Mortgage Insurance Basics

Ken Dailey, FCAS, MAAA

Casualty Loss Reserve Seminar
September 15, 2009

What is Mortgage Insurance (MI)?

- Mortgage Insurance (MI) is a type of credit insurance where a mortgage lender/investor is insured against a loss from a default by the borrower. Borrower pays the premium
- MI is usually purchased when the borrower puts less than 20% down
- Fannie Mae / Freddie Mac require MI or some other form of credit enhancement when purchasing a low down-payment loan
- There are 8 mortgage insurers in the market today. All are currently feeling the effect of the mortgage crisis with higher loss ratios and reductions to capital

Nuances of Mortgage Insurance

- MI is a capital intensive line. Until recently, a mortgage insurer would typically write $1 of premium per $3 of capital. Ratios have increased lately
- Policy term is unknown at time loan is originated. Averages about 5-6 years
- Contagion – risks are highly correlated. Adverse economic conditions affect many borrowers simultaneously
- Claim sizes are relatively small. Typical claim size is $50k and a $200k claim is rare. Frequency drives results.
- Loss emergence not uniform over life of policy
- Short tailed reserving. Most delinquent loans are resolved within 1 year to 18 months. (Though in the mortgage crisis this has slowed)

MI Terminology

- NOD – Notice of Delinquency. Occurs when a loan servicer notifies a mortgage insurer that an insured loan is in arrears. Does not necessarily mean there will be a mortgage insurance claim
- Cure – An NOD that has been rectified without a mortgage insurance claim. Usually occurs when the borrower brings the loan current or pays off the loan entirely
- NIW – New Insurance Written = Original loan amounts on new policies written
- Risk – Coverage $ provided on insured loans
- Subprime – no generally accepted definition, but refers to borrowers or loans that are more likely to default and is usually based on credit score
- Alt-A – Loans that are not subprime but have provided “alternative” documentation, or no documentation, of income or assets. Often the borrowers income has not been verified by the lender

MI Delivery Channels

- Primary Mortgage Insurance
  - Flow – Loans delivered and insured one at a time. Premiums determined from filed rate sheets
  - Bulk – Many loans insured though a single deal or delivery. Each loan priced separately with final rates set through a bidding process
- Pool Mortgage Insurance
  - Many loans insured through a single pool policy. Rates determined through a bidding process. All loans given same premium rate
  - Commonly have aggregate deductibles and stop loss thresholds

Mortgage Insurance Rates

- Many factors are considered in setting MI rates, but base rates generally focus on the % of the loan balance that is covered and the Loan-To-Value (LTV) ratio
- A common LTV / coverage combination is 90% / 25%
- The premium rate is expressed in terms of basis points (0.01% of loan balance). For instance, a typical rate may be 0.75% of the loan balance annually.
- MI premiums may be incorporated in the borrowers total mortgage payment or paid separately
- Rates do not change during the life of the policy and the policy cannot be cancelled by the insurer, except for non-payment of premium

The Claim Process

- If a borrower defaults and the lender forecloses and takes title to the property, then there may be an insurance claim
- Mortgage insurer generally has the option to
  - Pay the entire loan balance and expenses to the lender and take title to the property
  - Lender retains title and pay the lesser of
    - Actual losses plus expenses (accrued interest, legal and maintenance)
    - Coverage percentage of the loan balance plus expenses
  - Example:
    - Loan balance = $200,000, Expenses = $20,000
    - Coverage = 25%
    - Claim Payment = 25% x (200,000 + 20,000) = $55,000

Captive Reinsurance

- The most common reinsurance mechanism for mortgage insurance has been captive reinsurance
- Lender typically reinsures loans they originate (or service) through a captive insurance company affiliate. Sometimes quota share, but mostly excess of loss basis
- Aggregate excess threshold is established for all loans originated in a policy year
- Mortgage insurers now receiving material reinsurance benefit from this coverage

Risk Factors that Drive Losses

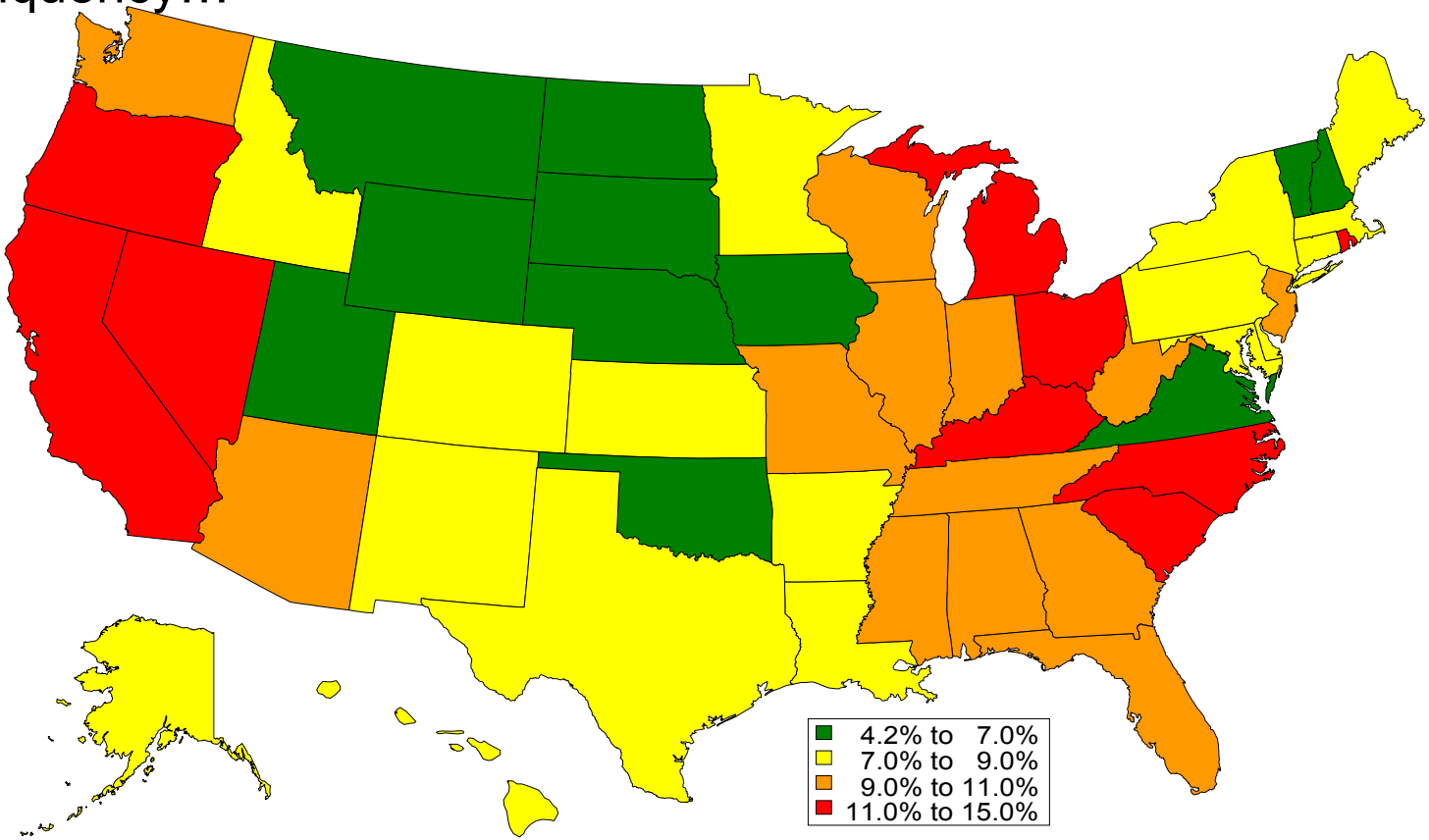
- Economic factors – unemployment and home price appreciation
- Borrower credit quality
- Documentation of income or assets
- Size of down payment (LTV)
- Type of loan (fixed rate, ARM, 2nd lien, interest only, etc.)
- Loan purpose (owner occupied v. investor property)

Capital Issues Facing MI industry

- Recent losses for mortgage insurers have restricted their ability to write new business
- States have various restrictions on capital
  - Contingency reserve limits dividend to policyholders
  - 25-to-1risk/capital limitation in many states
  - MPP = Minimum Policyholders Position establishes a minimum capital threshold to write new business

