

The Sub-prime Mortgage Situation: Causes and Lessons

Mark Adelson

Adelson & Jacob Consulting, LLC

New York State Bar Association

Derivatives & Structured Products Law Committee

ABN AMRO, 49 East 52nd Street, 5th Floor, NY, NY

Wednesday, 13 February 2008

Agenda

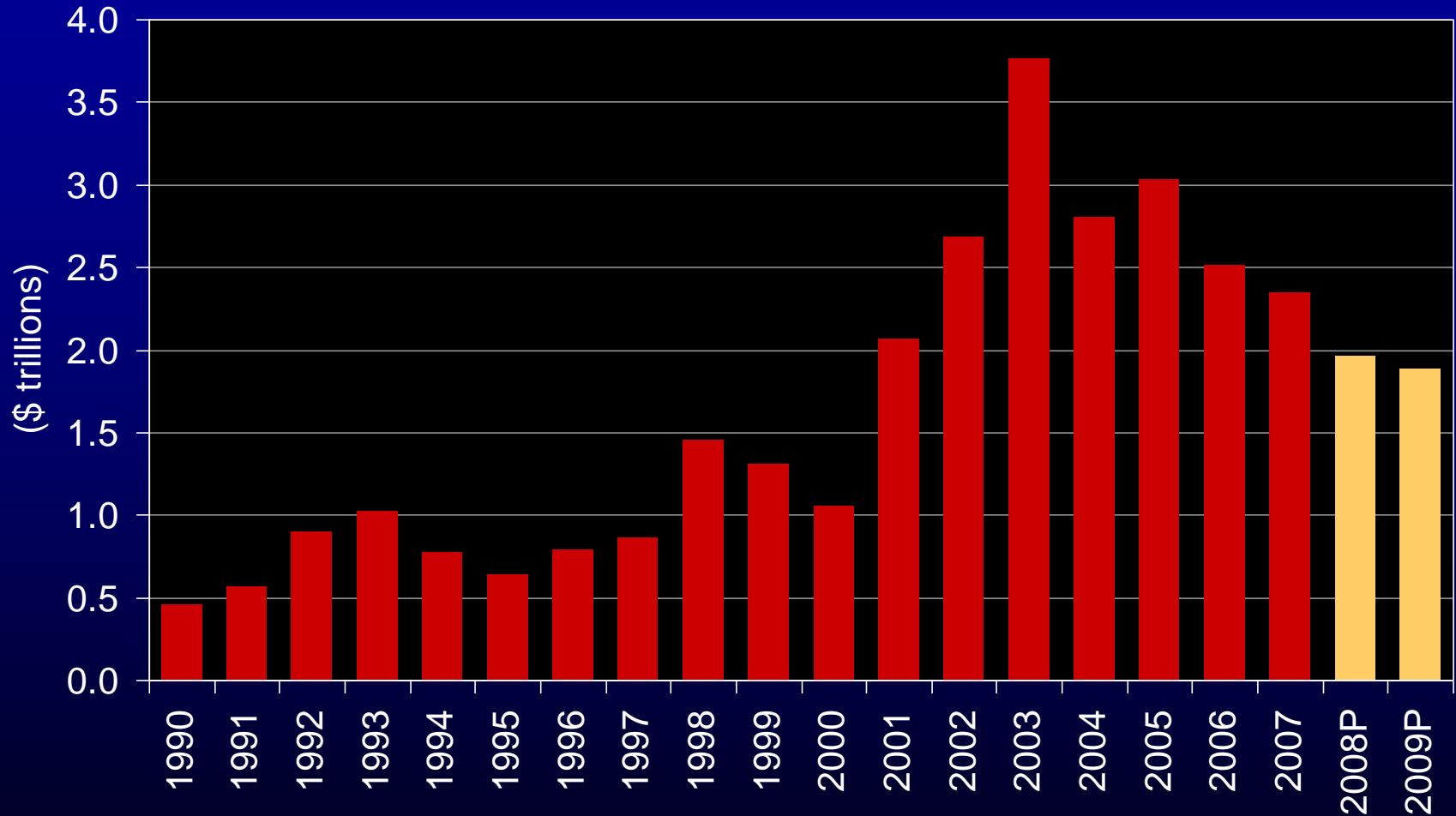
- The context of the situation
- What is a sub-prime mortgage?
- Basics of origination and servicing
- Measures of mortgage loan credit risk
- Understanding ABS deal structures
- Cash flow triggers, sequential vs. pro rata distributions
- Performance outlook, uncertainty, and challenges
- Public policy initiatives

Fed Funds Target Rate, NASDAQ Composite Index, and Annual Rate of U.S. Home Price Appreciation



