

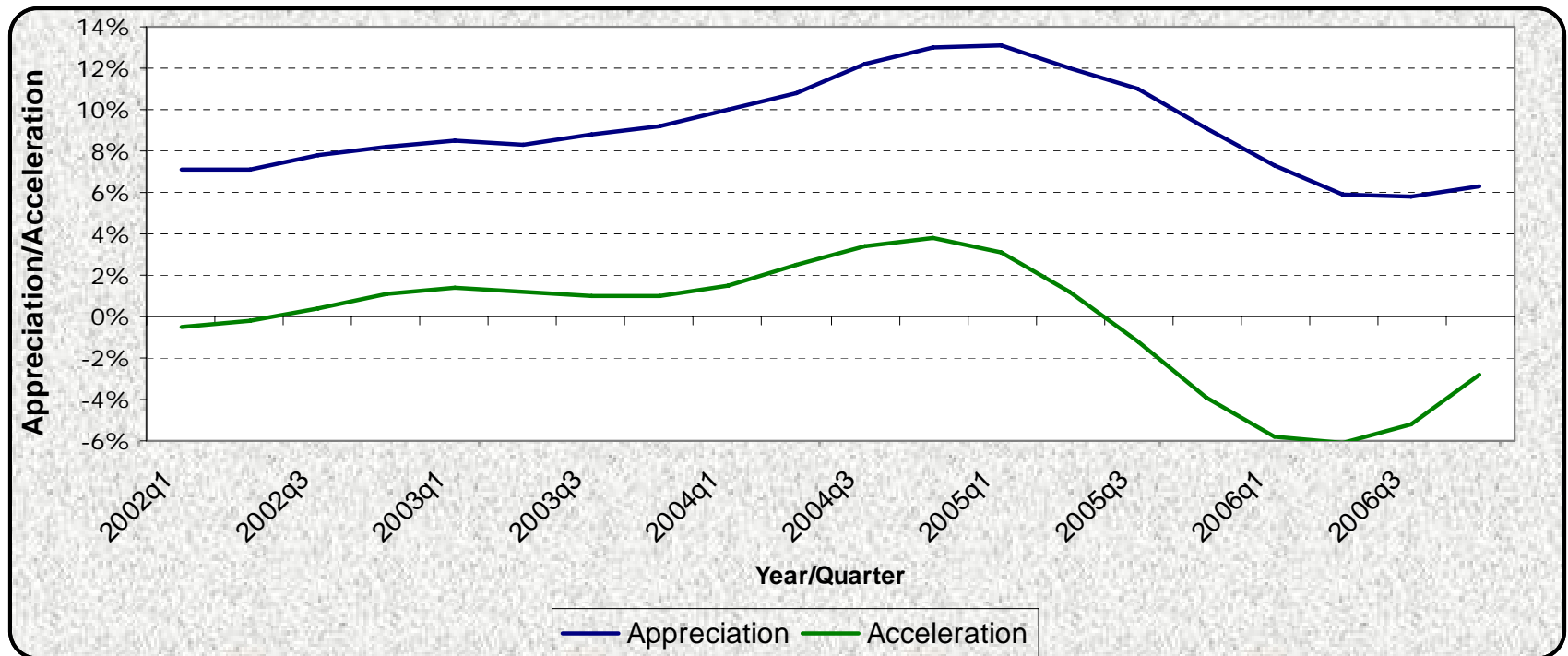
Solutions for Eliminating Collateral Fraud

