

CREDIT RATING AGENCIES AND THE CREDIT CRISIS: WHAT SECURITIES ATTORNEYS NEED TO KNOW



ANALYSIS GROUP
ECONOMIC, FINANCIAL and STRATEGY CONSULTANTS

APRIL 13, 2010

Agenda

- Introduction
- Presentation
 - Steve Herscovici, Managing Principal, Analysis Group
 - Bill Chambers, Finance and Credit Analysis Professor, Boston University and former head of S&P's Rating Evaluation Service
- Questions and Answers — (*anonymous*)
- Slides — now available on front page of Securities Docket
 - > www.securitiesdocket.com
- Wrap-up

Webcast Series

- Series of webcasts — every other week
- www.securitiesdocket.com/webcasts
- Next:
 - **April 20:** PCAOB Enforcement—The Nuclear Option for Small & Mid-Sized Firms
 - **April 27:** Math for Lawyers—Valuation Theory and Practice 101



Panel



Steve Herscovici



Bruce Carton



Bill Chambers

Credit Ratings Agencies and the Credit Crisis: What Securities Attorneys Need to Know

April 13, 2010

William J. Chambers
Boston University

Steven Herscovici
Analysis Group

What Information Do Credit Ratings Convey?

- An opinion of the creditworthiness of an obligor that is meant to reflect default risk
- Provide current and potential investors information on an issuer's financial strength
- In the event of default, ratings convey information on loss severity, given default

How Are Credit Ratings Used?

- Investors use credit ratings to compare creditworthiness across different entities
- Some institutional investors have limits on the ratings of debt they hold
- Some debt have terms that depend on credit ratings (e.g., spread or coverage ratios may be a function of rating)
- Investors use as a summary measure for complex securities, such as structured products

How Are Rating Agencies Paid?

- Fees paid by issuers represent majority of rating agency income, but fees are not tied to specific rating outcome
- Issuer pay model creates perception of conflict of interest
- Given reputational risk, the agencies would not sacrifice rating quality for fees from any single issuer