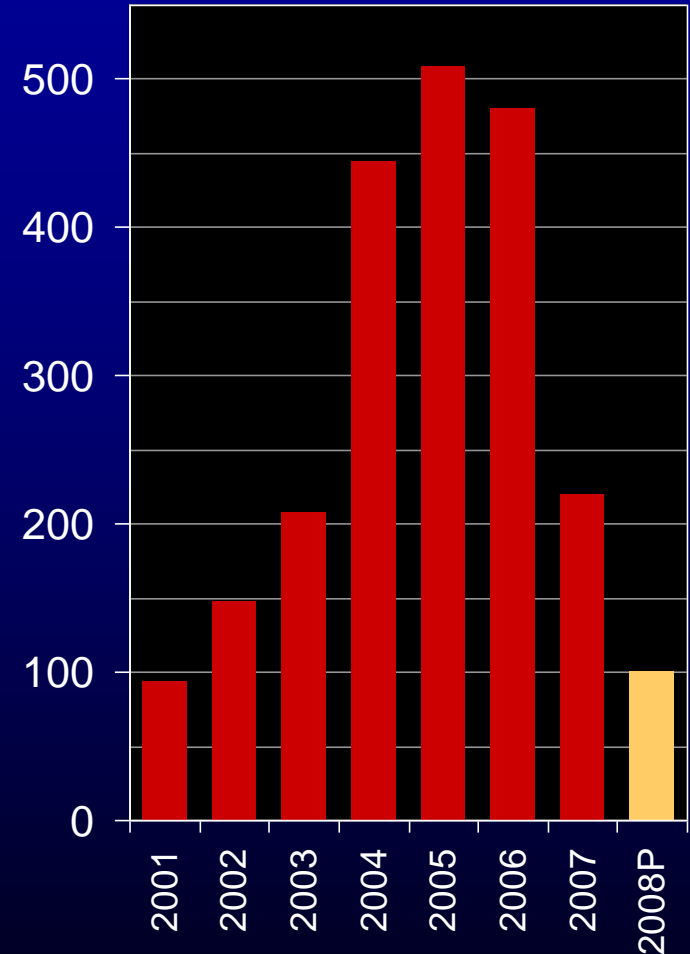
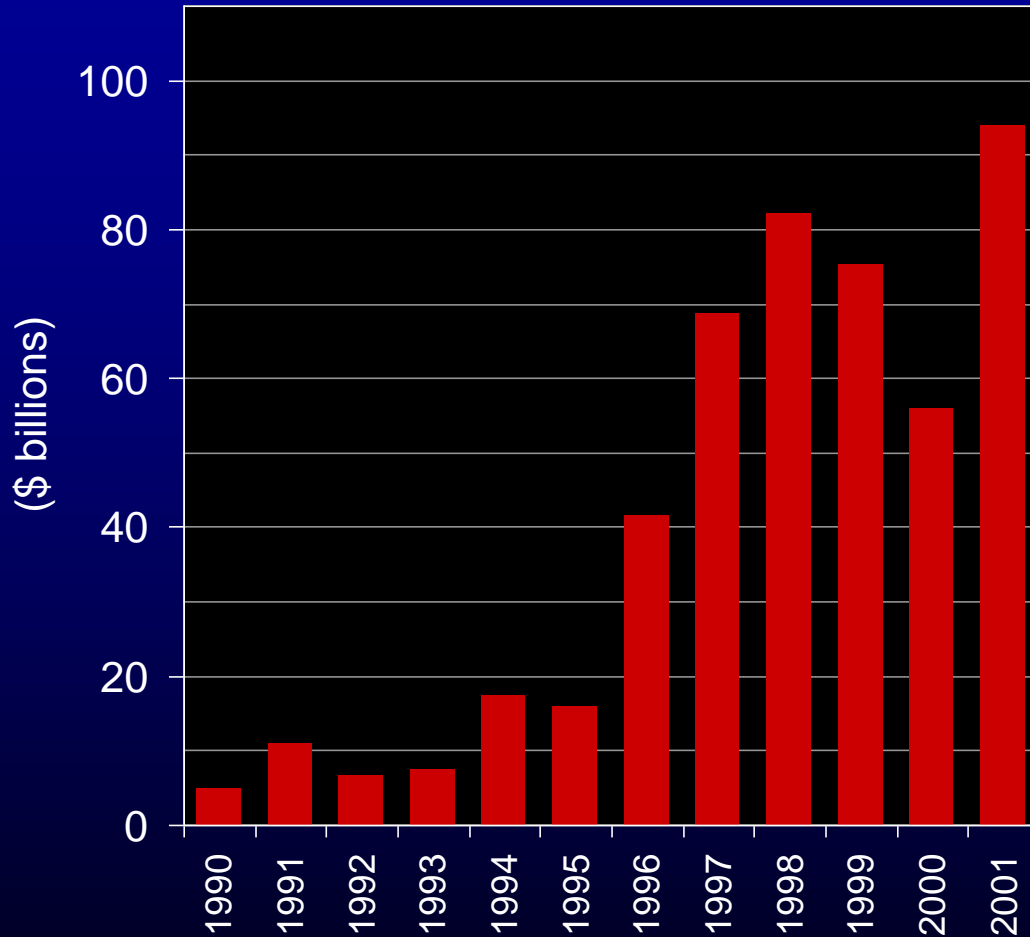
Source: Federal Reserve, Yahoo

