



Fair Value: Where Finance Meets Accounting

Douglas Winn, President
Wilary Winn LLC



Wilary Winn LLC

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Wilary Winn President and co-founder Douglas Winn has more than twenty-five years of executive level financial experience and has served as a management consultant for the most recent fifteen years.

Mr. Winn co-founded Wilary Winn in the summer of 2003 and his primary responsibility is to set the firm's strategic direction. Since inception, Wilary Winn has grown rapidly and currently has more than 375 financial institution clients located in 46 states and the District of Columbia, including 29 of the top 100 credit unions.

Fair Value Measurements and Disclosures

Fair Value Hierarchy

Level 1: Quoted prices in active markets for identical assets or liabilities

Level 2: Observable inputs other than quoted prices

- LIBOR
- Housing Price Indices
- Auto Auction Results

Level 3: Unobservable inputs

Fair Value Measurements and Disclosures

Valuation Techniques

Market Approach: Quoted prices in active markets for identical or comparable assets or liabilities

- Can include matrix pricing

Income Approach: Techniques to convert future amounts to a single present amount.

- Can include present value, option-pricing, and multi-period excess earnings

Discounted Cash Flow Analysis

Examples of the Current Uses of Discounted Cash Flow Analyses

- Valuation of Illiquid Investments and Loans, including Mortgage Servicing Rights
- Troubled Debt Restructurings
- Accounting for Loans with Deteriorated Credit Quality
- Mergers and Acquisitions
- Quantitative Goodwill Impairment Testing

Discounted Cash Flow Analysis

Other Uses of Discounted Cash Flow Analyses

- ASU 825-15 which introduces the concept of the Current Expected Credit Loss (CECL) model.
- Integration of expected credit losses into ALM reporting in order to consider risks on an integrated basis
 - Helps meet the requirements of Enterprise Risk Management (“ERM”)

Discounted Cash Flow Analysis

Historical Cost vs. Discounted Cash Flows

Loan of \$500,000 yielding interest at 3.75%

or

Present value of a payment of \$2,315.58 for 360 months
discounted at 3.75%

Fair Value Where Finance Meets Accounting

This presentation will:

- Review the standard industry approach to discounted cash flow analyses
- Discuss the appropriate discount rate to use depending on the accounting application (fair value, OTTI, ASC 310-30, etc.)
- Show market trends for major input assumptions by asset type
- Show market trends for M & A activity

Discounted Cash Flow Analysis

Industry Approach to Valuation of Fixed Income Investments

Key Valuation Inputs:

- Conditional Repayment Rate (CRR)
- Conditional Default Rate (CDR)
- Conditional Prepayment Rate (CPR = CRR + CDR)
- Loss Severity
- Discount Rate – Depends on Accounting Context

Discounted Cash Flow Analysis

Discount Rates To Be Used

- Fair value discount rate – contractual vs. net of expected credit losses
- Effective yield at inception – FAS ASC 310-20 (FAS 115)
- Effective yield at modification – TDRs

Discounted Cash Flow Analysis

Discount Rates To Be Used - Continued

- Cost of equity capital - mergers
- Current accretable yield for loans or investments with deteriorated quality – FAS ASC 310-30 (SOP 03-3)
- Accounting yield for determination of OTTI (complex can be 310-20, 310-30 or 325-40)
 - OTS Flowchart

Discounted Cash Flow Analysis

2 Loan Example
Fixed Rate Mortgage Loan Valuation as of August 31, 2013

| Principal Balance | FICO | LTV | WAC | Age | WAM | Avg Life | CPR % | CRR % | CDR % | Severity % | Future Loss % | Discount Rate | Fair Value % | Fair Value \$ | Difference | Undiscounted Principal Losses | Discount Rate Difference |
|-------------------|------|------|------|-----|-----|----------|-------|-------|-------|------------|---------------|---------------|--------------|---------------|------------|-------------------------------|--------------------------|
| 100,000 | 740 | 67% | 6.0% | 58 | 302 | 2.9 | 28.3% | 27.3% | 1.0% | 10.0% | 0.3% | 3.4% | 106.3% | 106,254 | 6,254 | (300) | 6,555 |
| 100,000 | 620 | 133% | 6.0% | 58 | 302 | 5.2 | 20.6% | 7.8% | 12.8% | 36.7% | 20.6% | 7.0% | 76.9% | 76,929 | (23,071) | (20,622) | (2,450) |

Discounted Cash Flow Analysis

Loan # 2
 Sched. P&I payment \$ 642.46

Annual CRR% 7.8%
 Annual CDR% 12.8%
 Annual Severity% 36.7%

| Valuation Month | Loan Payment Month | Remaining Loan Balance | Actual Amort | Voluntary Prepays | Repo Prin Recoveries | Total Prin Collected | Interest | Total P&I Collected | DQ Balance | Repo Balance | Liquidations | Repo Prin Losses | Monthly CRR% | Monthly CDR% | Monthly Severity% |
|-----------------|--------------------|------------------------|--------------|-------------------|----------------------|----------------------|----------|---------------------|------------|--------------|--------------|------------------|--------------|--------------|-------------------|
| 0 | 58 | 100,000 | | | | | | | | - | | | | | |
| 1 | 59 | 99,184 | 141 | 675 | - | 816 | 494 | 1,310 | 1,137 | - | - | - | 0.676% | 1.137% | 36.7% |
| 2 | 60 | 98,383 | 139 | 662 | - | 801 | 485 | 1,285 | 2,253 | - | - | - | 0.676% | 1.137% | 36.7% |
| 3 | 61 | 97,597 | 137 | 649 | - | 786 | 475 | 1,261 | 3,346 | - | - | - | 0.676% | 1.137% | 36.7% |
| 4 | 62 | 96,826 | 135 | 636 | - | 772 | 466 | 1,237 | 4,418 | - | - | - | 0.676% | 1.137% | 36.7% |
| 5 | 63 | 96,068 | 134 | 624 | - | 757 | 457 | 1,214 | 5,469 | - | - | - | 0.676% | 1.137% | 36.7% |
| 6 | 64 | 95,325 | 132 | 612 | - | 743 | 448 | 1,191 | 6,499 | - | - | - | 0.676% | 1.137% | 36.7% |
| 7 | 65 | 94,596 | 130 | 600 | - | 730 | 439 | 1,169 | 6,372 | 1,137 | - | - | 0.676% | 1.137% | 36.7% |
| 8 | 66 | 93,879 | 128 | 588 | - | 716 | 430 | 1,147 | 6,248 | 2,253 | - | - | 0.676% | 1.137% | 36.7% |
| 9 | 67 | 93,176 | 127 | 576 | - | 703 | 422 | 1,125 | 6,125 | 3,346 | - | - | 0.676% | 1.137% | 36.7% |
| 10 | 68 | 92,487 | 125 | 565 | - | 690 | 414 | 1,104 | 6,005 | 4,418 | - | - | 0.676% | 1.137% | 36.7% |
| 11 | 69 | 91,809 | 123 | 554 | - | 677 | 406 | 1,083 | 5,888 | 5,469 | - | - | 0.676% | 1.137% | 36.7% |
| 12 | 70 | 91,145 | 122 | 543 | - | 665 | 398 | 1,062 | 5,772 | 6,499 | - | - | 0.676% | 1.137% | 36.7% |
| 13 - 302 | 71 - 360 | 0 | 8,887 | 26,052 | 35,585 | 70,523 | 19,094 | 89,617 | - | - | 56,206 | 20,622 | 0.676% | 1.137% | 36.7% |
| Total | | | 10,459 | 33,335 | 35,585 | 79,378 | 24,428 | 103,806 | | | 56,206 | 20,622 | 0.676% | 1.119% | 36.7% |

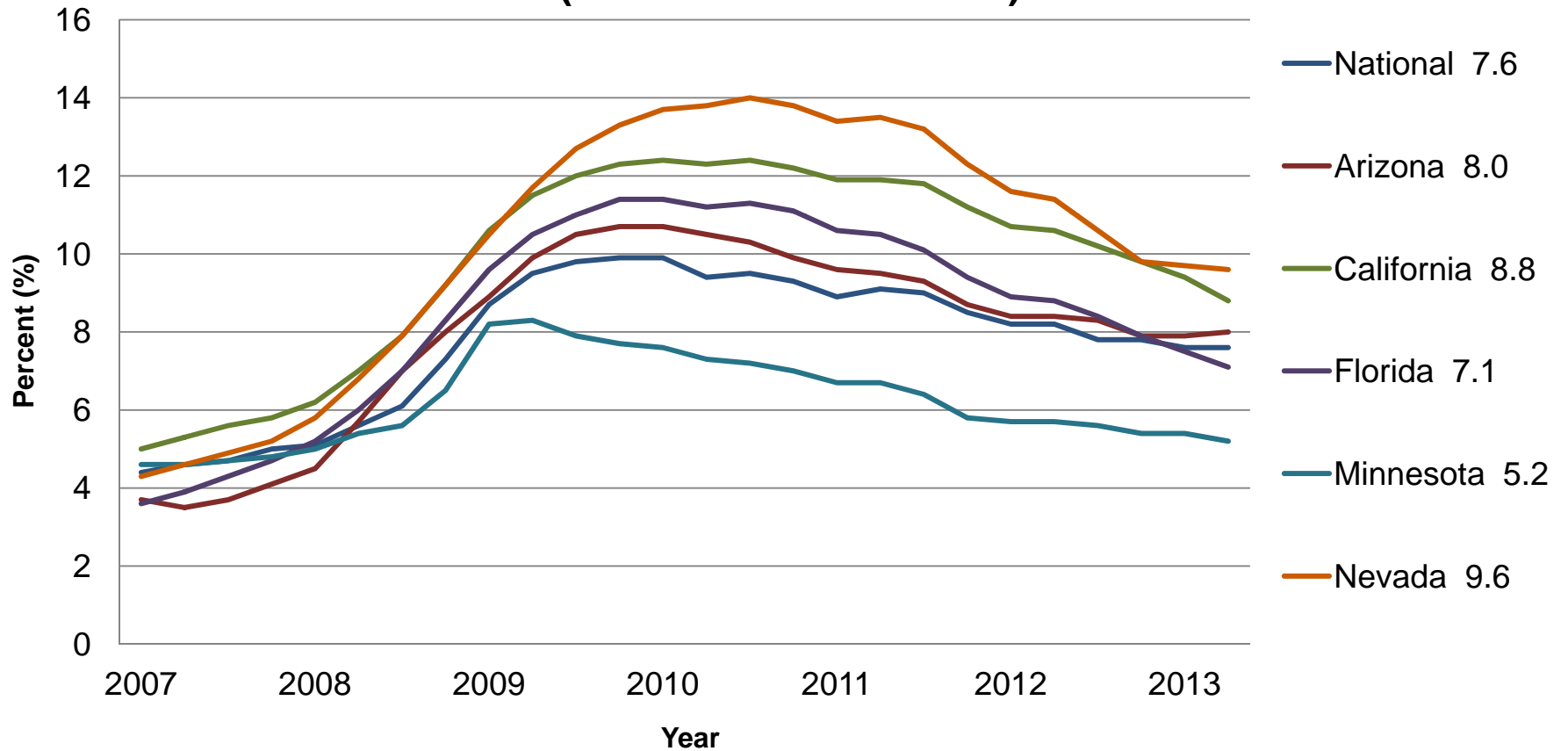
Discounted Cash Flow Analysis

Marketplace Conditions

- Credit Conditions Improving
- Risk of Prepayment has Decreased
- Fair Values Up