Mitigating Overvaluation and Collateral Fraud- Empirical Evidence and Solutions

Dr Mark Fleming
Chief Economist
CoreLogic

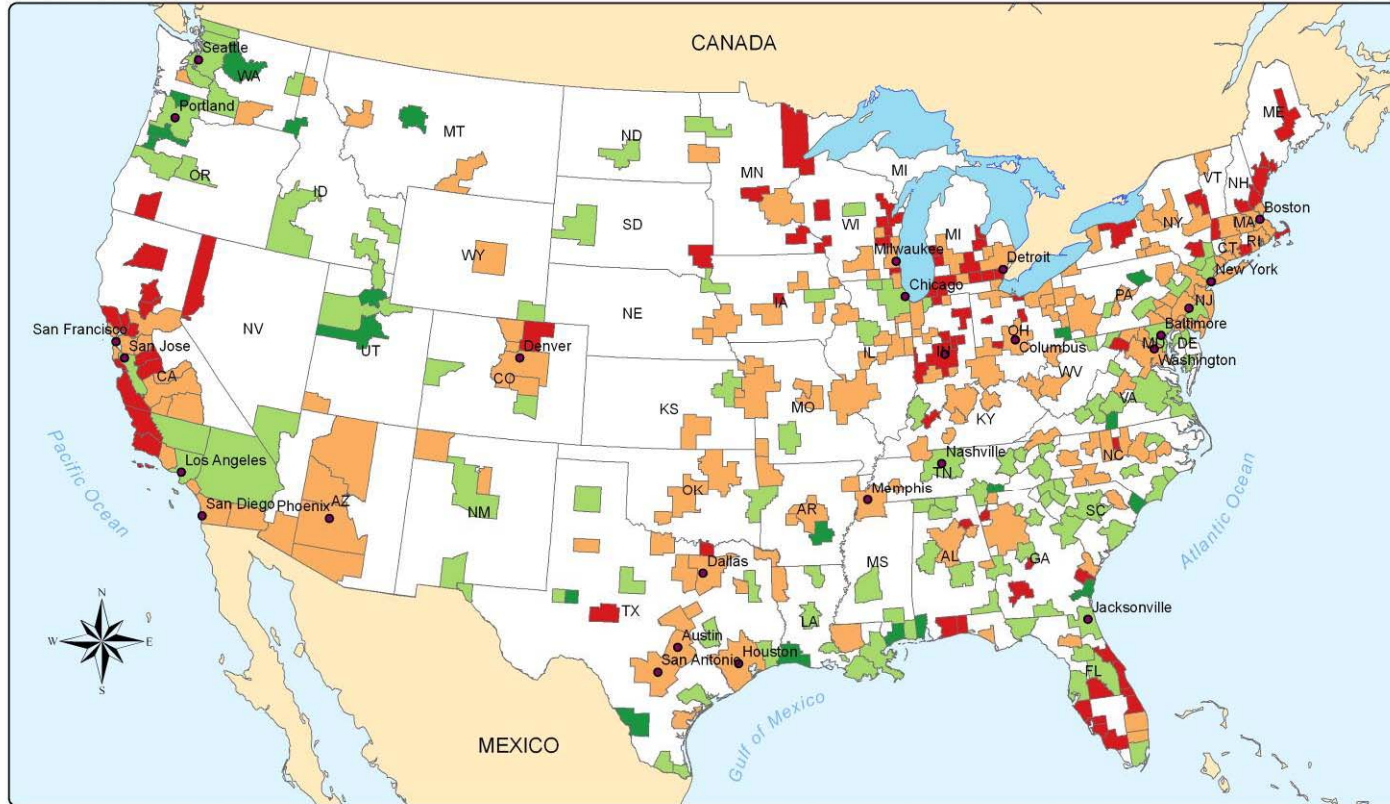
Repeat Sales House Price Trends

- The national market began slowdown in early 2005 /now stabilizing
- Peaked at almost 14 in early 2005/ 6% Q4 2006
- 36 of 379 markets (9.5%) with significant growth (>15%)
- 117 of 379 markets (31%) with growth <2.5%, real depreciation
- 81 markets in actual nominal decline/236 markets decelerating



House Price Appreciation

House Price Index by CBSA, Q4 2006 - actual



Hawaii



Alaska

Appreciation Rates for Q4 2006

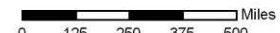
- < 0%
- 0-8%
- 9-17%
- > 17%

Top Ten - Highest Appreciation CBSA Number/Name

- 48300 Wenatchee, WA
- 29700 Laredo, TX
- 30300 Lewiston, ID-WA
- 18700 Corvallis, OR
- 33260 Midland, TX
- 38340 Provo-Orem, UT
- 48540 Wheeling, WV-OH
- 31020 Longview, WA
- 34820 Myrtle Beach-Conway-North Myrtle Beach, SC
- 38220 Pine Bluff, AR