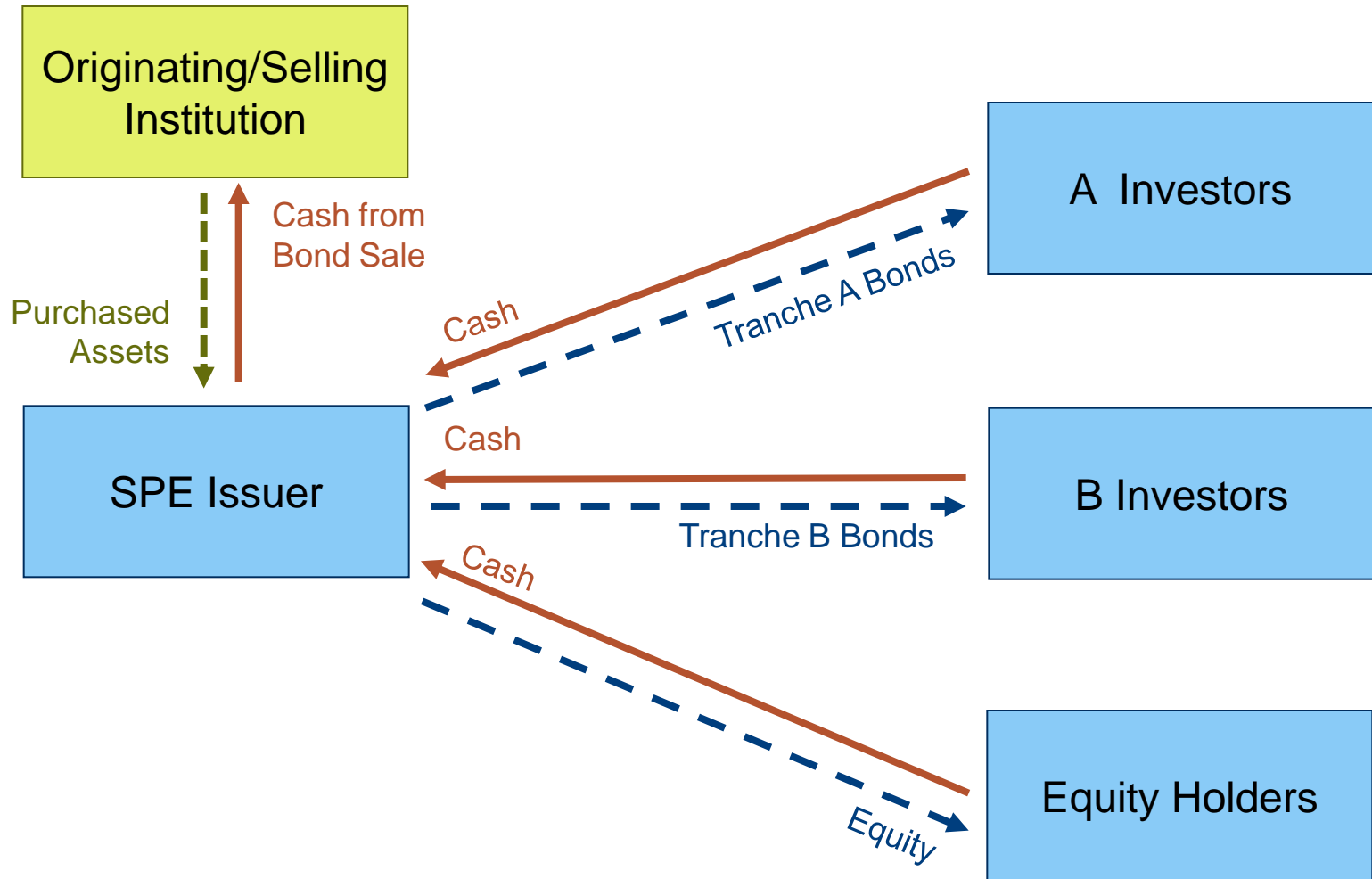
Credit Rating Process

- Deliberative process, involving considerable interaction between rated entity and rating agency
 - Review public and non-public information to assess creditworthiness
 - Project future business conditions and macroeconomic factors
 - Model ability to repay interest and principal under a range of potential outcomes
- Rating agencies have taken steps to make process more transparent, by publishing:
 - Rating criteria
 - Transition matrices of rating changes
 - Default histories

