Chapter 1: The White Paper

At this time what is available is limited to the outline and some charts and commentary. The presentation is on the web.

White Paper Objectives
• Analyze the Current Status and Historical Context for the Sub-prime Crisis
• Create and Evaluate Proposed and Prospective Short-term and Long-term Policy Options-Solutions
• Indicate Important Open Research Issues

Presentation Outline
• Overview
• Subprime Crisis Status Report
• Policy Prospective
• Towards a Focused Research Agenda

Elements for the Short-term and Long-term Resolution of the Subprime Crisis
• Devise Programs to Stabilize the Housing Market and Housing Finance System
• Engender Housing and General Financial Market Viability
• Implement Policies that Avoid Recurrence and Moral Hazards
• Prepare for Potential Wider Domestic Economic Implication of the Sub-prime Crisis
• Recognize and Plan for Potential Global Economic and Financial System Interactions

Overview Subprime Issues
• **Direct Effects**
  – Delinquencies
  – Foreclosures
  – home prices
• **Lender Industry and Secondary Market Behavior**
  – New Profit Model
  – Underwriting Standards
  – Fee Structures
  – Accessibility of Secondary Market
• **Risk Contagion Effects**
  – New Construction
  – Real Estate Services
  – Equity Loans
  – Financial Institutions
• **Global Effects**
  – Risk Spread “Adjustments”
  – U.S. Consumption and International Trade, World-wide Stock Market/Bond Market
Subprime Crisis: Selective Status Report

Prime Delinquency Rate is High

- The sub-prime delinquency rate has pushed up past 17%.

![Sub-Prime Mortgage Delinquency Rate 2007Q4](chart)

Foreclosure Rate Is Rising Rapidly

- Foreclosures started in the fourth quarter represent 83 basis points of all outstanding mortgages. This is a quarterly rate.

![Foreclosures Started 2007Q4](chart)

Why Were We So Susceptible to the Subprime Crisis?

- Diminution of Underwriting Quality
- Inexperience of Owner-Borrowers
- Financial “Wizardry”
- Aggressive, Risk-Taking Investors
Percent of Loan Value Low-Doc or No-Doc
2000 Q1 to 2007 Q2

Home Ownership Rates

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

How Exposed Are We?
• Total US housing stock is 128 million units
• Annual sales since 2000 represent between 4-6% of stock
• States with high levels of price declines account for a large share of housing stock; and larger share of mortgages outstanding
• Nationwide, the ability to buy a home has not changed dramatically, but regional variations show large areas of vulnerability
• Subprime loans are 12 percent of all outstanding mortgages

US Annual Sales, Existing Homes

Sales to Households Ratio
States with Largest Loss in Home Value from Peak to Q2 2008

Understanding Variation in Exposure and Experience Can Help Shape Policy
• Wide variation within the US in housing markets (median 2007 home value ranges from $88,000 in Mississippi to $536,000 in California)
• Wide variation in exposure to subprime loans (low of 6% in South Dakota, high of 20% in Nevada)
• Share of subprimes in foreclosure range from 3% in Utah to 18% in Michigan
• Factors, such as age, household size, ownership rates, and government regulation, can influence the level and outcome of exposure.

Per Capita Income and Home Price Indices Compared, US, 1975-2008

Per Capita Income and Home Price Indices Compared, Far West, 1975-2008
Selected Ownership Rates by State: 2006

Cross-State Regression Results:
Determinants of Subprime Share in Total Mortgages
- Negatively related to median age
- Positively related to home price and price growth rate, and minority population
- Negatively related to per capita income
- Negatively related to state regulatory proxies (financial administrative expenditures; state employment, etc.)
Cross-State Regression Results:
Determinants of Foreclosure Share in Total Mortgages

- Foreclosures related to earlier subprime share
- Negatively Related to Regulatory Stance
- Positively related to Minority Share and Age
- Complex relationship between subprime share and foreclosure share on one hand, and home price change and age on the other

### Cross-State Regression Results:
#### Determinants of Foreclosure Share in Total Mortgages

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S.E. of regression 0.037396  Akaike info criterion -3.844062
Sum squared resid 0.052538  Schwarz criterion -3.65469
Log likelihood 103.0241  F-statistic 6.961977
Durbin-Watson stat 2.028090  Prob(F-statistic) 0.000181

### Cross-State Regression Results:
#### Determinants of Foreclosure Share in Total Mortgages

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S.E. of regression 0.005314  Akaike info criterion -7.543936
Sum squared resid 0.001299  Schwarz criterion -7.354541
Log likelihood 197.3704  F-statistic 10.49004
Durbin-Watson stat 1.522456  Prob(F-statistic) 0.000004
Some Troubling Conclusions
• Regional differences are significant?
• Ownership at what social costs?
• Credit tightening needs to be selective, especially where economies are weak?