U.S. Mortgage Originations



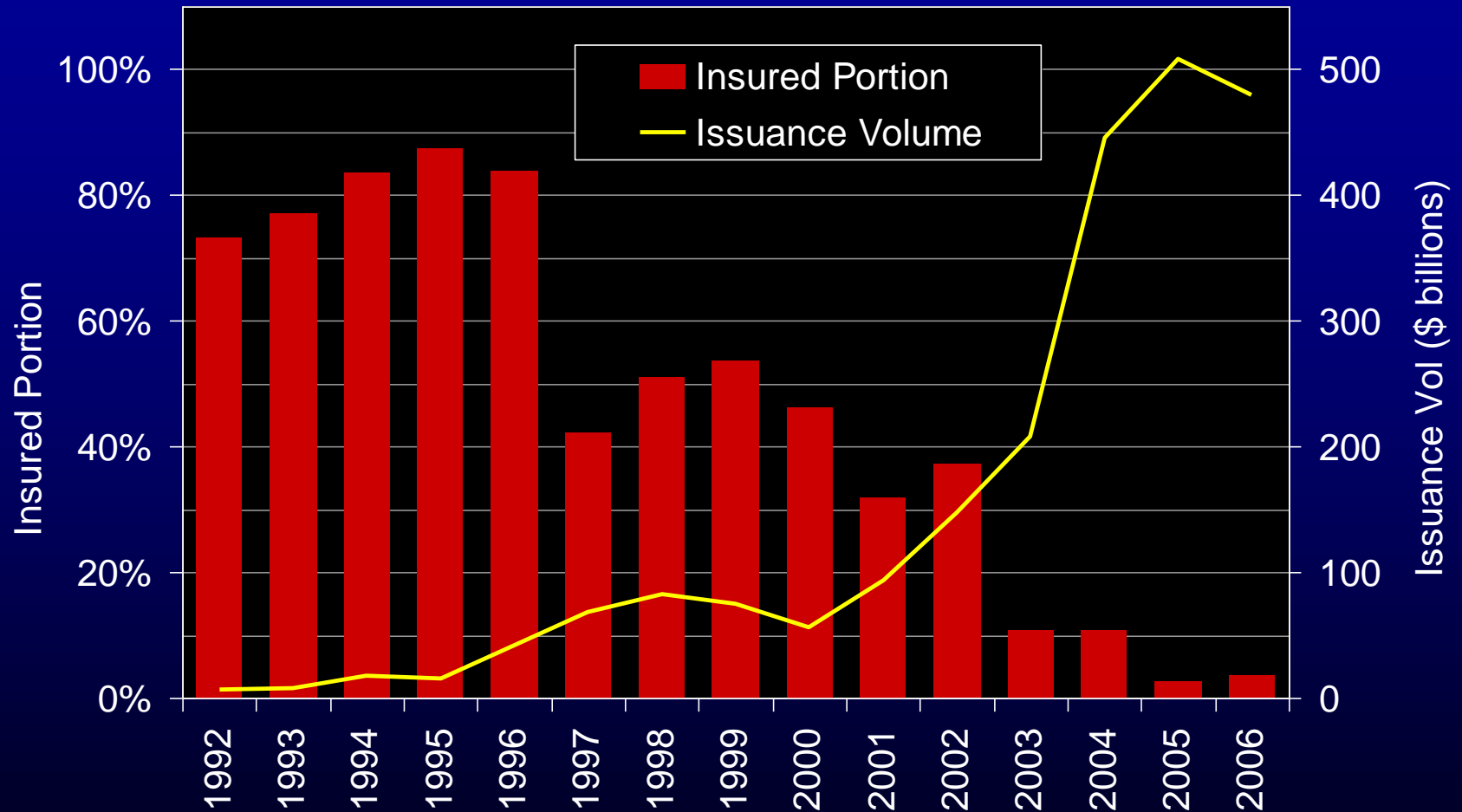
Source: Inside Mortgage Finance, Mortgage Bankers Associations

U.S. Public Home Equity ABS Issuance



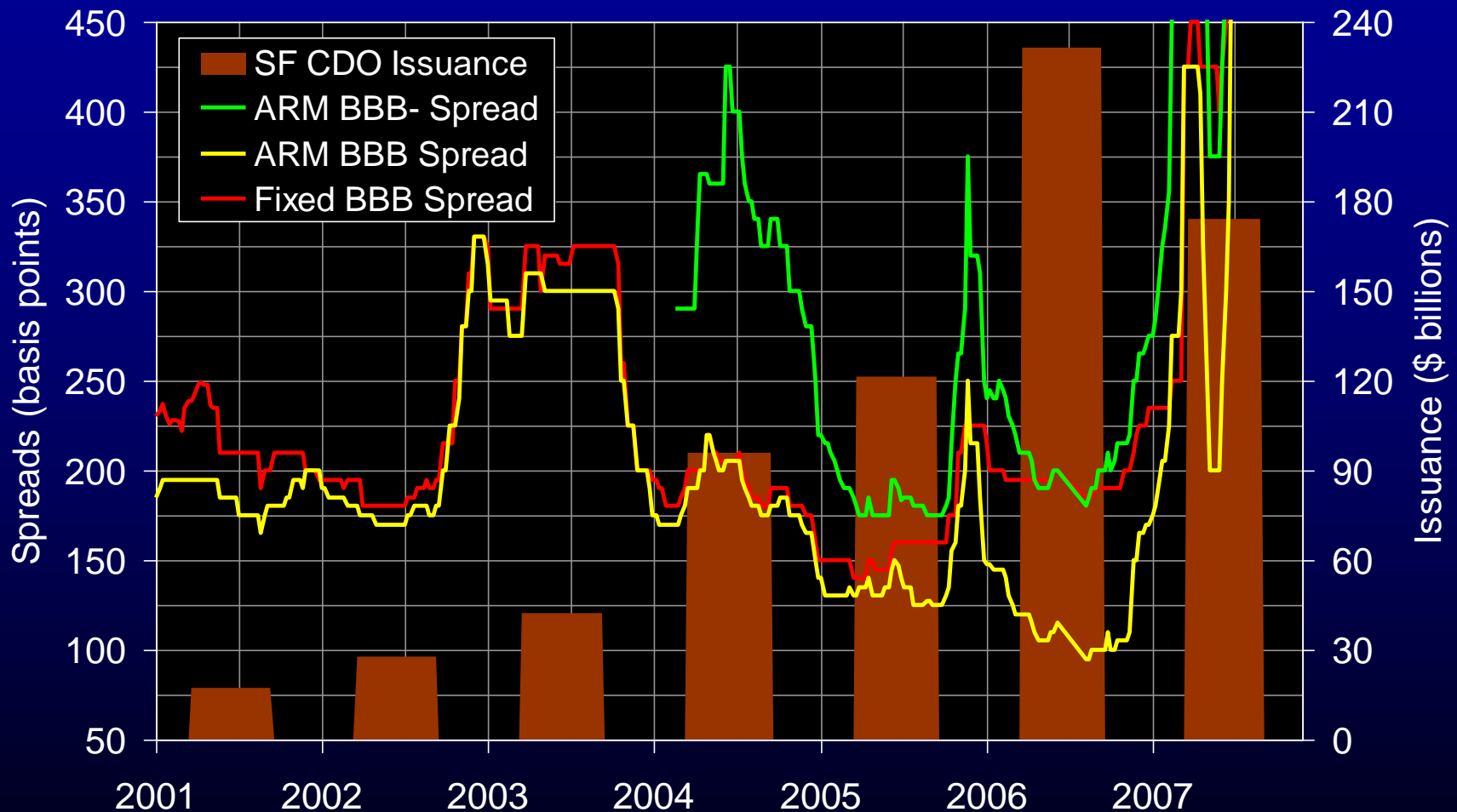
Source: Moody's, Bloomberg, Asset Securitization Report

