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ABSTRACT

The US economy is in the throes of the worst financial and economic crisis since the Great Depression. What commenced as a crisis in the US housing and mortgage markets has contaminated other sectors and spread globally. Hitherto, most policy efforts and resources have been devoted to propping up the banking and financial sector. It is clear that in order to restore economic growth and confidence internationally, policies must be designed and implemented to stabilize the housing market. With this objective in mind, our paper analyzes and evaluates a wide and comprehensive spectrum of policy proposals that have been put forward to deal with the critical issue of housing foreclosures and the need to stabilize the housing and housing finance sector. We also describe the genesis and evolution of the crisis, as well as present our own cross-state analysis of the determinants of subprime mortgages and foreclosures.

We examine initial responses of various Government agencies and public-private partnerships, the recent Obama administration programs and proposals, as well as wide-ranging and diverse proposals from prominent academics, policy think-tanks and housing experts. Proposed plans include solutions involving auxiliary loans, shared appreciation mortgages, standards for renegotiated principal, across-the-board rate adjustments, creation of new Government institutions and legal reform. We analyze the potential effectiveness of these proposals applying our benchmark criteria of i) non-recurrence and future mitigation of moral hazard, ii) bang for the buck, iii) fairness and distributive aspects, iv) judicious mix of short-term and long term solutions, and v) regulatory implications. In conclusion, we propose some essential elements of a fair, effective and viable plan to fix the residential finance system and the housing market.

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Executive Summary

The so called subprime crisis is a major historic milestone for the U.S. and the world economy. The speculative bubble in the housing market began to burst in the United States in 2006, and has been followed by ruptures in virtually every asset market in almost every country in the world (with rare exceptions, such as the U.S. Treasury market). The forces unleashed by the subprime crisis in the United States will probably take many years to dissipate, threatening additional interactive collateral damage in asset markets as well as to the financial system. There are those who believe that the subprime crisis has set in motion fundamental socio-economic changes that will profoundly affect consumer behavior, influence economic outcomes and societal tastes and preferences.

While the housing market and the attendant mortgage sector in the United States is the focus of our analysis, the solutions that we evaluate must be understood in the broader context of the global financial crisis and the entire financial value-chain. It is necessary to “stabilize” the U.S. housing market and the mortgage sector in order to restore economic growth and confidence at home and abroad. However, policies to stabilize the housing market are unlikely to succeed fully unless many of the other asset markets and financial institutions are stabilized simultaneously

Our analysis addresses three intertwined issues:

- What is the genesis of the subprime crisis?
- How effective will existing and proposed housing-mortgage policies be for fixing the subprime crisis?
- What needs to be done, both in terms of research and policy, for a better understanding of the crisis and for the development of policy solutions?

Root Causes of the Subprime Crisis

The confluence of Macroeconomic, social and financial factors caused the housing bubble in the US. Macroeconomic conditions provided several crucial elements. The US consumer debt fueled the trade deficit, which was financed substantially with savings by US trading partners. These global imbalances and capital inflows combined with official Fed interest rate policy (in response to the dot com bust and the recession of 2002) generated cheap debt. There was cheap mortgage money for homebuyers at one end, and a willing pool of global investors in securitized mortgages, at the other.

New borrowers emerged to meet the expanding supply of mortgage money. Homeownership rates rose among younger and lower income households. The financial sector frenetically expanded products to meet the demand from homeowners and satisfy yield starved investors. Through financial alchemy, investment firms created derivatives

with higher ratings than what the underlying securities would support. The fee structure rewarded lenders, mortgage brokers, and securitizers for originations rather than financial product viability, thereby creating incentives for increased transactions. Regulatory laxness passively permitted diluted underwriting standards and predatory lending practices, supporting the growth of subprime and Alt-A mortgages, which were then securitized and sold to investors around the world.

Subsequently, with lower growth in demand for homes, prices began to stabilize or dip slightly and the boom in home construction collapsed. Simultaneously, the many subprime mortgages with interest reset provisions started to come due. Combined with lower sales activity and prices, a self-sustaining loop was created, causing marginal borrowers to default, further worsening the housing market. As home prices sank and mortgage default rates rose, the value of mortgage securities began to decline and the derivatives market started unraveling. The failure of major U.S. financial institutions, heavily invested in dodgy assets, and the repeated need for tens and then hundreds of billions of dollars in government provided funds to keep them afloat, led to a much broader financial crisis not only within the US but globally.

Regional Variations

While this broad process worked its way through the housing market throughout the US, there was considerable geographic variation. For example, median 2007 home values ranged from \$88,000 in Mississippi to \$536,000 in California. At present, states with the largest home value losses are California, Nevada, Florida, Arizona and Michigan. The top five states for subprime shares in total mortgage outstanding (end 2005) were Nevada, Florida, Tennessee, Texas and Arizona, and the top five states with highest share of foreclosures (end of 2007) were Michigan, Ohio, Florida, Nevada and Indiana.

A statistical analysis confirms that the highest share of subprime mortgages were issued in states with populations with younger median age, higher average price growth rates in the recent past (2000-2005), and weaker state-level financial regulatory structures (proxied by per capita expenditures on financial administration and supervision). Higher subprime shares in the recent past were the single most important determinant of higher foreclosure rates. These statewide variations suggest that policy programs will need to take account of regional variations, and that states with strong preexisting regulatory and institutional frameworks may be better positioned to partner workout programs.

Initial Responses at the Federal Level

The avalanche of foreclosures at the local level has drawn responses from both state and federal legislative bodies. At the state level, much of the initial response has been to institute protections for those facing foreclosure and to limit the ability of financial institutions to repeat the mistakes that led to this crisis. The collapse of critical, publicly traded financial institutions and the failure of government sponsored enterprises have drawn responses at the executive and legislative levels of the federal government. At the same time, Congress, as well as regulatory bodies such as the FDIC, have begun crafting measures to deal not only with the large scale collapse of the credit system, but with the local and individual issues directly related to mortgage default and foreclosure.

The mortgage default and foreclosure problem manifests in several different ways, each of which contributes to the larger crisis: 1) Individual borrowers face payment distress, either because they were not able to afford the initial loan, because rate adjustment decreases their ability to pay, or because of change in income status (such as job loss) has impacted their ability to pay. 2) In weak market areas, the incentive to continue mortgage payments may be eroded by declining values leading to negative equity and “under water” loans. 3) Price decline may accelerate in neighborhoods with numerous foreclosures, because of slower sales where prices are expected to decline further and the impacts of neighborhood quality where foreclosed vacant units pockmark the area. 4) Resolving mortgage issues in problem homes and problem neighborhoods becomes more difficult if the home is underwater, if the loan has been securitized, or if there is more than one lien on the property.

Policy responses to date have nibbled at these issues, but leave large chunks unresolved. Several different programs deal directly with one or more segments of the existing borrower population, with some variation in the types of modifications available.

- HOPE NOW began in late 2007 and was entirely voluntary, with the government role limited to bringing together housing assistance organizations and lenders in the process of reworking loans for distressed borrowers. The program addresses only delinquent loans for single family owner occupants who are not in bankruptcy, and whose loan to value ratio is too high to allow standard refinancing. The primary adjustment offered is to decrease payments to 38 percent of household income, by lowering interest rates, increasing loan duration, or principal forbearance.
- Hope for Homeowners, established by Congressional measure in mid-2008, is also a voluntary agreement between borrower and lender. Borrower owner-occupants may be in default but must have a history of at least 6 payments, may not own a second home, and must have payments greater than 31 percent of income. Both principal and interest rate may be adjusted into a fixed rate loan of no more than 96.5 percent loan to value. Any decrease in principal is offset by shared equity appreciation in the future.
- FDIC has a program for adjusting interest rates and forbearance of principal on at-risk loans in the portfolios of institutions in receivership that has been a proving ground for some of the current government strategies.

Alternative Proposals

Large segments of loans are not addressed by these programs and a number of academics and finance experts have offered advice on how to reach larger groups of borrowers, tackle the negative equity disincentives, or provide further home buying stimulus.

- Caplin, Cunningham, Engler and Pollack suggest a 2-loan solution, one interest bearing with a standard LTV, and a second shared appreciation mortgage with no interest, but a payoff on sale or at the end of the mortgage term
- Martin Feldstein recommends a supplemental government low cost loan for up to 20 percent of the mortgage, with rates based on the cost of funds.

- The Qualified Impaired Mortgage program gives the lender the deed and releases the borrower from the loan. The home occupant may enter a 5 year recovery lease with the option to repurchase the home at its current fair market price at the end of the lease (Alpert).
- Zingales recommends standardized renegotiation at the zip code level, based on changes in the home price index. The mortgage face value would be reduced by the average price decline of the local index, wherever prices had decreased more than 20 percent. On sale, the mortgage holder would receive half of the difference between mortgage value and sale price.
- Hubbard/Mayer call for lowering the mortgage spread between 30 year fixed and 10 year Treasury to its 20-year average of 1.6 percent. They also call for the creation of a modern HOLC, which would share losses on negative equity with lenders, but would also share in future appreciation with homeowners.
- Geanakoplos and Koniak recommend transferring the reworking function from the paralyzed master servicers to government appointed community-based “blind” trustees to work out problem mortgages.
- Blinder, Roubini and others suggest establishing a HOLC-type entity to buy and rework problem loans, while providing counseling to at-risk borrowers and determining when foreclosure is necessary.
- Fix-Housing-First (FHF) recommends stimulating home-buying by an expanded version of this program, applicable to all homebuyers, with “credits” of up to 3.5 percent of the conforming loan limit (possibly as high as \$22,000). They suggest tying requiring repayment only if the home is sold in the first three years. The program would include a subsidized interest rate for a thirty-year fixed rate loan.

The Obama Plan

The program instituted in February 2009 by the Obama administration incorporates a number of existing and recommended approaches, but still falls short of a comprehensive all-inclusive residential rescue program. The major components of the current program are:

- Refinancing for borrowers in good standing—This program helps borrowers with loans held by the GSEs to refinance if reduced equity makes them ineligible for refinancing without assistance.
- Reworked loans for borrowers at-risk of foreclosure—Uses a Treasury-backed plan to reduce monthly payments. Lenders and the program share the costs of reducing payments to equal or less than 31 percent of income. Incentives are offered to servicers to rework loans (in increments over time, to encourage workable loans), to borrowers to stay current, and to lenders through insurance on further declines in home value.
- Increased investment in GSEs to increase confidence in mortgage backed securities, expand availability of loans

- Other types of assistance, from allowing bankruptcy judges to modify mortgages, to renter and neighborhood stabilization assistance.

Several important factors are not addressed in the current version of the Obama plan. First, troubled borrowers still require case-by-case workouts, a time consuming process. If the plan is indeed intended to stem foreclosures, then some type of foreclosure “breathing room” may be necessary for the workout process to succeed. Second, a very large number of the subprime mortgages have been securitized, often into several different products. Legislative action is needed to provide servicers the flexibility and incentives to rework these loans. Third, many of the problems of loans that are deeply under water have not been resolved by the stability initiative. Fourth, many homeowners carry multiple mortgages; there may need to be a more explicit role and responsibility for holders of second mortgages to allow the plan to work smoothly. Fifth, a monitoring system of home prices by region would be useful to determine if the restriction of action to conforming loans is capturing most of the problem.

A Check List for Moving Forward

A quick solution to the mortgage/home price/foreclosure problems will likely engender stabilizing forces for other critical sectors of the economy. Applying our benchmark criteria of i) future mitigation of moral hazard, ii) bang for the buck, iii) fairness and distributive aspects, and iv) judicious mix of short-term and long term solutions, we evaluate all the major, existing housing and mortgage proposals. Going forward, several factors will be important for fostering stability in the housing and residential finance markets;

1. A sustainable, viable plan is likely to require elements of a standardized approach (e.g. for interest rate reduction), as well as triage for case-by-case analysis for loan modifications.
2. Losses and gains may have to be shared among three parties: lenders, borrowers and Government.
3. Legal reform may be necessary in order that refinancing will delink servicers from security investors.
4. Targeting home-buying assistance to areas with high foreclosure rates would bring the support directly to the areas most in need of stabilization.
5. There is little data on “jingle mail” share of foreclosures and on investor-landlords. A method for addressing these homes, perhaps tied to rental assistance, could keep the homes occupied and off the market.
6. An overhaul, restructuring and redistribution of federal and state regulatory responsibilities might combine the best institutional features of both.