Improving Credit Conditions

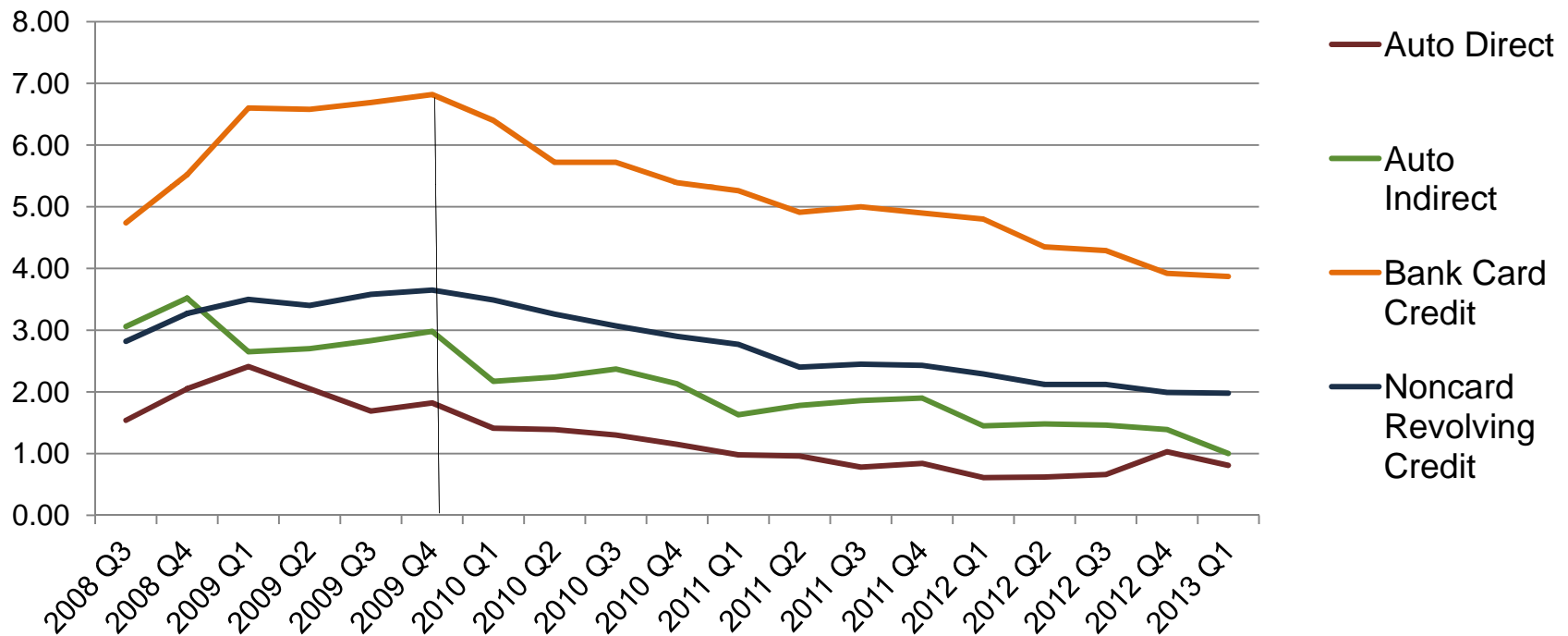
Unemployment Rates (12/31/2006 - 6/30/2013)



Source: U.S. Bureau of Labor and Statistics

Improving Credit Conditions

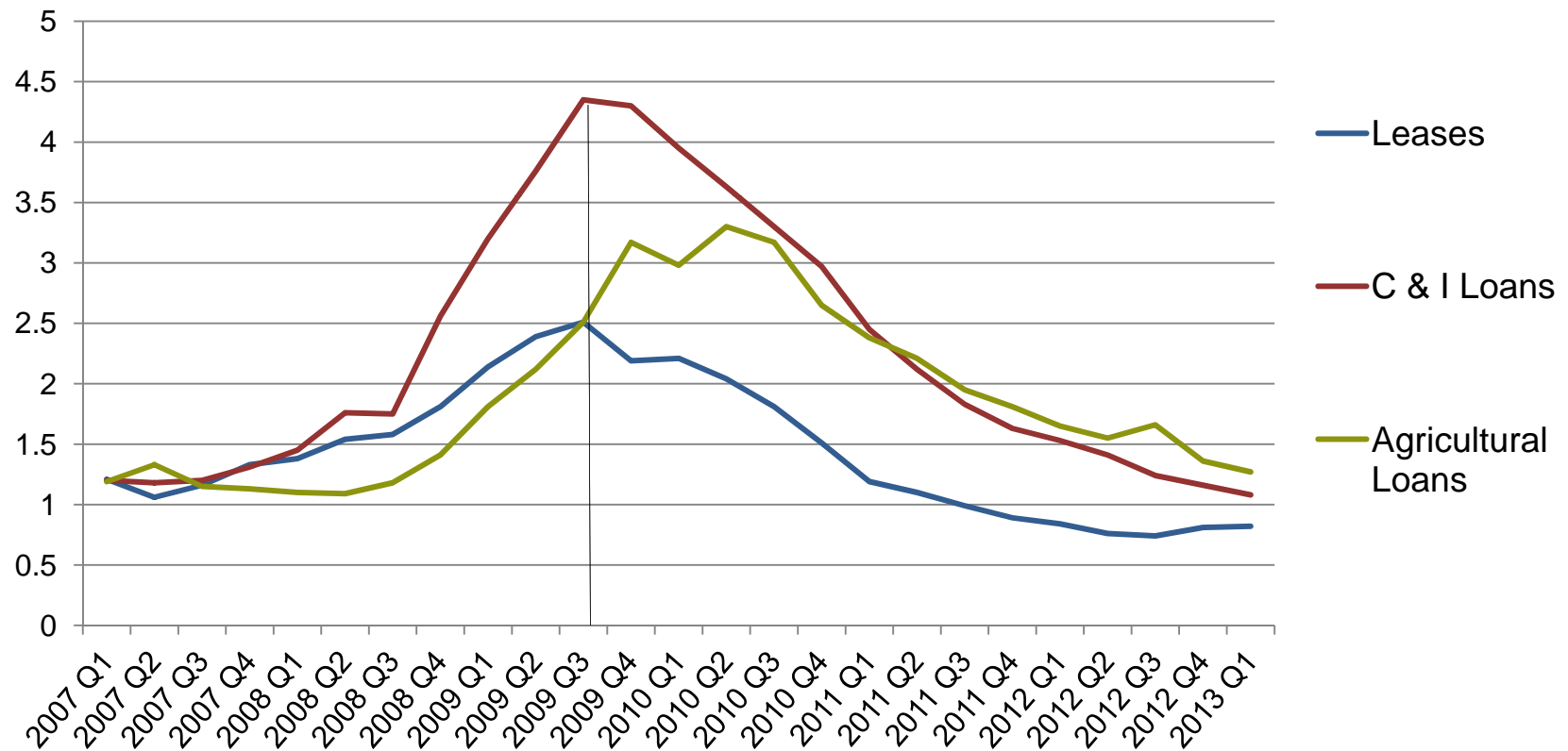
Loans Past Due 30 Days or More as a Percentage of Loans with Outstandings



Source: American Banker's Association: Consumer Credit Delinquency Report

Improving Credit Conditions

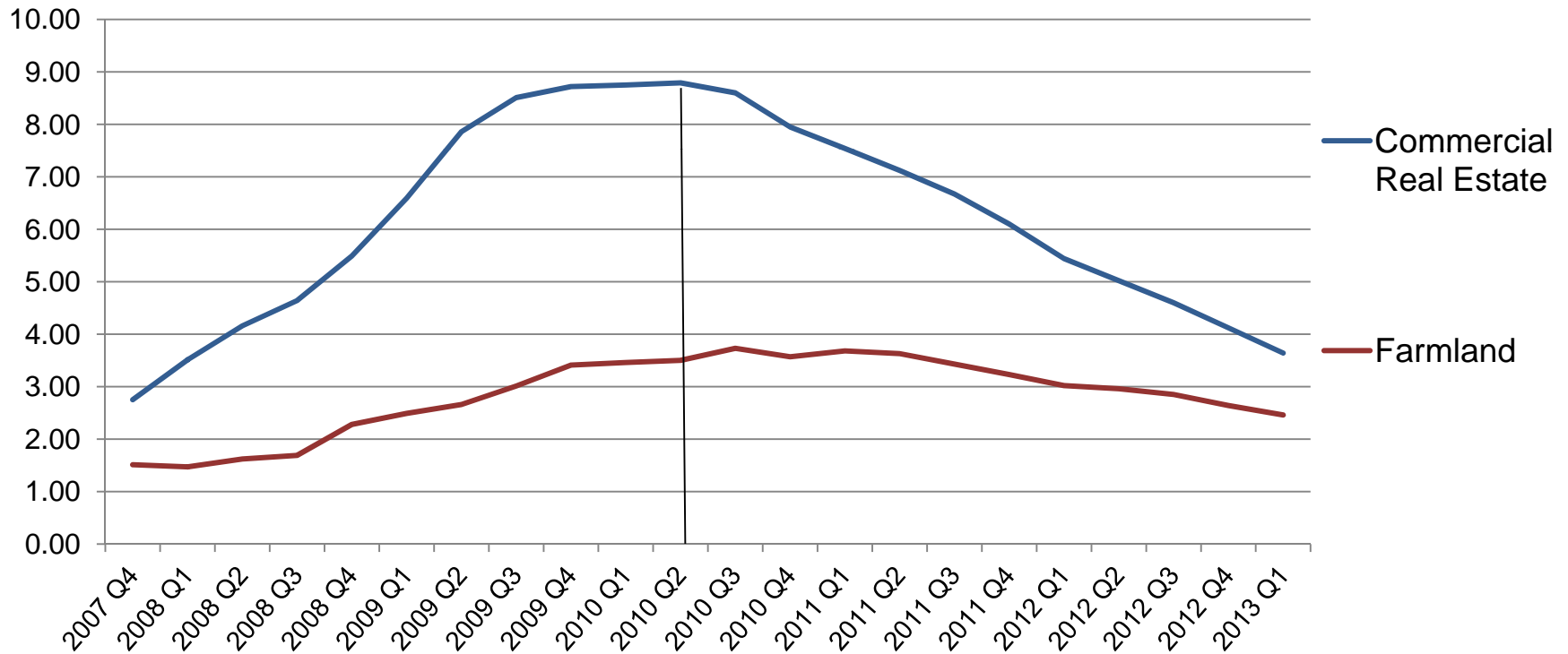
Delinquency Rates on Loans and Leases at Commercial Banks