Bottom Ten - Lowest Appreciation CBSA Number/Name

- 46940 Sebastian-Vero Beach, FL
- 25980 Hinesville-Fort Stewart, GA
- 30620 Lima, OH
- 34620 Muncie, IN
- 15980 Cape Coral-Fort Myers, FL
- 38940 Port St. Lucie-Fort Pierce, FL
- 12700 Barnstable Town, MA
- 24540 Greeley, CO
- 11180 Ames, IA
- 42100 Santa Cruz-Watsonville, CA

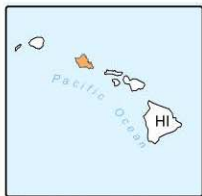
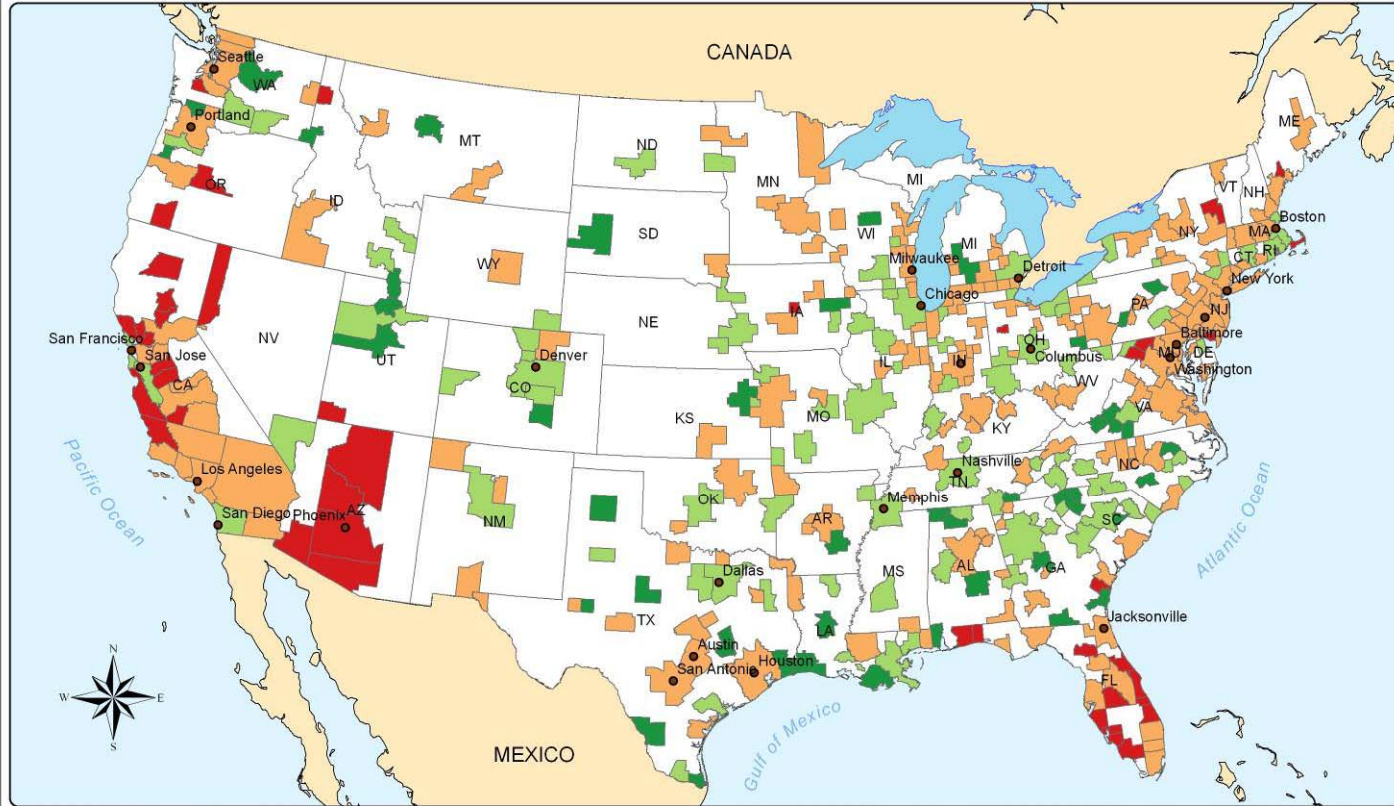