The Housing Problem and the Economic Crisis: A Review and Evaluation of Policy Prescriptions

I. Introduction

Since 2007 the United States and much of the world have been in the midst of a financial and economic crisis of unprecedented proportions. Housing values have declined in the US at a rate not seen since the Great Depression, credit markets have seized up, balance sheets of financial and non-financial corporations are in dire straits, widespread contagion across global markets is real, and heightened perception of risk and uncertainty regarding all counterparties has emerged.

The subprime crisis has not been confined to the housing and mortgage sectors, nor is it just an American phenomenon. The boom and bust sequence in U.S. residential real estate markets affected other countries around the world, including China, Singapore, New Zealand, Iceland, the United Kingdom, Germany, France and Ireland. Financial institutions in all of these countries have been impacted in a similar way to that of the United States. Simultaneously, stock and bond markets and other asset markets such as oil, food, wine and art “cratered” in the U.S. and elsewhere. Now, the commercial real estate market is also starting to display a crisis profile similar to that of the residential market. First, the on-going economic contraction has begun to cause demand for commercial real estate, whose fundamentals had been relatively strong, to shrink. Second, many of the favorable financing packages for commercial real estate are approaching maturity, with little prospect for refinancing under equally favorable terms. The increasing vacancy combined with tightening credit for commercial real estate is the

classic recipe for a major downturn for commercial real estate markets, which is in its incipient stages at the time of writing of this document.

With this unprecedented economic downturn has come a substantial new body of research published in 2007 and 2008, addressing, among other issues:

- What is the genesis of the subprime crisis? (See Chomsisengphet and Pennington-Cross (2006), Whalen (2008), Gramlich (2007), Demyanyk and Van Hemert (2008), Jaffee (2009a))
- How did the subprime crisis spread to other asset markets? (See Schwarcz (2008), Whalen (2008), Gorton (2008))
- What was the role of securitization and derivatives? (See Schwarcz (2008), Ashcraft and Schuerman (2006), Keys, Mukherjee, Seru and Vig (2008))
- What needs to be done, both in terms of research and policy, for a better understanding of the crisis and for the development of policy solutions? (See Congressional Budget Office (2008b), Schwarcz (2008), McCoy, Pavlov and Wachter, (2009))
- Who were the players (and perpetrators) and how did they contribute to the crisis? (See Whalen (2008), Jaffee and Quigley (2008, 2009))
- What to do about the immediate problems, such as the grassroots foreclosures crisis and repairing the (regulated and “shadow”) financial system so that this crisis cannot recur again? (See Schwarcz (2008b), Shiller (2008) and many others mentioned throughout our paper)

In addition, a huge body of policy literature has emerged in concert with the unfolding of the crisis. From late 2007 through early 2009, there has been a continuous sequence of new crises, occurring weekly, if not daily and sometimes hourly (see the *New York Times* 2009), followed by new, and often ad-hoc policy proposals and responses (Nocera 2009). Potential solutions evolve through sequential political battles, often emerging in a form quite different from that originally proposed (Birnbaum 2008, Morris 2008, Urban 2008). Frequently, the core of the problem, the housing crisis, is obscured by the dust raised by the broader credit crisis and suggested solutions (Geanakoplos and Koniak 2008). Sometimes, within a period of a few weeks, vastly differing proposals have been offered by a wide variety of respected academics and policy makers. (See, for

example, Blinder 2008a and 2008b, Feldstein 2008, and Baker 2008, from February and March 2008.) Federal and state governments have been involved in addressing a wide range of problems, including delinquent loans, frozen credit markets, insolvent banks, and significant losses in financial wealth. Writing a “white” paper on policy in this climate has been challenging, to say the least.

The so called subprime crisis is likely to be a major historical milestone for the U.S. and the world economy. The forces unleashed by the subprime crisis in the United States will probably take many years to dissipate, threatening additional interactive collateral damage in asset markets, in the broader global financial system, and in the real economies around the world. The Federal government (and thus US taxpayers) has committed hundreds of billions of dollars to rescue packages, primarily for bailing out insolvent banks and other financial institutions. Until recently, with the thrust of policy resources concentrated on resurrecting the world financial system, the approach for rescuing the US housing market has appeared to be very much an afterthought, and only now have measures been undertaken to focus seriously on the original source of the problem--homeowners defaulting on mortgage payments. Fortunately, policymakers have now realized the centrally substantive nature of the housing crisis as a core fundamental problem that has to be solved in order to resolve the issues of the financial system at large.

It is our belief that it is a necessary condition to “stabilize” the housing market and residential financial sector in order to restore economic growth and confidence in the U.S. (and world) financial system and the global economy. Policies to stabilize the housing market and the housing finance system are unlikely to succeed unless many of

the other asset markets and financial institutions (e.g., stock market, bond market, banking system, insurance companies, and so forth) are stabilized simultaneously. That is, appropriate public actions for the residential sector cannot succeed without the stabilization of the other asset and financial markets, and vice versa.

The primary focus of this paper is evaluating the various policy proposals that have been espoused to deal with ameliorating foreclosures, stabilizing the housing market and arresting the free fall of housing prices. We begin with a schematic reprise of what happened during the recent past to bring the economy to this juncture. We next discuss the players involved in the subprime crisis, and draw upon the rich body of research conducted in the last year to present an understanding of their role in the build up to the crisis and the bursting of the subprime bubble. We augment the findings from these studies with our own analysis of variations at the state level in subprime exposure and loan failure rates. We then provide an overview of the existing and proposed public policy responses to the crisis. We follow with more detail on those responses directly addressing the housing market, reviewing and evaluating key proposals, suggested by either the academic community or the policy establishment, as well as the most recent approach crafted by the Obama administration. We conclude with a discussion of strengths and weaknesses of current measures, issues remaining to be resolved, possible strategies to be considered, and a prospective research agenda.

II. Elements of the Financial Meltdown

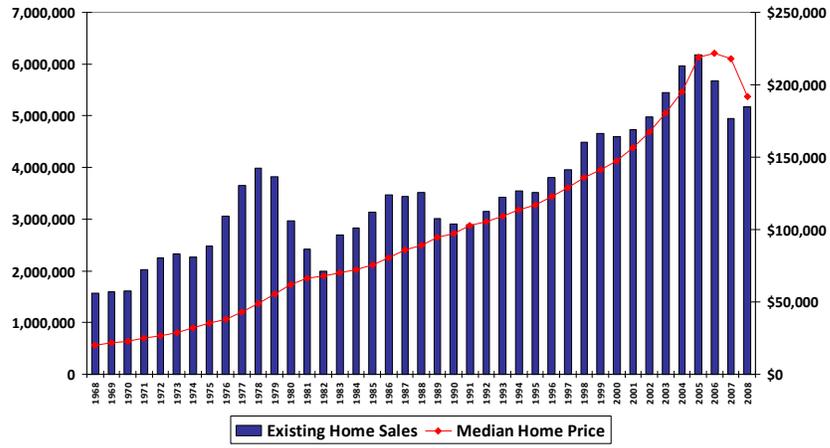
The problems we face today came on the heels of two bubbles, one in the housing market, and a related one in the credit markets. Several different factors contributed to the housing market bubble, some of which also intertwined with the credit market bubble.

The Housing Bubble

The inflating of the housing bubble can be measured by home sales and home prices (Figure 1). Housing sales and prices had been growing at a rapid pace, particularly since the early-mid 1990s, until the downturn began in 2006/2007. The downturn, which initially appeared modest, then accelerated, with median prices declining below 2002 levels; most recently the rate of housing value decline apparently has started to moderate.² Some-home sales indices have declined 10 to 30 percent nationwide, and by as much as 40 percent or more in some markets. Even the more modest losses in housing value become more significant when one considers how home purchases are financed. Since housing is highly leveraged, an initial 20 percent equity stake in a home purchased over the last few years has been, in all likelihood wiped out. The assumption that homeownership is a good means of wealth accumulation has come into question.

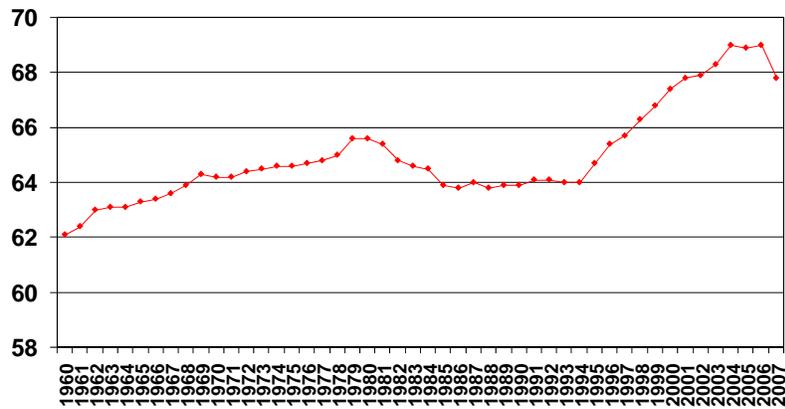
² The median home price is not the only measure of home price changes nor is it the best, but it is the one for which we have the longest time series. The median price is as much a measure of the change in mix of homes sold as of the change in value. Indices more closely reflecting the change in value include the OFHEO index, which is based on "conforming" loans--essentially the middle of the market--nationwide, and the Case-Shiller index, which is computed utilizing a repeat sales econometric model for the 20 largest US metropolitan markets. The OFHEO index shows a drop of around 10 percent in value nationwide as of January 2009 from its peak in April 2007. The Case-Shiller index is down by approximately 30 percent from its peak in June 2006.

Figure 1
US Home Sales and Median Price, 1968-2008



Source: National Association of Realtors

Figure 2
Home Ownership Rates



Source: US Census

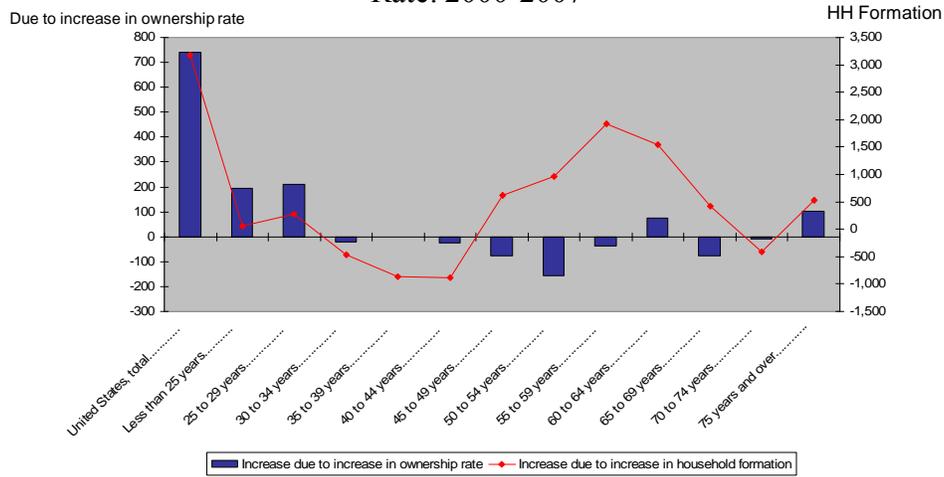
Rapid home price increases, easy credit, speculative activity and an accommodative transactional environment enhanced by securitization resulted in a

dramatic increase in homeownership rates starting from the early to mid 1990s and peaking at the apogee of the housing bubble. The dot-com collapse in 2001 prompted loose monetary policy from the Fed, and led to sharp decreases in interest rates. Mortgage rates dropped, and returns on alternative investments such as the stock market slowed. Homeownership rates (Figure 2) surged in the United States with an increase from about 65% to almost 70%. The increase in homeownership rates was skewed to the Western part of the United States, the younger population, and Hispanics and other minorities. A decomposition of the growth in the number of homeowners between 2000 and 2007 reveals that over half of the homeownership rate growth is accounted for by households under 29 years of age (See Figure 3). Given the boom in housing prices, homebuilders found their industry to be the most profitable in three decades. New homes were created based upon optimistic economic scenarios. New housing unit starts peaked at over 2 million in 2005, and dropped by more than half to less than 1 million by 2008 (US Census data as published on the web by the National Association of Homebuilders).