Developing a Policy Prospective

Policy Objectives
• Stability in Housing Market
  – Retaining high home ownership rates
  – Arresting drastic value slide
  – Maintaining ownership incentives for households with negative equity
  – Normalizing new and existing market activity
• Liquidity in Mortgage Market
  – Stabilizing financial markets
  – Efficient securitization
  – Reorganizing Fannie and Freddie to be viable entities (at low social costs)

Framework for Response
• Short Term
  – Housing market
    • Loan workout process
    • Stabilize home prices
  – Mortgage market
    • Underwrite financial system
    • Demand appropriate upside reward for risks taken
    • Dilute existing equity and debt participants fairly

Framework for Response
• Long Term
  – Housing market
    • Rebalance renter and homeowner subsidies
    • Develop revised standards for “subprime” low income borrowers
      (based on repayment experience)
Mortgage market
- Reduce moral hazard and adverse selection by synchronizing cash flow with longer term outcomes
- Expand regulation of financial markets
  - Insurance funds
  - Underwriting standards
  - Capital requirements

Whose Problem?
- Homeowners/Borrowers
- Homebuyers
- Home-sellers
- Builders
- Lenders
- Securitizers
- Investors
- Regulators
- Taxpayers
- Government sector
- International Components

Housing Market Recovery Strategies
Credit Market Recovery Strategies

Policy Evaluation Criteria/Benchmarks
- Moral Hazard Issue or Chance of Recurrence
- Fairness and Equity
- Bang for the Buck (Efficiency)
- “Good” vs. “Bad” Subprime Loans
- Distributional (Income and Geographic) Impact
- Linkages of Housing finance System with Broader Financial System and Economy

Policy Tool Kit
- Subsidies (Owners, lenders/originators)
- Regulatory Intervention (state/federal)
- Persuasion (Haircuts?)
- Coordination
- Liquidity/Funding
- Taxation
- Counseling
- Special Incentives – e.g. skin in the game requirement

The Secondary Market Enigma
1. FNMA and FHLMC
2. FDIC and Banks
3. IB and Securitization
4. Monoline Insurers
5. CDS

Real Sector Constraints for Policy
- Economic Environment
- Job Creation
- Household Formation
- Wage Growth Prospects
Measuring The Costs
FHA Loan Program: 2008-2011
Subprime Vulnerability—CBO Estimate

![Diagram showing the costs of the FHA Loan Program](image1.png)

Institutions Covered by FDIC, by Risk Category (Share of Assessment Base)

![Pie chart showing risk categories](image2.png)

Impact Evaluation Matrix

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<th>Policies</th>
<th>Participants/Criteria</th>
<th>Homeowner/Borrower</th>
<th>Originator</th>
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<td>FNMA &amp; FHLMC</td>
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Source: CBO cost estimates April, June and July 2008.

Total Assessment Base: $6.88 Trillion
Targeting Policy
• Economic Slow-downs
• Credit Tightening
• Loss of Confidence in System

Policy Perspective
• No Single Policy is the Silver Bullet
• Complex Benefits-Costs Require Multi-faceted Solutions
• Regional-State Differences Require Regionally Differentiated Approaches
• Reinvigorate Securitization Process
• Triage “Bad” Loans

Selected Open Research Issues
Expanded Academic Research for Policy Implementation
• Why are there large regional differences in mortgage performance?
• What is the significance of state regulatory systems?
• How are age-income-ethnic characteristics related to ownership, and loan issuance and performance?
• How important are distorting incentives (Fee structure; ratings agencies)?
• How extensive are risk externalities?

How Can We Explain Local-State and Regional Mortgage Performance Differences?
• Housing Market Differences
• State Regulatory Behavior
• State-Regional Economic Industrial Organization Impacts

How are Ownership and Loan Performance Related to Household Characteristics?
• Ownership Rates, Income, Age and Ethnicity
• Loan Issuance and Household Characteristics
• Loan Performance and Household Features

How Important Are Risk Externalities Generated By the Housing Market – Subprime Financial Crisis?
• Linkages between Housing Market and Housing Financial System
• Real Sectors – Financial Sectors Interactions
• Potential Complex Geographic Contagion Effects (Local, State, National, International)

What Role Did “Incentives” Play in Lending Behavior
• Fee Structures, Moral Hazard and Adverse Selection
• Rating Agency Gate-keeping
• Investor Perceptions

Does State and Local Regulatory Behavior Affect Loan Behavior?
• Borrower Oriented Programs
• Employment-Income Programs
• Financial Institution Monitoring and Control