Map Date: January 22, 2007



House Price Acceleration

Acceleration Rates of Housing Prices by CBSA, Q4 2006 - actual



Hawaii



Alaska

Acceleration * Rates for Q4 2006

- < -15% Low
- -15% - 0%
- 0% - 6%
- >6% High

* The rate of change for Appreciation

Top Ten - Highest Acceleration CBSA Number/Name

- 29700 Laredo, TX
- 48300 Wenatchee, WA
- 48540 Wheeling, WV-OH
- 18700 Corvallis, OR
- 30300 Lewiston, ID-WA
- 48700 Williamsport, PA
- 38220 Pine Bluff, AR
- 19260 Danville, VA
- 15190 Brownsville-Harlingen, TX
- 39340 Provo-Orem, UT

Bottom Ten - Lowest Acceleration CBSA Number/Name

- 46940 Sebastian-Vero Beach, FL
- 15980 Cape Coral-Fort Myers, FL
- 29460 Lakeland, FL
- 34340 Naples-Marco Island, FL
- 39340 Port St. Lucie-Fort Pierce, FL
- 25980 Hinesville-Fort Stewart, GA
- 39460 Punta Gorda, FL
- 19660 Deltona-Daytona Beach-Ormond Beach, FL
- 32780 Medford, OR
- 42100 Santa Cruz-Watsonville, CA



Map Date: January 22, 2007



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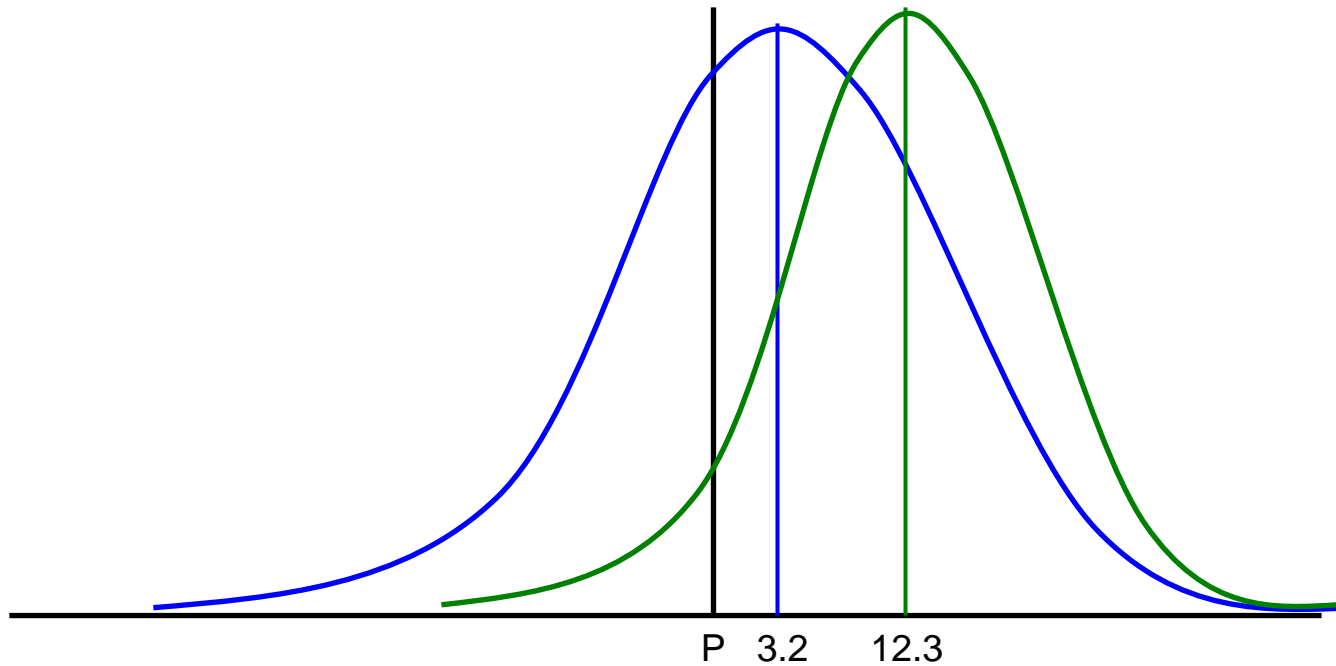
- **Market appreciation no longer available to mitigate loan loss severity**
- **Valuations of any kind are more important in this market transition.**
- **Problem Statement: Are AVMs more or less risky than appraisals in softening markets?**
- **How do we define risk? The potential for a valuation method to overvalue relative to decelerating acceleration.**
- **Are valuations based on “exuberant expectations”**