Insured Portion of U.S. Home Equity ABS Issuance



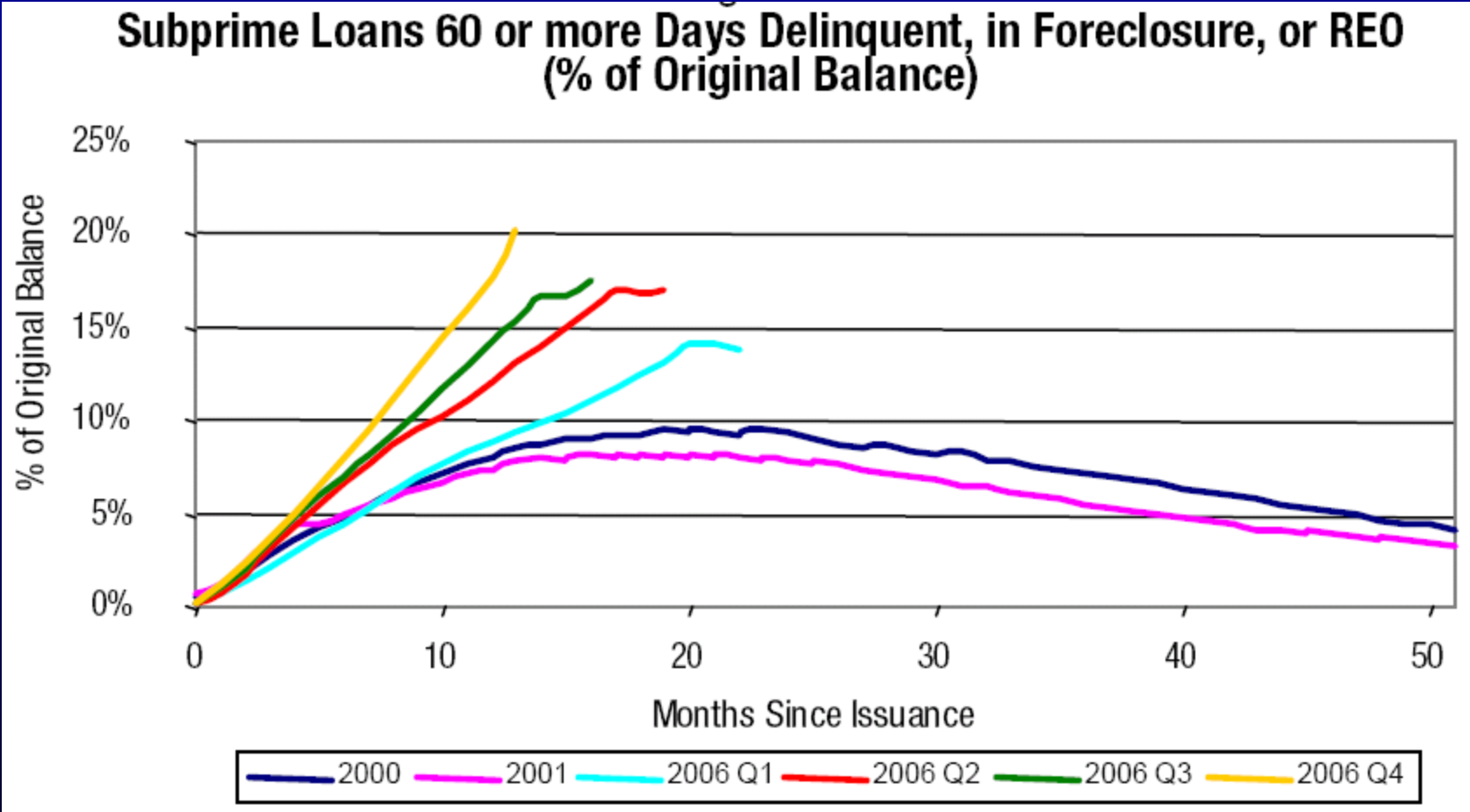
Sources: Asset-Backed Alert Database (insured portion), Moody's, Bloomberg, Asset Securitization Report

Home Equity ABS Yield Spreads over Swaps/LIBOR and Annual Structured Finance CDO Funded Issuance Volume



