provide, as well as demographic characteristics about the borrowers, and beginning in 2004, the interest rate spread on the loan if it is more than 3 percent above the comparable US Treasury rate (HUD 2008). HMDA was given teeth through its sister legislation, the Community Reinvestment Act (CRA), passed by Congress in 1977. Under CRA, certain types of depository lending institutions that are federally regulated (such as commercial banks and savings and loans), are encouraged to reinvest a designated portion of their funds (through loans or direct investments) in their local community, specifically to communities with low incomes. Examiners can use

the information reported under CRA, and public comments on the information from the community, to deny requests for bank mergers or acquisitions. Research suggests that CRA regulations have been modestly effective at increasing lending to otherwise underserved areas (Holyoke 2004; Apgar et al 2002; Shlay 1999), though others suggest room for improvement (Williams, McConnell & Nesiba 2001).

CRA legislation, while predominately upholding the public value related to increasing availability of homeownership through service to the underserved, also by nature of local community investment increases the propensity for sustainable mortgages. Lenders who are held accountable to their communities are more likely to provide for loans that are sustainable over time (Ergungor 2007; Moulton 2007). There is no specific provision included in CRA for affordable mortgage lending, however research suggests that community reinvestment type loans crowd out higher cost loans in underserved communities (Calem, Gillen & Wachter 2004).

The Mortgage Revenue Bond (MRB) Program

State Housing Finance Agencies (HFA's) began to form in the 1960's, particularly after the 1968 Housing Act which provided funds to states to develop rental housing, and the 1968 Revenue and Expenditure Control Act which permitted the use of tax exempt industrial revenue bonds for "residential real property for family units" (Durning 1992, 7). While most state HFA's initially sold bonds for rental housing development, in 1974 they began selling bonds for mortgages. Mortgage revenue bonds (MRB's) are tax exempt securities issued by state or local housing finance agencies. Agencies sell the bonds to investors at reduced interest rates (because the interest earned is tax exempt), and use the savings to buy down the interest rate on private mortgages to borrowers, typically originated by private lenders participating in the program.

While by design meeting the public value of affordability (loans are provided at reduced interest rates), MRB's were not initially targeted at low income borrowers or underserved areas. In fact, in many local MRB programs, as much as 2/3 of the population qualified for the program based on income in 1978 (Durning 1992). To prevent overuse and to better target MRB subsidies, Congress enacted the Mortgage

Subsidy Bond Tax Act of 1980, limiting the use of the funds to first time homebuyers purchasing homes below set price limits, unless homes were purchased in target areas. Shortly after, income limits were added to the program, as well as caps on the amount of bond money states can access in a given year (Durning 1992, Carliner 1998). In 2005 alone, 9.8 billion dollars was generated through the sale of tax exempt mortgage revenue bonds by state housing finance agencies, subsidizing roughly 90,000 home purchases by low income borrowers across the United States (National Council of State Housing Finance Agencies 2006-1). Recently, both Congress and the President have considered proposals to expand MRB's in light of the mortgage market crisis, allowing MRB's to be used to refinance unaffordable mortgage loans (thereby increasing their sustainability) and increasing the bond cap placed on states to stimulate more home purchases (OMB 2008; Joint Economic Committee 2007).

The Evolution of the Subprime Market…Political Authority?

Subprime lending in the 1990's grew by as much as 900 percent (Shlay 2006). According to HMDA data, high cost (subprime) loans grew from 1 percent of the total mortgage market in 1993 to 10 percent of the mortgage market in 2000, to 15-30 percent of the total loan volume in 2006[7]. What has been described as "The Brave New World" of mortgage lending (Lea 1996) was launched into being with slow death of Savings & Loan Associations in the late 1970's and the subsequent federal deregulations and private financial market activity in mortgage securities.