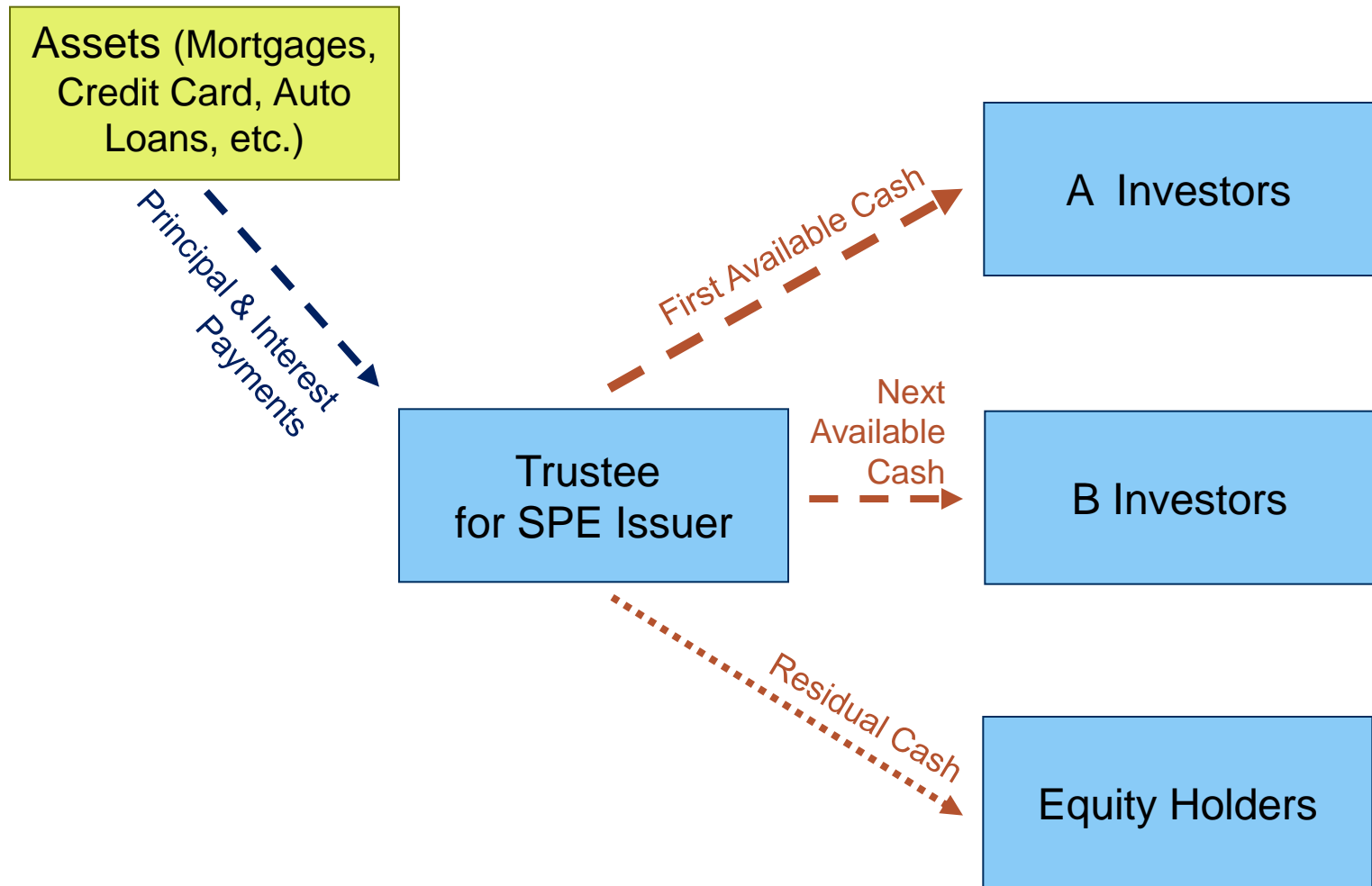
Basic Elements of Asset-Backed Securities

- Specific assets (e.g., mortgages, credit card receivables, automobile loans) are sold into a special purpose entity
- SPE issues debt to pay for the assets
- Cash flow from the assets is used to pay the interest and repay the principal of the debt