Unemployment Rates by State

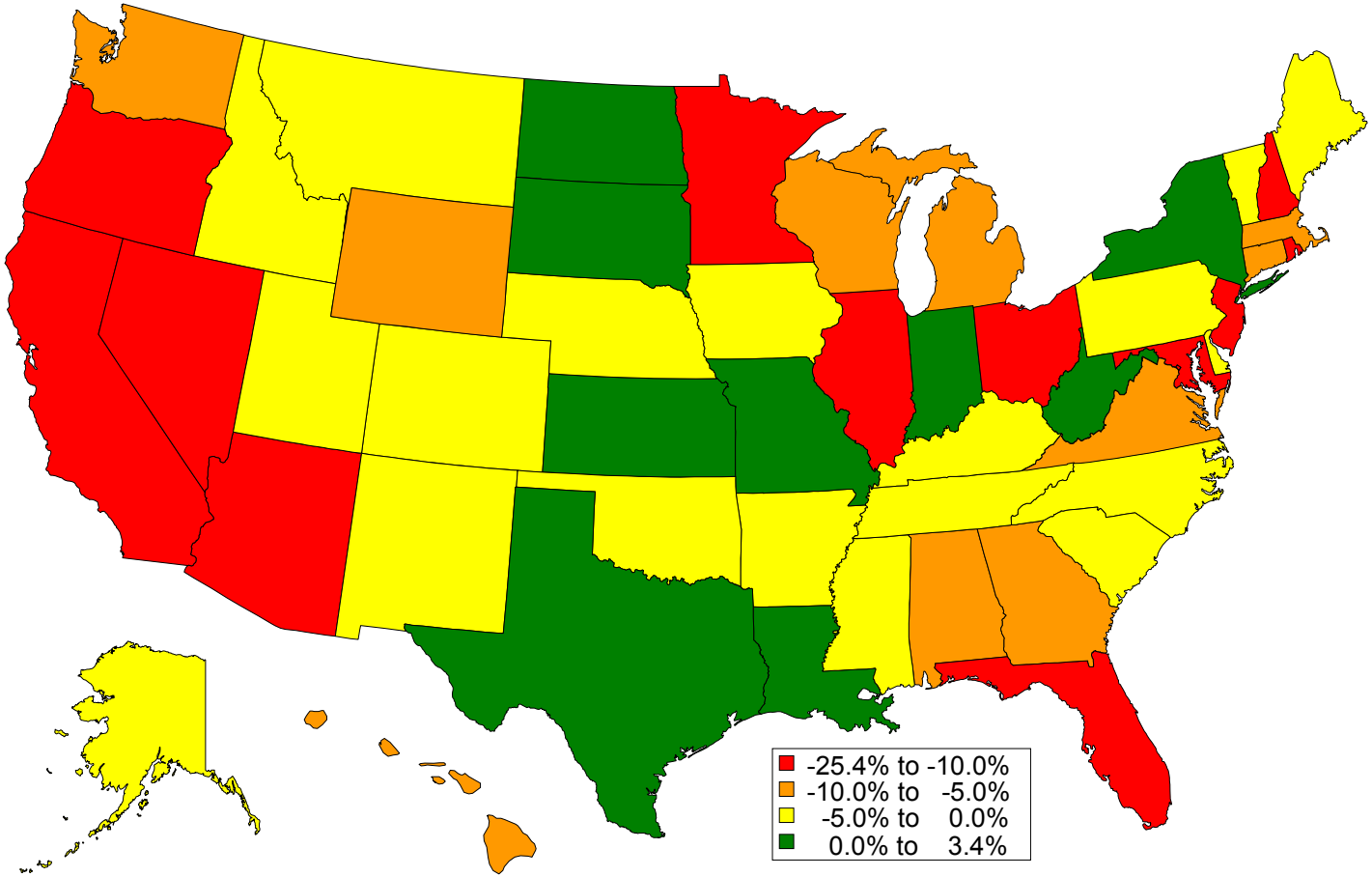
- Unemployment increases the likelihood of a borrower delinquency…



Source: Bureau of Labor Statistics / Haver Analytics. Only includes people actively looking for work, July 2009

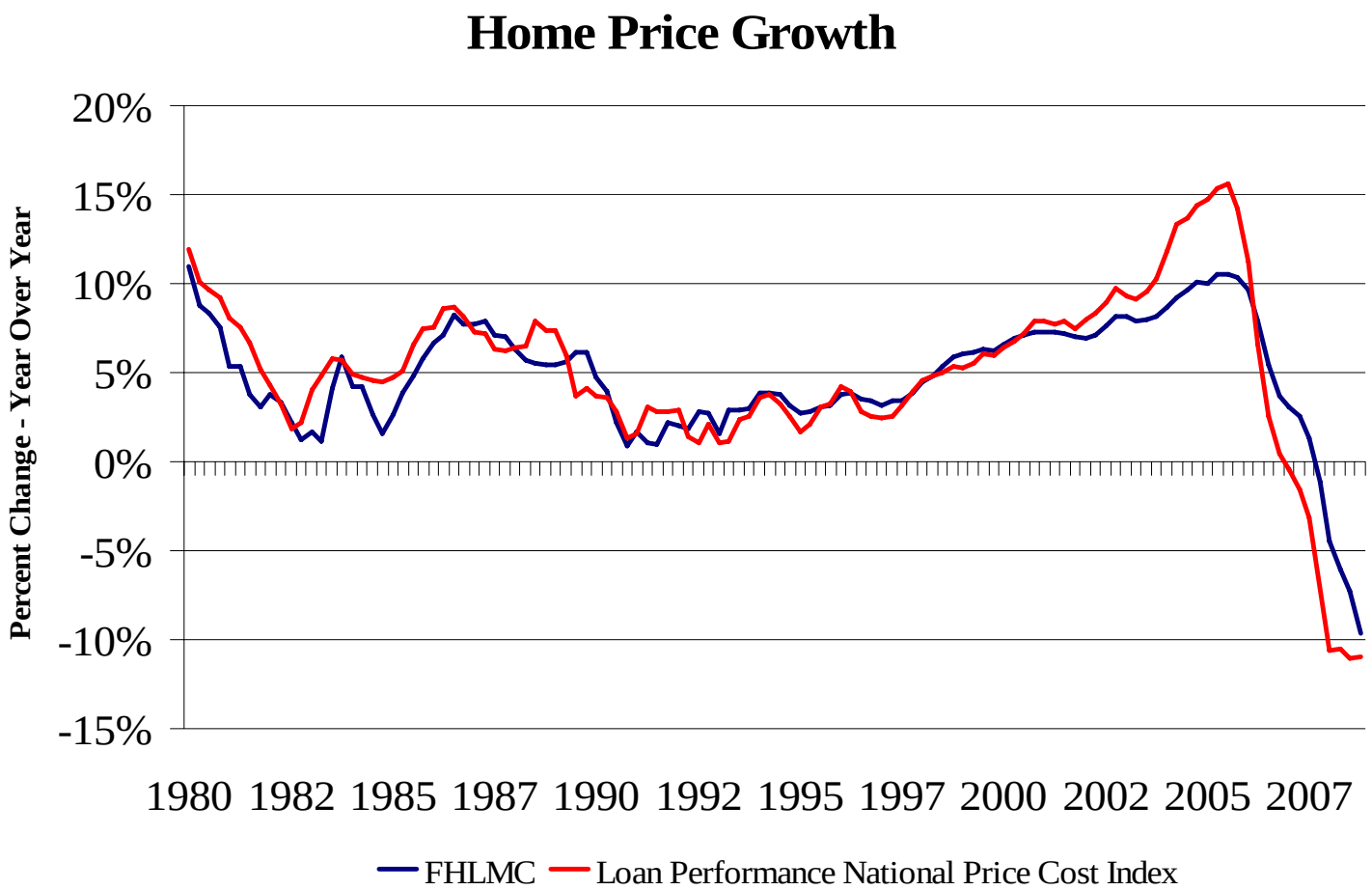
Home Price Changes by State

- … And loss of equity increases the likelihood of an MI claim



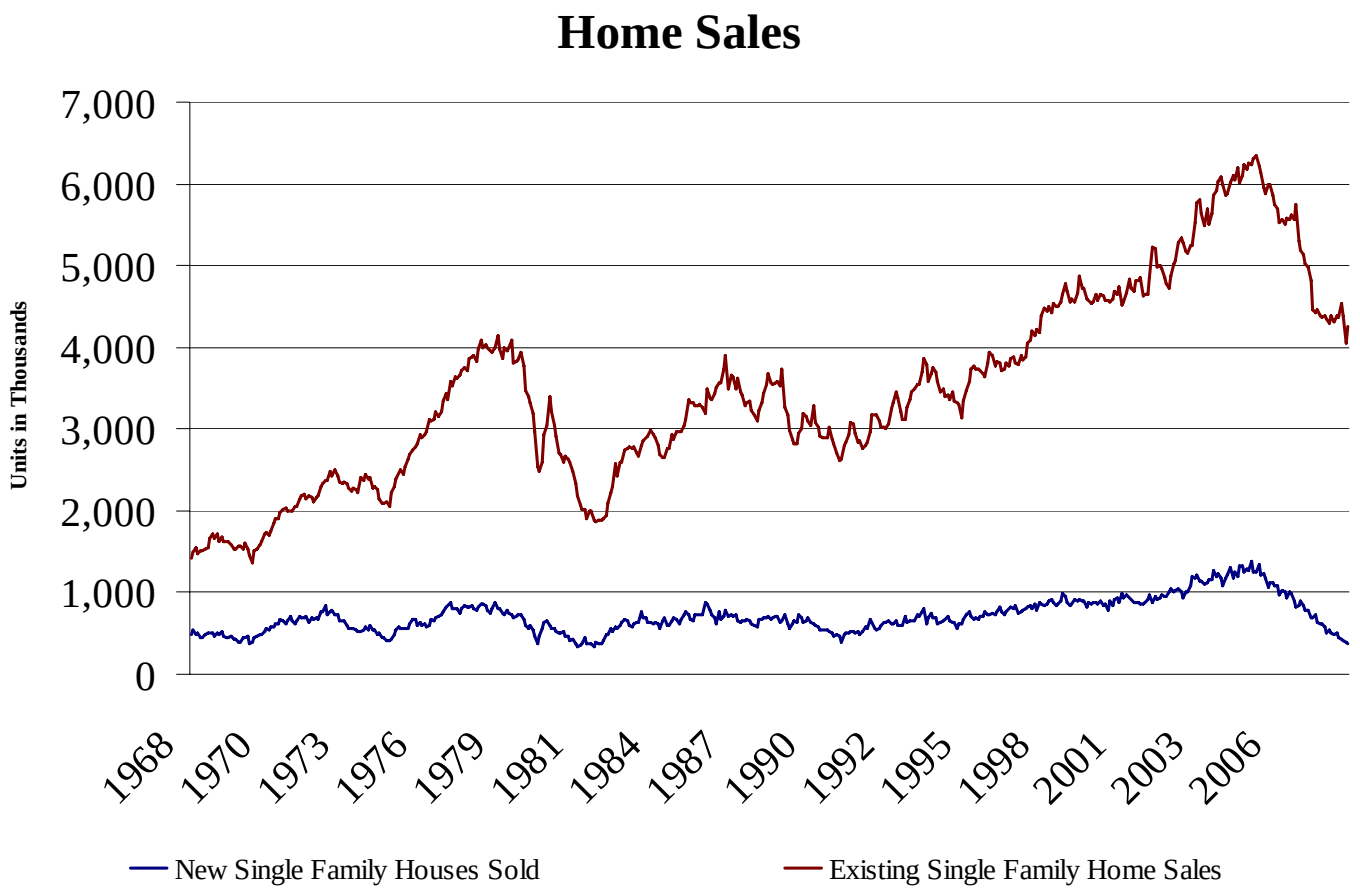
Source: First American, CoreLogic, LoanPerformance HPI % Change: Year-to-Year as of June 2009.