Over Valuation Risk in a Changing Market

- Appraisal error= $(\text{market value}-\text{appraised})/\text{market}$
- But market is not observed in refinance transactions
- Is there a proxy available for market value
 - An AVM predicts market value but may itself be biased
 - We can measure the bias of an AVM relative to observed purchase transactions
 - Adjusting the AVM value to account for the bias creates an unbiased estimate of market value.
- Sample-
 - 30,000 subprime transactions
 - From April, May, and June of 2006
 - Mix of purchases and refinance transactions
 - Highest concentration in CA (1/3 of file) and Florida

Value bias risk in slowing markets

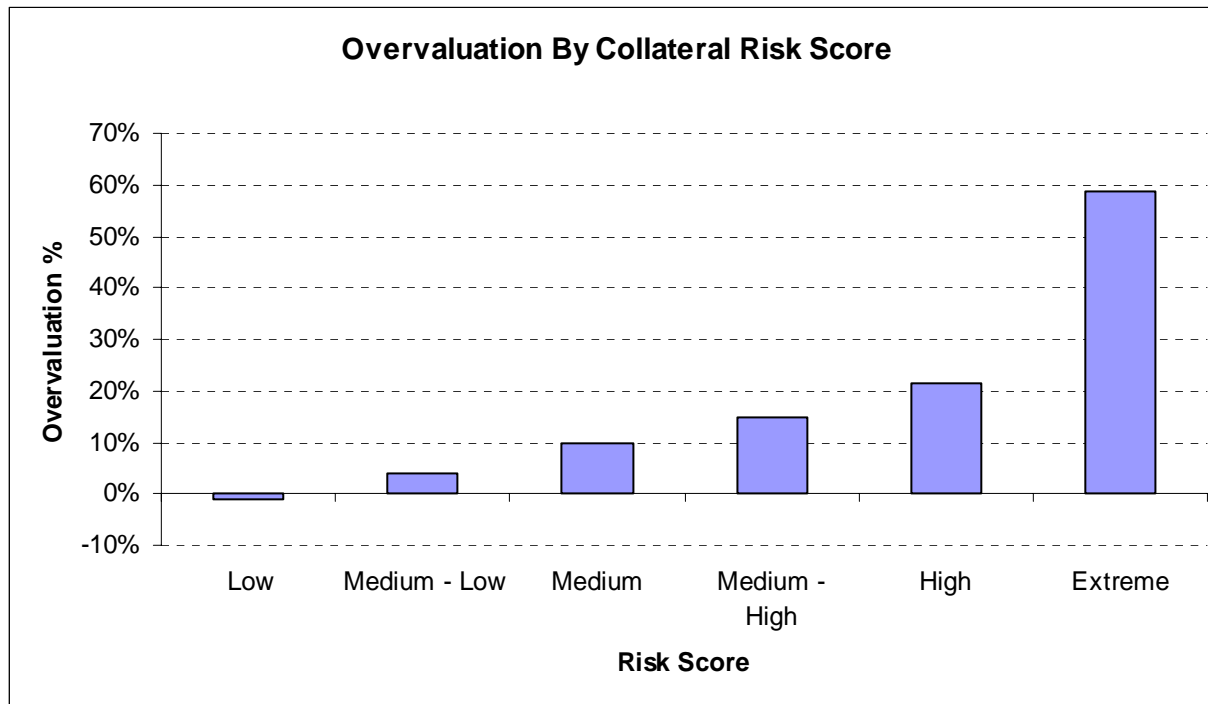
Estimated Appraisal Bias(%)