The 1980 Depository Institutions Deregulation and Monetary Control Act phased out state interest rate caps, allowing lenders to charge higher interest rates to borrowers, followed by a 1982 Act that permitted adjustable rate mortgages and balloon payments (the entire mortgage balance becomes due, or "balloons" at a specified point in time a few years after purchase). Starting in the mid 1990's, private Wall Street Mortgage Backed Securities became more attractive to investors, dividing mortgages into tranches and providing higher risk tranches (lower credit borrowers with higher interest rate mortgages) a

[7] The difference in rates as of 2006 is based on whether you count all high cost loans as subprime loans (30%), or only loans originated by lenders identified by HUD as subprime (15%).

higher rate of return for investors. Risk was more easily appraised due to the automation of underwriting, and thus "risk based pricing" became a standard practice. All of these changes laid the groundwork for the subprime mortgage market to develop as a viable strategy in US mortgage lending. The government role in the development of the subprime market was thus an enabler. In their recent review of the evolution of the subprime market, Chomisiengphet and Pennington-Cross (2006) note that while there were many factors that contributed to subprime market growth, "most fundamentally, it became legal" (38).

Subprime lenders are typically independently owned mortgage companies, and as such, fall outside the regulation of federal banking laws (Nothaft and Surette 2002). Also called "B" and "C" loans, subprime loans typically target borrowers with blemished credit, and compensate for the increased risk with higher fees and higher interest rates. Studies show that more than half of subprime loans (42-80 percent) impose pre-payment penalties for prepaying on a mortgage, compared with only 2-11 percent of prime lenders (Immergluck and Smith 2004). Additionally, they often permit borrowers to have a payment that would be considered "unaffordable" by most prime lenders- allowing a debt to income ratio as high as 40-50 percent of the gross monthly income of the borrower, contrasted with 36 percent maximum for most prime lenders. Thus rather than supporting the public value of affordable mortgages, subprime mortgages actually provide higher cost financing by design.

This is not to say that subprime mortgage lending does not support any of the core public values. In fact, the subprime mortgage market is responsible for much of the gains in homeownership made to underserved populations over the last decade. Research demonstrates that as much as 1/3 of the growth in lending to underserved neighborhoods can be explained by the growth of the subprime market, and that 2 times as many low income households, and nearly 3 times as many black households (or households living in black neighborhoods) received subprime loans than the average borrower (Canner 1999; Calem, Gillen and Wachter 2004). Some suggest that this growth is due to the concentration of credit and income compromised borrowers in underserved areas, who would otherwise not be able to qualify for mortgage

lending. In fact, this is the economic argument behind subprime lending; that the subprime market mitigates the effect of credit rationing that takes place in the prime market (Chinloy & MacDonald 2005; Cutts & Van Order 2005; Gramlich 2007), smoothing out the otherwise artificially cut off market.

However, others are more skeptical about the targeting practices of subprime lenders, suggesting that as much as 35 to 50 percent of all subprime borrowers could have qualified for prime mortgages at more affordable prices (Carr & Scheutz 2001). In a recent study of subprime mortgages originated in 2004, Chomsisengphet and Pennington-Cross found that the average credit score of subprime borrowers was 651, very close to the average score of 669 for prime borrowers (2006). Research also suggests that borrowers receiving subprime loans are less financially savvy than their prime counterparts. In a survey of prime and subprime borrowers, Lax et al found that whereas nearly 90 percent of all prime borrowers reported shopping around for interest rates on their home purchase, only 75 percent of subprime borrowers reported such search behavior (2004). Thus, subprime borrowers are prime targets for predatory lending practices of brokers often associated with subprime loans (Renuart 2004; Williams, Nesiba & McConnell 2005).

One of the primary public value clashes related to subprime lending, demonstrated by the current mortgage market crisis, is that many of the subprime loans have proven unsustainable, with a delinquency rate of nearly 19 percent in the final quarter of 2007, compared with 3.5 percent for prime mortgages, and 5.8 percent for all mortgages combined (Mortgage Bankers Association 2008). While this has been the impetus for the recent alarm and subsequent reconsideration of the appropriateness of subprime lending strategies, the potential clash between the subprime market and core public values has been apparent since the inception of subprime lending as a mortgage strategy.