The Integrated Housing-Securitization Bubble

Figure 4 displays the interconnections between easy money, global imbalances, the housing bubble and the securitization/credit bubble. Factors in the rise of subprime lending included loose monetary policy leading to low interest rates after the 2001 recession, regulatory laxity promoted by relevant institutions, mania for higher returns, a transactions-based incentive structure for mortgages and securitization, predatory lending to vulnerable segments of the population, and foreign financed trade deficits leading to large inflows into US Treasuries and Agencies, and consequently, lower mortgage rates (Bardhan and Jaffee, 2007).

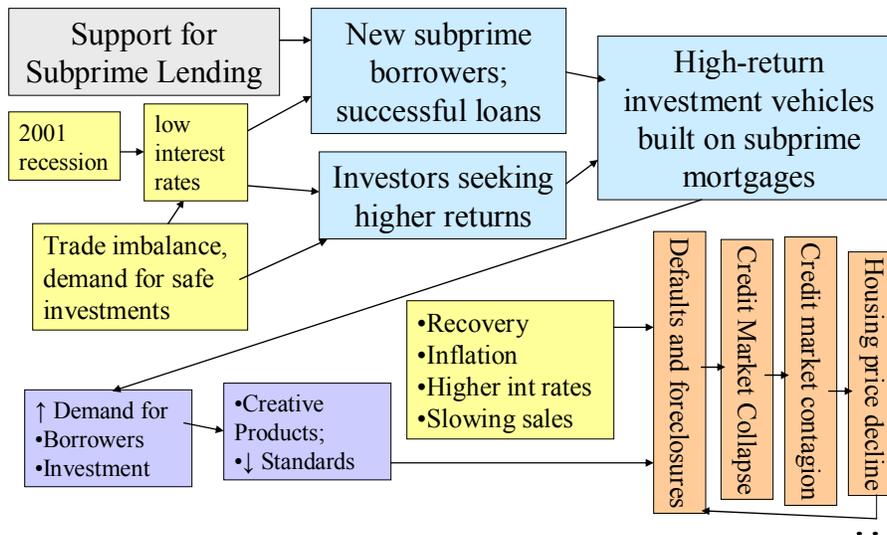
Figure 3
 Decomposition of Change in Number of Home Owners: a) Natural Growth of Households, vs. b) Pure Growth of Ownership Rate: 2000-2007



Source: ACS and Census

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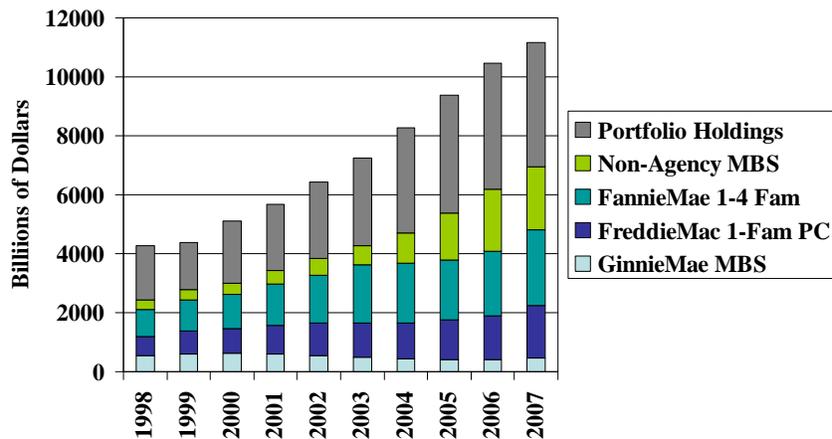
Figure 4
 Interconnections Between the Housing and Securitization Bubbles



The smooth and successful experience with early subprime lending and the insatiable demand of investors for higher returns created a market for a wider range of

mortgage backed securities, beyond those with implicit US government backing through the government sponsored enterprises—Fannie Mae, Freddie Mac, and Ginnie Mae (hereafter, the first two are referred to as the GSEs). As shown in Figure 5, all types of mortgage backed securities grew rapidly between 1998 and 2007 with the exception of tightly controlled Ginnie Mae securities. However, the most rapid increase was in non-Agency serviced private label mortgage-backed securities. Much of this growth was in the subprime and the Alt-A mortgage sectors, whose share grew to more than one third of all mortgages issued by 2006 (Figure 6).

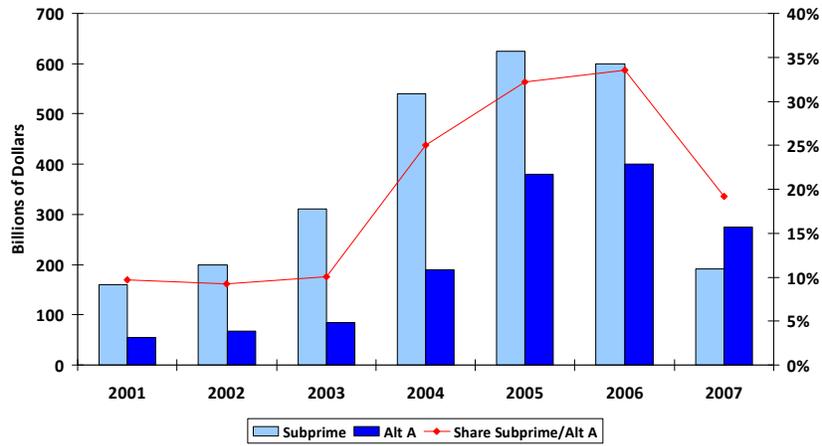
Figure 5
Trends in 1-4 Family Mortgage Servicing Outstanding



Source: Inside Mortgage Finance, July 2008.

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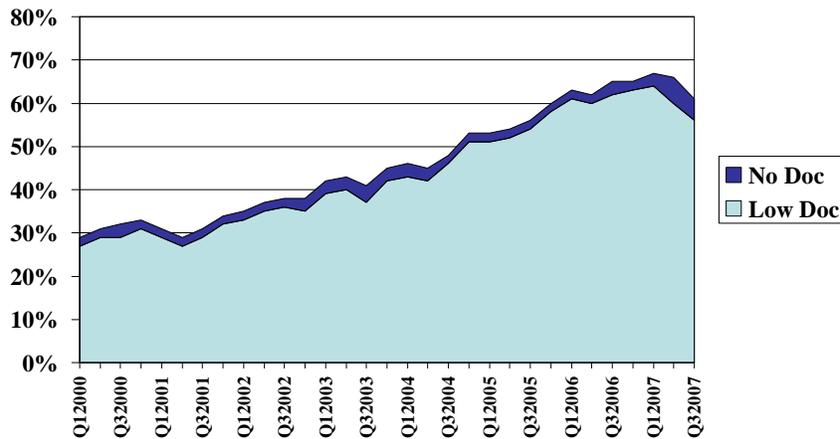
Figure 6
 Subprime and Alt A Mortgage Originations—Value and Share of Total Originations



Source: Inside Mortgage Finance, May 2008.

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Figure 7
 Percent of Loan Value Low-Doc or No-Doc
 (All Except Agency Prime Loans, 2000 Q1 to 2007 Q2)



Source: Authors using First American CoreLogic Marketing Reports, Loan Performance data, May 2008.

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As the volume of subprime and alt-A loans expanded, the loan “quality” worsened, as illustrated in Figure 7, based on First American CoreLogic Loan Performance data, which tracks the majority of non-Agency securitized loans. The share

of these non-Agency loans issued with low or no documentation rose from 30 percent in 2000 to over 60 percent in 2007.

The Two Bubbles Collide

The two bubbles had an almost symbiotic relationship until approximately late 2006, early 2007. With overall strength in the economy interest rates began to rise, demand growth slowed, and payments on adjustable rate loans began to rise. The number of defaults jumped sharply by mid-2006, but the early increases were reported by data tracking agencies with reassuring words. For example, DataQuick's president was quoted as saying, "This is an important trend to watch but doesn't strike us as ominous. ... The increase was a statistical certainty because the number of defaults had fallen to such extreme lows" (DataQuick 2006a). The default rate tripled within a few months. Early signs of collapse continued with the bankruptcy of New Century Financial, the nation's largest independent subprime lender, in March 2007 (CNNMoney.com 2007). By the time Bear Stearns suffered its collapse in early 2008, both bubbles were well on their way to deflating.

III. Stakeholders in the Subprime Crisis and Financial Meltdown

The financial and housing bubbles emanated from multiple sources and a multitude of players were involved in the process. This section identifies the growing list of stakeholders in the subprime financial crisis, and discusses who they are, their roles in the debacle, their needs in the wake of the crisis, and the "moral hazard" inherent in addressing their situation.

Identifying the Stakeholders

Our description of stakeholders goes beyond the initial subprime group to consider all those now enmeshed in the financial crisis. In understanding how the financial situation affects each group, where policy intervention might occur, and potential distributional and other impacts of intervention, we need to examine the characteristics and motivations of each of these players.

Those involved in and affected by the subprime and related credit crisis can be described along several economic axes. First, stakeholders enter the supply-chain at many different points. There are those who occupy the housing (owners and renters), own the housing (owner-occupants and investment property owners), build homes (private, public, and not-for-profit organizations), lend (regulated lending institutions, non-bank lenders, government programs), securitize loans (GSEs, investment banks), provide insurance or other types of guarantees or hedging (US government, GSEs, private insurers, private credit default swaps), regulate financial activities (FDIC, OTS, SEC), invest in the financial instruments (pension funds, state and other local governments, foreign governments, other institutional investors, private individuals), or experience

"collateral damage" (other types of borrowers, future home purchasers, investors in other types of assets, retirees, taxpayers).

A second dimension is the organizational/structural features of the stakeholder-- an individual (homeowner, renter, individual investor), a private institution (pension fund, insurance company, lending institution), or a public institution (which could range from a single purpose agency, such as Ginnie Mae, to a municipal, state, or sovereign government). Third, the geographic scope of the stakeholder (local, national, international) affects vulnerability, the probability and severity of impact, and intervention options. Fourth, the type and level of exposure will depend on the type of asset held, level and nature of the investment transaction, and investment as a share of the investor's wealth. Fifth, the degree of culpability is a function of many elements – for example, was the stakeholder a direct and willing risk-taker, an uneducated and inexperienced participant, or an unprepared "bystander?" We begin with a list of stakeholders, categorized by the stage at which each enters the housing-financial supply chain, and elaborate on the role of each stakeholder using other distinctive stakeholder features.

Those directly involved in housing

1) Occupants

The subprime crisis impacted housing occupants, including owners and renters. Owners with no mortgage debt are likely to be in the least vulnerable position, although if they had planned to realize their capital gains, these have lost value. Of the 112 million housing units in the US, 75.5 million were owner occupied in 2007. Of these, 23.9

million (less than 1/3 of owner-occupied homes) were mortgage free (American Community Survey 2007).

Of the 51.6 million households with mortgage debt, almost 38 percent were paying more than 30 percent of their income on housing costs, and 14 percent spent more than half of their income on housing costs. These households are especially vulnerable to mortgage default. We roughly estimate that as of late 2008, based on the number of annual sales, home price declines and down payment amounts, between 10 and 12 million homes have mortgages with outstanding loan balances greater than the house value. In terms of demographic characteristics, these owner-occupants may be either young, first-time owners, or longer term owners who refinanced as interest rates dropped and home values rose (57 percent of loans made between 2001 and 2007, based on Inside Mortgage Finance data).