Source: Federal Reserve Delinquency Rates

Improving Credit Conditions

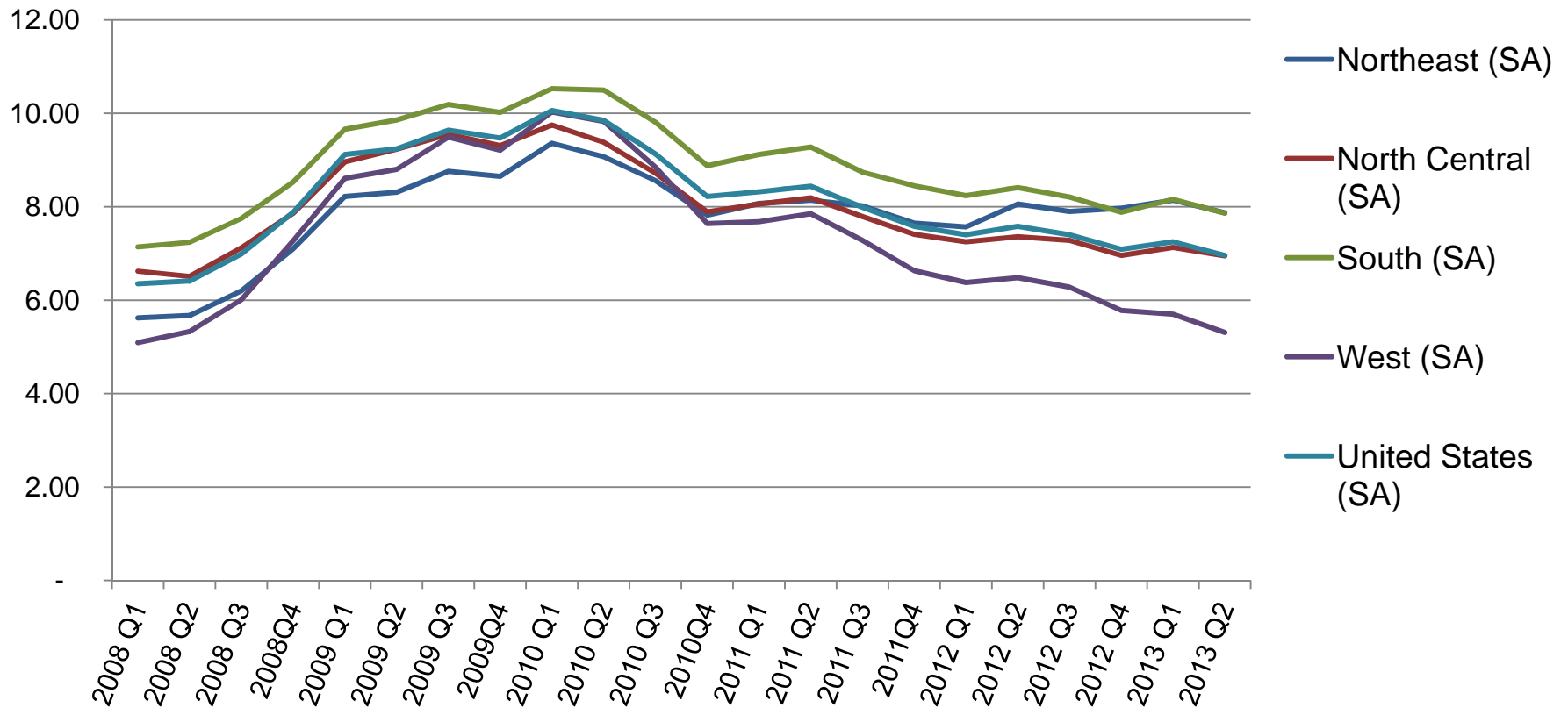
Delinquency Rates on Loans at Commercial Banks



Source: Federal Reserve Delinquency Rates

Improving Credit Conditions

30 Day Plus Residential Mortgage Loans By Region



Source: American Banker's Association: Consumer Credit Delinquency Report

Improving Credit Conditions

Serious Delinquencies by State – 2nd Quarter 2013

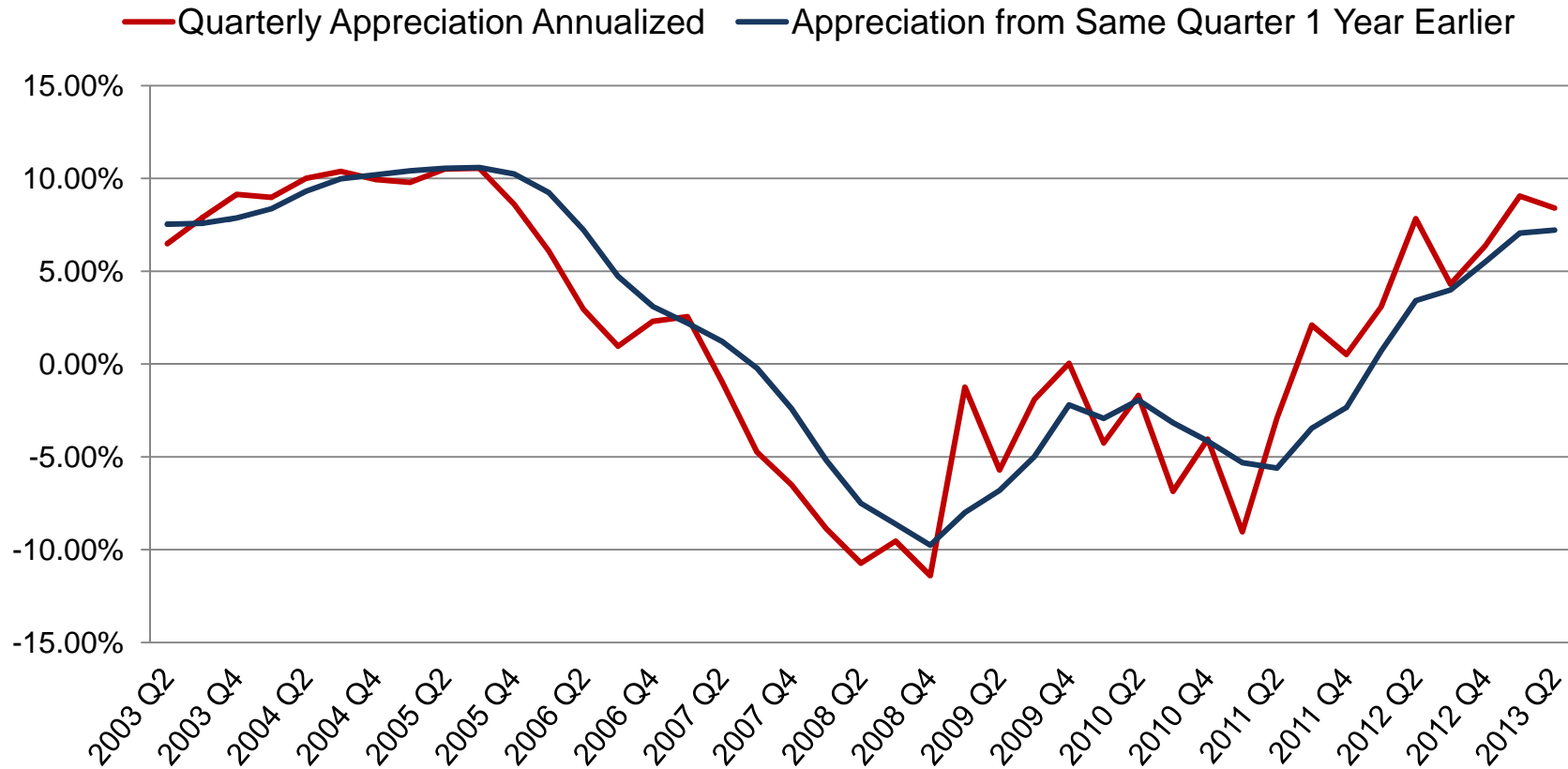
| | | | | | |
|----------------------|-------|----------------|------|---------------|------|
| Florida | 13.54 | South Carolina | 5.58 | Kansas | 3.88 |
| New Jersey | 12.25 | Georgia | 5.51 | Missouri | 3.87 |
| Nevada | 9.37 | New Mexico | 5.39 | Utah | 3.85 |
| New York | 9.17 | Louisiana | 5.37 | Idaho | 3.84 |
| Illinois | 8.15 | Washington | 5.29 | Iowa | 3.71 |
| Maine | 8.08 | Kentucky | 5.28 | Texas | 3.61 |
| Maryland | 7.81 | Oregon | 5.27 | West Virginia | 3.42 |
| Connecticut | 7.53 | Arkansas | 5.22 | Virginia | 3.26 |
| Rhode Island | 6.99 | Oklahoma | 5.17 | Arizona | 3.19 |
| Delaware | 6.66 | Vermont | 5.06 | Nebraska | 2.90 |
| Ohio | 6.45 | Alabama | 5.00 | Minnesota | 2.80 |
| Mississippi | 6.34 | Tennessee | 4.80 | Colorado | 2.69 |
| Indiana | 6.19 | North Carolina | 4.60 | Montana | 2.27 |
| Pennsylvania | 6.13 | Wisconsin | 4.52 | Alaska | 2.07 |
| Hawaii | 5.99 | Michigan | 4.45 | Wyoming | 2.07 |
| Massachusetts | 5.93 | New Hampshire | 3.92 | South Dakota | 2.02 |
| District of Columbia | 5.73 | California | 3.89 | North Dakota | 1.43 |

Shaded states = Judicial

Source: Mortgage Bankers Association

Improving Credit Conditions

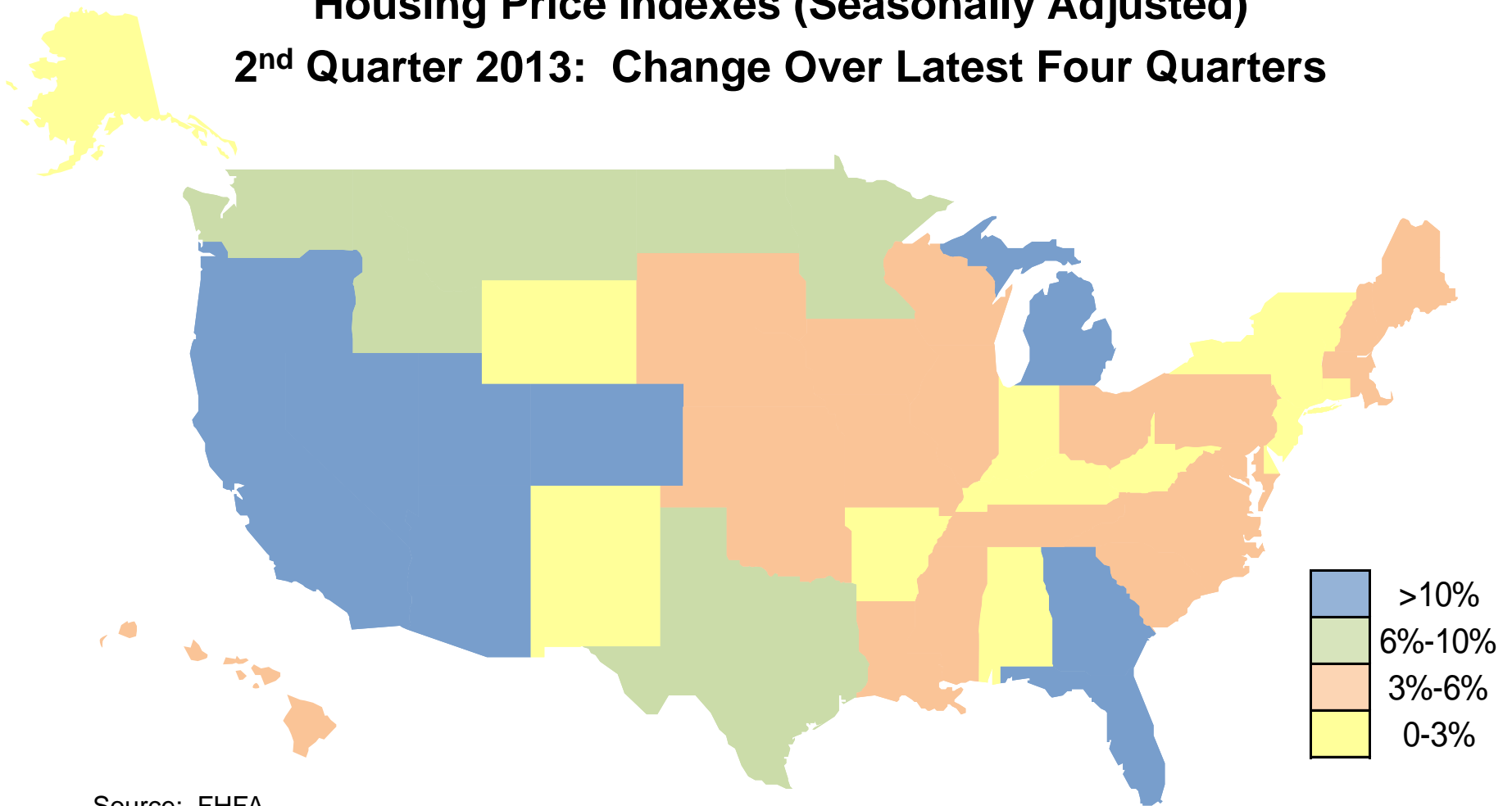
FHFA Seasonally Adjusted House Price Index