It is of critical importance to understand the government actions (or inactions) that enabled the subprime market, and the subsequent effect on other pre-existing strategies in mortgage lending. While the causes of the subprime crisis can be traced to a variety of sources, including front line brokers, securitization processes, and investors, the government's primary role in contributing to the crisis was that

of an enabler. In short, government permitted the unfettered market to dominate a segment of mortgage lending. The anti-regulatory climate post Keynesian economics in the 1980's (Immergluck 2004) permitted the emergence of a near "pure market experiment" in mortgage lending that existed alongside the more public strategies including FHA, GSE's, MRB's and CRA community lending. No effort was made to coordinate the subprime experiment with the other existing mortgage strategies. The assumption was made that the subprime market would simply be filling a void that was left unfilled by other market strategies, thus smoothing credit access (Chinloy & MacDonald 2005; Cutts & Van Order 2005; Gramlich 2007). But did this occur?

Preliminary research by An and Bostic (2006) finds that in fact there is a strong, negative relationship between changes in GSE market share and changes in subprime market share, where as GSE market share in an area increases over time, subprime market share in an area decreases (and vise versa). Research by Calem, Gillen & Wachter (2004) indicates that while minority borrowers in general have a higher probability of receiving a subprime loan, in communities with strong community reinvestment lending, minorities are actually significantly less likely to receive subprime loans. In a study of community based lending institutions, Ergungor (2007) found that the presence of local banks in a community decreases the market share of high cost loans in that community. This suggests a crowding out relationship, rather than a smoothing effect, between more public lending strategies and subprime lending. *We hypothesize that rather than filling a void, the introduction of an unfettered market strategy into the public-private quilt of mortgage lending effectively crowded out other more public strategies, and thus crowded out public values in mortgage lending for a segment of the U.S. population*.

Methods & Data

One of the primary economic assumptions underlying the subprime market strategy was that it was filling a gap in the mortgage market for borrowers who would otherwise not be served by mortgage lenders. One way to test this assumption is to examine the change in subprime lending volume in a particular area, relative to the change in the volume of lending under the other mortgage strategies, at two

points in time (see An and Bostic 2006). Under this assumption, an increase in any of the other mortgage strategies would have no influence on the amount of subprime lending provided in an area. We will implement this test with an aggregate multivariate regression model, by county, as follows:

$\Delta S_i = a + \gamma \Delta P_i + \beta X_i + \varepsilon_i$

Where ΔS_i is the change in subprime market share from 2004 to 2006 in county i; ΔP_i is the change in a set of public-private mortgage strategies (FHA, GSE, MRB and CRA community lending) from 2004-2006 in county i; X_i is a set of control variables for county i, including change variables for economic conditions by county; and ε_i is a normally distributed disturbance term.

Another way to test this assumption is to examine the probability of a borrower receiving a high cost loan, relative to the market presence of other lending strategies in a given area. If the two are truly independent, increases or decreases in other lending strategies in a given area will have no significant effect on the probability of a borrower receiving a high cost loan. While previous analysis have predicted the probability of a borrower receiving a high cost loan using logistic regression (Calem, Gillen & Wachter 2004), we employ multi-level modeling techniques, specifically hierarchical linear modeling, to take advantage of the nested nature of the data.

Although mortgage lending has become more globalized than in the past, the type of mortgage a borrower receives (and from whom they receive it) is still largely proximately dependent (Ergungor 2007). The county lending "culture," including the public nature of the lending activity in a particular county, may thus influence the type of loan that a borrower receives (and therefore the probability of receiving a high cost loan). The multi-level modeling framework is specifically designed to understand the influence of such group level variation on individual outcomes (Heinrich & Lynn 2001). Further, because borrowers are nested within counties, there is reason to believe that the borrower observations within a particular county "group" are not truly independent of one another. Proceeding to estimate using traditional logistic regression techniques violates the independence between units assumption, and thus

may result in inefficient or even biased estimates, depending on the severity of the between group differences.

For this analysis, we use a random intercept and random coefficient model, allowing for unique variance components by county for the intercept and model variables. The general system of structural equations to be estimated is:

Level-1 Model: $\Pr[\text{highcost}]_j = \beta_0 + \beta_1 B_{1j} + \beta_2 CT_{2j}$

Level-2 Model: $\beta_0 = \gamma_{00} + \gamma_{01} P_{1j} + \gamma_{02} C_{2j} + u_0$
$\beta_1 = \gamma_{10} + u_1$
$\beta_2 = \gamma_{20} + u_2$

Where Pr[highcost] is the probability of a borrower receiving a high cost loan; B_j is a vector of borrower level variables; CT_j is a vector of census tract characteristics associated with the location of purchase; P_j is the percent market share of a set of public-private mortgage strategies (FHA, GSE, MRB and CRA community lending) in 2006 for the county in which the borrower purchased a home; C_j is a vector of county level variables, and u is the random variance component.