Year-Over-Year Home Price Growth



Source: Based on FHLMC Conventional Mortgage Purchase-Only Home Price Index

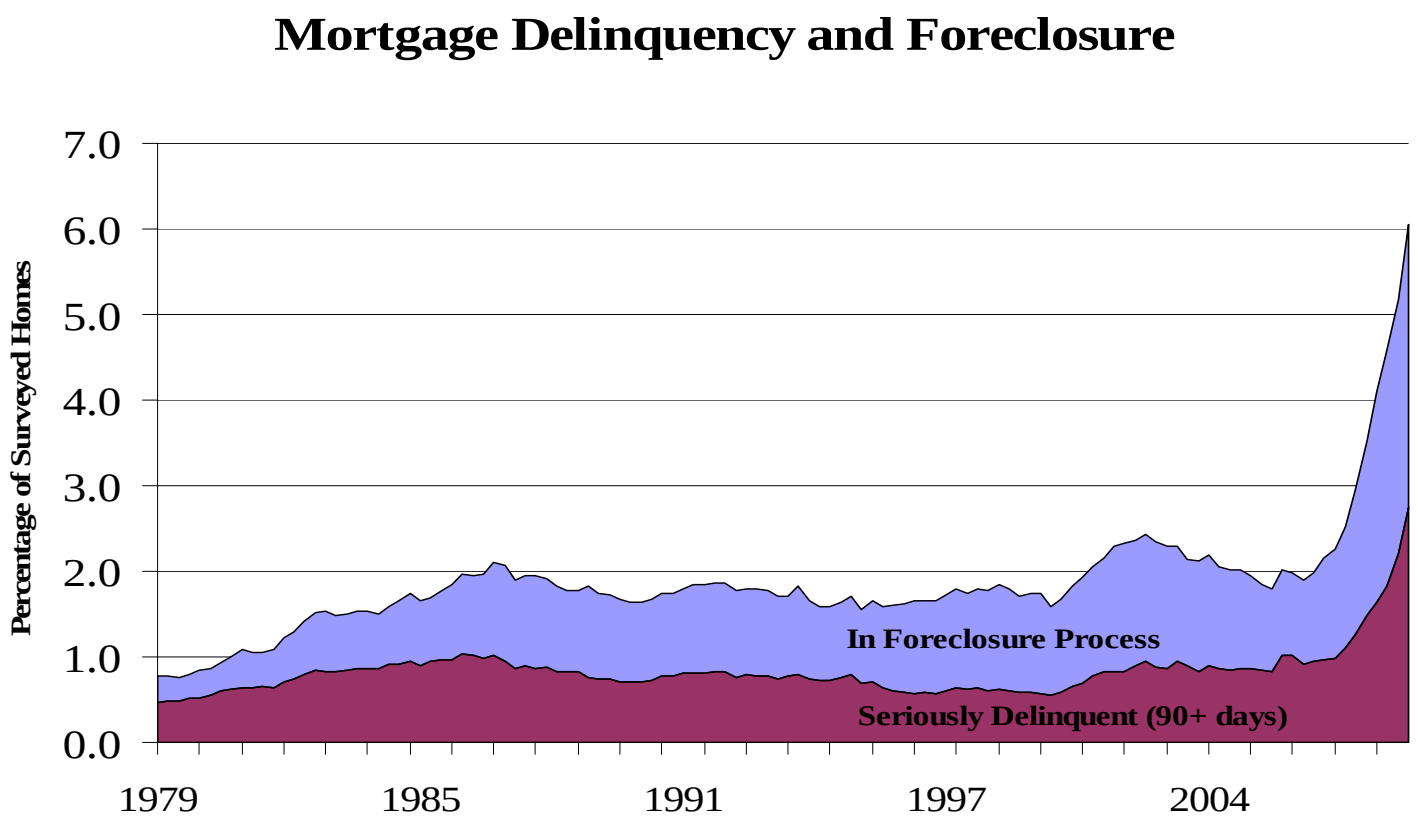
New and Existing Home Sales – U.S.



Source: New Home Sales from US Census; Existing Home Sales from Realtor Surveys

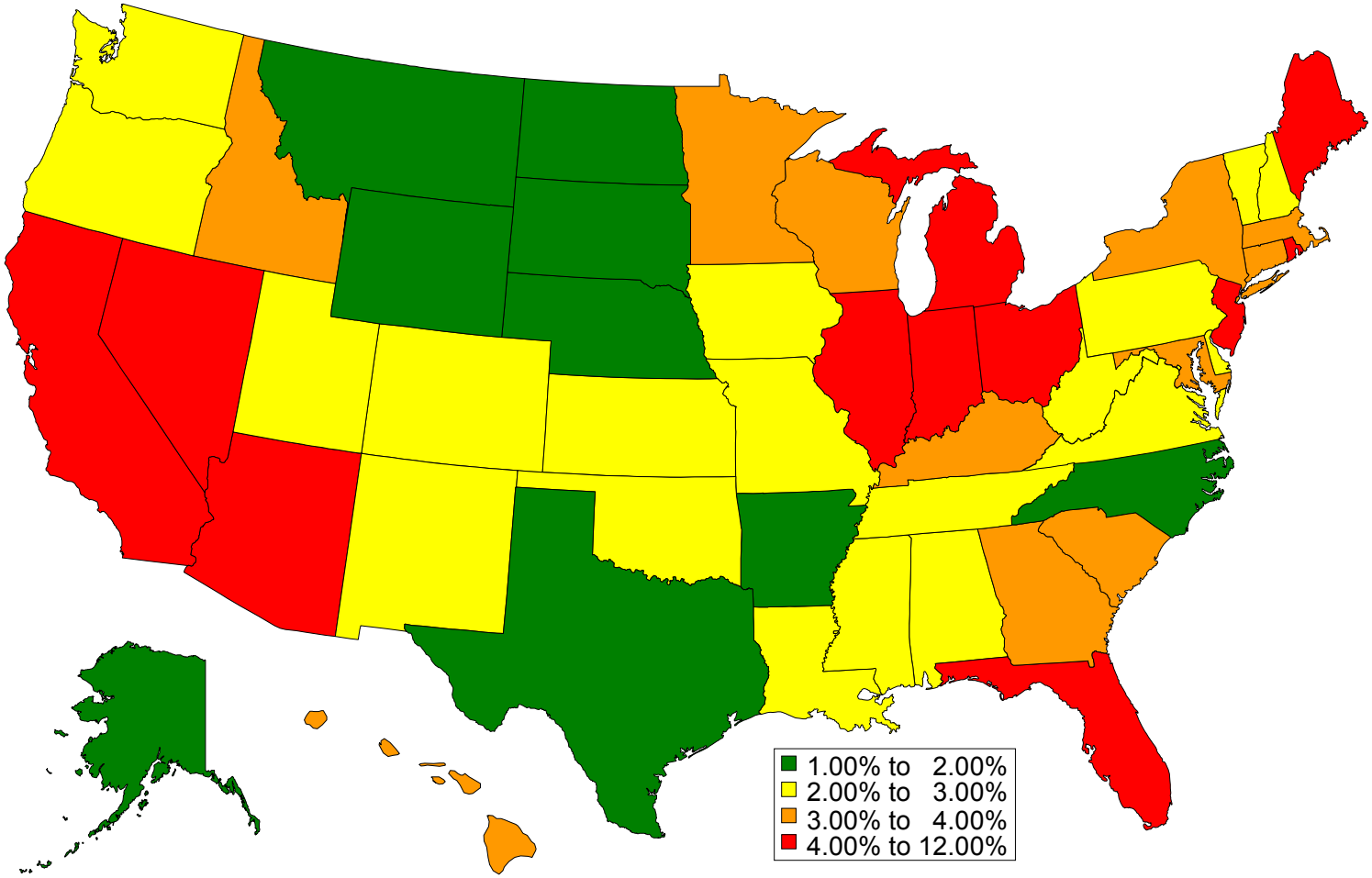
Foreclosure and 90+ Day Delinquency Rates Nationwide

- The recession and riskier loan types have led to much higher levels of delinquencies and foreclosures.