Source: FHFA

Improving Credit Conditions

Housing Price Indexes (Seasonally Adjusted)
2nd Quarter 2013: Change Over Latest Four Quarters



Source: FHFA

Improving Credit Conditions

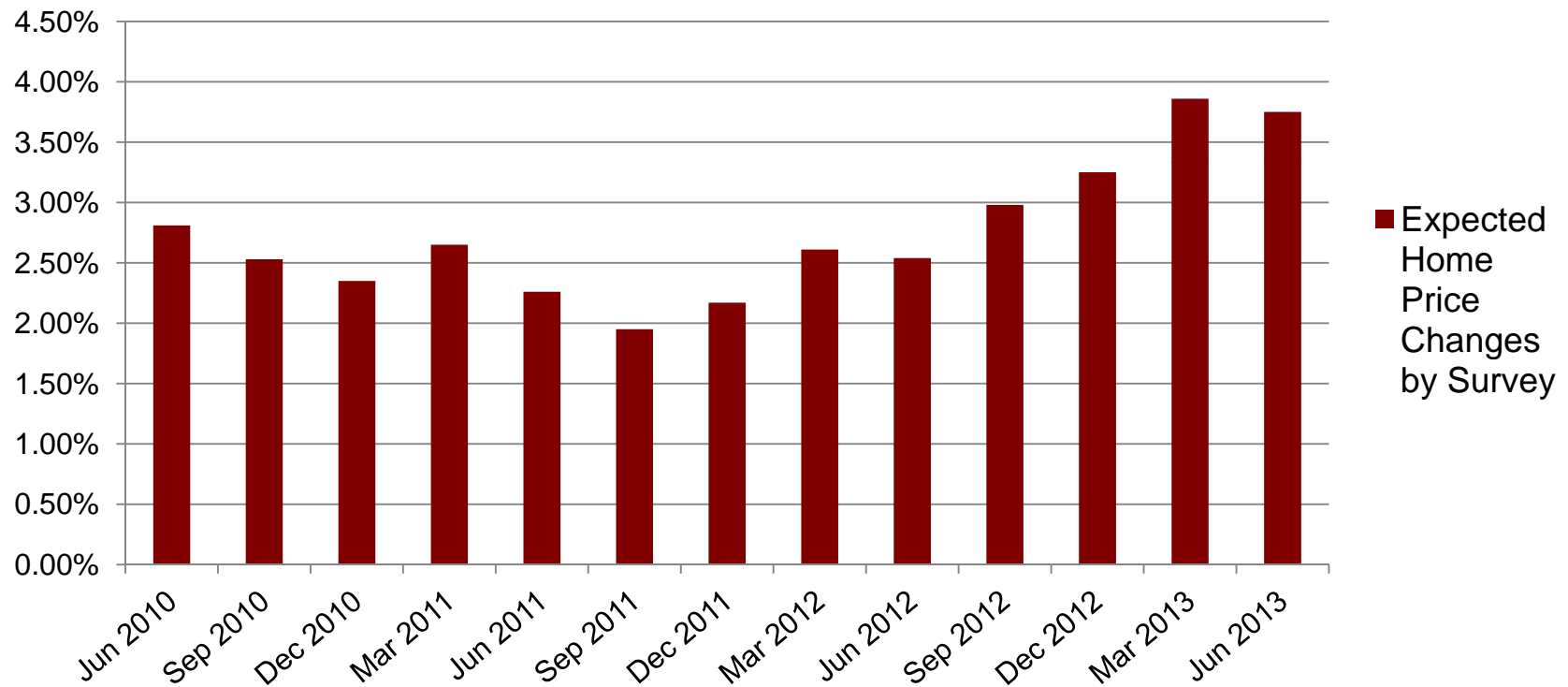
Changes in Housing Prices

| | <u>One Year</u> | <u>Five Year</u> | <u>Fore</u> | | <u>One Year</u> | <u>Five Year</u> | <u>Fore</u> |
|-----------------|-----------------|------------------|-------------|---------------|-----------------|------------------|-------------|
| Atlanta | 14.04% | -13.24% | N | Orlando | 17.56% | -20.15% | J |
| Bakersfield | 21.84% | -12.04% | N | Phoenix | 23.28% | -13.38% | N |
| Chicago | 6.65% | -19.49% | J | Riverside | 21.92% | -6.25% | N |
| Fort Lauderdale | 13.33% | -9.25% | J | Sacramento | 25.99% | -2.66% | N |
| Fresno | 13.72% | -14.83% | N | San Diego | 14.25% | 4.57% | N |
| Jacksonville | 11.42% | -19.20% | J | San Francisco | 22.69% | 13.37% | N |
| Las Vegas | 26.60% | -26.81% | N | San Jose | 20.68% | 13.73% | N |
| Los Angeles | 16.27% | -0.15% | N | Seattle | 14.01% | -11.85% | N |
| Miami | 12.84% | -16.37% | J | Tampa | 8.31% | -13.15% | J |
| Milwaukee | 5.37% | -9.74% | N | Tucson | 6.97% | -24.01% | N |

Source: FHFA

Improving Credit Conditions

Expected Home Price Changes Long Term Average



Source: Pulsenomics/Zillow

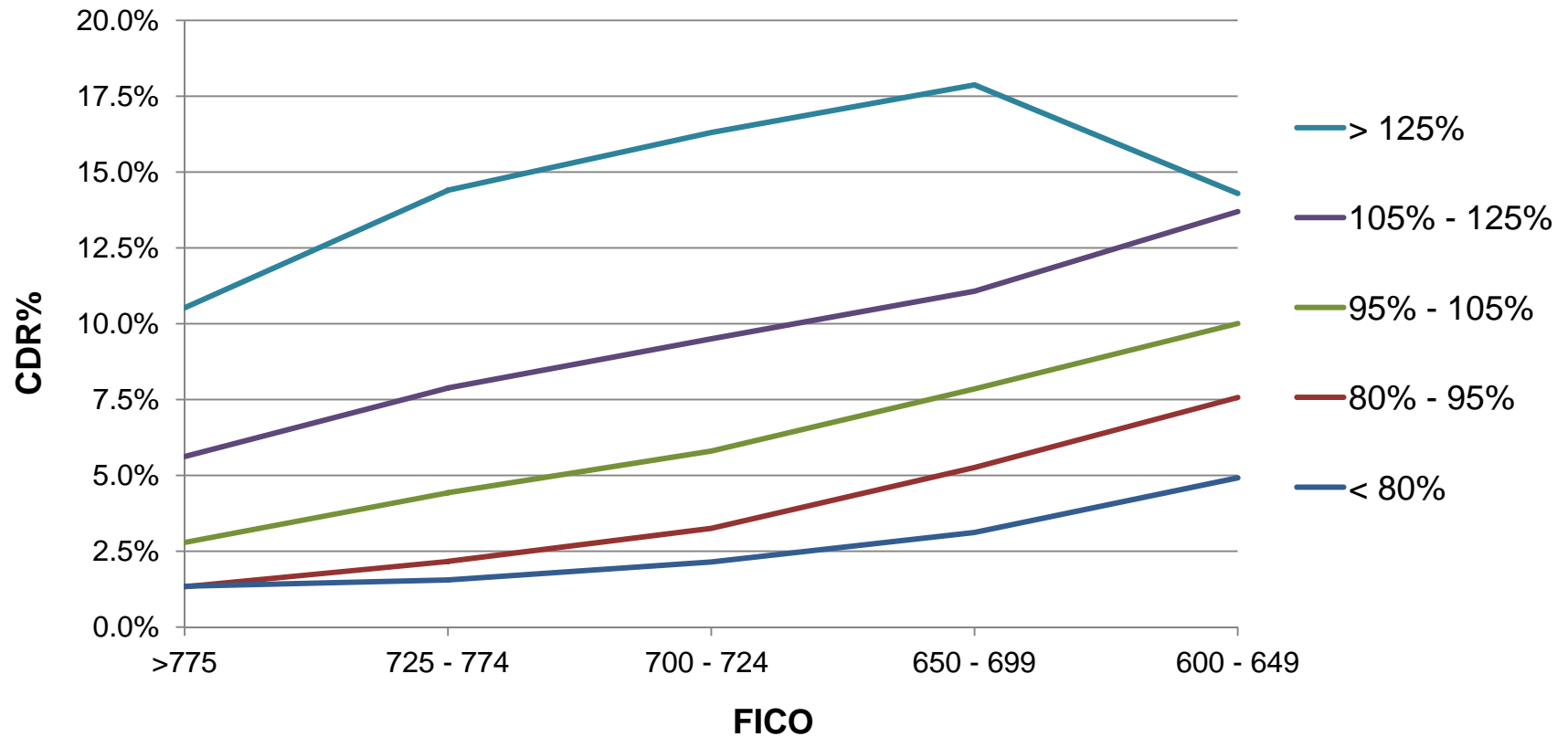
Risk Layering

Real Estate Loans – Key Loan Attributes

- Interest rate – fixed or variable
- Contract term – balloons, hybrids, etc.
- Lien position
- Closed or open ended
- Source – retail vs. wholesale
- Loan purpose – primary, second home, investor
- Debt to income ratios
- Credit score
- Loan-to-value ratio

Risk Layering

Average 12 month CDR% by LTV% and FICO



Source: CoreLogic (updated through 5/31/13)

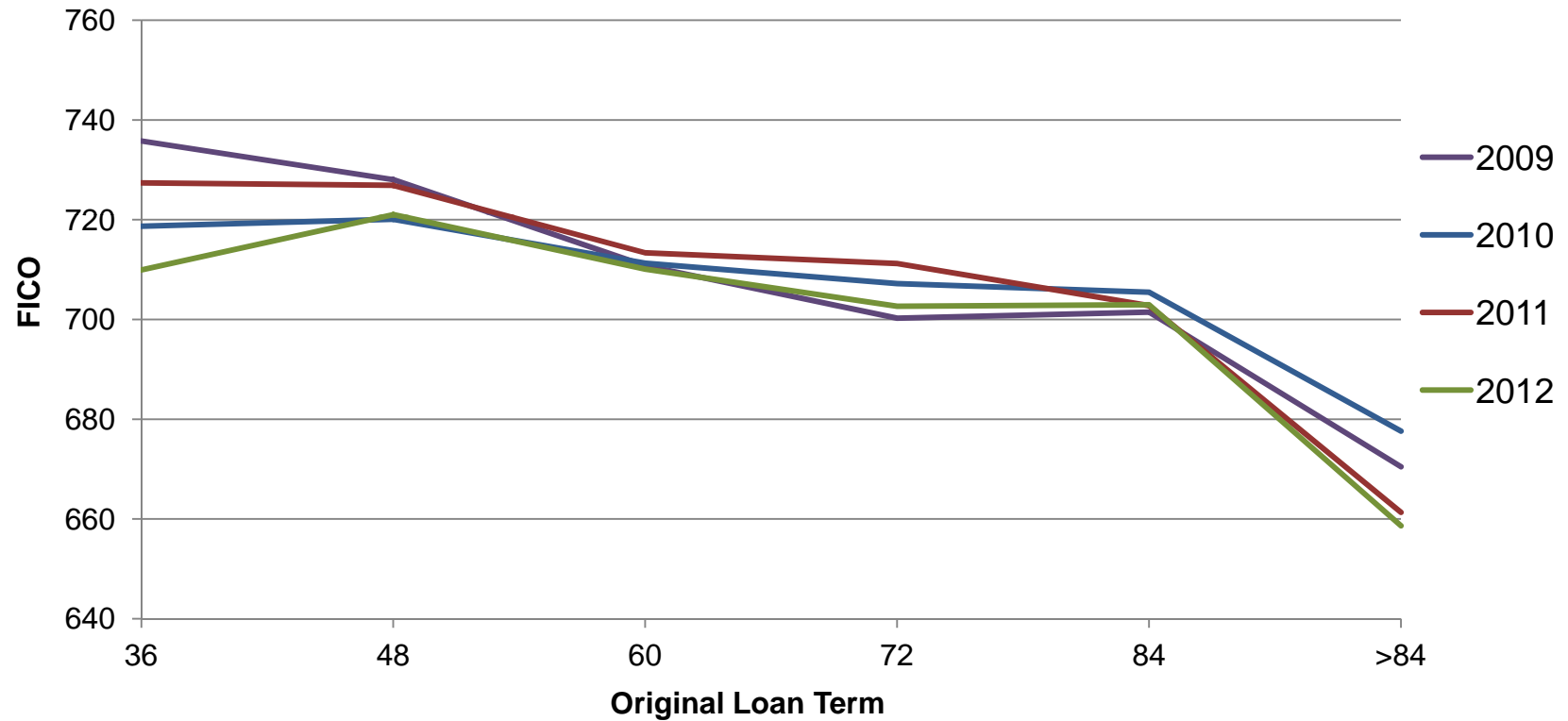
Risk Layering

Auto Loans – Key Loan Attributes

- Interest rate
- Contract term
- Source – direct vs. indirect
- Advance rate
- Credit score
- Loan term