Renters become most vulnerable when the property owner is carrying high levels of debt on the property. In parts of the country most heavily affected by declining property values and foreclosures, the carrying cost on a rental property purchased near the peak (mortgage plus associated housing expenses and costs) is no longer covered by market rents.

2) Borrowers

Borrowers include owner-occupants, who may be first-time homebuyers, move-up borrowers, or those who refinanced; and investors/speculators. Investors may have an arms-length relationship to the occupant, or a personal relationship (for example, parents investing in a home occupied by a child), or may keep the house vacant. The degree of vulnerability of borrowers depends on the type of loan, as well as income and

employment status. As of June 2008, 11 percent of all mortgages outstanding were subprime (down from 14 percent in June 2007); 3 percent of prime loans and 28 percent of subprime loans were delinquent 60 days or more. The incidence of delinquency and foreclosures is heavily concentrated in a set of "sunshine" and/or economically troubled states. In June 2008, California and Florida together accounted for one fifth of prime loans, one fourth of subprime loans, almost one third of loans delinquent more than 60 days, and almost two fifths of all loans in foreclosure.³

The degree of culpability can vary widely among borrowers and may be difficult to pin-point and untangle. Owner occupants may range from the least culpable (those who borrowed an affordable amount, had unexpected financial problems--a job loss, a medical emergency, and are unable to sell because prices have declined), to a middle ground (inexperienced borrower acted on the advice of a lender and contracted for unaffordable payments), to risky borrowers, who used subprime refinancing to cope with existing cash-flow problems, to dishonest borrowers and speculators who took out loans based on falsified income and employment information, planning to flip the home for a gain. Looking at the "ownership" experience in Massachusetts, Gerardi, Shapiro and Willen (2007, p.14) find that owners had on average 2.7 loans during the period they owned the home, and that many added debt soon after the home purchase.

Investor-borrowers tend to be excluded in many discussions of policy responses. These borrowers are often defined exclusively as investors, not as owner occupants, although to confound matters further, there are "owner occupants" who live in the home purchased for only a very short time, in order to qualify for financing available only to

³ Statistics in this paragraph calculated by authors from data reported by First American Core Logic LoanPerformance.

occupants (the “flippers” referred to in many discussions); also, there are investors who, while not living in the home, have a family relationship with the occupants. While all of these stakeholders may be classified as "investors," the options for working with these borrowers will vary by investment motivation, with the arms-length investors more willing to walk away, especially in cases where there is non-existent underlying equity.

3) Builders

Close to 200,000 establishments, with almost 1 million employees, were involved in homebuilding in 2006. In 2006, over 70 percent of new single family homes constructed were for sale (rather than occupied as rental property). The for-sale portion of newly constructed multifamily homes rose from under 20 percent in 1995 to 45 percent in 2006. New single-family home sales accounted for over 17 percent of all home sales in 2005, but this share dropped to under 14 percent by 2007. Unlike homeowners, many of whom can choose whether to sell in a down market, homebuilders are pressed to reduce inventory. Since carrying costs are high, in part because credit has tightened, the pressure to dispose of the “piled up” inventory further depresses housing sale prices and exacerbates the housing crisis in the absence of improved demand (US Census Bureau data).

The Lending System

4) Lenders

Direct lenders include banks and mortgage companies. Mortgage originators include large subsidiaries of banks and thrifts, and independent mortgage lenders (See Table 1).

Table 1			
Trends in Top Mortgage Originators			
Top Mortgage Originators 2005	Volume 2005 (\$Bil)	Status 2000	Status 2008 (\$Bil; through 6/08)
Countrywide Financial*	\$490.95	#3; \$61.69	#2; (\$132.03); (acquired by Bank of America, January 2008)
Wells Fargo Home Mortgage*	\$392.33	#1; \$76.46	#1; \$133.69
Washington Mutual*	\$248.83	#5; \$50.73	#8; \$30.50; Chapter 11 Bankruptcy 9/08; Bank assets sold to JP Morgan Chase
Chase Home Finance*	\$183.49	#2; \$76.01	#3; \$116.40
Bank of America Mtg. & Affil	\$158.82	#4; \$51.82	#4; \$74.80; acquired Countrywide
CitiMortgage, Inc.	\$124.29	#14; 19.65	#5; \$72.73
GMAC Residential Holding Corp	\$91.54	#15; 17.82	Now Residential Capital LLC, #7; \$35.73
Ameriquest Mortgage Co*	\$79.68	Not in top 30	Retail lending shut down and wholesale servicing acquired by Citicorp, 2007
GMAC-RFC*	\$64.27	Not in top 30	Acquired by Mortgage Express Ltd. in 2005
IndyMac*	\$60.77	#21; \$9.26	#14; \$15.42; failed July 2008
National City Mortgage Co.	\$59.03	#11; \$21.49	#17; \$12.66
Wachovia Corporation	\$57.71	Not in top 30	\$6; \$37.94; purchased by Wells Fargo, October 2008, following large losses.
New Century Financial Corp.*	\$56.1	Not in top 30	Filed for bankruptcy March 2007 ()
ABN AMRO Mortgage Group	\$53.34	#6; \$23.84	Not on top 50 list
Aurora Loan Services	\$51.93	Not in top 30	Not on top 50 list; subsidiary of Lehman; stopped originating loans in early 2008;
<p>* Among top 25 subprime lenders in 2005 Sources: Inside Mortgage Finance, 2006 Mortgage Market Statistical Annual and September 26, 2008 newsletter; http://newsroom.bankofamerica.com/index.php?s=press_releases&item=7956; http://money.cnn.com/2007/04/02/news/companies/new_century_bankruptcy/index.htm; http://www.rockymountainnews.com/news/2008/sep/18/aurora-loan-contributed-to-downfall-of-lehman/</p>			

Of the top 15 mortgage originators in 2005, at least 7 had failed, been acquired by other lenders to avoid failure, and/or ceased all retail lending by 2008. More than half of the 15 top mortgage originators were also among the 25 top subprime lenders in 2005. Some still hold a portion of these loans in their asset portfolio, but many played a role mainly as "pass-through" agents, with loans eventually becoming securitized, thus allowing a much larger volume of mortgages to be originated and relaxing the incentives for due diligence. Retained recourse on securitized loans eventually contributed to the collapse of some of these institutions.

5) Securitizers

Private companies, GSEs and public agencies (FHA, Ginnie Mae) were involved in converting the loans into financial investment instruments, either directly as securitizers, or through providing insurance and guarantees that strengthened mortgage-backed securities. The role of the private securitization market expanded rapidly in the first decade of the 21st century. Non-agency MBS share of mortgage servicing grew from under 8 percent in 2000 to 20 percent in 2006 (over a 400 percent increase in value serviced, compared to a doubling of overall loan value in the market, as estimated from data reported by Inside Mortgage Finance). Analysis by Mian and Sufi (2008) suggests that the expansion of mortgage credit to "subprime zip codes" was closely correlated both with declining relative income growth, and with the increase in securitization of subprime mortgages.

Other Players

6) Insurers

Insurance played a critical role, both in primary and secondary markets. Several Federal agencies are involved in mortgage insurance, and there is a private mortgage insurance industry as well. Regulated mortgage insurers were subject to capital standards held against losses. Although faced with high potential losses, these companies have not failed, as yet. In contrast a number of other financial products were developed (e.g., credit default swaps) that essentially hedged against losses on the secondary market in bonds and mortgage backed securities but did not fall within the definition of (or under regulatory statutes for) insurance. For these and other reasons, such as lack of “insurable interest” of parties to the transaction, these derivatives have proved much riskier. AIG, a large insurer, had both traditional insurance products and a small group in London generating credit default obligations that were sold not only to the holders of securitized mortgage instruments but also to other investors “betting” on a downturn in the mortgage securities and housing markets. These instruments were sold against insufficient underlying collateral and lay at the core of AIG's collapse. (Dash and Sorkin 2008)

7) Investors

Investors from around the world include individuals, institutional investors, hedge funds, corporations, financial firms of various kinds, and a multitude of governments. Investors have suffered massive losses, although actions undertaken by the Federal Government through TARP and the Federal Reserve through a variety of programs have tended to limit losses. Indirect impacts have been felt by unrelated individual investors and corporations as stock values have dropped. In the immediate term, investor

reluctance in the face of heightened risk perceptions, counterparty uncertainty, and general risks of unreliability has slowed new investments.

8) Taxpayers

The costs of the credit crisis are being borne by many different groups. Unquestionably, the size of the bail-out to financial institutions, the economic recovery and stimulus package, and the indirect costs of various Fed initiatives will place a large bill in the hands of the taxpayer. The long term costs and duration remain uncertain. Over time, economic recovery may help recoup costs at the Federal level and thus for the taxpayers. The Congressional Budget Office (2008a) estimates of the costs of HERA, for example, suggest immediate costs of \$42 billion but net costs of \$25 billion after a variety of related revenues are taken into account. The remaining costs may become an inter-generational issue, as the large deficits contracted in 2008 and 2009 to address the credit crisis and related problems become a tax on subsequent generations. Whoever pays off the new deficits, today's taxpayers are likely to suffer other long-term losses in their retirement accounts, in addition to the drop in housing wealth.

Vulnerability versus Culpability

A number of analyses have taken on aspects of vulnerability versus culpability in examining the role of different players in this set of bubbles. Although earlier research by Calem and Wachter (1999) showed a link between delinquency and poor credit history, analysis by Coleman, LaCour-Little and Vandell (2008) shows little impact of subprime lending on house price inflation. Other factors—the role of non-owner investors and the decreasing GSE market share played a larger role in the decoupling of the market from fundamental economic factors.

More attention has been paid to the role of investors in stimulating the bubble. Gerardi et al (2008) conclude that the expectation that housing price appreciation would continue supported risky investments, based on the historic belief that a downturn in prices was unlikely. In reviewing market analyst literature prior to the bust, they found many who were aware of the potential downside of declining house values but who discounted the possibility. Case 2008 (p. 12) notes that “the housing market is quite susceptible to the formation of bubbles” for exactly the reason that sales are driven by consumer expectations of continued price increases.

Calomiris 2008 (p. 6) argues that this is not a unique event, focusing also on the investment and financing side of the process--“the most severe financial crises typically arise when rapid growth in untested financial innovations coincided with very loose financial market conditions.” Ready availability of credit is also the theme of Mian and Sufi (2008). Jaffee (2009) dwells further on the investment side as a critical element in turning a problem in a small segment of the mortgage market into a national financial crisis. The role of the financial sector in producing a crisis of this magnitude is a major reason that initial responses may have focused on the credit markets.

IV. A Cross-State Analysis of Subprime Trends

The policy space regulating the issuance, origination and disbursement of residential mortgages, as well as the entire institutional structure that is involved in the process, is governed not only by Federal, but also by state level authorities. This is true for both the mortgage industry per se as well as the banking and financial industry at large. While the focus, in academic literature and in the popular press, has been on the understandably weightier role played by Federal regulations, or the lack thereof in the present crisis, there has not been a comparable focus on the role played by state regulatory bodies or the state-level regulatory stance in the making of the subprime crisis. There has been considerable academic work using grassroots, individual mortgage data across zip codes (Mian and Sufi), counties (Gerardi, Shapiro and Willen) and other jurisdictions. As far as we know there has been inadequate research on state-wise determinants of subprime originations and foreclosures. We believe that a state-level analysis could generate additional insights for policy formulation in the current crisis, at yet another level of government institutions.