For this analysis, we rely on disaggregated Home Mortgage Disclosure Act Data (HMDA) as our primary source[8]. HMDA data provides information on the purchase characteristics, including the loan amount, location (census tract) of purchase, interest rate spread on the mortgage (if the rate is more than 3 percentage point above the comparable US Treasury rate), type of purchaser and loan status (approved, denied, withdrawn, etc), as well as limited information about borrowers, including their income, race, gender. We limit our analysis to mortgages reported to HMDA in three states: Indiana, Ohio & Florida, from 2004-2006, and only to owner occupied home purchase mortgages. These exclusions result in a dataset including more than 4 million individual observations, distributed among 247 counties in the three states. For the aggregate analysis, we cluster the home purchases by county. For the individual analysis,

[8]In general, HMDA requires federally regulated mortgage originators (including conventional lenders, mortgage companies, thrifts, and independent agencies) making conventional and government guaranteed mortgages within Standardized Metropolitan Areas to disclose publicly certain data on each loan originated, annually. In the 2005 HMDA data, the nearly 8,850 lenders reporting comprised roughly 80 percent of all home lending activity in the U.S. (Avery, Brevoort, and Canner 2006). HMDA's sister legislation, the CRA, places additional requirements on depository institutions in congruence with their annual HMDA reports.

we limit our sample to borrowers purchasing homes in the three states in 2006, resulting in a total of more than 630,000 observations.

We link this data by census tract to neighborhood and demographic characteristics from the 2000 Census. Statistics on unemployment are obtained from the US Bureau of Labor Statistics and are linked by county to the borrowers. Finally, lender characteristics are downloaded from the Transmittal Information Sheet (TIS) files with the HMDA data.

Analysis

Before proceeding with the multivariate analysis, Table 1 provides a brief overview of important trends in both subprime market share and the market share of other public-private mortgage strategies from 2004 to 2006. The top section provides disaggregated information for all owner occupied home purchase transactions (with a mortgage) in Indiana, Ohio and Florida for 2004, 2005 and 2006. As demonstrated on the table, there is a sharp increase in high cost mortgage transactions from 2004 to 2006, from 15.18 percent of all mortgages to 33.86 percent of all mortgages. At the same time, there is a clear decrease in most other public-private market shares: GSE (Fannie and Freddie) purchased mortgaged decreased from almost 30 percent in 2004 to just under 20 percent in 2006; FHA mortgages decreased from 10 percent in 2004 to about 6 ½ percent in 2006; mortgages originated by local lenders who are also subject to CRA decreased from 8 percent in 2004 to 5 ½ percent in 2006. Mortgage Revenue Bond loans, while obviously a much smaller share of the market, more than doubled during this same time period. However, the prevalence of MRB's in the market is very location specific. The lower portion of Table 1 demonstrates that MRB mortgages make up as much as 15.66 percent of all mortgage transactions in some counties, where there are also a few counties with no MRB transactions.

INSERT TABLE 1 HERE

The first section of the analysis, Table 2, presents the results of the aggregate change regression by county. The results clearly demonstrate a strong, negative relationship between public-private mortgage strategy market share and subprime loan market share. Most substantively, a 1 percent increase

in the MRB market share in a county is associated with more than ½ a percent decrease in the subprime market share in a county. Similar to An and Bostic (2006) a 1 percent increase in GSE market share is associated with a .25 percent decrease in subprime market share, and a 1 percent increase in FHA market share is associated with a .13 percent decrease in subprime market share[9]. Finally, a 1 percent increase in local CRA lender market share is associated with a .11 percent decrease ($1/10^{th}$ of a percent) in subprime market share. The control variables are significant predictors and perform as expected, with decreasing incomes and loan to income ratios predicting increasing subprime market shares in an area, and counties with higher educational attainment with lower market share increases in subprime lending.