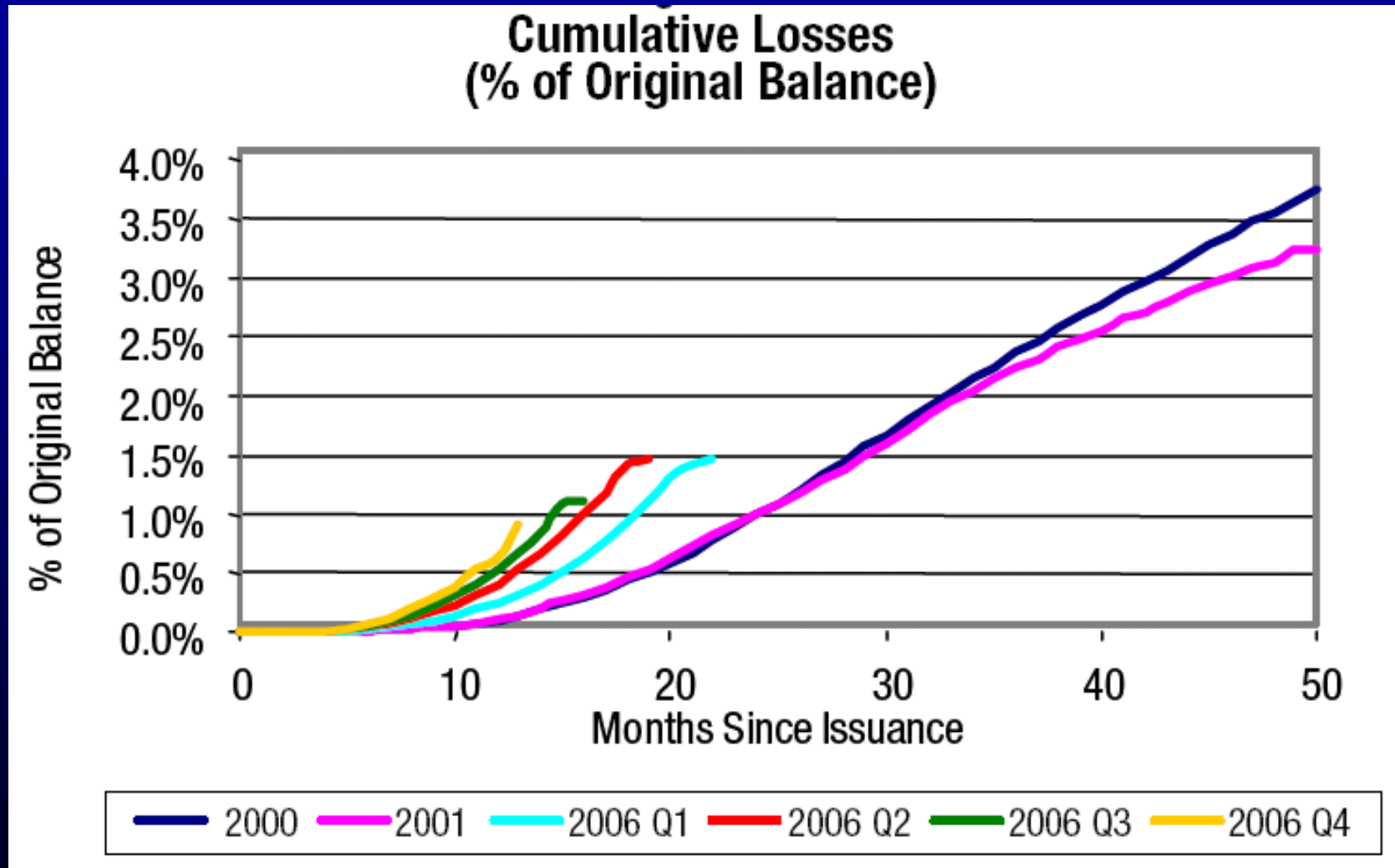
Source: JPMorgan

Sub-prime Performance (12/2007)



Source: Moody's

Sub-prime Performance (12/2007)