State Regulatory Conditions Preceding the Run-Up to the Current Crisis

Some of the institutional structures and policy tools available to the states in the arena of residential mortgage lending include: i) Individual State Regulatory Authorities, such as State Banking, Finance and Securities departments (named differently in different states), covering a spectrum of duties relating to overseeing state-chartered banks, credit unions and mortgage lending; ii) the American Association of Residential Mortgage Regulators (an association of state level banking and financial regulatory officers), which promotes “the exchange of information between and among the executives and

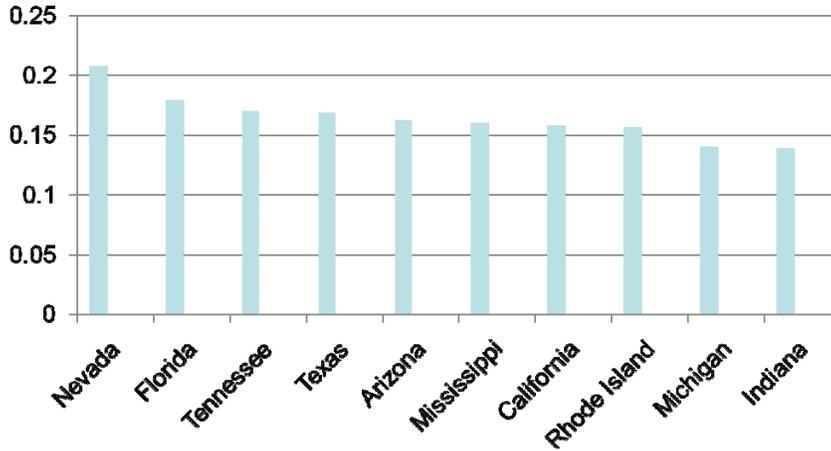
employees of the various states who are charged with the responsibility, pursuant to the laws of the individual states, for the administration and regulation of residential mortgage lending, servicing and brokering; promotes a better understanding of mortgage regulation”; iii) The Conference of State Bank Supervisors, which is an organization of state banking regulators “dedicated to protecting and advancing the nation's dual banking system,” through supporting “a system that offers competitive chartering options, efficient and effective supervision, and a lower cost of regulation for all banks.” (Conference of State Bank Supervisors 2009)

Differences in State Economic, Demographic and Housing Conditions

The need to analyze the subprime crisis at the state level is underscored by two other factors. First, the boom years and the run-up in the housing sector, as well as the subsequent housing downturn have had varying impacts on states. Second, even prior to the crisis, there existed a wide range and variation in the nature of the housing market across states in terms of housing values, exposure to subprime loans, foreclosure rates, demographic, social and economic factors, such as household size, home ownership rates and other variables.

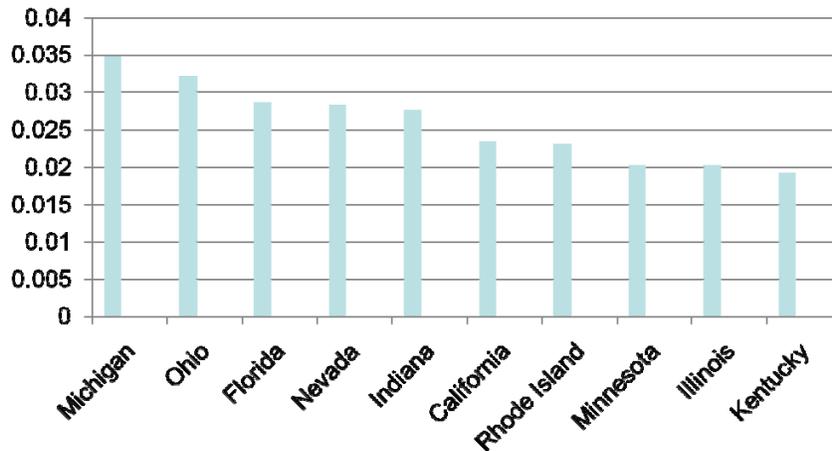
For example, median 2007 home values ranged from \$88,000 in Mississippi to \$536,000 in California and at present, states with the largest losses in home value are California, Nevada, Florida, Arizona and Michigan. Home ownership rates at their peak ranged from a high of 80% for West Virginia to a low of 45% for the District of Columbia. Figures 8, 9, and 10 show shares of subprimes in total mortgages outstanding, shares of all mortgages in foreclosure for some key states, as well as states with the “youngest” and “oldest” populations.

Figure 8
 Share of Subprime in Total Mortgages Outstanding:
 Top Ten States, 2005



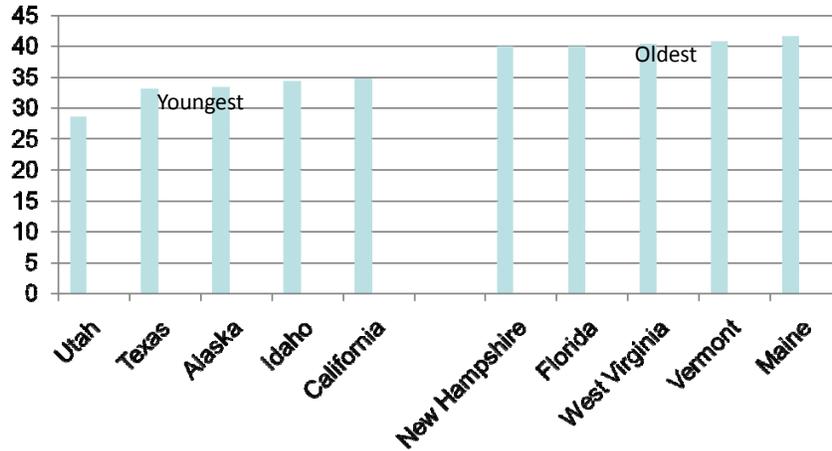
Source: Loan Performance

Figure 9
 Share of all Mortgages in Foreclosure 4Q 2007:
 Top ten states



Source: Loan Performance

Figure 10
Youngest and Oldest States: Median Age

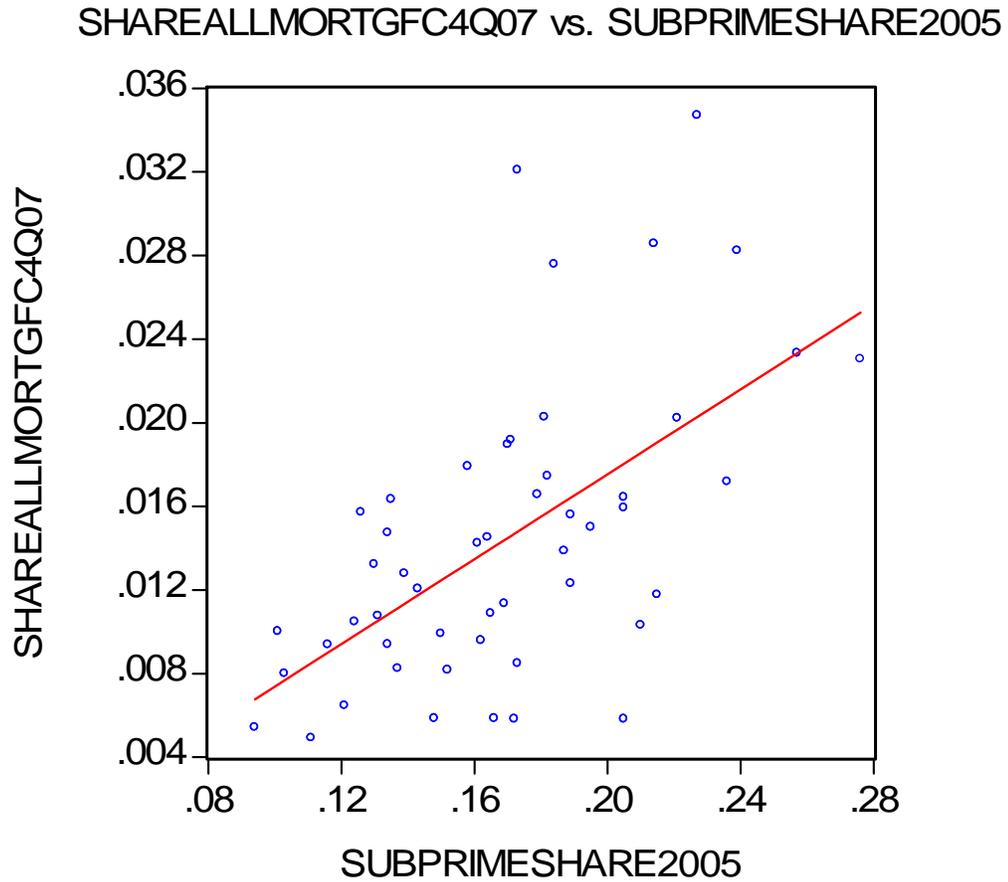


Source: US Census

Statistical Analysis of State Differences

For our empirical work we collected data on the variables mentioned above, as well as data on per capita incomes, minority share of population, home prices, and state funding and budget allocations for banking, finance and mortgage lending supervision related departments. Data sources for the fifty states and the District of Columbia included First American CoreLogic Loan Performance, the US Census Bureau, the American Community Survey, the American Housing Survey, the Federal Deposit Insurance Corporation and the Statistical Abstracts of individual states.

Figure 11



We first examine a simple relationship between subprime exposure in each state and foreclosure experience. A scatter plot (Figure 11) of the share of foreclosures in all mortgages outstanding at the end of 2007 against the share of subprimes in total mortgages outstanding two years prior suggests a positive relationship.

We then estimated cross-sectional OLS regressions for the determinants of subprime share and for each state's share of mortgage loans in foreclosure. The results are shown in Table 2 and Table 3.

TABLE 2: FACTORS ASSOCIATED WITH SUBPRIME SHARE

Dependent Variable: Subprime Share in all mortgages,
Q4, 2005
Method: Least Squares

Sample (adjusted): 1 51
Included observations: 51 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.425919	0.088374	4.819511	0.0000
MEDIANAGE	-0.006213	0.002321	-2.676639	0.0103
Home Price Change 2000-2005	0.053581	0.018576	2.884409	0.0059
Per capita income	-3.88E-07	1.05E-06	-0.371442	0.7120
State expenditure on financial administration/regul ation/oversight per capita	-0.000366	9.82E-05	-3.731583	0.0005

Adjusted R-squared 0.277615

We find that states with populations with younger median age, higher average annual price growth rates in the recent past (1999-2005), and weaker state-level financial regulatory structures (proxied by per capita expenditures on financial administration and supervision) were the ones more likely to have higher shares of subprime mortgages.

TABLE 3: FACTORS ASSOCIATED WITH SHARE OF MORTGAGES IN FORECLOSURES

Dependent Variable: Share of all mortgages in foreclosure Q4, 2007

Method: Least Squares

Sample (adjusted): 1 51

Included observations: 51 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.046125	0.014205	-3.247166	0.0022
SUBPRIMESHARE2005	0.112406	0.022632	4.966722	0.0000
Home Price Change 2002-2007	-0.007840	0.003392	-2.311523	0.0253
Mortgage Burden exceeding 30% of income	0.000196	0.000198	0.991944	0.3264
MEDIANAGE	0.001074	0.000358	3.001445	0.0043

Adjusted R-squared 0.459946

As suggested by the empirical results in Table 3, higher subprime shares in the recent past were the single most significant determinant of higher foreclosure rates.

Without more detailed empirical analyses it is difficult to draw any conclusion about the complex relationship between the subprime and foreclosure shares, on the one hand, and home price change and age, on the other. One interpretation of our statistical results would imply that while subprime issuance was associated with younger borrowers, subsequent foreclosures were not – perhaps due to other factors, such as lower net liabilities or employment tenure issues. In some model specifications foreclosures are related positively to minority share of the population and negatively to more recent home price changes but the statistical results are not robust.

Our data is aggregated at the state-level and in some cases, (e.g., the age and income variables) the correct level of analysis should be the individual mortgage.

However, a state-level analysis, with the inclusion of state-level regulatory institutions and practices highlights the role of state-level oversight and regulatory environment (or lack thereof) in the generation of problem mortgages and is vital in acquiring a full picture of the causes of the subprime crisis and for subsequent policy prescriptions for resolving problems associated with it.

V. Are There Lessons for Today's Housing Market from Policy Prescriptions of Past Financial Crises?

Two twentieth century US financial disasters—the bank failures of the Great Depression and the savings and loan crisis of the 1980s—led to widespread bank failures and plunging residential real estate prices. While the Great Depression was not a real estate-based crisis, but rather impacted housing markets, there has been discussion about adapting public policy vehicles of these periods, especially the Home Owners' Loan Corporation (HOLC) of the 1930s and the Resolution Trust Corporation (RTC) of the 1980s, to address the current subprime crisis.