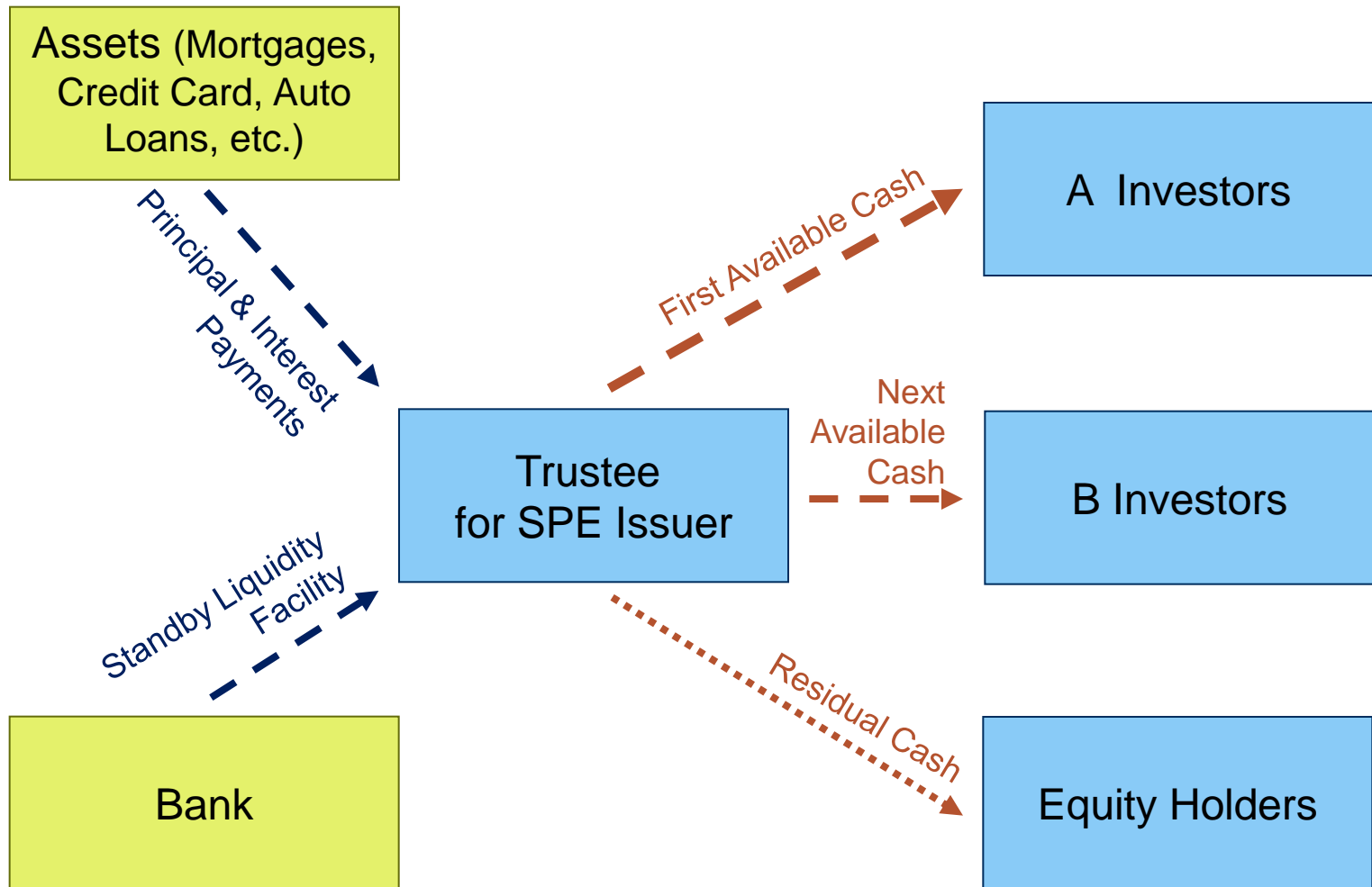
Origination of Asset-Backed Securities



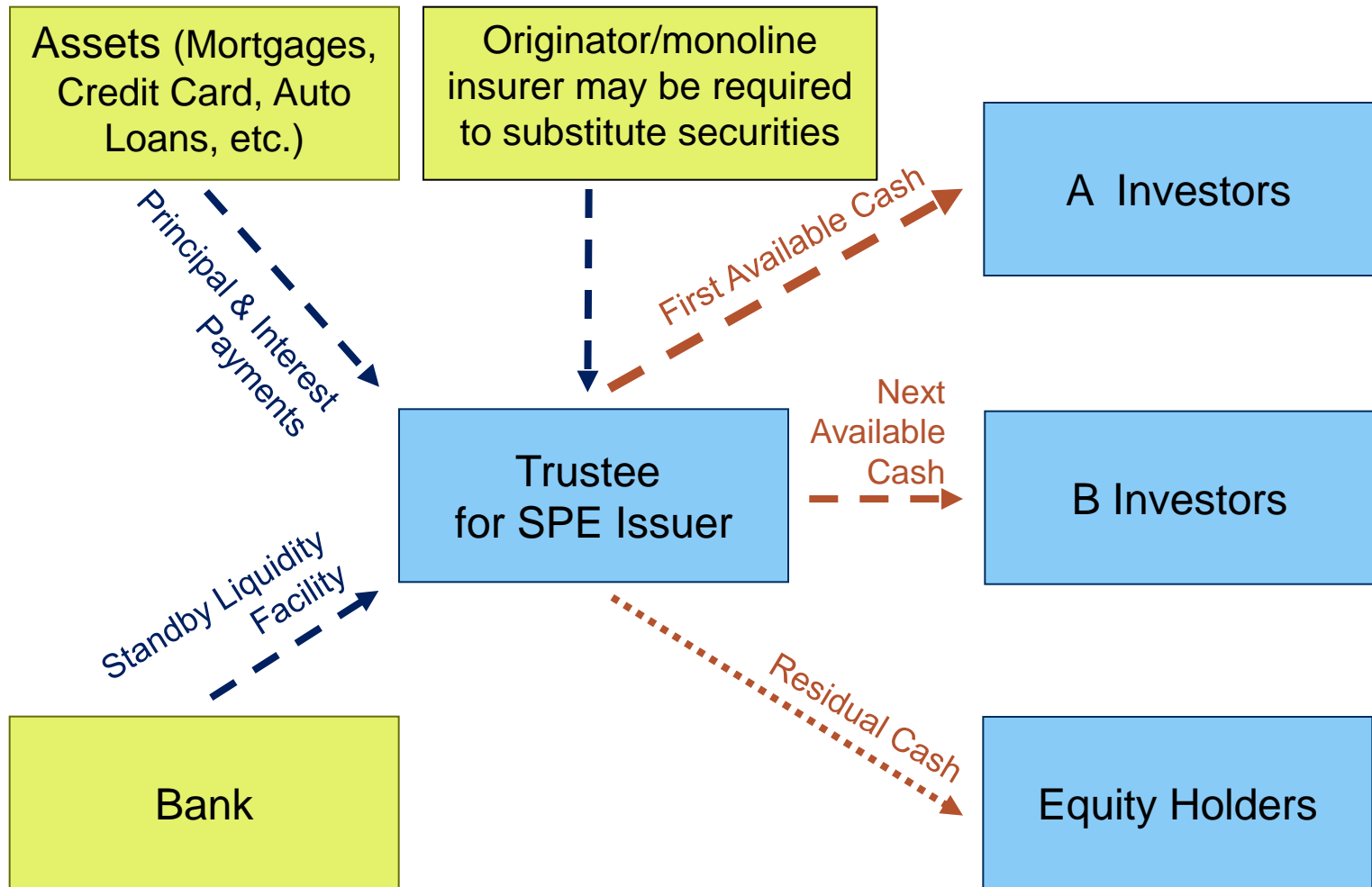
Repayment of Asset-Backed Securities



Repayment of Asset-Backed Securities, con't.



Repayment of Asset-Backed Securities, con't.



Evaluating Creditworthiness of Asset-Backed Securities

- Same rating scale, but not directly comparable with corporate debt
 - Rating claims on cash flows, not firm-specific debt
- Quantity and quality of collateral is evaluated using mathematical simulations
- Legal structure and protections (seniority, internal and external guarantees)
- Underwriting standards employed in originating assets
 - Representations and warranties, appraisals, verification of income/employment, etc.
- Quality of servicing: Need approved servicer