Source: Mortgage Bankers Association, seasonally adjusted, % of all mortgages

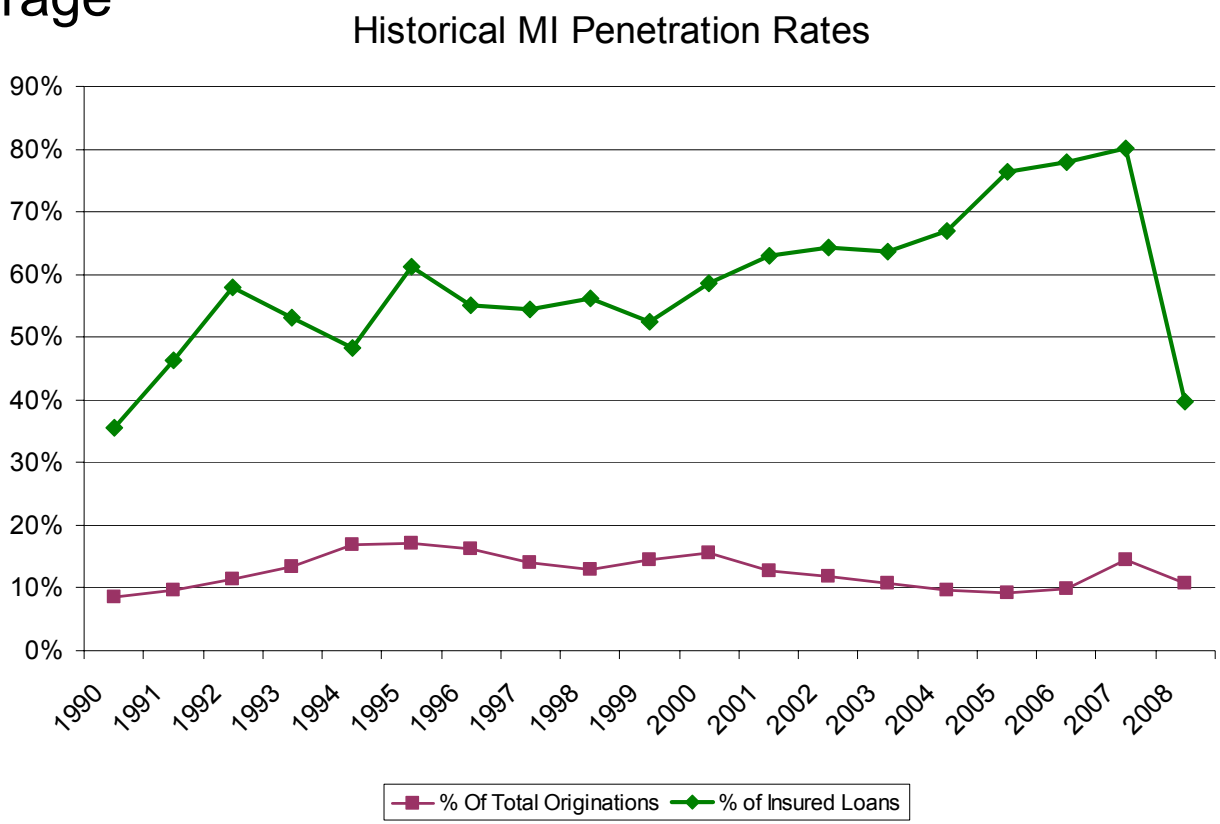
Percent of Loans in Foreclosure by State



Source: Mortgage Bankers Association / Haver Analytics, June 2009

MI Penetration Rates

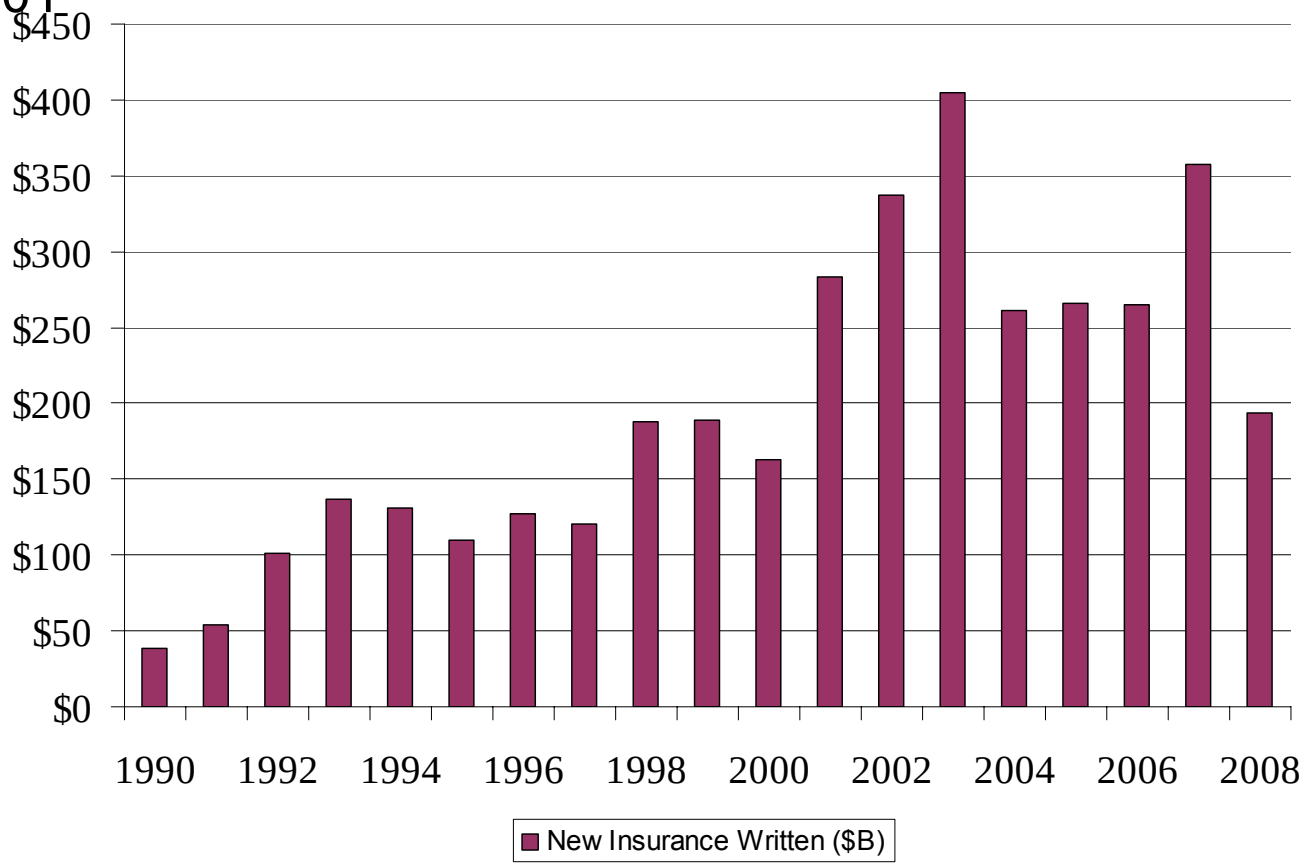
- Historically, most insured loans are covered by monoline mortgage insurers. However, FHA and the VA also provide coverage