INSERT TABLE 2 HERE

The purpose of the multi-level model in this analysis is to identify the influence of county level mortgage lending publicness on the probability of a borrower receiving a high cost loan. Table 3 presents the results of this analysis. Model 1 includes only borrower level characteristics, allowing for random intercept and random coefficients by county. Note that characteristics of the census tract of purchase are included with borrower level characteristics. The percent of the census tract with at least highschool education is a proxy measure for borrower risk, as credit score information is not provided in HMDA data files. Borrower income and loan amount also describe the risk of the borrower. All three measures are significantly and negatively associated with the probability of receiving a high cost mortgage, as would be expected. Model 2 includes county level characteristics as controls, in addition to borrower level characteristics. By comparing the variance component of the intercept between Model 1 and Model 2, one can identify that slightly more than 20 percent of the variation in the probability of receiving a subprime loan between counties is explained by these county control variables.

[9]Using a different operationalization for subprime lender and a different time period but a similar methodology using HMDA data, An and Bostic (2009) found a .27 percent decrease in subprime market share associated with a 1 percent increase in GSE market share, and a .07 percent decrease in subprime market share associated with a 1 percent increase in FHA market share.

Of most interest to this analysis, Model 3 includes measures for mortgage publicness, or mortgage strategies that are more public in nature, by county. Specifically, the market share of local bank originations, MRB mortgages, GSE purchased mortgages and FHA mortgages all negatively predict the probability of a borrower receiving a subprime loan (although local bank market share is not statistically significant), in line with the crowding out hypothesis. Together, the county mortgage publicness variables explain an additional 30 percent of the variation in the probability of a borrower receiving a subprime loan between counties.

To substantively interpret the findings, Table 4 includes the predicted probabilities for the variables in Model 3 based on the beta coefficients from the multi-level logistic regression. Predicted probabilities for a one standard deviation change around the mean are provided, as well as predicted probabilities for a change from minimum to maximum values. While those with higher incomes are less likely to receive a high cost loan (9.51% for those with the highest income, compared to 14.17% for those in the sample with the lowest income), the size of the loan amount received is more substantive. It is important to remember that this dataset includes only owner occupied, home purchase mortgage originations; with this in mind, borrowers with a loan amount of about $80,000 (log = 8.99 in thousands) have a predicted probability for receiving a high cost loan of 14.56%, compared with borrowers receiving a mortgage for $180,000, with a predicted probability of 9.52%. Perhaps most substantively, and most concerning, is the enormous effect of race and ethnicity. Black borrowers are nearly three times as likely to receive a high cost loan as non-minority borrowers (27.91% compared to 11.81%), and Hispanic borrowers are nearly twice as likely to receive a high cost loan as non-minority borrowers (19.27% compared to 11.81%). This finding is in line with previous research that has noted the racial and ethnic disparities associated with subprime mortgage lending (Canner et al 1999; Calem, Gillen & Wachter 2004).

Unique to this analysis, county-level mortgage market share variables are also important predictors of the probability of a borrower receiving a high cost mortgage. As public market shares

increase in a county, the probability of a borrower receiving a subprime mortgage decreases. Of the 247 counties included in this analysis, the MRB market share (percent of MRB mortgages to total mortgages originated in a county in 2006) ranges from 0 percent to 16 percent; the probability of a borrower receiving a subprime loan changes with the MRB market share from 12.51 percent to 9.16 percent, respectively. Further, the market share of FHA insured mortgages varies from 0 percent to 75 percent of market share in a county; the probability of delinquency nearly doubles for those counties with no FHA lending compared with those counties with the highest proportion of FHA lending (13.72% to 7.93%). Most substantively, GSE investment in a county (purchases of mortgages by Fannie Mae and Freddie Mac) is negatively associated with the probability of a borrower receiving a high cost loan, with predicted probability ranging from 16.5% for counties with only 7% of their mortgages purchased by GSE's, to 6.58% for counties with 60% of their mortgages purchased by GSE's. The effects of local bank market share and housing counseling organization presence are not statistically significant.