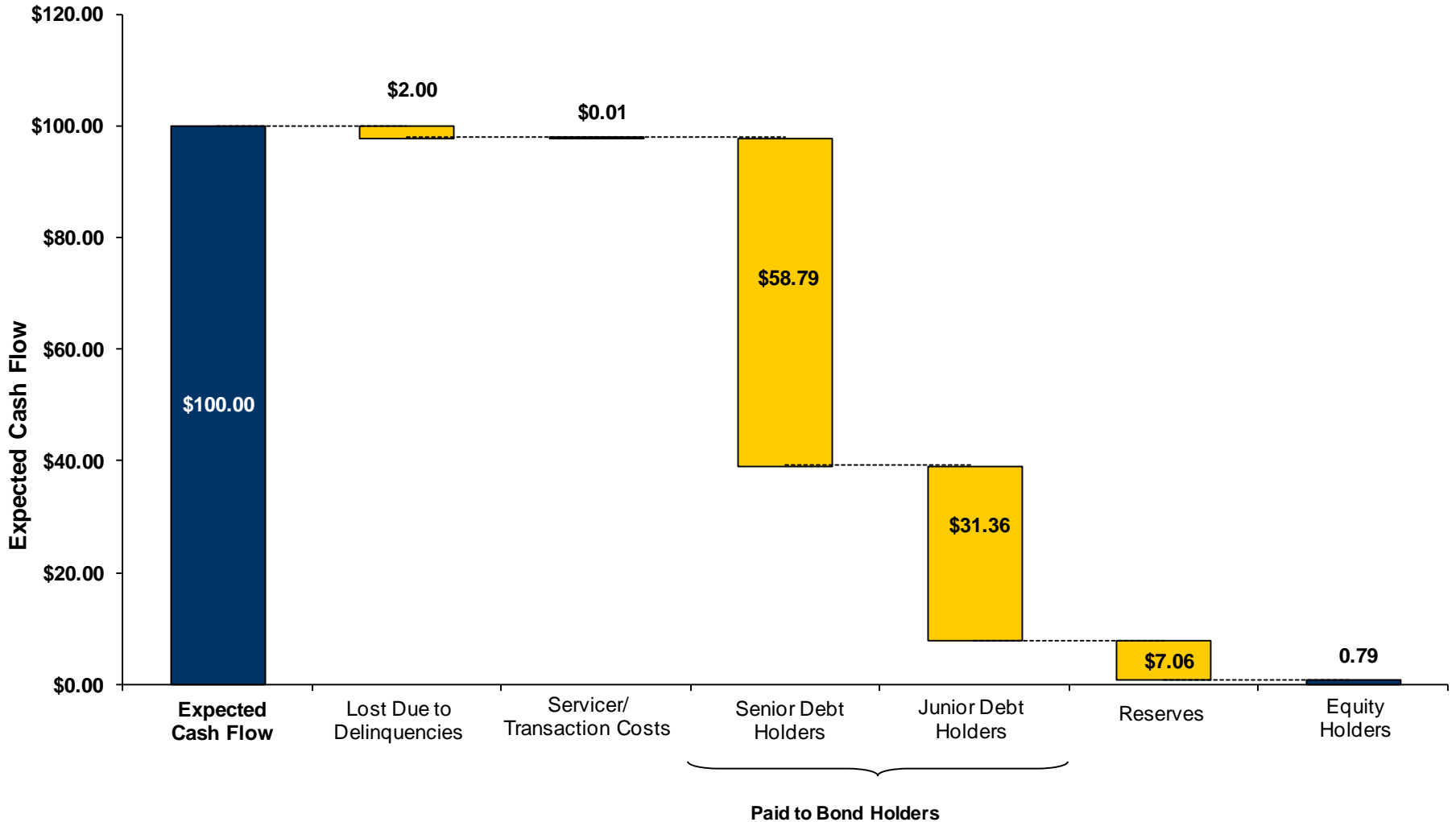
Pooling of Risky Assets

- Debt holders are afforded several forms of protection
 - Over-collateralization: Value of assets pledged may exceed amount of debt issued
 - Tranching: Debt may be divided into several tranches. Senior-most debt gets paid first, then the next most senior, on down to the most junior tranches
 - Junior tranches are more risky and are compensated by higher interest rates
 - Excess spread: Interest rate on assets may exceed weighted average interest rate on debt
 - Guarantee/replacement of assets: Originator or others (financial guarantor) may provide insurance, guarantee and/or pledge to replace delinquent or defaulted assets