Source: Mortgage Insurance Companies of America, FHA, VA

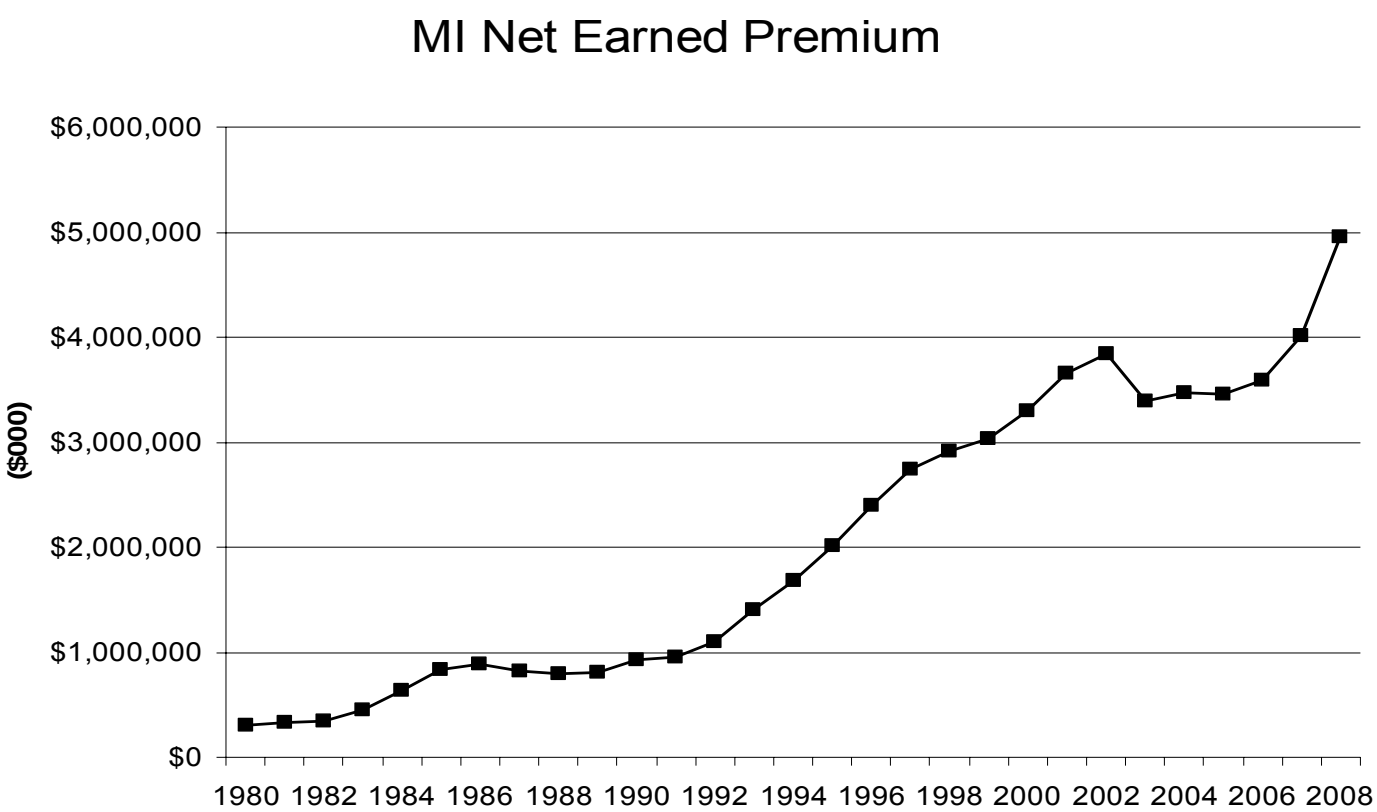
MI Industry NIW Trend

- The volume of new business for MIs significantly increased beginning in 2001



Source: Mortgage Insurance Companies of America

MI Earned Premium Trend



Source: Mortgage Insurance Companies of America

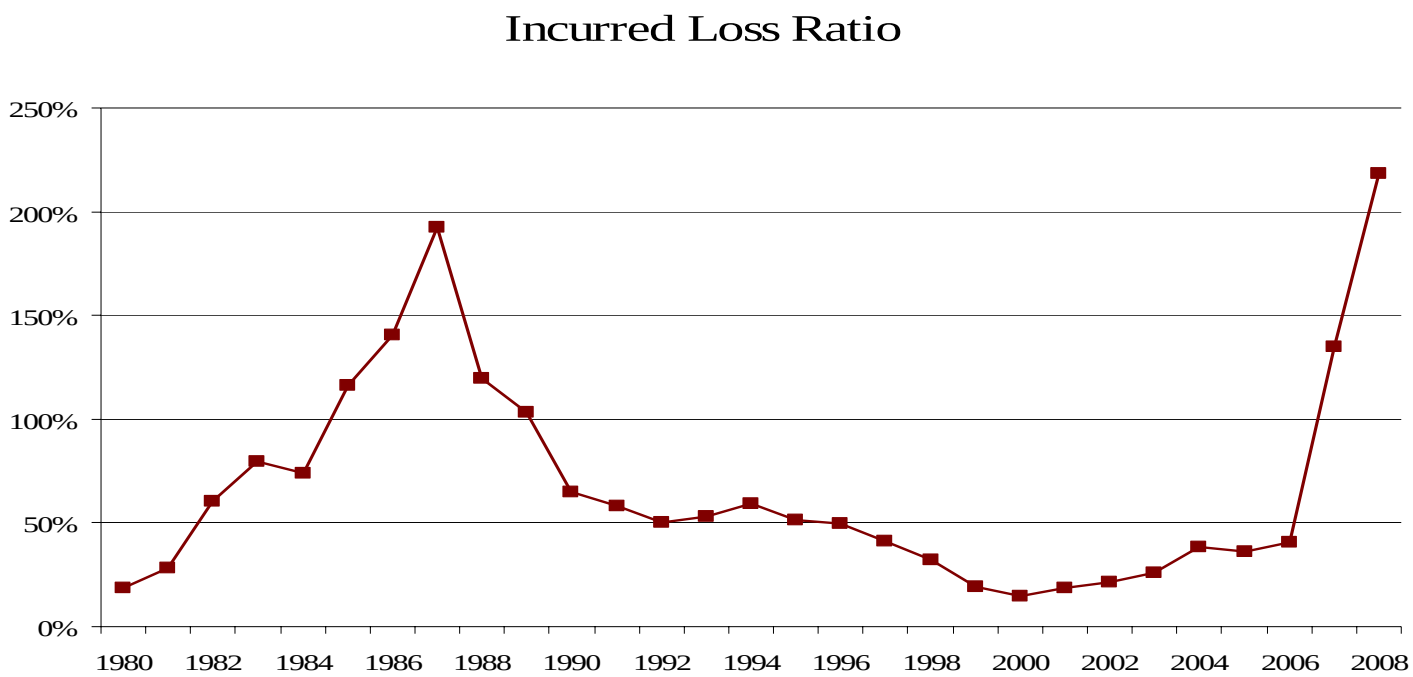
MI Incurred Loss Trends

- Higher levels of foreclosures have resulted in higher MI losses

Source: Mortgage Insurance Companies of America

MI Industry Loss Ratios

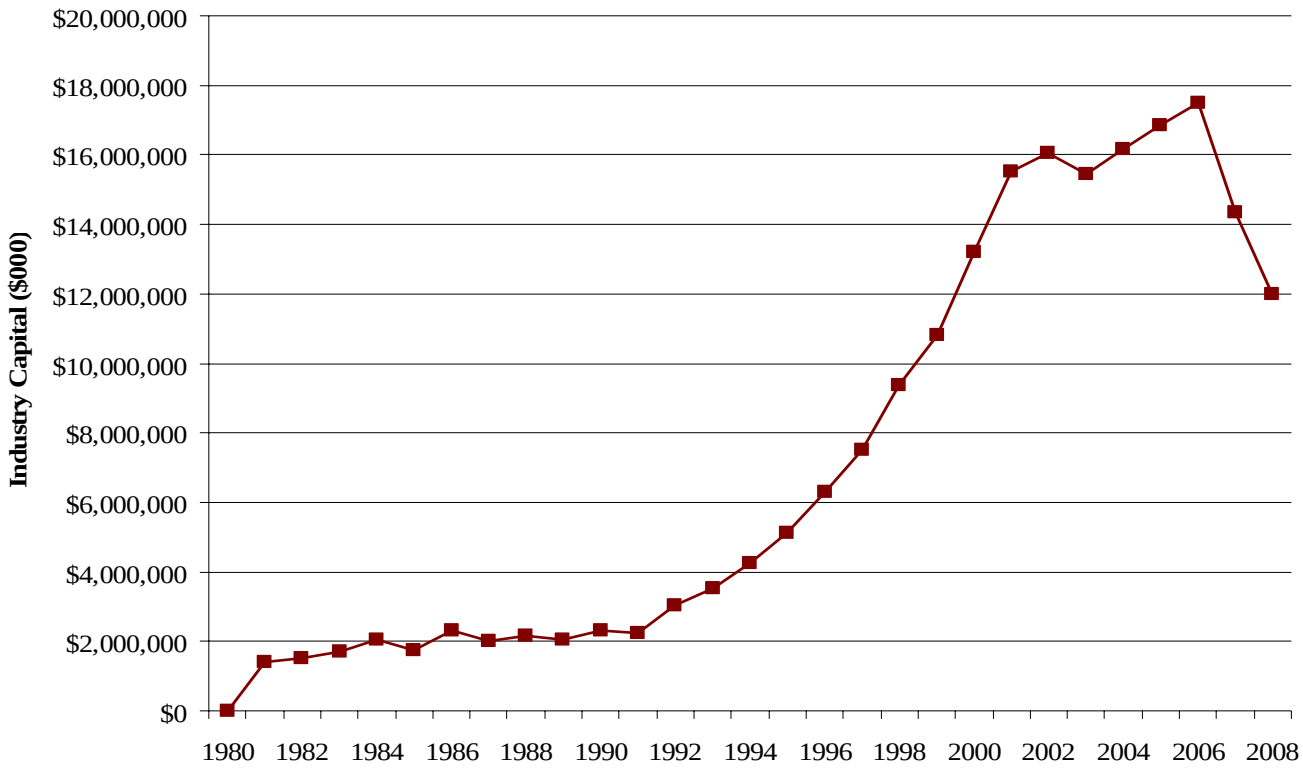
- Three economic events have impacted MI loss ratios
  - Oil Patch – mid 80s
  - Defense industry, end of Cold War – mid 90s
  - Mortgage crisis / Great Recession - today



Source: Mortgage Insurance Companies of America

MI Industry Capital Levels

- Loss ratios above 200% have eroded mortgage insurer capital starting in 2007



Source: Mortgage Insurance Companies of America

Private mortgage insurance reserving

Kamil Jasinski, FCAS, MAAA

Casualty Loss Reserve Seminar
15 September 2009

Ernst & Young
Quality In Everything We Do

Agenda

- Overview
- Loss trigger
- Traditional reserving approach
- Claim count modeling
- Loss severity/average claim amount
- Direct loss modeling
- Mortgage pools
- Premium deficiency reserve
- Contingency reserve
- Conclusion

Overview

- Private mortgage insurance (MI) is a unique line of business.
- Reserving for MI has always relied on specific methods that were not commonly used elsewhere.
- The current financial crisis and housing meltdown introduced further challenges for reserving actuaries and management.
- Basic MI loss reserving methods will be introduced along with enhancements implemented to reflect changing the environment.