INSERT TABLES 3 & 4 HERE

Discussion

Both the market share change analysis and the multi-level analysis demonstrate a significant, and relatively substantial negative relationship between more public mortgage lending strategies and the high cost lending strategy. In a given county an increase in the market share of public lending strategies from 2004 to 2006 is associated with a decrease in the market share of high cost lending. Further, borrowers purchasing homes in counties with a higher proportion of public lending are less likely to receive a high cost loan, controlling for community and borrower characteristics. There are obvious limitations to this analysis and to the data used in this analysis. Unfortunately, HMDA data does not include critical indicators for borrower risk, such as credit score or affordability ratios that are important in understanding the cost of mortgages received. Proxies for risk characteristics were included; however, more robust analyses with fuller measures for borrower risk would be important to confirm the validity of these

findings. Nonetheless, the main purpose of this analysis was to understand the general direction and substance of the relationship between high cost lending and more public mortgage lending strategies.

That a negative relationship exists between two mortgage strategies operating in the same market is not surprising. In fact, it has been demonstrated in previous research that a negative relationship exists between FHA insured mortgages and GSE (Fannie Mae and Freddie Mac) mortgage purchases (An and Bostic 2006-2). What is concerning is the contrasting nature of the "dueling" mortgage strategies, one set of strategies continuously infused with public values, and the other isolated from "political" authority, and the markets and borrowers who are most susceptible to the political authority-less mortgage strategies. The very borrowers who could benefit the most from influences of publicness in mortgage lending were the borrowers being targeted by the high cost, "free-market" lending strategies.

Conclusions

The primary failure in the mortgage lending market over the past two decades was a failure to manage the publicness of mortgage lending strategies. Managing publicness requires understanding and coordinating the mix of political and economic authority necessary to bring about public value outcomes (Bozeman 2007). While this discussion has focused on mortgage lending, the implications of these findings extend to numerous other policy and organizational contexts that often necessitate a mixed public/market strategy, from the science and technology field, to health care, to homeland security. In such situations, a formal "contract" between public and private actors often does not exist; however, the need is all the more critical to coordinate political and economic authority to ensure public value outcomes.

The subprime crisis, as a case study in managing publicness, takes its place alongside other studies using a publicness framework to examine public policy domains. The publicness framework has been applied to policies a widely divergent set of policies including substance abuse policies (Heinrich and Fournier 2004), urban mass transit (Boschken 1992), and research and development laboratories

(Emmert and Crow). Despite the magnitude of its effects, many of the lessons of the subprime case resemble those found in other policy domains. However, there is one respect in which every case differs. Since each policy domain is distinctive, having its own social problems, opportunities, and constituencies, the mix of political and economic authority instruments brought to bear is likewise quite particularistic. Likewise, the efficacy of particular policy instruments (both public and private) varies according to domain. A specific mix of, say, tax credits, subsidies and laissez faire that proves highly effective in one policy realm may prove a formula for disaster in another. From a pragmatic standpoint, we can perhaps safely conclude that the subprime mortgage domain, and perhaps mortgages in general, require a different "formula" now that the most recent one has proved so combustible. Policy actors have girded themselves to change the mix, through legislative action, industry self-regulation, and other means for the exercise of political and economic authority. Time will tell us if the new formula serves better than the old.

Can we improve on "time will tell?" Even if one assumes, with us, that macro-level policy making can be understood in terms of the mix of political and economic authority brought to bear, it does not follow that current policy theories can inform those choices. In the first place, one of the reasons for the hegemony of market fundamentalism (at least in many industrialized nations) is the relative weakness of public value-based policy theory (Bozeman, 2007; Brown, 1992). Public interest theory has been widely pilloried (e.g. Schubert, 1961). More contemporary theories of public policy have their own weakness, including an over-emphasis on processes and micro-politics, hyper rationalism or the fact that many are really little more than public applications of tools developed for analysis of private markets. Some of the more tried and true models of policy-making are much more appropriate to the individual policy-maker than to institutional level policy making operating in complex environments.

Indeed, the subprime mortgage market failed. However, as this analysis has demonstrated, the underlying public value failure is perhaps more profound and indicative of substantial crisis than any "short term" effect on the private market. As public policy and management researchers and practitioners, we have a robust and developing knowledge of policy tools and environments, lending

valuable insight to managing publicness in a variety of contexts. In the rush to develop market bandages after the subprime crisis, there is a critical need for an integrated approach to managing publicness, thereby addressing the underlying ailment.