Risk Layering

Used Auto FICOs by Loan Term



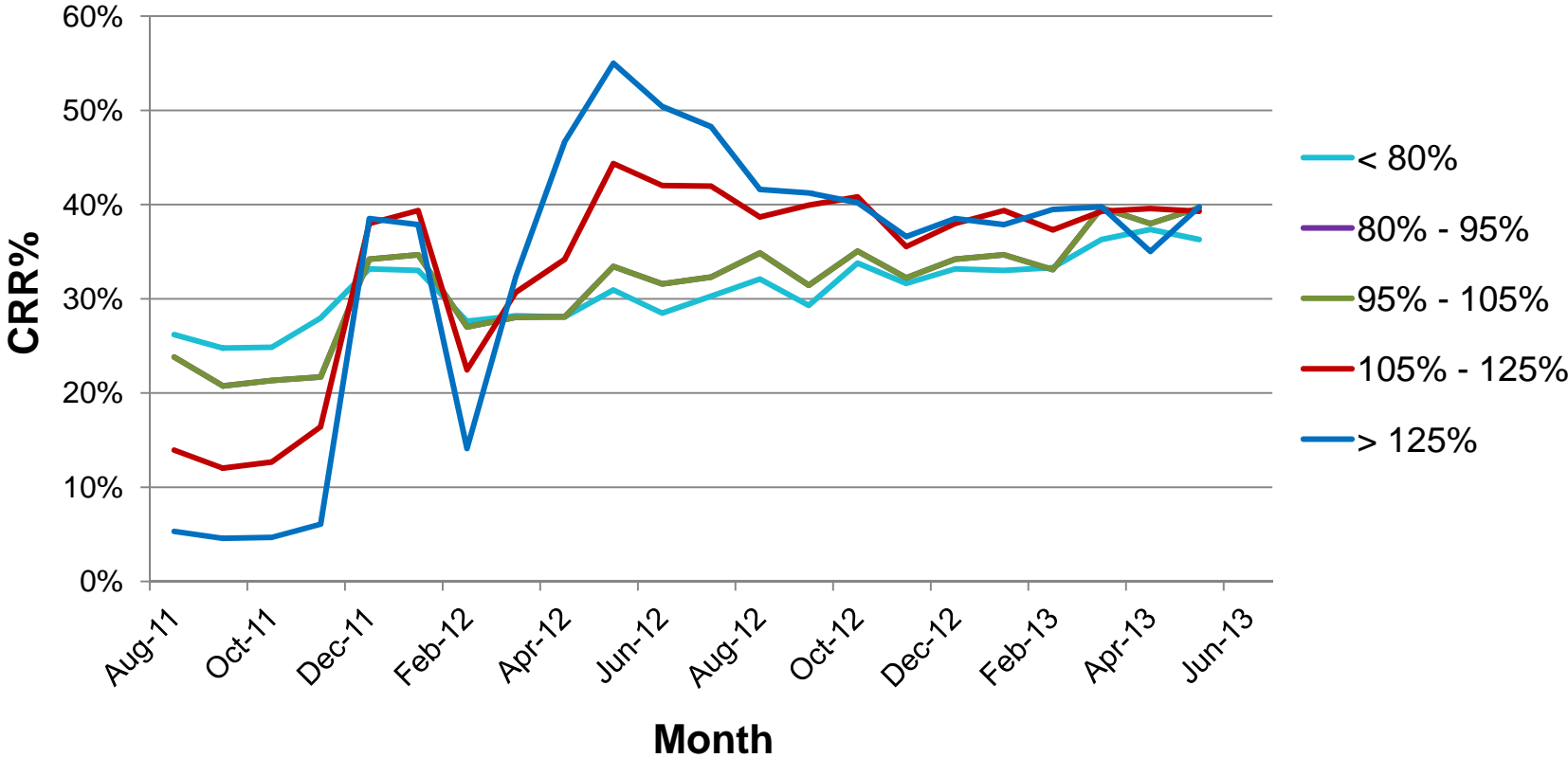
Source: Wilary Winn - results for selected clients

Risk of Prepayment

- Recent uptake in Long-Term Interest Rates
- HAMP and HARP 2.0 – agency MBS
 - Extended through the end of 2015
 - Loans must have been delivered to FNMA/FHLMC before May 31, 2009
 - October 2011 Revision had large effect

Risk of Prepayment

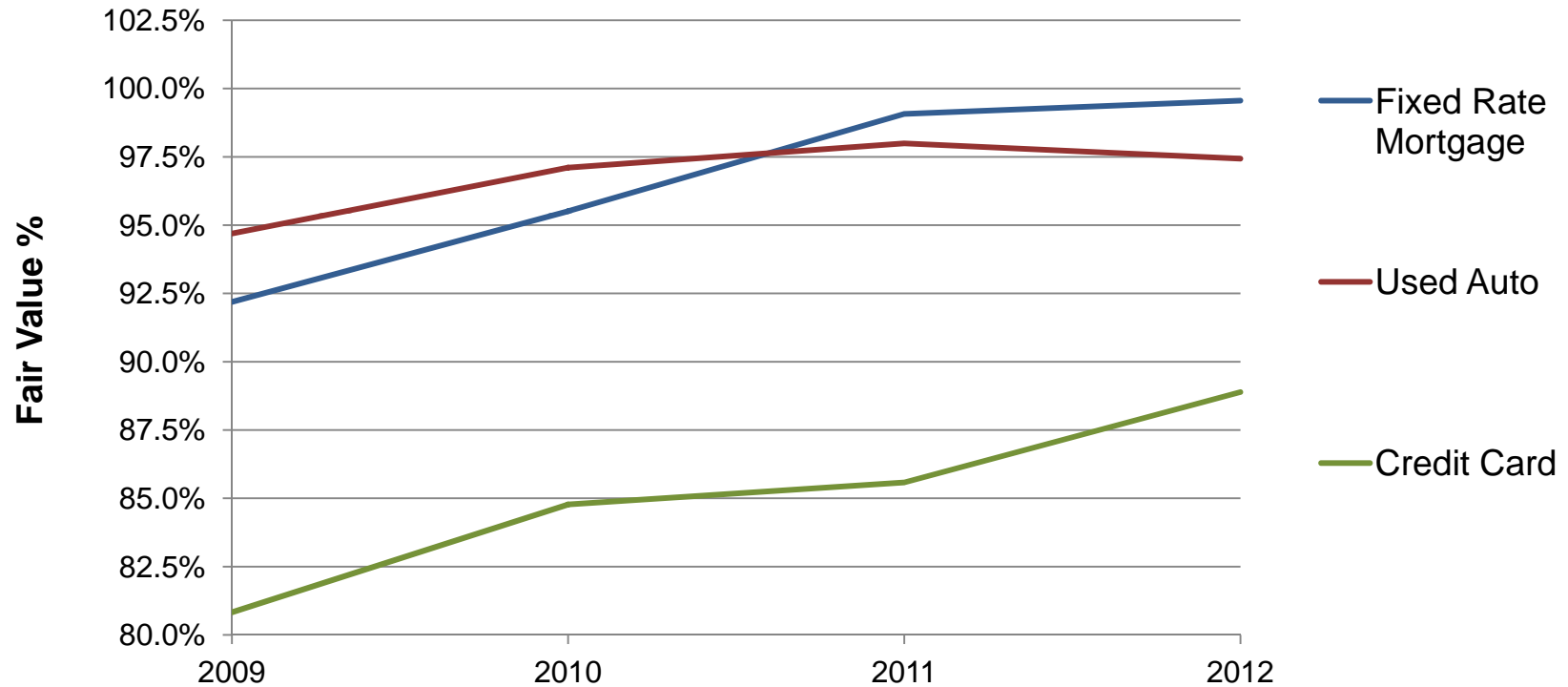
Prepays by LTV%
(2006 origination, 6% interest rate)



Source: CoreLogic (updated through 5/31/13)