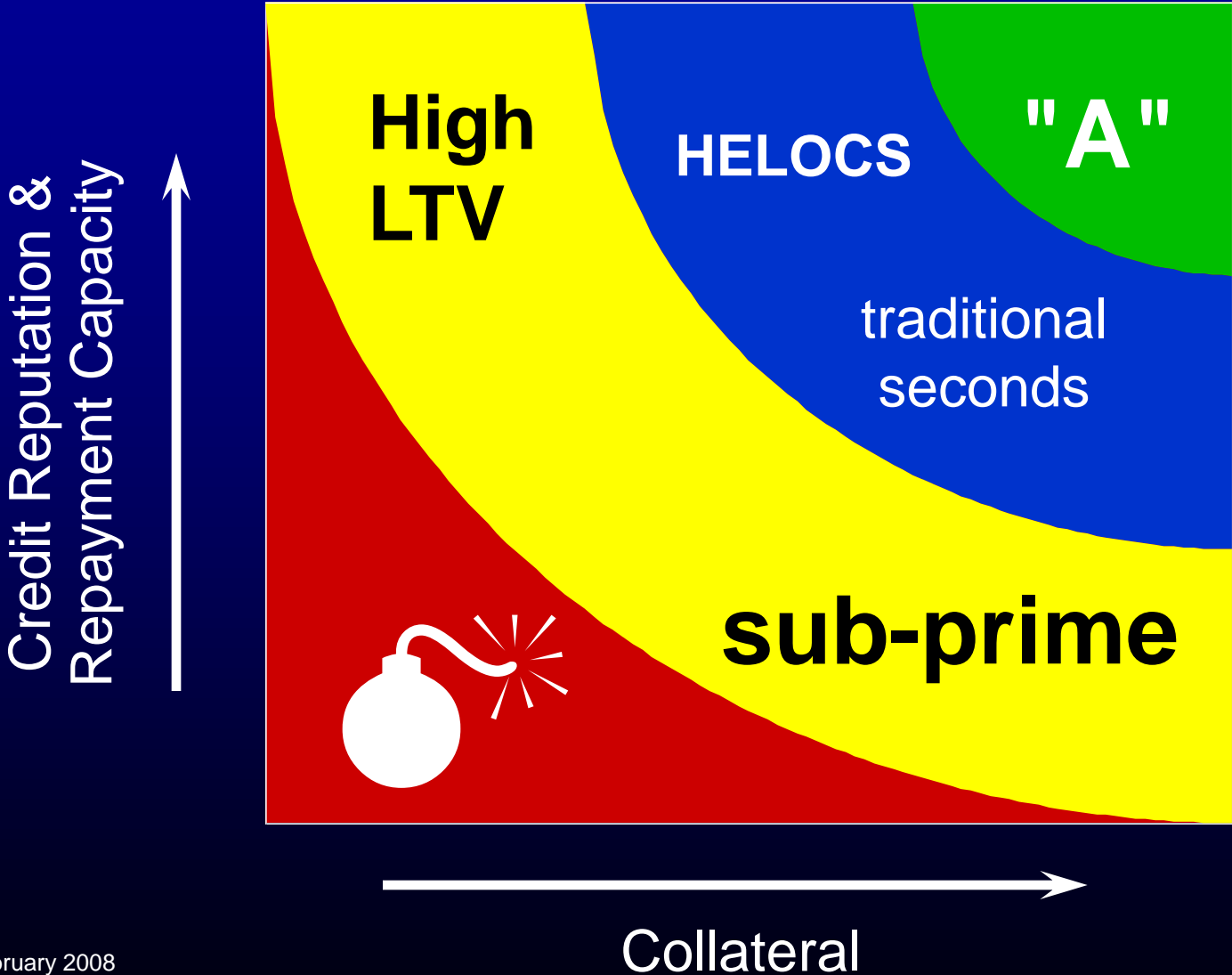


Source: Moody's

The ABS "Home Equity" Euphemism

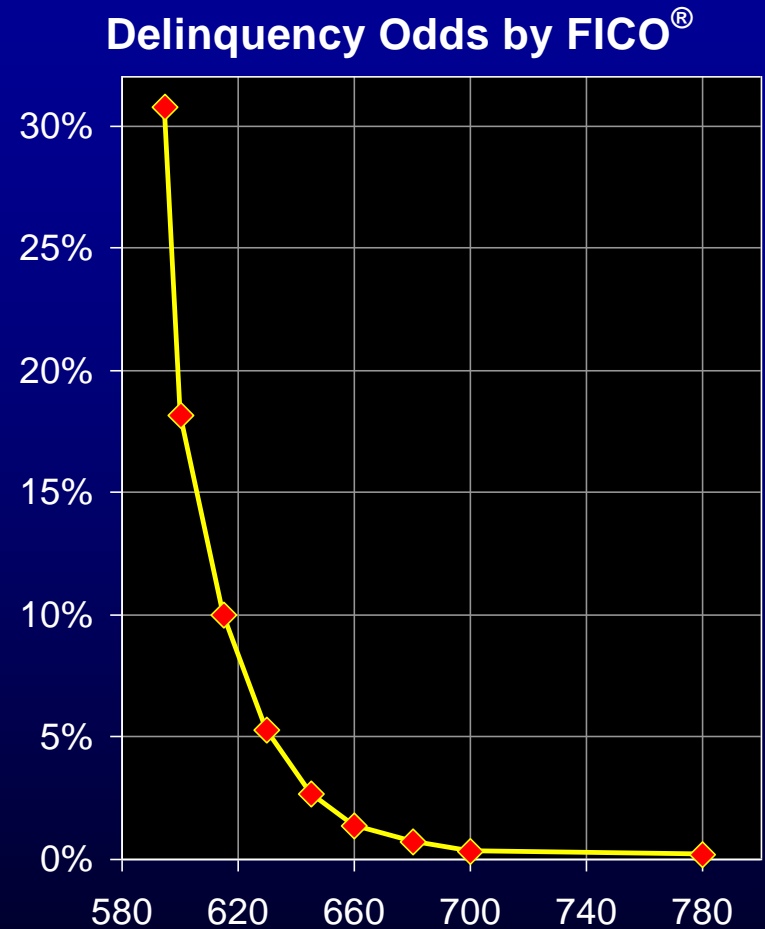
- In securitization, "home equity loan" means any loan secured by residential real estate other than
 1. prime-quality, first lien mortgage loans
 2. manufactured housing loans
- Types of "home equity" loans include:
 - sub-prime mortgage loans (biggest category)
 - second lien mortgage loans (traditional home equity loans)
 - home improvement loans
 - HELOCs
 - "high LTV" mortgage loans
 - Reperforming and non-performing loans (sometimes)

The Sub-prime Mortgage Market in Context



Sub-prime Mortgage Loan Basics

- Usually either
 - Delinquent in past 12 months
 - FICO below 620
- Common features
 - high DTI
 - low or no reserves
 - no escrows
 - no MI if LTV over 80
 - hybrid ARM 2/28 or 3/27 (>80%)
 - limited documentation
 - investor properties.



Source: Realestateabc.com

Other Old Definitions

Prime Loans

- Conforming in all respects to standard Fannie/Freddie program criteria
- Typical features
 - Clean payment record: 0x30x12
 - LTV \leq 80% or with MI
 - DTI \leq 28% inside, 36% outside
 - Full documentation
 - Reserves and escrows
 - Owner occupied

Alt-A Loans

- Borrower has clean credit
- But ... one or more of
 - LTV $>$ 80% w/o MI
 - temporary resident alien
 - non-owner occupied property
 - high DTI
 - high LTV w/ other factors (e.g. cashout)
 - less than full documentation

New Definitions

- Spectrum of quality
 - Prime: top ~70%
 - Alt-A: next: ~15%
 - Sub-prime: bottom ~15%
- New non-traditional products complicate classification
 - Option ARMs
 - Interest-only
 - Hybrid ARMs
 - Piggy-back seconds
 - Stated income to W-2 borrowers
 - Risk layering !!!

Origination Basics

- Originate to sell
- Generate profits on origination
- Underwriting criteria
 - Pricing tiers, rate sheets
 - Underwriting "matrix"
 - doc level → pay history → FICO/LTV grid → max loan amount & DTI
 - product type → pay history → doc level/property type grid → max LTV & size
 - Exceptions
 - documented (e.g., LTV upgrades for good pay history but weak FICO)
 - undocumented

Origination Basics (cont.)

- Channels
 - Retail
 - Wholesale – correspondents, brokers
- Origination process – quality control, staffing, risk modeling, pricing, strategy
- Pedigree – performance history of the originator's loans

Measures of Mortgage Loan Credit Risk

- Traditional view: 3 "C"s
 - Collateral – loan-to-value ratio (LTV)
 - Credit – credit score (FICO)
 - Capacity – debt-to-income ratio (DTI)
 - Other factors

Measures of Mortgage Loan Credit Risk (cont.)