Response to the collapse of the banking system and mortgage markets in the 1930s had several components, which has shaped banking and mortgage regulation today. Establishment of the Federal Home Loan Bank System provided “a stable source of funds” for thrift institutions. The Home Owner's Loan Corporation “purchased and refinanced distressed mortgages on 1- to 4- family homes.” Government organized insurance programs provided new stability, through the Federal Housing Administration, insuring qualifying mortgages on 1- to 4- family homes, and the Federal Savings and Loan Insurance Corporation (FSLIC, replaced by FDIC in 1989) provided deposit insurance for thrifts. Mortgage funding was expanded through the establishment of the Federal National Mortgage Association (FNMA), which established a secondary market for the purchase of FHA-insured loans (Wheelock 2008). In addition, the 1933 Glass-Steagall Act established the Federal Deposit Insurance Corporation (FDIC) and separated commercial banking from investment banking.

By the 1970s, the federal role in the secondary market for mortgages continued, expanded and had become more complex. The Government National Mortgage Association (Ginnie Mae) was established within HUD to provide guarantees for FHA and Veterans Administration loans in the secondary market. FNMA became quasi-privatized as a government sponsored enterprise in 1968, and the Federal Home Loan Mortgage Corporation (FHLMC) was established with similar structure in 1970. By the late 1970s, high inflation generated pressure to deregulate a broad set of banking activities and to modify the banking structure. By 1980, the Depository Institutions Deregulatory and Monetary Control Act phased out interest rate caps, broadly expanded lending authority, and established new reserve requirements for depository institutions. (See <http://www.fdic.gov/regulations/laws/important/index.html>)

Loosened regulatory authority allowed savings and loans to enter new areas of lending, and ultimately to overextend and collapse. The policy response to the savings and loan debacle in the 1980s was much less wide-sweeping than that of the depression era responses. With a less severe national economic downturn during the 1980's crisis, policy focused narrowly on maintaining confidence in depository institutions through reorganizing the insurance system and minimizing costs by disposing of problem assets that had become the property of the US Government. The Financial Institutions Reform, Recovery, and Enforcement Act of 1989 (FIRREA) abolished FSLIC, expanded FDIC powers and access to funding, and established the Resolution Trust Corporation (RTC) to dispose of problem assets. While the HOLC (ultimately) made a small profit by the time it was liquidated in 1951, the RTC's record was more controversial. The net cost of the program to the US Treasury (i.e., the taxpayer) was on the order of \$85 billion (Sasseen

2008), and the fairness and transparency of the disposition process was questioned (McCoy 1991).

Although the causality of the current crisis has been different, the policy response in 2008 and 2009 has mirrored the responses to these earlier disasters. The focus has been on first reestablishing liquidity in credit markets, next on re-capitalizing financial institutions, and then on stabilizing the housing market, (in reverse order of the sequential evolution of the crisis). The problems facing regulators and Congress in 2008 and 2009 have been arguably more complex than in the 1930s and have encompassed a much wider range of institutions and asset markets than in the 1980s. Several factors distinguish this crisis episode from those of earlier epochs:

- The financial system is more globalized than it was in either the 1930s or 1980s. The potential for contagion from US financial markets to the rest of the world is much greater.
- There is a much broader set of problem assets. Real estate assets, mortgages, mortgage backed securities, credit-based derivatives, commercial paper, auto and credit card loans have all been “infected.”
- The troubled institutions represent a larger segment of the financial sector. Also, the intensity of inter-connectedness and the risks of counterparty linkages mean that the failure of one segment of one large institution has the potential to destabilize the entire global financial system.

All factors and circumstances considered, the direct application of housing market and residential financial policy solutions utilized in the Great Depression and the S&L’s crisis would fail to take into account crucial, significant contemporary socio-economic

and political realities. In this context, while earlier policy solutions are suggestive and instructive, it is important to learn from the past in order to modify and forge public policy remedies to address the special nature of today's financial and economic crises. Each of the unique characteristics outlined above contributed to a response that focused first and foremost on credit institutions.

VI. Existing and Proposed Policy Responses to the Subprime and Housing Foreclosures Problem

The avalanche of foreclosures has drawn policy responses from state and federal legislative bodies. At the state level, much of the initial response has been to institute protections for those facing foreclosure. The collapse of critical publicly traded financial institutions, failure of government sponsored enterprises, and inadequate oversight by regulatory bodies have inspired policy initiatives at the executive and legislative levels of the federal government. The federal governmental responses began as fire-fighting measures--enhancing available credit to the largest banks, shoring up large financial market participants whose unregulated activities had become so deeply enmeshed with credit flows that their failure could conceivably lead to systemic market problems and failures, nationalizing the government sponsored enterprises (Fannie and Freddie only) to prop up their mortgage activities as well as the value of agency bonds (many of which were held by foreign governments). At the same time, Congress, as well as regulatory bodies such as the FDIC, have begun crafting measures to deal with the large scale collapse of the credit system, the local and individual issues directly related to mortgage default and foreclosure, and with preventing the recurrence of these problems in the future.

State versus Federal Approach

Both the state and federal policy responses have been largely reactive. At the state level, measures have focused primarily on two aspects--limiting predatory lending and providing relief for troubled borrowers. Thirty-six states have passed at least 115 “responsive” measures between 1999 and 2008. North Carolina responded early to

predatory lending activity, passing the North Carolina Predatory Lending Law in 1999 (Smith 2002). The District of Columbia and South Carolina followed in 2000, with measures that were later strengthened in 2002 or 2003. About half of all legislation had been passed by 2003, but a dozen states continued to modify or pass new measures through 2007 and 2008. Few of the policy prescriptions directly address borrowers currently confronting foreclosure or growing negative equity, although some related concerns are widely covered, such as limiting prepayment penalties on high cost mortgages.

Apart from legislation, states have worked in concert with major lenders to encourage workouts that avoid foreclosure, such as actions by the State Foreclosure Prevention Working Group (State Foreclosure Prevention Working Group 2008). In addition, the Conference of State Bank Supervisors and the American Association of Residential Mortgage Regulators have developed a universal licensing system that states may adopt.

The Spectrum of Housing and Mortgage Proposals

Although states have tried to reduce predatory lending practices and activities, they have had limited resources for dealing with millions of problem loans. The direct federal response to problem loans began evolving in a piecemeal fashion in late 2007, continuing in 2008. Initially the "heavy policy artillery" was aimed at recapitalizing financial institutions, but many recognized that the financial system will only recover when the housing market and mortgage market have been stabilized. Much smaller amounts of funding have been allocated for direct interventions in mortgage relief or enhancing homebuyer opportunities. Many of the early measures addressed limited

stakeholders (e.g. only borrowers currently in default), and/or offer a limited set of options in response. The options are further complicated because several different types of organizations or businesses have responsibilities for different segments of the troubled loans, and the loans may in fact serve as collateral for several different types of investors, with varying interests in the possible workout options.

The housing and mortgage proposals fall into four major groupings. Within each grouping are many distinct types of proposals, most addressing only a small sub-stratum of the problem. The groupings include:

- Existing loan modification for keeping the borrower in the house
- Mechanisms for property “take-over” where affordable payments for the borrowers are not feasible
- New homebuyer incentives for stabilizing home prices
- New mortgage instruments allowing easier workouts or adjustments in the future.

The following sections review the policies implemented over the past 18 months as well as a number of proposals that were not adopted but influenced policy directions over time.

The Initial Policy Reactions and Programs through December 2008

The primary goal of modification of existing loans is to avoid foreclosure by making the loan affordable to the existing borrower. This may involve reducing the loan interest rate, maintaining interest rates at teaser rates, extending the loan payback period (loan duration), or making adjustments to the principal itself to reflect current home values.

Three programs established in 2008 are summarized in Table 4. The "Streamlined Mortgage Modification Plan" is a voluntary strategy originating in late 2007, as Hope Now, but evolving into the process for modifying loans held by Fannie and Freddie, beginning in December 2008. Unlike the FDIC approach, this process applies only to single family owner-occupant mortgage borrowers delinquent 90 days or longer (who are not in bankruptcy, and whose current loan to value ratio exceeds 90 percent). For this narrow group, loans are modified to reduce payments to 38 percent of household income, using lower interest rates, longer duration, or forbearance (postponement) on some of the principal. The cost is born by the lender or current loan holder (the investor). The lender and borrower motivation for participating in the program hinges on circumstances where foreclosure is imminent, and the costs of modification would be less than those of foreclosure. For troubled borrowers at the margin of affordability, the program creates a moral hazard in that the borrower is more likely to obtain assistance if delinquent on the loan.

. The FDIC workout process applies to loans when a lender is in receivership with the FDIC. FDIC identifies distressed loans to be modified. Their aim is to avoid the added costs of foreclosure by reducing payments to 38 percent of income or less, keeping interest rates at a minimum level of 3 percent for 5 years and capping later rates at the level of the Freddie Mac survey rate for conforming mortgages. Other methods for reducing payments may include extended amortization and forbearance on a portion of the loan principal.

Table 4: Existing Loan Modification Programs as of February 1, 2009

	Streamlined Mortgage Modification Plan	Hope for Homeowners (H4H)	FDIC Workout Process
Date	December 2007 (Hope Now); December 2008 (Streamlined plan)	Title IV of the Housing and Economic Recovery Act of July 2008; in effect October 2008 through 9/30/2011	2007, 2008 responses, processes, and recommendations
For Whom	SF home owner occupants, delinquent 90+ days, not in bankruptcy, loan to value ratio >90%	Borrower owner-occupants in any permanent housing, made at least 6 payments, own no second home; loan prior to 2008; payments are >31% HHI; default not voluntary, no fraud.	Borrowers (in primary residence) with "distressed" loans (delinquent or at-risk), who could afford reset payments
Participating Loan Holders	Fannie, Freddie, other voluntary lenders	Any lender; all lien holders must agree.	Lenders in receivership to FDIC
Modification	Payments decreased to = or <38% of household income	<ul style="list-style-type: none"> • Loan <\$550,440 • Must take out FHA insurance; 3% upfront, 1/5% an. • New mortgage = or <96.5% new value (lender write-down) • 31/43% to 38/50% debt ratios • Fixed rate 30-40 yr • No 2nd for 5 years • Shared future equity and appreciation 	<ul style="list-style-type: none"> • Payments = or < 38% of income • Minimum and capped interest rate • Extended payments • Forbearance (deferred payment) on some principal • Waived fees, late charges
Process	Loan by loan review	Loan by loan review	Loan by loan review
Costs	Borne primarily by lender	Principal write-downs borne by lender and investor, borrower foregoes some appreciation; FHA insurance role	Bank shareholders; FDIC insurance pool; holders of securitized assets may get better returns than with foreclosure
Issues	Addresses only most urgent loan situations, possibly too late; moral hazard encouraging default	Limits with securitized loans; CBO estimates only 400,000 loans may be dealt with because all holders must agree	Limited to FDIC held lenders, but model for "Streamlined" approach (less moral hazard); case by case review has been slow

Sources: Hope Now 2008. Housing and Economic Recovery Act of 2008; Bair 2008

Hope for Homeowners (H4H) was established by Title IV of the Housing and Economic Recovery Act (HERA) of 2008 and is administered by the Federal Housing Administration. The program is based on voluntary agreement between borrower and lender, whereby troubled or at-risk owner-occupant borrowers of any permanent housing are refinanced with an FHA insured loan for no more than 96.5 percent of the current home value. There are significant limits, as well as costs to both the borrower and current loan holder. The new loan is a fixed market-rate loan for a 30 or 40-year term; loans are limited to \$550,440 or less; the loan payment is limited to an income limit of 31 percent for home loan debt servicing/43 percent for all debt (or up to 38/50 percent for a lower loan to value ratio); there can be no second liens for 5 years; and the owner must share future equity recovery and appreciation with FHA, even if the loan is later refinanced. The Congressional Budget Office (2008a) estimated that the requirement that all lien holders should be on board could limit the number of eligible loans to 400,000 (about 5 percent of all subprime and Alt-A loans on owner-occupied housing).