Fair Values Improving

Fair Value by Product Type



Source: Wilary Winn – results for selected clients

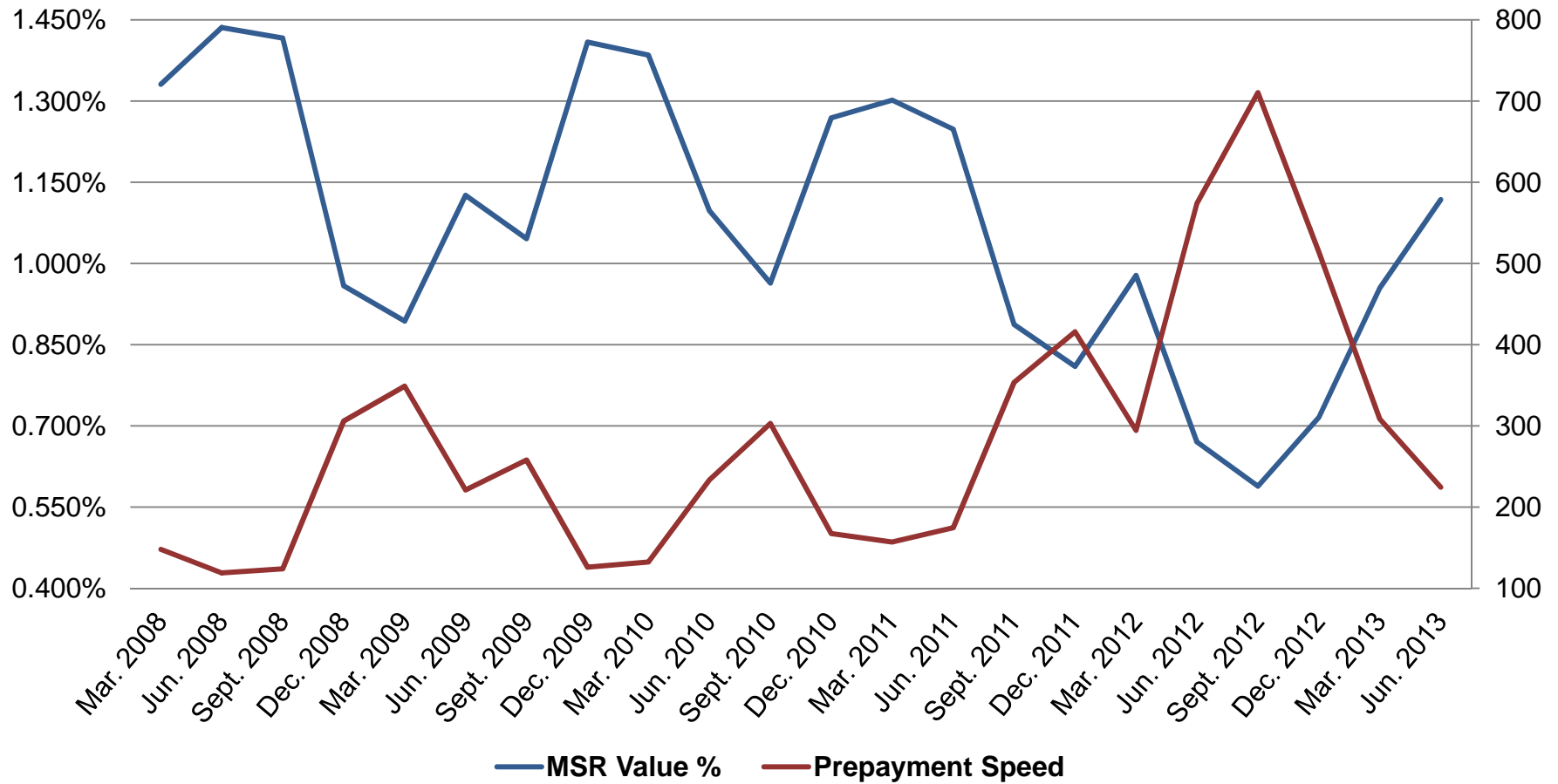
Fair Values Improving

Valuation of Mortgage Servicing Rights

- Loan amount
- Servicing fee percentage
- Interest rate and expected rate of prepayment
- Servicing costs – including delinquency and foreclosure
- Ancillary Income
- Value of float P & I and T & I
- Discount rate

Fair Values Improving

Value of MSR Asset



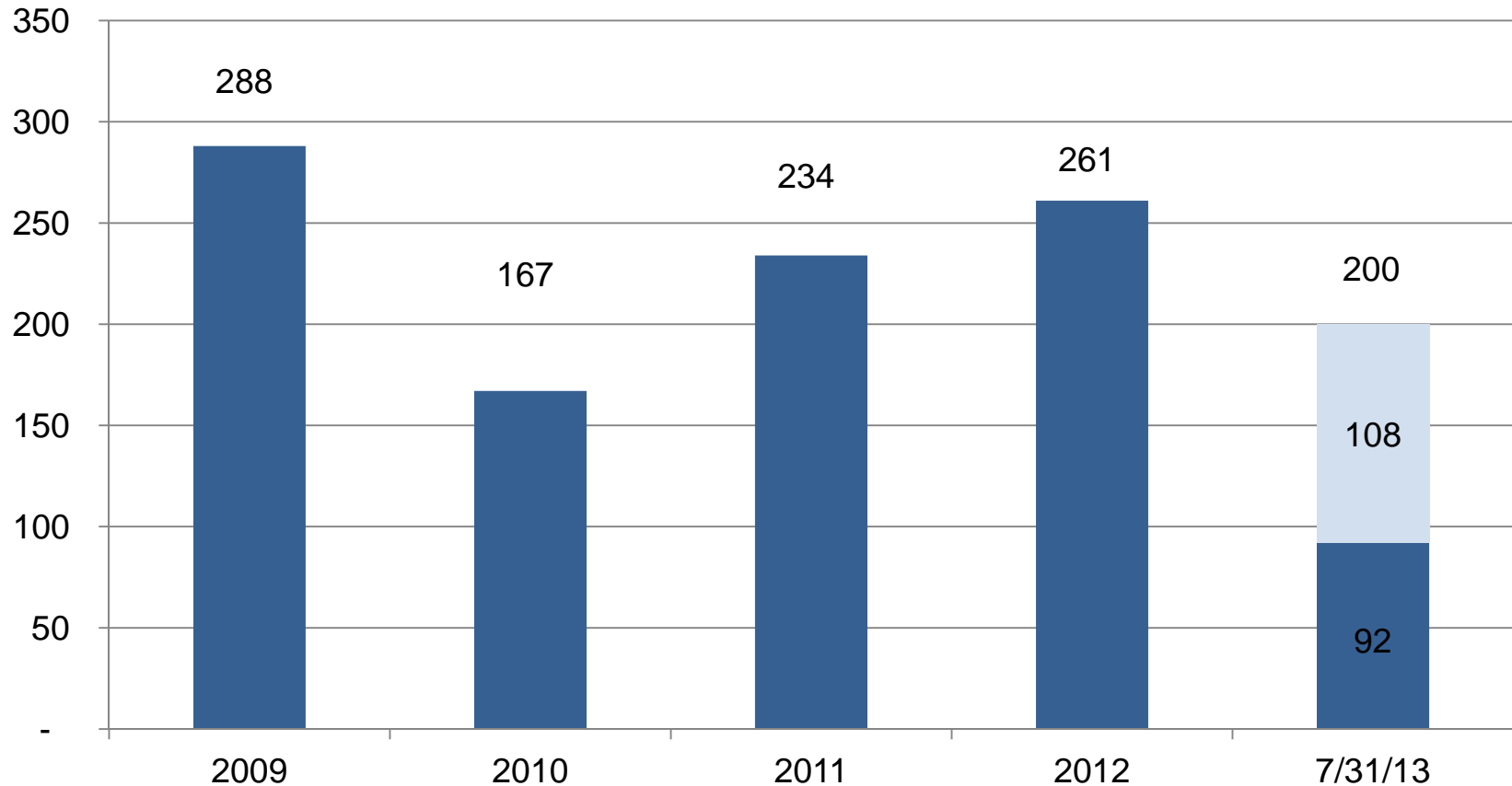
Credit Union Mergers and Acquisitions

Mergers and Acquisitions

- Credit union mergers and failures by year
- Mergers and acquisitions valuation approach
- Merger results summary