- Were there exuberant expectations on the part of refinance borrowers supported by Appraisals in the spring of 2006?
- Would an AVM have supported this exuberance?
- Which yields higher credit risk?

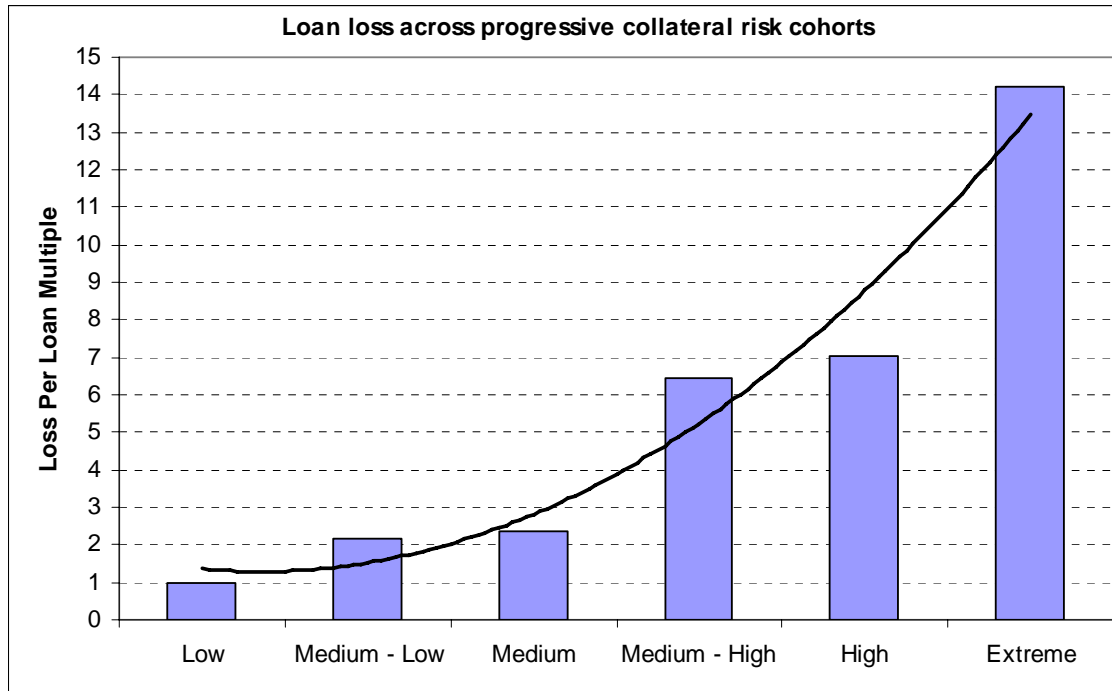
Collateral Risk- Measuring Overvaluation

- Overvaluation bias by Collateral Risk Score
- More than 200,000 transactions across prime and sub prime originations.
- Highest Risk categories are on average almost 60% overvalued, a significant loss exposure.