Table 1: Distribution of Market Share by Market Strategies,
Owner Occupied Home Purchase Originated Loans, Indiana, Ohio & Florida

	2004		2005		2006	
Disaggregate						
High Cost	15.18		30.08		33.86	
MRB	0.71		0.84		1.93	
GSE	27.54		20.34		19.42	
FHA	10.15		6.55		6.68	
Local CRA	7.98		6.34		5.69	
Disaggregate Loans (Without MRB)	727901		831406		744106	
Disaggregate Loans (With MRB)	733111		838475		758717	
County Averages		*Range*		*Range*		*Range*
High Cost	15.52	*5.09 - 37.73*	26.71	*9.01 - 48.76*	27.27	*10.55 - 57.52*
MRB	1.07	*0 - 11.87*	1.33	*0 - 11.33*	2.67	*0 - 15.66*
GSE	30.31	*11.90 - 63.69*	26.72	*6.81 - 63.23*	27.13	*7.23 - 59.52*
FHA	25.38	*2.18 - 63.64*	20.88	*.74 - 50.00*	20.96	*.49 - 75.00*
Local CRA	17.16	*.70 - 56.61*	14.38	*0 - 52.17*	13.19	*0 - 62.17*
Counties	247		247		247	

Table 2: OLS Estimates for the Market Share Change Regression, 2004-2006[1]

	Change in High Cost Loan Share		
	Model 1		
	β		SE
Mortgage Strategies (Percent Change)			
% MRB	-0.592	***	(0.175)
% GSE	-0.254	***	(0.057)
% FHA	-0.129	**	(0.045)
%Local CRA	-0.110	*	(0.049)
Economic Conditions (Change)			
% Unemployment	-0.017	*	(0.007)
Median Income (Th)	-0.001		(0.001)
Average Loan Amount (Th)	0.001	**	(0.000)
% Loan to Income	-0.146	***	(0.031)
County Indicators (2000 Census)			
Ohio Dummy	-0.006		(0.011)
Florida Dummy	-0.028	^	(0.016)
Population (log)	0.012	***	(0.004)
% ≥ High School	-0.218	**	(0.068)
Median Home Value (log)	-0.040	^	(0.022)
Intercept	0.580	**	(0.223)
N	233		
Adjusted R^2	0.505	***	

[1]Data on Mortgage Markets Shares was obtained from the 2004, 2005 and 2006 HMDA LAR and TIS reports for Indiana, Ohio and Florida. Disaggregated data for home purchase, originated, owner occupied loans was aggregated by county within each of the three states for each year to compute percents. While 247 counties total were identified, 233 had Mortgage Revenue Bond loan activity from 2004-2006, and 221 contained census tracts identified by HUD as "underserved" for GSE targets. Data on economic conditions was obtained from the U.S. Bureau of Labor Statistics, FFIEC, and HMDA data files. Census data was obtained from the 2000 US Census.

Table 3: Multilevel Model Predicting High Cost Loan, Indiana, Ohio & Florida 2006[1]

	Model 1		Model 2		Model 3	
Fixed Effects	Individual Only		Individual & County		All Variables	
Individual Variables	β	SE	β	SE	β	SE
Intercept	-1.276 **	0.042	-1.186 **	0.045	-1.285 **	0.042
Income (log)	-0.050 *	0.023	-0.049 **	0.023	-0.049 **	0.024
Loan Amount (log)	-0.583 **	0.013	-0.584 **	0.013	-0.582 **	0.013
Black	1.053 **	0.036	1.058 **	0.036	1.062 **	0.036
Hispanic	0.573 **	0.043	0.573 **	0.042	0.578 **	0.043
State Dummy: Indiana	0.027	0.055	-0.224 **	0.077	0.054	0.081
State Dummy: Ohio	-0.082	0.054	-0.431 **	0.084	-0.023	0.095
Census Tract Percent Urban	-0.050 ^	0.030	-0.046	0.033	-0.040	0.035
Census Tract Percent ≥ Highschool	-0.974 **	0.152	-0.975 **	0.152	-0.985 **	0.155
Census Tract Median Home Value	-0.665 **	0.046	-0.672 **	0.047	-0.660 **	0.048
County Level Variables						
Number of Banks (log)			0.040	0.046	0.073 *	0.040
Unemployment Rate (2006)			0.115 **	0.024	0.089 **	0.025
Population (log)			0.072	0.050	0.014	0.038
Percent Urban (County)			-0.262 **	0.098	-0.200 **	0.082
Median Income (log)			0.274 ^	0.165	0.205	0.156
Market Share Local Banks					-0.358	0.232
Market Share MRB Loans					-2.181 **	0.825
Market Share FHA Loans					-0.818 **	0.178
Market Share GSE Loans					-1.946 **	0.273
Housing Counseling Orgs/Population					-0.275	2.124
Random Effects (Variance Component)						
Intercept	0.192 **		0.150 **		0.103 **	
Income (log)	0.093 **		0.092 **		0.093 **	
Loan Amount (log)	0.024 **		0.024 **		0.025 **	
Black	0.100 **		0.099 **		0.100 **	
Hispanic	0.208 **		0.207 **		0.207 **	
Census Tract Percent Urban	0.080 **		0.075 **		0.071 **	
Census Tract Percent ≥ Highschool	1.807 **		1.795 **		1.890 **	
Census Tract Median Home Value	0.219 **		0.215 **		0.216 **	