Credit Union Mergers and Acquisitions

Credit Union Mergers

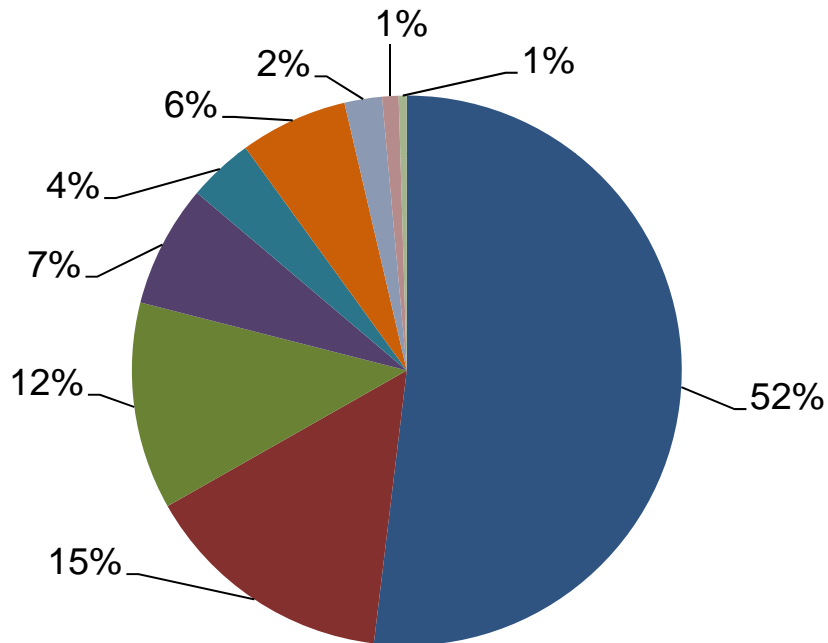


Actual mergers through 5/9/13 and remaining approved mergers through 7/31/13

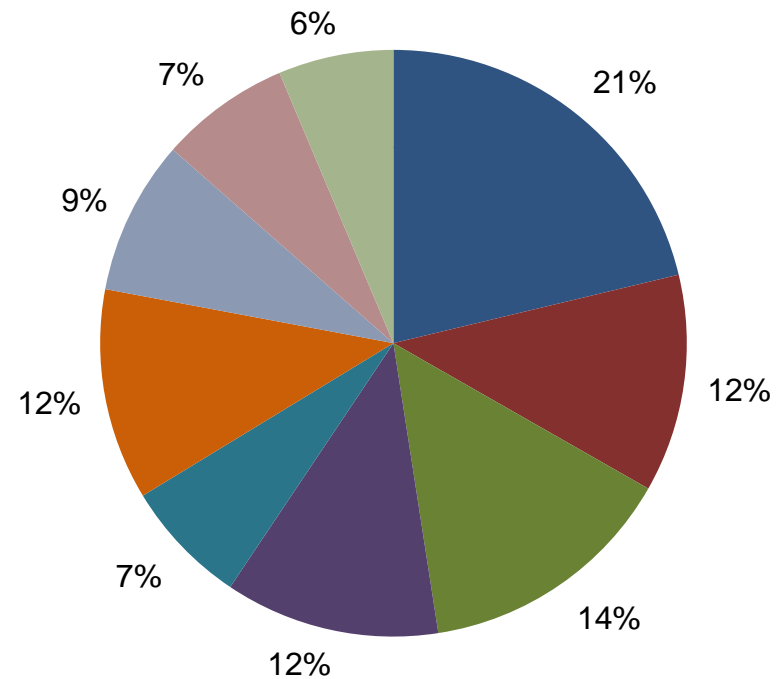
Source: SNL and NCUA

Credit Union Mergers and Acquisitions

**Credit Union Mergers by Asset Size
2009 through 5/9/13**



**Number of Credit Unions by
Asset Size as of 6/30/13**

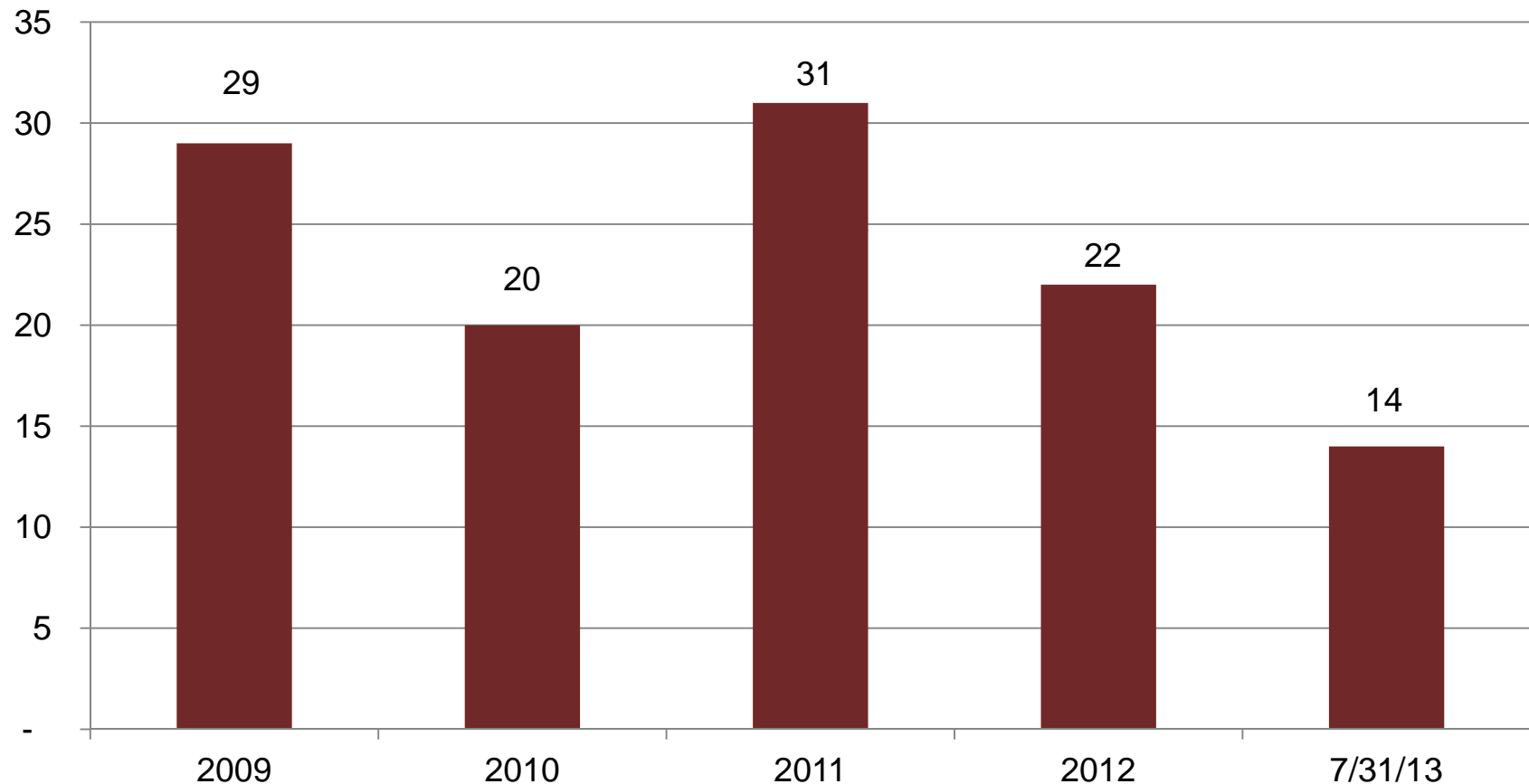


- | | | |
|-----------------|-----------------|----------------|
| ■ < \$5 | ■ \$5 - \$10 | ■ \$10 - \$20 |
| ■ \$20 - \$35 | ■ \$35 - \$50 | ■ \$50 - \$100 |
| ■ \$100 - \$200 | ■ \$200 - \$500 | ■ > \$500 |

Source: SNL

Credit Union Mergers and Acquisitions

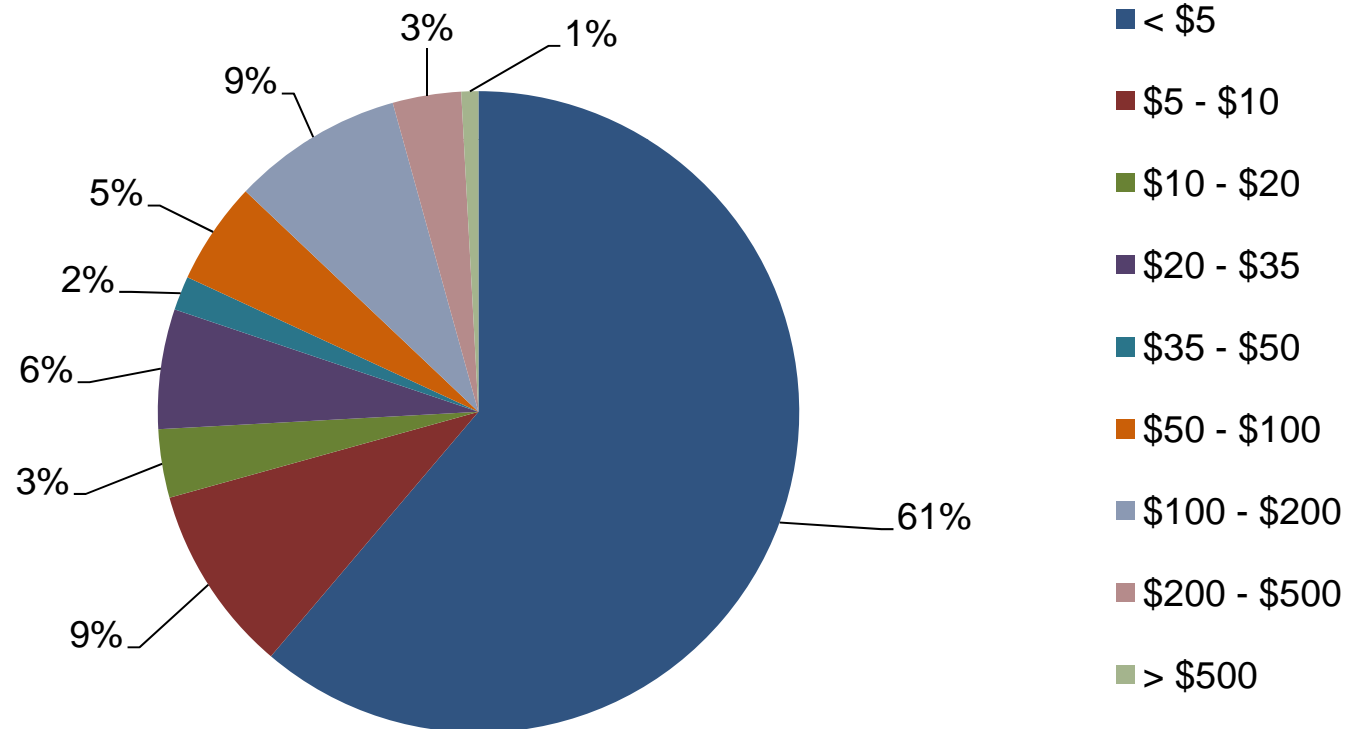
Credit Union Failures and Closures



Source: SNL and NCUA

Credit Union Mergers and Acquisitions

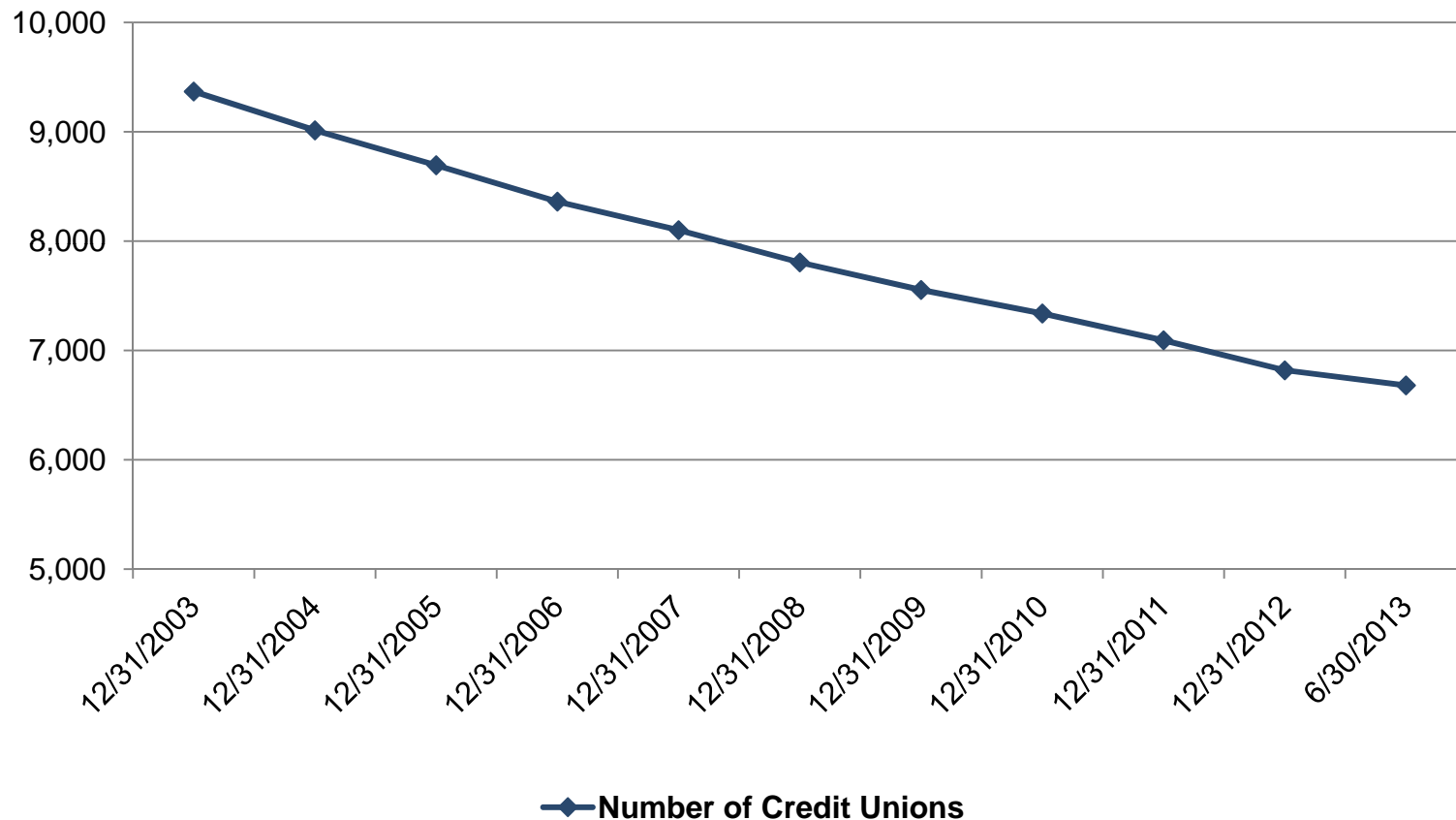
Credit Union Failures by Asset Size 2009 through 7/31/13



Source: SNL and NCUA

Credit Union Mergers and Acquisitions

Change in Number of Credit Unions



Source: NCUA

Valuation Approach

Value of the Entity as a Whole

- Experts generally use income-based and market-based approaches to determine fair value
- Values derived using the different methods must be reconciled to reach an overall fair value conclusion
- Entity value of credit union acquired in a bid transaction is the purchase price

Valuation Approach

Income Based Approaches

- Estimated future cash flows are discounted to derive an estimate of fair value
- Generally involves the use of a CAPM pricing model using an after-tax discount rate
- Estimate of terminal value is generally included – Gordon Growth model

Valuation Approach

Further Considerations of Income Based Approach

- Most experts use income versus cash flow to value financial institutions
- Need to adjust for the amount of income that must be retained in order to remain well capitalized
- A key assumption is the future rate of growth