Loss trigger

- Loan issuance is typically simultaneous with the start of the policy period.
- Loss event is defined as a receipt of notice of delinquency (NOD).
- Similar to claims-made policies:
  - There is very little pure IBNR (pipeline only).
  - Loss reserve analysis may be performed on a report year basis
- Loss reserve is typically the largest liability component on the balance sheet.
- Premium deficiency reserve can complement the loss reserve for the exposure on loans that are current on active policies (non-NOD).

Traditional reserving approach

Pending NOD x claim rate x average claim amount = case reserve

- Pending NOD count is known.
- Claim rate is derived based on the analysis of historical patterns and the business environment.
- Average claim is estimated based on the amount of risk outstanding on delinquent loans.
- Methods exist for estimating loss amount directly.
- Pure IBNR is very small and typically estimated using lag analysis.

Claim count modeling

- Direct triangular methods
- Adjusted development methods
- Triangular methods based on NOD runoff
- Frequency on pending inventory by NOD status and loan type
- Methods based on changes of NOD status

(Continued)

Claim count modeling

- Direct triangular method:
  - Traditional reported claim development

Paid Claim Counts								
Report Year	3	6	9	12	18	21	24	30
2004	27	140	380	681	1,891	2,500	3,000	3,517
2005	20	90	241	552	1,587	2,207	2,751	3,387
2006	31	95	289	593	1,746	2,497	3,178	4,035
2007	26	91	282	716	3,027	4,398	5,616	7,078
2008	42	182	521	1,304	3,762			
2009	62	170						

(Continued)

Claim count modeling

- Adjusted development methods:
  - Slow down or acceleration of NOD resolution rates may distort the pattern.
  - Adjustment should reflect the NOD resolution rate.

% of NOD Completed (Paid or Cured)				
Report Year	3	6	9	12
2001	9%	27%	46%	70%
2002	10%	27%	47%	70%
2003	12%	29%	48%	71%
2004	11%	28%	48%	69%
2005	10%	27%	44%	65%
2006	11%	27%	46%	65%
2007	9%	21%	36%	53%
2008	7%	17%	30%	45%
2009	7%	14%		

(Continued)

Claim count modeling

- Triangular methods based on NOD runoff:
  - NOD persistency and resolution are estimated.
  - Percentage of NODs resolved as claim is estimated.
- Frequency on pending inventory by NOD status and loan type:
  - Claim rates by loan type and NOD status are estimated based on recent history.
  - Selected claim rates are applied to pending NOD inventory.
- NOD status transition:
  - NOD status changes over time as they move from notice to foreclosure/cure.
  - Transition percentages can be estimated.
  - Selected transition percentages are used to run-off pending inventory.

Loss severity / average claim amount

- Triangular methods:
  - Average claim amount is triangulated.
  - Changing environment distorts the pattern.

Average Paid Claim Method

Average Amount Paid per claim

Report Year	6	18	30	42	54	Estimated Ultimate
2006	21,300	26,900	33,800	35,000	→	33,006
2007	26,600	42,300	45,200	→	→	43,478
2008	37,500	40,200	→	→	→	41,762
2009	47,000	→	→	→	→	58,591

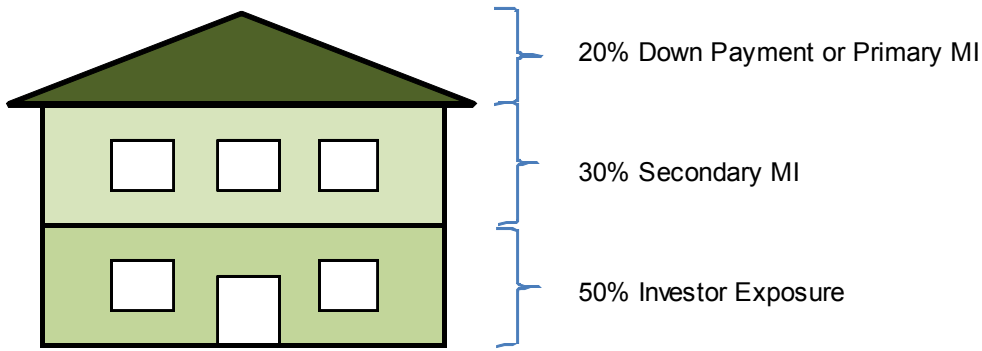
- Methods based on pending risk:
  - Ratios of average claim amount to average pending risk are analyzed.
  - The results “recalibrate” with the changing environment .
  - Trend or change in product/state mix can be incorporated.

Direct loss modeling

- Triangular methods:
  - Paid loss amount is triangulated.
  - Changing environment distorts the pattern.
- Triangular methods based on RIF runoff:
  - Risk in force (RIF), a.k.a. “total pending risk” persistency is estimated.
  - Percentage of RIF converting into losses is projected.

Mortgage pools

- Set up as credit enhancements for mortgage backed securities
- May cover both first and second lien mortgages
- May offer primary or secondary MI layer



- If secondary MI:
  - Historical data is scarce
  - Frequency versus severity
  - Leverage

Premium deficiency reserve

- It is intended to cover potential losses from all business in force
- Only contemplates the excess of future losses over future premiums
- Persistency assumptions are key
- Additional step on the loss side: NOD projection
- Models largely based on run-off
- Present value rather than nominal value

(Continued)

Premium deficiency reserve

SSAP 58: “When the anticipated losses, loss adjustment expenses, commissions and other acquisition costs, and maintenance costs exceed the recorded unearned premium reserve, contingency reserve, and the estimated future renewal premium on existing policies, a premium deficiency reserve shall be recognized by recording an additional liability for the deficiency with a corresponding charge to operations.”

SSAP 53 : “For purposes of determining if a premium deficiency exists, insurance contracts shall be grouped in a manner consistent with how policies are marketed, serviced and measured. A liability shall be recognized for each grouping where a premium deficiency is indicated. Deficiencies shall not be offset by anticipated profits in other policy groupings.”

Contingency reserve

- Statutory requirement
- 50% of premium earned in any given year kept in the contingency reserve for 10 years
- After 10 years, the reserve can be withdrawn
- If calendar year loss ratio > 35%, excess amount can be withdrawn
- Not an actuarial calculation

SSAP 58: “The purpose of this reserve is to protect policyholders against loss during periods of extreme contraction”

Conclusion

- Traditional methods for MI case reserve estimation are based on frequency/severity approach.
- Pure IBNR is relatively small.
- Reserving for MI is short-tailed.
- Traditional triangular methods are easily distorted.
- Frequency by status methods can be difficult to support in changing environment.
- Methods relying on run-off of pending NODs have emerged.
- Pools, captives, second-liens introduce further complications in the reserve models.