■ Modern (Fannie Mae) view:

■ Primary risk factors (Part X, §, 3.01)

- Equity investment (LTV)
- Credit history (FICO score)

■ Contributory Risk Factors (Part X, § 3.02)

- Liquid financial reserves
- Employment classification
- Mortgage term (15, 30, 40)
- Product type (FRM, ARM, hybrid, etc.)
- Property type (SFR, condo, 2-4)
- Transaction type (PMM, RTR, CO)
- Co-borrowers
- DTI ratio
- Previous delinquency
- Previous bankruptcy

Loan Documentation – Common Permutations

Documentation Type	Full or Alternative Documentation	Reduced Documentation					No Ratio	No Doc (NINA)
		Stated Income	Stated Assets	Stated Income/ Stated Assets	No Income	No Assets		
Income Disclosed	✓	✓	✓	✓		✓		
Source of Income Verified	✓	✓	✓	✓	✓ ¹	✓	✓ ²	
Amount of Income Verified	✓		✓			✓		
Qualifying Ratios Calculated from Income	✓	✓	✓	✓		✓		
Assets Disclosed	✓	✓	✓	✓	✓		✓	
Assets Verified	✓	✓			✓		✓	
¹ "No Income" loans usually have a verbal verification of employment (VVOE) ² "No ratio" loans rarely (but sometimes) have a VVOE								

Processing & QC: Automation

■ Pros

- Speed
- Certainty
- Convenience
- Consistency

■ Cons

- False precision
- Invites manipulation
- G.I.G.O.
- Misses nuances

Example – Appraisals

Regular Appraiser



Automated Appraiser



Example – FICO® Score

Includes

- Payment history 35%
- Outstanding debt 30%
- Credit history length 15%
- Pursuit of new credit 10%
- Credit mix 10%

Excludes

- Income
- Employment
- Collateral
- Address
- Age
- Sex
- Race
- Religion
- Marital status

When Things That Seem Alike Really Aren't

- HEL/B&C Underwriting Guidelines
 - Description of delinquencies
 - Debt-to-income ratio

Description of Delinquencies

Which history suggests more risk?:

Jan \$1,000	Feb \$0	Mar \$1,000	Apr \$1,000	May \$1,000	Jun \$1,000
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Jan \$1,000	Feb \$0	Mar \$2,000	Apr \$1,000	May \$1,000	Jun \$1,000
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Description of Delinquencies

Borrower's payment history:

Jan	Feb	Mar	Apr	May	Jun
\$1,000	\$0	\$1,000	\$1,000	\$1,000	\$1,000

- As of June 1, the borrower is:
 - 120 days delinquent one time (1x120)
 - 30 days delinquent four times in a row (4x30)
 - 30 days delinquent once on a “rolling” basis (1x30)



Debt-to-Income Ratio

■ Income

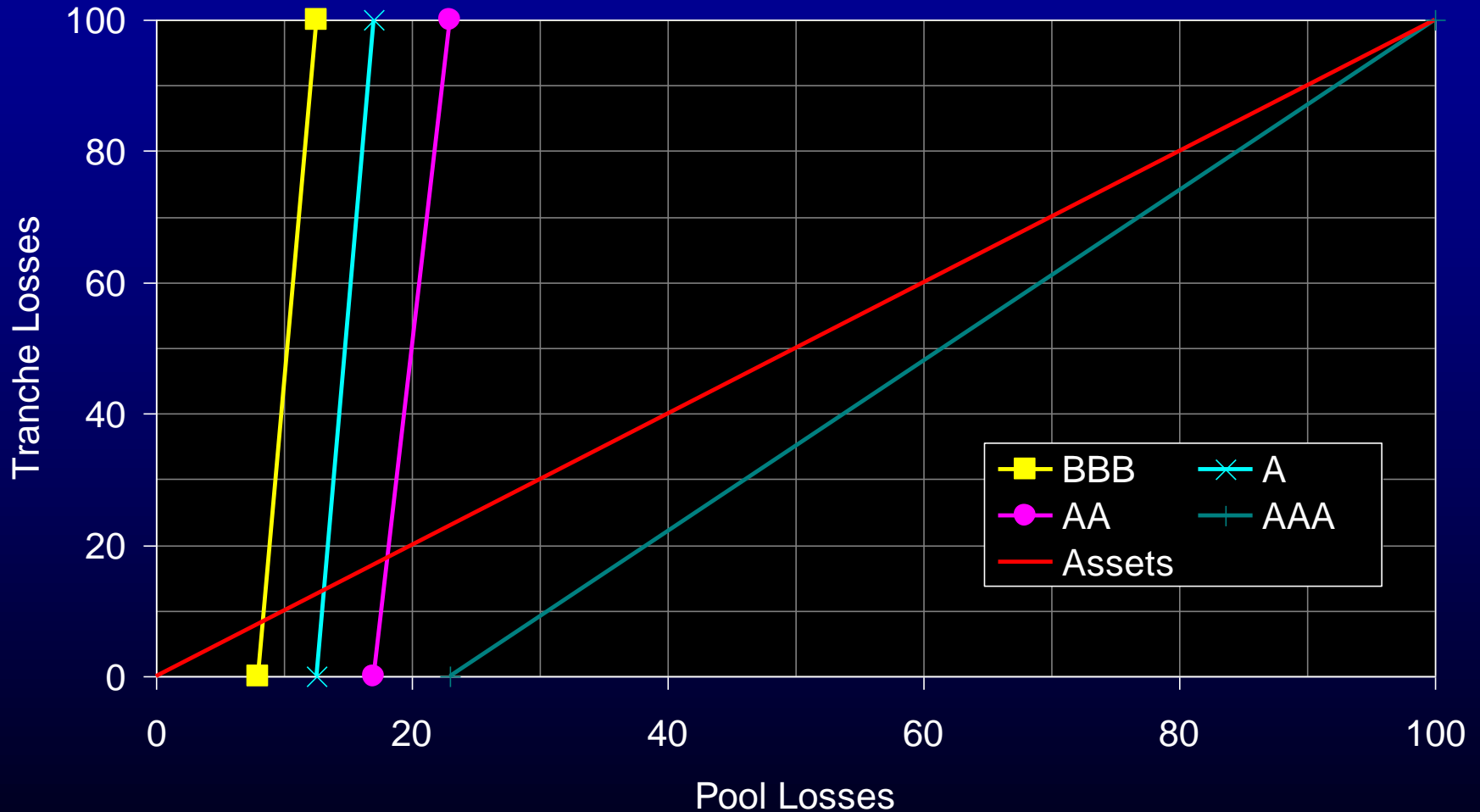
- Regular job
- Investment income
- Second job
- Home business
- Gifts