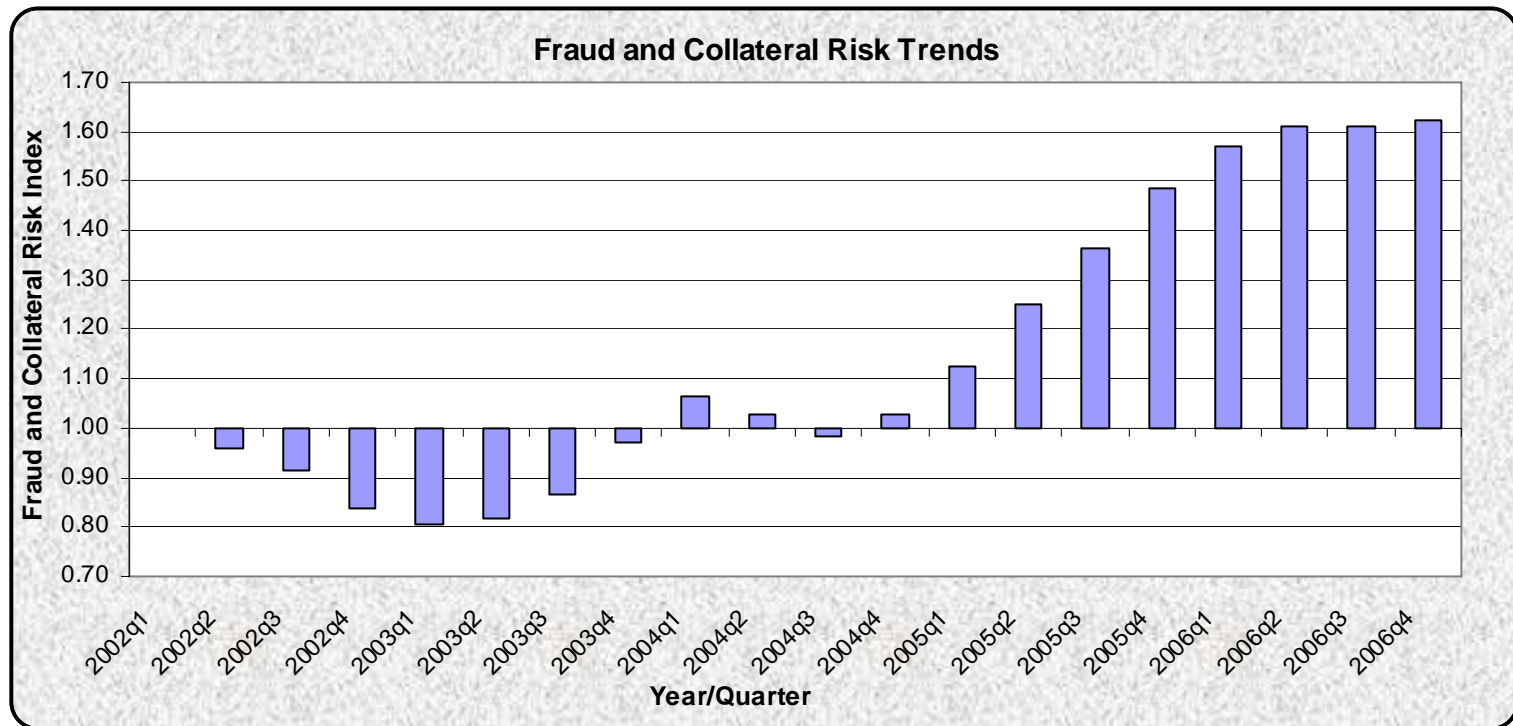


Collateral Risk- Measuring Severity

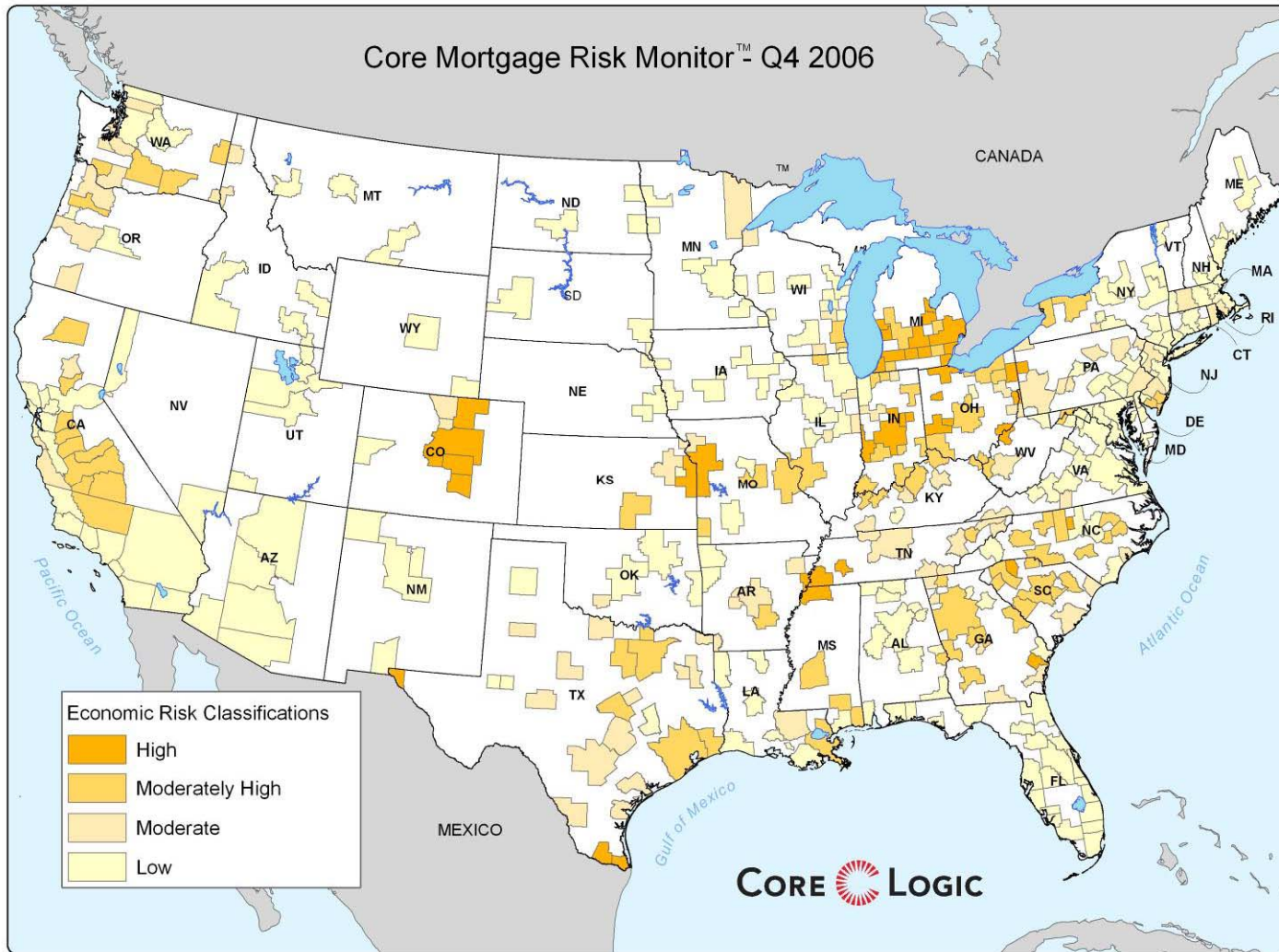
- **Observed Severity by Collateral Risk Score**
- **More than 200,000 transactions across prime and sub prime originations.**
- **Highest Risk category has on average 14 times higher average severity.**



- How does Fraud and Collateral Risk relate to Loan Performance?
 - Mortgage Risk Index: economic index that forecasts the relative risk of mortgage loan delinquencies due to fraud propensity and collateral risk, house price dynamics, and the health of the local market economy.
 - Within the mortgage risk index the collateral risk index has been consistently rising.



Collateral Risk Monitoring



- **House Price appreciation continues to abate so collateral fraud will not cure with time.**
- **Data proves that appraisals are biased upward in a slowing market more so than AVMs possibly due to increased “pressures”.**
- **This overvaluation risk can be predicted and identified with collateral risk scores**
- **Losses are highly correlated to overvaluation**
- **Among 379 markets monitored fraud and collateral (overvaluation) risk has been rising over the past year.**
- **Protection against collateral fraud and overvaluation can be found in the use of automated collateral scoring**