MI Presentation

Casualty Loss Reserve Seminar

September 2009

John F. Gibson, FCAS, MAAA

PRICEWATERHOUSECOOPERS

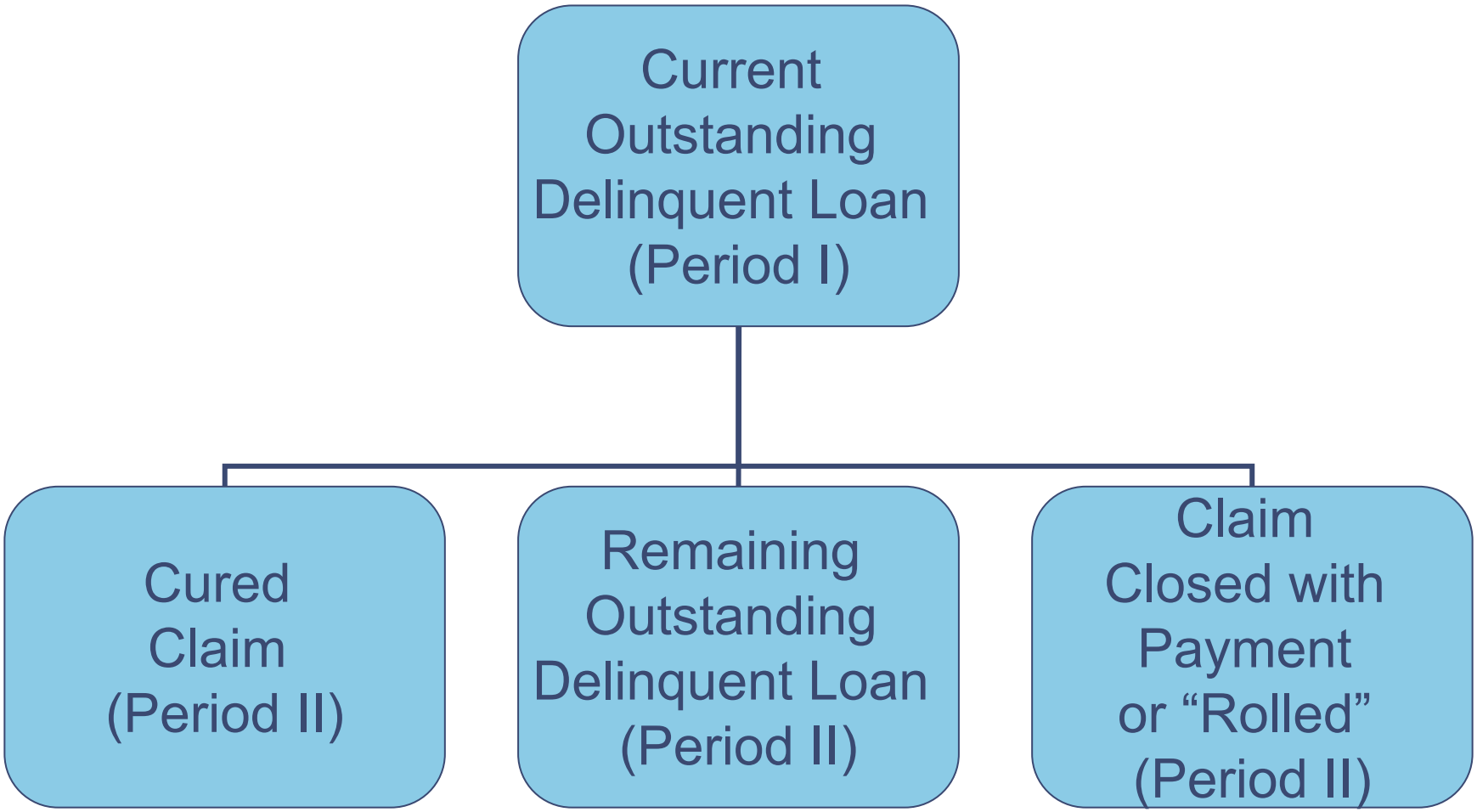
Reserving Methodology

- Frequency and Severity Method
  - Frequency = number of currently delinquent loans that will result in a paid (rolled) claim
    - Estimated by accident quarter and incremental calendar period
  - Severity = percentage of the coverage (risk) on the current delinquencies that will be paid on rolled claims
    - Estimated by future calendar period

Benefits of Method

- The incremental, conditional claim method provides the following advantages:
  - "Known Outcome" – we know each accident quarter must ultimately result in 0 open delinquencies
  - Can separate the trends in Cure Rates and Roll Rates
  - Can more easily see the macroeconomic trends in the calendar period incremental activity

Incremental Decision Tree (Frequency)



Outstanding Delinquent Loans

Outstanding Delinquents													
Acc Yr	Acc Qtr	1	2	3	4	5	6	7	8	9	10	11	12+
2006	4	195	170	145	95	80	75	65	45	24	17	4	
2007	1	185	145	120	80	60	55	40	30	20	14		
2007	2	235	155	130	100	90	75	65	55	45			
2007	3	215	175	140	130	100	90	70	70				
2007	4	230	180	140	130	125	110	85					
2008	1	225	200	165	135	110	105						
2008	2	215	165	120	90	90							
2008	3	210	195	155	135								
2008	4	245	215	200									
2009	1	170	155										
2009	2	195											

Incremental Cured Claims

Incremental Cured Claims													
Acc Yr	Acc Qtr	1	2	3	4	5	6	7	8	9	10	11	12+
2006	4	0	113	51	22	9	7	8	10	4	8	2	
2007	1	0	102	31	13	8	7	5	5	5	6		
2007	2	0	92	25	15	11	8	5	3	12			
2007	3	0	74	28	15	11	6	4	6				
2007	4	0	80	27	14	8	7	4					
2008	1	0	70	26	11	8	6						
2008	2	0	60	19	10	6							
2008	3	0	52	24	12								
2008	4	0	61	22									
2009	1	0	39										
2009	2	0											

Incremental Cured Claims as a Percentage of Outstanding

		Conditional Cure Rate											
Acc Yr	Acc Qtr	1/0	2/1	3/2	4/3	5/4	6/5	7/6	8/7	9/8	10/9	11/10	11 to Ult
2006	4		57.9%	29.8%	15.4%	9.9%	8.8%	10.9%	15.7%	9.1%	33.0%	28.5%	30.0%
2007	1		55.1%	21.7%	10.7%	10.4%	12.4%	9.2%	12.6%	17.7%	29.4%	30.0%	30.0%
2007	2		39.3%	16.3%	11.6%	10.7%	8.6%	6.1%	5.2%	21.1%	30.0%	30.0%	30.0%
2007	3		34.3%	15.9%	10.8%	8.8%	5.8%	4.8%	8.5%	15.0%	30.0%	30.0%	30.0%
2007	4		34.8%	15.3%	9.9%	5.9%	5.4%	3.4%	10.0%	15.0%	30.0%	30.0%	30.0%
2008	1		31.3%	13.0%	6.4%	5.7%	5.5%	8.0%	10.0%	15.0%	30.0%	30.0%	30.0%
2008	2		27.7%	11.8%	8.3%	6.3%	6.0%	8.0%	10.0%	15.0%	30.0%	30.0%	30.0%
2008	3		24.7%	12.2%	7.5%	6.0%	6.0%	8.0%	10.0%	15.0%	30.0%	30.0%	30.0%
2008	4		24.9%	10.2%	8.0%	6.0%	6.0%	8.0%	10.0%	15.0%	30.0%	30.0%	30.0%
2009	1		23.2%	11.0%	8.0%	6.0%	6.0%	8.0%	10.0%	15.0%	30.0%	30.0%	30.0%
2009	2		21.0%	11.0%	8.0%	6.0%	6.0%	8.0%	10.0%	15.0%	30.0%	30.0%	30.0%

Estimated Future Cured Claims

Cured Claim Rate x Prior Outstanding

Future Incremental Cured Claims													
Acc Yr	Acc Qtr	1	2	3	4	5	6	7	8	9	10	11	12+
2006	4											2	1
2007	1										6	4	1
2007	2									12	14	3	1
2007	3								6	11	11	3	0
2007	4							4	9	9	11	2	1
2008	1						6	8	8	9	11	2	1
2008	2					6	5	6	6	7	7	2	0
2008	3				12	8	7	7	7	8	9	2	1
2008	4			22	16	11	9	10	10	11	12	3	0
2009	1		39	17	11	7	6	7	7	8	8	2	0
2009	2	0	41	17	11	7	6	7	7	8	8	2	0

Incremental Claims Closed with Payment (Rolled Claims)

Incremental Closed with Payment (Rolled) Claims													
Acc Yr	Acc Qtr	1	2	3	4	5	6	7	8	9	10	11	12+
2006	4	0	1	3	11	15	15	11	8	18	12	9	
2007	1	0	0	2	7	14	11	9	7	9	9		
2007	2	0	1	2	12	14	15	11	9	12			
2007	3	0	0	2	9	15	18	15	6				
2007	4	0	0	2	7	16	20	10					
2008	1	0	0	1	7	14	11						
2008	2	0	0	1	4	6							
2008	3	0	0	1	3								
2008	4	0	0	1									
2009	1	0	0										
2009	2	1											

Incremental CWP (Rolled) Claims as a Percentage of Outstanding

		Conditional CWP Rate											
Acc Yr	Acc Qtr	1/0	2/1	3/2	4/3	5/4	6/5	7/6	8/7	9/8	10/9	11/10	11 to Ult
2006	4		0.3%	1.6%	7.6%	16.2%	18.6%	14.2%	12.6%	41.0%	48.0%	53.0%	70.0%
2007	1		0.2%	1.2%	5.7%	17.7%	19.0%	15.8%	16.4%	31.0%	43.1%	55.0%	70.0%
2007	2		0.3%	1.1%	9.6%	14.0%	16.4%	15.1%	14.1%	21.1%	45.0%	55.0%	70.0%
2007	3		0.1%	1.2%	6.2%	11.9%	17.8%	16.7%	9.0%	30.0%	45.0%	55.0%	70.0%
2007	4		0.2%	1.2%	4.8%	12.2%	15.7%	9.0%	15.0%	30.0%	45.0%	55.0%	70.0%
2008	1		0.1%	0.6%	4.2%	10.1%	9.6%	12.0%	15.0%	30.0%	45.0%	55.0%	70.0%
2008	2		0.2%	0.4%	3.5%	6.2%	12.0%	12.0%	15.0%	30.0%	45.0%	55.0%	70.0%
2008	3		0.1%	0.4%	2.2%	10.0%	12.0%	12.0%	15.0%	30.0%	45.0%	55.0%	70.0%
2008	4		0.1%	0.3%	3.0%	10.0%	12.0%	12.0%	15.0%	30.0%	45.0%	55.0%	70.0%
2009	1		0.1%	0.4%	3.0%	10.0%	12.0%	12.0%	15.0%	30.0%	45.0%	55.0%	70.0%
2009	2		0.1%	0.4%	3.0%	10.0%	12.0%	12.0%	15.0%	30.0%	45.0%	55.0%	70.0%

Estimated Future Closed with Payment Claims (Rolled)

Closed with Payment Rate (Rolled) x Prior Outstanding

Future Incremental CWP (Rolled) Claims												
Acc Yr	Acc Qtr	1	2	3	4	5	6	7	8	9	10	11	12+
2006	4											9	2
2007	1										9	8	1
2007	2									12	20	6	1
2007	3								6	21	17	6	1
2007	4							10	13	19	16	4	1
2008	1						11	13	13	19	16	4	1
2008	2					6	11	9	9	13	11	3	1
2008	3				3	14	14	11	11	17	14	4	1
2008	4			1	6	18	18	15	15	22	18	5	1
2009	1		0	1	4	12	12	10	10	15	13	4	1
2009	2	1	0	1	4	12	12	10	10	15	12	4	1

Calendar Period	3Q09	4Q09	1Q10	2Q10	3Q10	4Q10	1Q11	2Q11	3Q11	4Q11	1Q12
	109	102	96	84	70	60	48	34	17	5	1