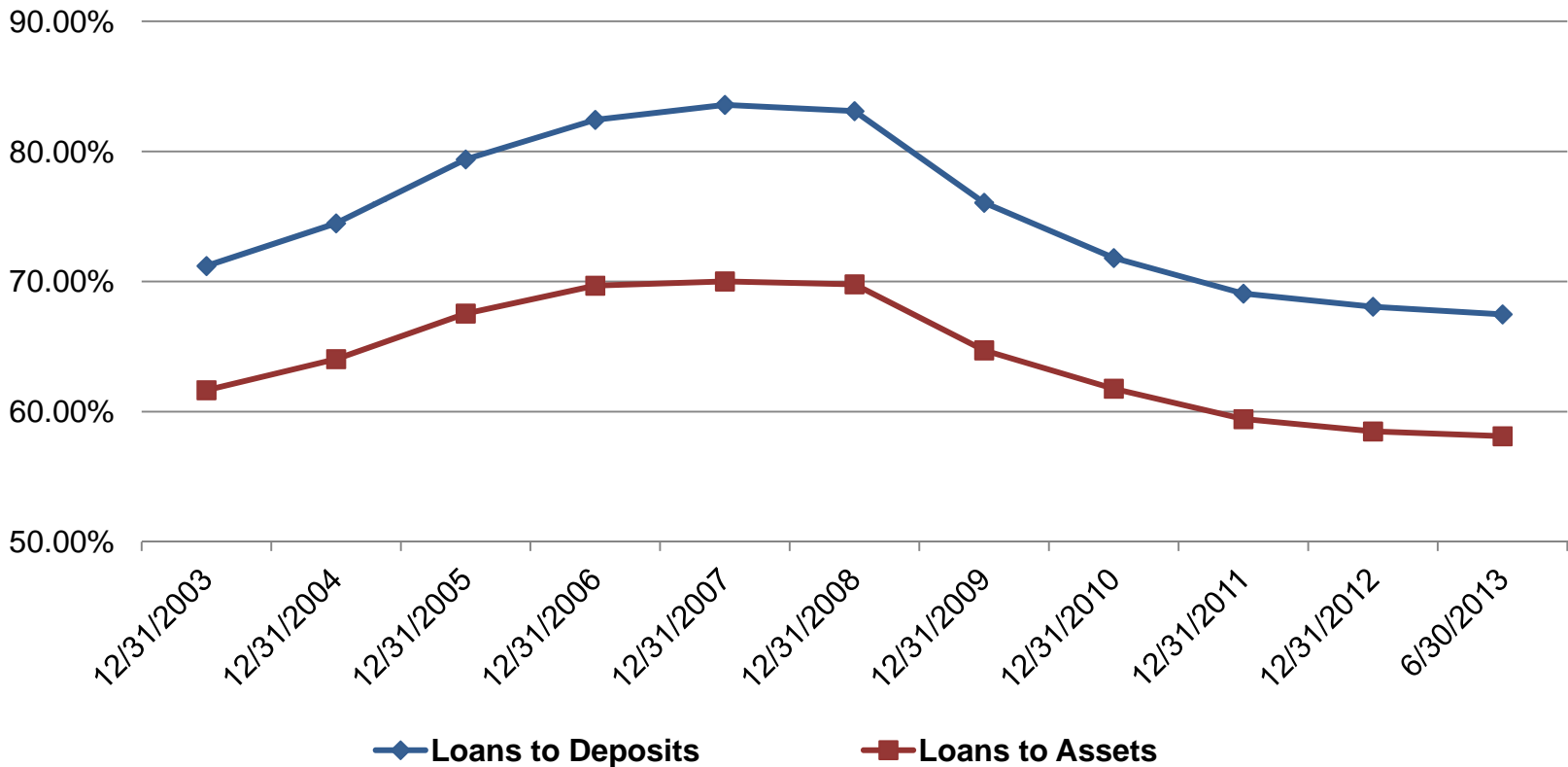
Valuation Approach

Further Considerations of Income Based Approach

- Historical review
- Review of operating market
- Discussion with management on operating issues specific to the credit union

Valuation Approach

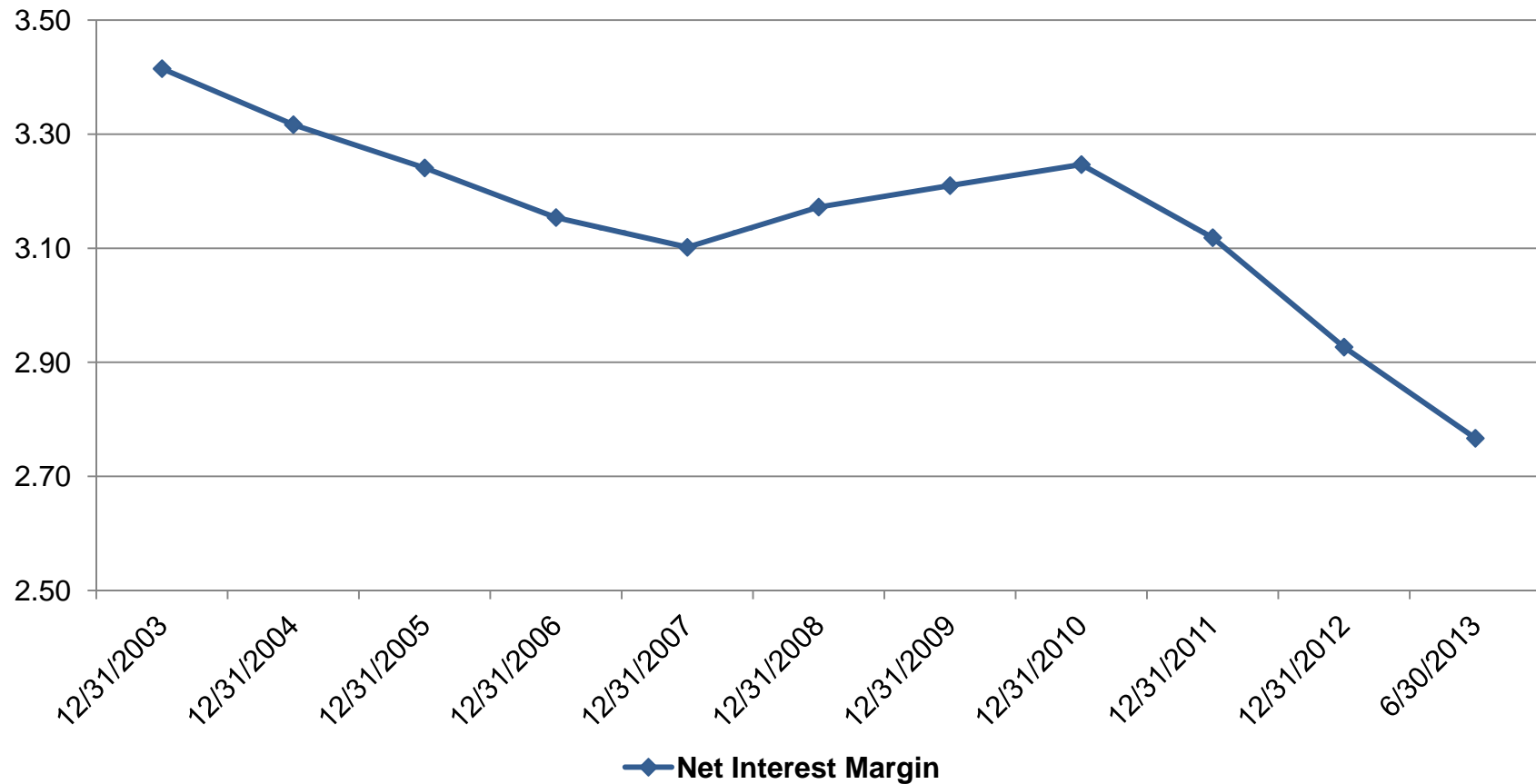
Loans to Assets and Deposits



Source: NCUA

Valuation Approach

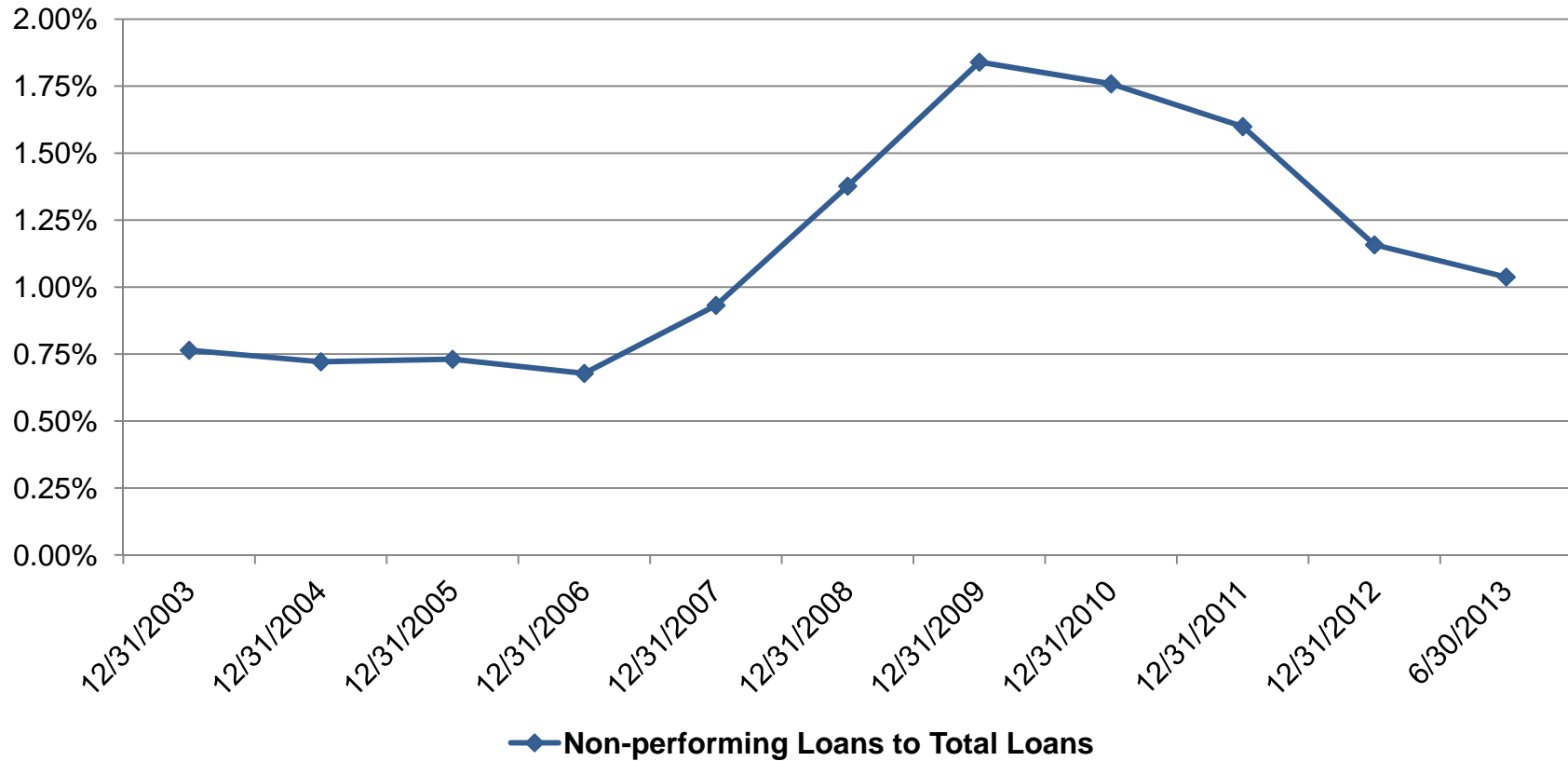
Net Interest Margin



Source: NCUA

Valuation Approach

Non-Performing Loans



Source: NCUA

Credit Union Mergers and Acquisitions

Merger Results Summary 2012 and 2013 through July 31

- 59 merger and acquisition valuations
- 22 states – 10 in CA, 5 in MA, 4 in FL, TX, MN
- Median size of \$36M – range of \$5M to \$334M
- Median loan FV of 93% - range of 71% to 99%
- Median FV of assets = 97%, liabilities =100%
- 18 resulted in goodwill, 3 in bargain purchase

Credit Union Mergers and Acquisitions

Goodwill Impairment Testing

- Step 0 Qualitative – improving economic conditions
- Step 1 Quantitative – fair value of the equity
 - Tension between NIM and improving credit
- Step 2 Quantitative – fair value of assets and liabilities

Auditing Fair Value

- Use of Pricing Services
- Determine nature of information provided
 - Active market, observable inputs, mark to a model
- Adjust Audit procedures accordingly assuming gaining an understanding of the model and input assumptions
- Price based on principal or most advantageous market
- Is the price provided by the service reasonable?

Auditing Fair Value

Use of Specialists – When to Use

Does auditor have necessary skill and knowledge

- Significant use of unobservable inputs
- Complexity of the valuation technique
- Materiality of the fair value measurement

Wilary Winn LLC

Services and Contact Information

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