■ Debt

- Fully indexed rate
- Teaser rate
- Included debts

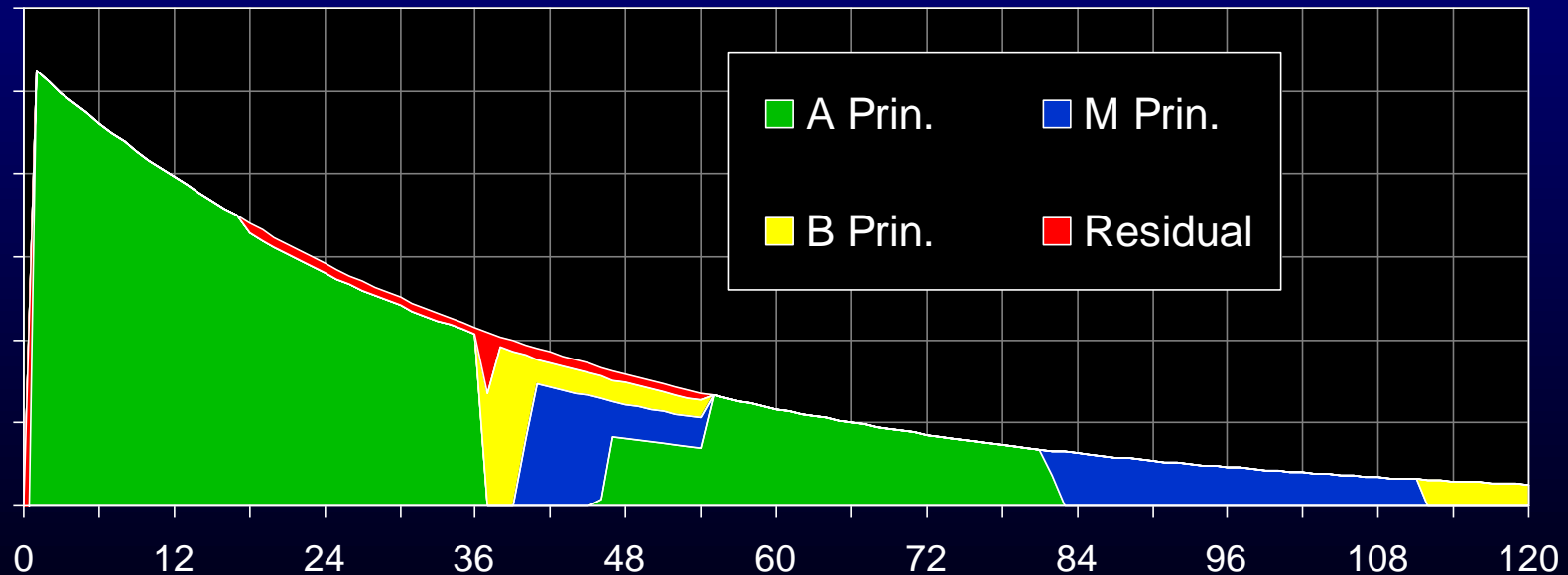


HEL ABS Deal Structure – Tranching



HEL ABS Deal Structure – Cash Flow

- Senior-sub, O/C (not like prime MBS six pack)
- Sequential / pro-rata / reverse sequential, with triggers
- Spreadsheet examples



Performance Uncertainty

- Resets for 2006 vintage in 2008 and 2009
- HPA outlook – wide range of views
- Interest rates levels
- Availability of credit
- Models running outside range of their development samples
- Emotional and psychological factors

Policy Initiatives

- **Non-traditional Mortgage Products** (71 Fed. Reg. 58609, 10/4/06)
 - interest-only loans and option ARMs
 - must qualify at fully-indexed rate
 - avoid collateral dependent loans (unsafe & unsound)
- **Sub-prime Mortgage Loans** (72 Fed. Reg. 37569, 7/10/07)
 - must qualify at fully-indexed rate
 - making loan based on collateral rather than borrower's repayment ability may be a "predatory" lending practice
- **Reg Z proposal** (73 Fed. Reg. 1671 1/9/08)
 - must consider ability to repay
 - must verify income
 - must collect escrows
 - restrict prepayment penalties

Policy Initiatives (2)

- *FHASecure* Program
- Economic Stimulus Act of 2008 (HR 5140)
- Mortgage Forgiveness Debt Relief Act of 2007
(Pub. L. No. 110-142)
- Mortgage Reform and Anti-Predatory Lending Act of 2007
(H.R. 3915 12/3/07)
- Home Ownership Preservation and Protection Act of 2007,
(S. 2452 12/12/07)
- Emergency Mortgage Loan Modification Act of 2007
(H.R. 4178 11/14/07)
- State actions
- Hope Now Alliance
- ASF streamlined loan modification framework