Estimated Future Outstanding

Prior Outstanding – Cured – Rolled

Future Outstanding Delinquents													
Acc Yr	Acc Qtr	1	2	3	4	5	6	7	8	9	10	11	12+
2006	4											4	0
2007	1										14	2	0
2007	2									45	11	2	0
2007	3								70	38	10	1	0
2007	4							85	63	35	8	2	0
2008	1						105	84	63	35	8	2	0
2008	2					90	74	59	44	24	6	1	0
2008	3				135	113	92	74	56	31	8	2	0
2008	4			200	178	149	122	97	72	39	9	1	0
2009	1		155	137	122	103	85	68	51	28	7	1	0
2009	2	195	154	136	121	102	84	67	50	27	7	1	0
Implied Open Claim Decay				11.7%	11.0%	16.0%	18.0%	20.1%	25.3%	45.2%	75.5%	83.0%	100.0%

Future Paid (Rolled) Claims Metrics

Acc Yr	Acc Qtr	(1) CWP To Date	(2) Future CWP	(3) Ultimate CWP (1)+(2)	(4) Ultimate Reported	(5) CWP Rate (3)/(4)	(6) Expected CWP (4)x(5)Sel	(7) Select CWP	(8) Current O/S	(9) Cond. CWP Rate ((7)-(1))/(8)	(10) Ult. CWP Rate (7)/(4)
2006	4	103	2	105	340	30.9%		105	4	50.0%	30.9%
2007	1	68	9	77	264	29.2%		77	14	64.3%	29.2%
2007	2	76	27	103	292	35.3%		103	45	60.0%	35.3%
2007	3	65	45	110	279	39.4%		110	70	64.3%	39.4%
2007	4	55	53	108	280	38.6%		108	85	62.4%	38.6%
2008	1	33	66	99	259	38.2%		99	105	62.9%	38.2%
2008	2	11	57	68	196	34.7%		68	90	63.3%	34.7%
2008	3	4	86	90	227	39.6%	91	90	135	63.7%	39.6%
2008	4	1	118	119	284	41.9%	114	115	200	57.0%	40.5%
2009	1	0	82	82	194	42.3%	78	80	155	51.6%	41.2%
2009	2	1	81	82	196	41.8%	78	80	195	40.5%	40.8%
	Total	417	626	1,043	2,811	37.1%		1,035	1,098	56.3%	36.8%
3q07	4q08			594	1,525	39.0%					
3q08	4q08			209	511	40.9%					
2q08	1q09			359	901	39.8%					
4q08	1q09			201	478	42.1%					
					Selected	40.0%					

Average Risk on Paid Claims

Average Risk on Paid Claim in Quarter												
State	3Q06	4Q06	1Q07	2Q07	3Q07	4Q07	1Q08	2Q08	3Q08	4Q08	1Q09	2Q09
Arizona	31,400	16,000	58,900	46,400	51,300	50,100	61,500	57,400	61,000	59,500	59,000	57,500
California	98,900	77,700	71,600	103,800	81,000	89,600	81,500	83,300	92,600	93,400	97,700	88,300
Michigan	31,100	28,700	33,300	31,000	33,900	37,000	32,000	31,200	32,300	34,400	35,700	36,200
States	53,800	40,800	54,600	60,400	55,400	58,900	58,333	57,300	61,967	62,433	64,133	60,667
All Other	27,600	27,400	27,400	29,400	29,200	30,800	30,500	32,000	33,700	36,300	35,900	36,800
Total CW	34,150	30,750	34,200	37,150	35,750	37,825	37,458	38,325	40,767	42,833	42,958	42,767

Average Loss Payment on Paid Claims

Average Payment on Paid Claim in Quarter												
State	3Q06	4Q06	1Q07	2Q07	3Q07	4Q07	1Q08	2Q08	3Q08	4Q08	1Q09	2Q09
Arizona	22,200	18,000	62,400	37,700	45,700	50,700	62,800	59,400	64,700	63,500	63,600	61,500
California	78,900	82,700	62,300	94,500	78,100	92,800	88,200	91,500	101,300	102,700	107,500	97,300
Michigan	32,200	31,000	33,800	31,700	33,700	37,600	34,600	33,600	35,400	38,300	38,600	39,200
States	44,433	43,900	52,833	54,633	52,500	60,367	61,867	61,500	67,133	68,167	69,900	66,000
All Other	23,700	24,400	24,100	24,600	25,300	28,500	29,800	31,000	33,200	36,900	36,900	36,800
Total CW	28,883	29,275	31,283	32,108	32,100	36,467	37,817	38,625	41,683	44,717	45,150	44,100

Historical Ratio of Paid Loss to Risk on Paid Claims

	Ratio of Payment to Risk											
State	3Q06	4Q06	1Q07	2Q07	3Q07	4Q07	1Q08	2Q08	3Q08	4Q08	1Q09	2Q09
Arizona	70.7%	112.5%	105.9%	81.3%	89.1%	101.2%	102.1%	103.5%	106.1%	106.7%	107.8%	107.0%
California	79.8%	106.4%	87.0%	91.0%	96.4%	103.6%	108.2%	109.8%	109.4%	110.0%	110.0%	110.2%
Michigan	103.5%	108.0%	101.5%	102.3%	99.4%	101.6%	108.1%	107.7%	109.6%	111.3%	108.1%	108.3%
States	84.7%	109.0%	98.2%	91.5%	95.0%	102.1%	106.2%	107.0%	108.4%	109.3%	108.7%	108.5%
All Other	85.9%	89.1%	88.0%	83.7%	86.6%	92.5%	97.7%	96.9%	98.5%	101.7%	102.8%	100.0%
Total CW	85.6%	94.0%	90.5%	85.6%	88.7%	94.9%	99.8%	99.4%	101.0%	103.6%	104.3%	102.1%

Severity Ratios

- What causes the severity to be greater than 100% of the risk in force?

  - Interest Expense
  - Foreclosure Costs
  - Loss Mitigation Costs
  - Fraud Investigation Costs

Estimated Future Ratio of Paid Loss to Risk on Paid Claims

	Projected Ratio of Payment to Risk											
State	3Q09	4Q09	1Q10	2Q10	3Q10	4Q10	1Q11	2Q11	3Q11	4Q11	1Q12	2Q12
Arizona	107.0%	107.2%	107.4%	107.6%	107.8%	108.0%	108.2%	108.4%	108.6%	108.8%	109.0%	109.0%
California	110.0%	110.2%	110.4%	110.6%	110.8%	111.0%	111.0%	111.0%	111.0%	111.0%	111.0%	111.0%
Michigan	108.0%	108.2%	108.4%	108.6%	108.8%	109.0%	109.2%	109.4%	109.6%	109.8%	110.0%	110.0%
States	108.3%	108.5%	108.7%	108.9%	109.1%	109.3%	109.5%	109.6%	109.7%	109.9%	110.0%	110.0%
All Other	100.0%	101.0%	102.0%	102.0%	102.0%	102.0%	102.0%	102.0%	102.0%	102.0%	102.0%	102.0%
Total CW	102.1%	102.9%	103.7%	103.7%	103.8%	103.8%	103.9%	103.9%	103.9%	104.0%	104.0%	104.0%

Average Risk on Open Delinquents and Future Estimated Average Payment

	Avg. Risk on Open	Projected Average Payment Average Risk on Open Delinquencies x Projected Ratio of Payment to Risk											
State	**2Q09**	**3Q09**	**4Q09**	**1Q10**	**2Q10**	**3Q10**	**4Q10**	**1Q11**	**2Q11**	**3Q11**	**4Q11**	**1Q12**	**2Q12**
Arizona	55,000	58,850	58,960	59,070	59,180	59,290	59,400	59,510	59,620	59,730	59,840	59,950	59,950
California	85,000	93,500	93,670	93,840	94,010	94,180	94,350	94,350	94,350	94,350	94,350	94,350	94,350
Michigan	35,000	37,800	37,870	37,940	38,010	38,080	38,150	38,220	38,290	38,360	38,430	38,500	38,500
States	58,333	63,175	63,291	63,408	63,525	63,641	63,758	63,875	63,933	63,991	64,108	64,166	64,166
All Other	40,000	40,000	40,400	40,800	40,800	40,800	40,800	40,800	40,800	40,800	40,800	40,800	40,800
Total CW	44,583	45,794	46,123	46,452	46,481	46,510	46,539	46,569	46,583	46,598	46,627	46,642	46,642

Calculation of Unpaid Loss

Calendar Period	(1) Estimated Future Rolled Claims	(2) Estimated Future Paid Claim	(3) Estimated Unpaid Loss
			(1) x (2)
3Q09	109	45,794	4,991,546
4Q09	102	46,123	4,704,546
1Q10	96	46,452	4,459,392
2Q10	84	46,481	3,904,404
3Q10	70	46,510	3,255,700
4Q10	60	46,539	2,792,340
1Q11	48	46,569	2,235,312
2Q11	34	46,583	1,583,822
3Q11	17	46,598	792,166
4Q11	5	46,627	233,135
1Q12	1	46,642	46,642
2Q12	0	46,642	0
Total Reserve			**28,999,005**

Data Segmentation / Stratification

- Geographical segmentation
  - "Sands" or "Sunshine" States – CA, FL, NV, AZ
  - "Rust" or "Auto" States – MI, OH

- Loan-type segmentation
  - Separate out Prime, Subprime, Alt-A, Pool

Questions?