The three programs illustrate the limitations of the early responses and of some that follow. First, all have limited applicability. Whether a program applies to a particular borrower depends on how financially troubled the loan and borrower are, who currently holds the loan, and whether then loan is held in multiple liens or not. Second, the workout process tends to be arduous and time consuming with any of these programs. The adjustments are made on a loan by loan basis, with voluntary participation by the lender and borrower unless the lender is in receivership with FDIC and the loan is still in the lender's portfolio. Third, none of these programs deal successfully with the problem of

negative equity. Most modified loans do not include a reduced principal amount, leaving lenders and borrowers at somewhat of a standoff. Fourth, because of the tedious workout process, its voluntary nature, and the inability to process a large number of loans in a timely way, these programs cannot in themselves provide the quantity of loan modifications required for the stabilization of the housing market.

Other Housing Market Policy Proposals

Over the past year, several academics and policy analysts recommended strategies to address some of the shortcomings of the early responses. Appendix 1 summarizes several proposals for addressing troubled loans and the housing market which were not incorporated into any of the congressional or voluntary programs. These include suggestions ranging from modification of loans with negative equity to across-the-board strategies for addressing problem loans in a swift, systematic way, rather than case by case.

The Shared Appreciation Mortgage (SAM1) proposed by *Caplin, Cunningham, Engler and Pollock (2008)* addresses the problem of negative equity. Under SAM1, an “underwater” mortgage would be replaced by two loans, one interest-paying with a loan to value ratio of less than 100% of the current price, and a second non-interest paying loan for the remainder, to be repaid upon home or loan disposition (either through proceeds from sale or refinancing). If the home sells for more than the original loan, the lender would share in the upside gains. The authors note that IRS rules would need to be revised to make this loan schema feasible.

Feldstein’s (2008) proposal recommends offering every homeowner with a mortgage the opportunity to replace 20 percent of the mortgage with a low interest

government loan (up to a limit). Creditors would be required to accept this partial mortgage prepayment and to reduce interest and principal. The supplemental loan would have tax deductible interest payments. The government loan would be recourse, with a low interest rate, with the key goal being to decrease the likelihood of a homeowner experiencing negative equity on her mortgage as a result of further price declines. Borrowers would still be paying off the initial loan amount, but a smaller balance would remain directly tied to the home, payments would be lower, and the incentive to “just walk away” would be reduced.

Zingales (2008) proposes a standardized method for renegotiating loans using zip code level estimates of housing price changes, combined with a shared appreciation loan. Using Case-Shiller index data, loans would be eligible for modification in any zip code where values have dropped 20 percent or more. The mortgage face-value would be reduced by the average price index decline, but the mortgage holder would receive 50 percent of any gain from the new mortgage on a subsequent house sale. The standardized approach would make it possible to modify quickly a large number of loans. However, since the geographic unit of analysis is at the zip-code level and not at the level of the individual, there is no means-testing or individual mortgage evaluation, leading to the possibility that people not at risk of foreclosure, perhaps not even with negative equity, could take advantage of the proposed legislation. Furthermore, a borrower whose home value has declined by say 25%, but who lives in a zip code with a Case-Shiller index down 15% since the time of purchase would not benefit from this proposal.

Alpert offers an alternative aimed at loans with currently high coupon rates or negative equity. His Freedom Recovery Plan would operate by declaring a mortgage to

be a “Qualified Impaired Mortgage” (QIM). As in a foreclosure, the lender would release the borrower from all further loan obligations and would take the deed. However, this plan would offer the borrower the option of a “Recovery Lease” with a 5-year term. The lease would be non-transferable, and the lender could sell the home to investors. If the former borrower is still a tenant 180 days before the lease ends, he would have the option to purchase the home at the current prevailing fair market value (determined by an agreement between the landlord and tenant or by an appraisal). The current holder of the mortgage would bear the largest costs of this plan, and it is not clear how this plan would work for securitized loans, especially complex tranching RMBS. Furthermore, for the Alpert plan to be implemented, some revisions to tax codes would be necessary.

Geanakoplos and Koniak (2008) offer a community based trustees proposal, making it possible to modify securitized loans. The decision on the fate of a mortgage—no change, modification, or foreclosure—would be made by a Government appointed, community-based trustee, knowledgeable regarding local market conditions but “blind” to the investment status of the mortgage. Once the decision is made, the servicer would modify or foreclose the loan as determined by the trustee. This approach could make many more loans available for “reworking,” but involves a larger government role than the current programs and still retains the tedium involved in case-by-case decisions. In principle, the reworking could involve reduction in principal, interest rates, duration change and so forth. The key distinguishing feature, therefore, is the “public sector” and localized community nature of the arbiters.

Several economists, including *Alan Blinder (2008)* and *Nouriel Roubini (2008)* have recommended a vehicle similar to the Homeowners Loan Corporation (HOLC) of

the depression era. The government entity would purchase troubled mortgages from banks and would issue new, affordable mortgages to distressed homeowners. There are many variations on this theme, as in many of the other plans, and in some versions the entity may not buy up debt but guarantee it (the original Frank-Dodd version); also, the FD version for the super FHA program included a provision for shared appreciation. Roubini's version of the proposal is an integrated package for the entire financial crisis; in addition to a HOLC type institution, he would create a Resolution Trust Corporation type entity for purchase of assets of failed institutions, and a Reconstruction Finance Corporation type entity for recapitalization of undercapitalized financial institutions. When initially proposed the outlays were expected to be in the region of \$400 billion; also, the establishment of the entity could be time consuming, and the proposals suggest case by case workouts rather than a blanket approach. The key issue, however, seems to be that similar to some of the other proposals, the time for an HOLC type "workout" is past, unless the housing slump is prolonged and deepens further.

Mayer and Hubbard (2008) have suggested a strategy that offers across-the-board mortgage adjustments. Mortgages would be offered on primary residences at a low fixed rate (a historical average of 1.6 percent above 10-year Treasury bond yields), with the GSEs buying the new mortgages. There would be automatic refinancing of GSE backed mortgages at the lower rate, and new homebuyers and non-GSE borrowers would also be eligible for loans within the conforming limit and for LTV less than 95% percent. For existing underwater mortgages, lenders would write off 50 percent of the loss, an HOLC-like entity would buy the mortgages, bear the remainder of the cost, and the government (taxpayers) would receive a 20 percent share of later appreciation. This program would

have up-front costs similar to those for establishing the HOLC programs, but the authors estimate that there would be an offsetting stimulus of over \$100 billion per year, including the stabilizing effects of higher housing prices. Compared to many other proposals, this program has the advantage of avoiding the delay of case-by-case workouts, but with the result that the assistance would go to any homeowner in a primary residence, regardless of need or past behavior. This proposal also undercuts the use of fundamental underwriting standards for loan issuance.

Mayer, with Morrison and Piskorski (2009) create an extension to the earlier proposal directed specifically at servicers of securitized loans. Noting legal constraints and lack of compensation as two factors limiting modification of securitized loans, even when the modification makes “economic sense,” the authors recommend using TARP funds to compensate servicers and legislating modifications to securitization contracts to eliminate restraints on good-faith modifications. They recommend a similar strategy for second liens. However, where second liens exist, the process even with incentives could be slowed down by the need to reach legally enforceable agreements for each loan.

First Time Home Buyers and Support for Housing Demand

Direct support for home purchases is provided in a limited way by tax credits allocated to first time home buyers authorized in HERA. The first time homebuyer tax credit in HERA is essentially a no interest 5-year loan for a portion of the down payment (up to \$7,500), which much be paid back in later taxes. Fix-Housing-First (FHF) recommends stimulating home buying by an expanded version of this program, applicable to all homebuyers, with “credits” of up to 3.5 percent of the conforming loan limit (possibly as high as \$22,000). They also suggest tying repayment to the length of

time the home is owned, with repayment required only if the home is sold in the first three years. The program would also include a subsidized interest rate for a thirty-year fixed rate loan.

Geanakoplos and Koniak, in conjunction with their Community-Based Trustee proposal suggest a program of Federal government support for home sales. This would involve a government contribution of 20 percent of the cost of a home purchase if the home had previously been foreclosed or if the home were purchased by anyone not previously living in an owner-occupied unit. The proposal includes a shared appreciation component. Upon sale, the 20 percent share would be repaid to the government as well as 20 percent of value appreciation. (Their proposal does not address whether the government down-payment share must be repaid in full in a future short sale.)

Both Fix-Housing-First and the Geanakoplos and Koniak proposals would have a larger effect on the housing market than the support currently available through HERA. The Geanakoplos and Koniak proposal would in all likelihood benefit lower income taxpayers more than either FHF or HERA, both of which use tax credits.

Future Mortgage Markets

A few proposals deal with long-term mortgage market reform by suggesting mortgage instrument restructuring to avoid the current problems. Shiller (2008) recommends a “continuous workout mortgage.” The goal of the proposed mortgage design is to eliminate uncertainties associated with the effects of economic conditions on the borrower’s ability and willingness to pay. Adjustments to payments and mortgage balance are made based on neighborhood price indices and an economic index tailored to the individual (but not the individual’s actual economic circumstances, to avoid moral

hazard). A falling home price index would lead to a lower mortgage balance, while a rising home price index would raise the mortgage balance. Conceptually, the continuous workout mortgage reduces uncertainty for the securitized instrument, but leaves the borrower with a very different type of home investment.

Hancock and Passmore (2008) suggest other variations that would make workouts less of an issue as future changes occur. The “buy your own mortgage” (BYOM) proposal would give the homeowner the choice to buy an option to prepay their mortgage at market value rather than par value. The option would have value only when the mortgage market value is less than par, and will assist both borrower and lender by mitigating foreclosure costs. Their variable maturity mortgage proposal (VMM) would keep monthly payments constant, but the maturity and duration would vary in response to changing interest rates, with maturity lengthening with higher interest rates and vice-versa. This provides payment certainty on a month-to-month basis, but increases uncertainty in long-term planning. In addition to these two proposals, they suggest making implicit government guarantees explicit and transparent by insuring all government debt involved in financing housing. The impacts of BYOM and VMM on the availability of mortgages for different types of households will vary depending on the pricing of the options. For the VMM there exists the possibility of negative amortization, in case the rates go up significantly. Also, since maturity extension can rise very rapidly it will have to be capped and lenders may be required to bear a significant portion of the duration risk; rather than reducing risk overall, the two instruments may change the conditions under which risk occurs.

VII. The Obama Administration Proposal

The Obama administration has developed a further set of proposals that extend the earlier housing market responses of the previous year and begin to address some of the limitations. The initial proposal released February 18, 2009, incorporates aspects of several of the programs previously in effect as well as some of the proposals sketched out above. The plan (summarized in Appendix 2) is designed to address both borrowers who are currently making payments and those who have begun to fall behind, to stem foreclosures, broaden the availability of lower interest rates, and to provide some resources for other groups affected by the credit crisis, such as renters and communities.

The plan primarily aims to assist two groups to refinance into lower interest rate loans -1) borrowers current with loans that were once conforming, but because of a decrease in home value have an LTV ratio above 80% and below 105%; and 2) borrowers with nonconforming loans whose ability to pay is at risk or are already in default. Refinancing for the first group is a fairly simple adjustment in eligibility standards, allowing higher LTV loans to receive interest rates similar to conforming loans. For the second group, the loan holder bears the cost of reducing payments to 38 percent of income and shares with the government costs of further interest rate reductions to reach a payment of no more than 31% of income. The payment reductions for this group have a 5-year time horizon, after which the payments may gradually increase to those for conforming loans.