^p<.10, *p<.05, **p<.01

[1]Based on Unit Specific Model with Robust Standard Errors, Full PQL. All Variables Grand Mean Centered.
Level 1 N= 632,919; Level 2 N = 247

Table 4: Predicted Probabilities- Receiving a High Cost Loan[1]

		Mean - 1/2 SD or 0	Mean + 1/2 SD or 1	Min Value	Max Value
Individual Variables					
Income (log)	10.87 to 11.50; 6.91 to 16.12	**11.97%**	**11.65%**	**14.17%**	**9.51%**
Loan Amount (log)	8.99 to 9.82; 4.61 to 16.01	**14.56%**	**9.52%**	**68.51%**	**0.28%**
Black	0 to 1	**11.81%**	**27.91%**		
Hispanic	0 to 1	**11.81%**	**19.27%**		
State: Indiana	0 to 1		12.38%		
State: Ohio	0 to 1		11.57%		
State: Florida	0 to 1		11.81%		
Census Tract Percent Urban	57% to 95%; 0% to 100%	11.89%	11.73%	12.13%	11.71%
Census Tract Percent ≥ Highschool	78% to 89%; 20% to 100%	**12.38%**	**11.26%**	**19.94%**	**10.17%**
Census Tract Median Home Value	11.34 to 11.75; 9.21 to 13.82	**13.29%**	**10.47%**	**38.39%**	**2.89%**
County Level Variables					
Number of Banks (log)	2.06 to 3.41; 0 to 5.36	**11.30%**	**12.33%**	**9.89%**	**13.96%**
Unemployment Rate (2006)	4.20% to 5.61%; 2.10% to 11.17%	**11.17%**	**12.48%**	**9.45%**	**18.96%**
Population (log)	10.41 to 11.57; 8.63 to 14.63	11.72%	11.89%	11.47%	12.35%
Percent Urban (County)	18.5% to 56%; 0% to 100%	**12.24%**	**11.39%**	**12.68%**	**10.44%**
Median Income (log)	10.47 to 10.64; 10.15 to 11.17	11.61%	11.99%	10.98%	13.20%
Market Share Local Banks	10% to 20%; 0% to 62%	12.00%	11.62%	12.38%	10.17%
Market Share MRB Loans	1.5% to 4.5%; 0% to 16%	**12.15%**	**11.47%**	**12.51%**	**9.16%**
Market Share FHA Loans	16% to 26%; 0% to 75%	**12.24%**	**11.18%**	**13.72%**	**7.93%**
Market Share GSE Loans	23% to 32%; 7% to 60%	**12.75%**	**10.93%**	**16.50%**	**6.58%**
Housing Counseling Orgs/Population	0 to .005; 0 to .05	11.82%	11.79%	11.82%	11.67%

[1]All continuous variables are held at their means to compute predicted probabilities, unless otherwise specified. Binary variables are held at their modal value, as follows: State = Florida (Indiana = 0; Ohio=0); Black=0; Hispanic=0. **Statistically significant variables (p<.05) are in bold type.**

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