Several factors that have delayed workouts are addressed in the Obama plan. While there is no reduction of principal or shared appreciation, there are incentives for homeowners to remain current, in the form of up to \$1000/year subsidy for 5 years, to be

directly applied for reducing remaining principal balance. In addition, for the lender, the loan can be insured against further declines in home value. The program also offers incentives to servicers and mortgage holders to modify early, before default occurs. While many aspects of the program are voluntary, recipients of Financial Stability Plan financial assistance will be required to participate in the Homeowner Stability Initiative, according to some of the material released together with the plan announcement.

Some of the issues identified in the discussion of earlier proposals are not fully addressed by the Obama administration plan. First, although the first group of borrowers could be addressed quickly under the plan, the second group would still require case-by-case workouts, a time consuming process. If the plan is intended to stem foreclosure activity, then foreclosure “breathing room” would be needed to make the workout process meet this goal. Second, a significant number of subprime mortgages have been securitized, often into several different products. Many critics have observed that legislative action would be needed to give servicers the flexibility and incentives to modify these loans. Without changes in the servicer mandate, refinancing of securitized subprime loans could continue to be problematic.⁴ Third, since many homeowners carry multiple mortgages there may be need for a more explicit role and responsibility for holders of second mortgages to allow the plan to work smoothly. Fourth, the effects of the program on the demand side are not sketched out fully. Expanding the purchase of loans through the GSEs should increase financing available for home purchases, but other programs, such as insurance against home value declines might be another vehicle to

⁴ The recent Private-Public Investment Partnership (PPIP) Program is an attempt to add new liquidity for the sale of whole and securitized mortgages. While the program is not implemented as yet and may never be implemented, it offers an approach to generating a “jump start” to reinvigorate the mortgage and RMBS markets.

further free up funding for newly-initiated home purchases at affordable interest rates.

Fifth, a monitoring system of home prices by region would be useful to determine if the restriction of action to conforming loans is addressing most of the problem loans, or if it is skirting around the problem. There may be many homeowners in places like coastal California who are not assisted by this plan because their loans exceed the conforming limits and are not eligible for refinancing. Finally, while the Obama plan may be an excellent start for dealing with homeowner borrower problems, will addressing only homeowner borrowers be adequate for stemming the housing price slide? Is it legitimate to assume that many home investors were speculators? What about purchases by extended family members or the issue of displaced renters? Furthermore, is \$1.5B adequate for addressing the issues that arise from the renter side of the market?

VIII. Concluding Remarks and Remaining Issues

A confluence of macroeconomic, social and financial forces caused the housing and subprime bubbles in the US. Macroeconomic conditions provided several crucial elements. US consumer debt fueled the trade deficit, which was financed substantially with savings by US trading partners. These global imbalances and capital inflows combined with official Fed interest rate policy (in response to the dot com bust and the recession of 2002) generated cheap and plentiful debt. There was copious, cheap mortgage money for homebuyers at one end, and a willing pool of global investors in securitized mortgages, at the other, all lubricated by lax oversight and weak regulation.

New borrowers emerged to meet the expanding supply of mortgage money. Homeownership rates rose among younger and lower income households. The financial sector frenetically expanded products to serve the demand from homeowners and satisfy yield starved investors. Through nothing short of financial alchemy, security issuers created derivatives with higher ratings than what the underlying securities could support. The fee structure rewarded lenders, mortgage brokers, rating agencies, and securitizers for originations rather than financial product viability, thereby creating incentives for increased transactions. Regulatory laxness passively permitted diluted underwriting standards and predatory lending practices, supporting the growth of subprime and Alt-A mortgages, which were then securitized and sold to investors around the world.

Subsequently, with lower growth in demand for homes, prices began to flatten or dip, and the boom in home construction collapsed. Simultaneously, the many subprime mortgages with interest reset provisions started to come due. Combined with lower sales activity and prices, a self-sustaining loop was created, causing marginal borrowers to

default, further worsening housing market conditions. As home prices sank and mortgage default rates rose, the value of mortgage securities began to decline and the derivatives market started unraveling. The failure of major U.S. financial institutions, heavily invested in dodgy assets, and the repeated need for tens and then hundreds of billions of dollars in government provided funds to keep them afloat, led to a much broader financial crisis across all asset markets not only within the US but globally.

It is clear that the larger financial and economic crisis cannot be resolved without stabilizing and addressing key issues surrounding the housing market, in general and foreclosures in particular. A solution to the mortgage/home price/foreclosure problems will likely engender stabilizing forces for other critical sectors of the economy. In this paper, we evaluate all the major, existing housing and mortgage related policy proposals, while applying our benchmark criteria of i) future mitigation of moral hazard, ii) bang for the buck, iii) fairness and distributive aspects, and iv) judicious mix of short-term and long term solutions. Going forward, several factors will be important for fostering stability in the housing and residential finance markets:

1. A sustainable, viable plan is likely to require elements of a standardized approach (e.g. for interest rate reduction), as well as triage for case-by-case loan modifications.
2. Losses and gains may have to be shared among three parties: lenders, borrowers and Government.
3. Legal reform may be necessary in order to delink servicers from security investors and clear the way for refinancing.

4. Targeting home-buying assistance to geographic areas with high foreclosure rates would bring the support directly to neighborhoods most in need of housing market stabilization.
5. There is little data on “jingle mail” share of foreclosures and on investor-landlords. A method for addressing these homes, perhaps tied to rental assistance, could keep the homes occupied and off the market.
6. An overhaul, restructuring and redistribution of federal and state regulatory responsibilities might combine the best institutional features of both.

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APPENDIX 1

Alternative Proposals for Mortgage Adjustment

	Shared Appreciation Mortgage I (Caplin, Cunningham, Engler and Pollock)	Mortgage Replacement Loans (Feldstein)	Freedom Recovery Plan (Alpert)	Standardized Renegotiation at the Zip Code Level (Zingales)	Community Based Trustee Proposal (Geanakoplos and Koniak)	HOLC-Type Proposals (Blinder; Roubini, others)	Hubbard-Mayer Plan
Date	September 2008	October 2008	October 2008	October 2008	October 2008	February 2008	October 2008
For Whom	Borrowers at risk of defaulting because of negative equity	All homeowners with a mortgage	Homeowners with “impaired” mortgage (high interest &/or LTV or in foreclosure)	All borrowers in zip code, where housing value has dropped 20% or more	Any distressed borrower	Borrowers with troubled mortgages	All borrowers (primary residences)
Modification	Replace part of loan with a SAM no interest loan	Replace 20% of loan with low interest government recourse loan.	Borrower becomes tenant, with option to repurchase in 5 years at then prevailing price	Compulsory (for lenders), optional (for borrowers) reduction of principal by price drop.	Reworking could involve reduction in principal, interest rates, duration change.	Government entity purchases and reworks problem loans	Replace loans with 30 yr fixed low interest loans held by GSEs
Process	<ul style="list-style-type: none"> • Loan 1, accepted L/V ratio, pays interest • Loan 2 	<ul style="list-style-type: none"> • Borrower may replace 20% of private loan (up to 	<ul style="list-style-type: none"> • Loan declared a qualified impaired mortgage 	<ul style="list-style-type: none"> • Implementation based on Case-Shiller Index price drop 	<ul style="list-style-type: none"> • Establish community based trustees to evaluate loans 	<ul style="list-style-type: none"> • Establish gov’t entity • Reworks or buys loans • Counseling 	<ul style="list-style-type: none"> • Refinance all primary residences to 10yr Treasury +

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	(SAM), remainder of value, no interest • At end of loan, pay off SAM and share of appreciation	\$80,000) with low interest government loan	<ul style="list-style-type: none"> • Lender takes deed, releases borrower from loan, no further recourse • Occupant may enter recovery lease, 5 yr term • Lender may sell to investors • At 4.5 years, tenant has option to buy home at current fair market price. 	<ul style="list-style-type: none"> • On sale, mortgage holder gets 50% of difference between sale price and renegotiated mortgage value 	<ul style="list-style-type: none"> • Determine no change/ rework/ foreclose • Legislation required to transfer reworking function to trustees from servicers 	for at-risk borrowers <ul style="list-style-type: none"> • Foreclose if necessary • Could include appreciation sharing 	1.6% fixed <ul style="list-style-type: none"> • Place mortgages with GSEs • Underwater mortgages would be held by an HOLC • Servicers share in loss or HOLC has SAM • Could cap write down on underwater loans

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Cost Effectiveness	Lender-reduced interest; borrower forgoes potential appreciation	Cost to government of low interest loans; potential household debt recovery costs	Lender takes write-down on property but gets a revenue stream; government loses some tax revenues	No taxpayer costs; trade-off between initial haircut and subsequent share of appreciation for the lenders/mortgage holders.	Cost to government of payments to community based trustee board and down payment share. Cost to investors/lenders from reworked loans.	Outlay could exceed \$400B, but much may be covered by returns over time; could be financed by Govt bonds	\$240B to >\$500B outlay; net cost less because of support for home prices

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Fairness, Moral Hazard, Other Issues	IRS issues; not clear if this would prevent losses or just make it easier for borrower to walk from negative equity	Program does not address the needs of those holding negative equity and ongoing foreclosure; Also, it is not clear whether the plan rewards those with large amounts of positive equity.	Requires tax law modifications; who is the owner of properties with “tranching” mortgages? Windfall for owners who stay in property?	May help many who otherwise would have continued loan payments; assumes most loans under water only after 20% drop; homeowners would have incentive to “under-invest” in their homes, if share of equity is only going to be 50% going forward.	Large government role; case-by-case approach; would work slowly.	Range of borrowers can be concern; duration, linked in some objective way to the housing market downturn would have to be hard-wired into the legislation.	Prevents overshooting of housing market on downside; sunset clause of two years; all homeowners gain regardless of history

APPENDIX 2				
Homeowner Affordability and Stability Plan (February 2009)				
	Refinancing for Responsible Homeowners	Homeowner Stability Initiative	Increase Confidence in GSEs	Other Impact Measures
Goals	Affordable, sustainable payments for creditworthy borrowers	Help at-risk borrowers avoid foreclosure	Lower mortgage rates through ↑ confidence	Offer further recovery support
For whom	Homeowner borrowers in good standing (between 80 and 105% LTV)	At-risk homeowner borrowers (40 to 50% income on mortgage payment)	All borrowers of conforming loans; GSEs	Borrowers in bankruptcy, renters, neighbors
Modification	Reduced monthly payments through Treasury-backed modification plan	Reduced monthly payments through Treasury-backed modification plan	Greater Treasury backing of GSEs	Judicial modification allowed
Process	<ul style="list-style-type: none"> • Borrower up to date, can afford payments, conforming loan • Ineligible to refinance to lower interest rates because declining home value has increased LTV. • Plan allows refinance into lower interest loan 	<ul style="list-style-type: none"> • Lender reduces interest payments to \leq 38% of income • Initiative matches further reductions to \leq 31% of income • Upfront and “pay for success” fees to servicers • Borrower incentives to stay current • Incentive to servicers and loan holders to modify early • Insurance against further home price declines 	<ul style="list-style-type: none"> • Treasury preferred stock agreement purchase increased to \$200B for each GSE • Treasury purchase of GSE mortgage-backed securities • GSE retained portfolio increased to \$900B • Support state housing finance agency liquidity 	<ul style="list-style-type: none"> • Allow judicial bankruptcy adjustments where no other alternatives have worked • Ease FHA restrictions • \$1.5B for renter assistance • \$2B neighborhood stabilization grants for innovative foreclosure avoidance

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	Refinancing for Responsible Homeowners	Homeowner Stability Initiative	Increase Confidence in GSEs	Other Impact Measures
Costs	Not specified	\$75B	Uses \$200B allocated in HERA	Additional \$3.5B
Moral Hazard, Fairness and Other Issues	<ul style="list-style-type: none"> • Does not help those seriously underwater; 	<ul style="list-style-type: none"> • Securitized loans—are the incentives enough? • Second liens—will legislative modification be needed? 	<ul style="list-style-type: none"> • Any support for jumbo loans? 	<ul style="list-style-type: none"> • Speed, coverage will depend on details of guidelines