Tranching of Asset-Backed Securities

- Securities are differentiated along various dimensions, based on default risk and risk of recovery
 - Cash flows from ABS securities are often divided into tranches that specify order that securities receive payments from underlying cash flows
 - In addition, the distribution of losses is tranching, with losses applied first to the most junior class of investors, until that class is exhausted, and then to the next most junior class
- The senior tranches have the greatest cushion and thus receive higher ratings
 - In addition, in the event of default, the highest-rated tranches should recover more

Cash Flow For a Tranching and Overcollateralized ABS



Example of Mortgage-Backed Security with Tranching and Excess Spreads

A. With 100% Performing Mortgages (No Defaults)

	Amount	Interest Rate	Required Cash Flow	Cash Flow Available to Repay Next Tranche	Interest Coverage Ratio	Additional Sustainable Default % with LGD of	
						100%	50%
Mtg. Collateral	\$100	6.0%		\$6.00			
MBS Senior	\$90	5.5%	\$4.95	\$1.05	1.21	17.5%	35.0%
MBS Junior	\$7	8.0%	\$0.56	\$0.49	1.88		
Equity	\$3						

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Equity	\$3						

B. With "Expected" Mortgage Default of 4% and Loss Given Default of 40%

Mtg. Collateral	\$98.40	6.0%		\$5.90			
MBS Senior	\$90	5.5%	\$4.95	\$0.95	1.19	16.2%	32.3%
MBS Junior	\$7	8.0%	\$0.56	\$0.39	1.70		
Equity	\$3						

Example of Mortgage-Backed Security, con't.

C. With Higher Than Expected Levels of Default (16%) & Lower Recoveries on Defaulted Assets (LGD of 50%)

	Amount	Interest Rate	Required Cash Flow	Cash Flow Available to Repay Next Tranche	Interest Coverage Ratio	Additional Sustainable Default % with Loss Given Default of	
						100%	50%
Mortgage Collateral	\$92.00	6.0%		\$5.52			
MBS Senior	\$90	5.5%	\$4.95	\$0.57	1.12	10.3%	20.7%
MBS Junior	\$7	8.0%	\$0.56	\$0.01	1.02		
Equity	\$3						

Example of Mortgage-Backed Security, con't.

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Note deficit of collateral for principal repayment: After MBS Senior tranche is repaid in full, there is only \$2 available to repay Junior tranche principal of \$7

What Went Wrong in the Credit Crisis?

- Introduction of new types of collateral with limited historical information about how they would perform in a downturn

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A. Origination of Mortgage Loans

Year	Prime		Alt-A		Subprime		Total Originations
	Origination (billions)	% of Total	Origination (billions)	% of Total	Origination (billions)	% of Total	
2001	\$1,863	88.2%	\$60	2.8%	\$190	9.0%	\$2,113
2002	\$2,474	89.2%	\$68	2.5%	\$231	8.3%	\$2,773
2003	\$3,345	88.8%	\$85	2.3%	\$335	8.9%	\$3,765
2004	\$1,860	71.5%	\$200	7.7%	\$540	20.8%	\$2,600
2005	\$1,750	63.5%	\$380	13.8%	\$625	22.7%	\$2,755
2006	\$1,520	60.3%	\$400	15.9%	\$600	23.8%	\$2,520

Source: Inside Mortgage Finance

What Went Wrong in the Credit Crisis?

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B. Issuance of Mortgage Backed Securities

Year	Prime		Alt-A		Subprime		Total Issuance
	Issuance (billions)	% of Total	Issuance (Billions)	% of Total	Issuance (Billions)	% of Total	
2001	\$1,230	92.6%	\$11	0.9%	\$87	6.6%	\$1,328
2002	\$1,614	90.2%	\$54	3.0%	\$123	6.9%	\$1,790
2003	\$2,368	89.8%	\$74	2.8%	\$195	7.4%	\$2,638
2004	\$1,252	70.6%	\$159	8.9%	\$363	20.5%	\$1,773
2005	\$1,246	61.0%	\$332	16.3%	\$465	22.8%	\$2,043
2006	\$1,124	58.0%	\$366	18.9%	\$449	23.1%	\$1,938

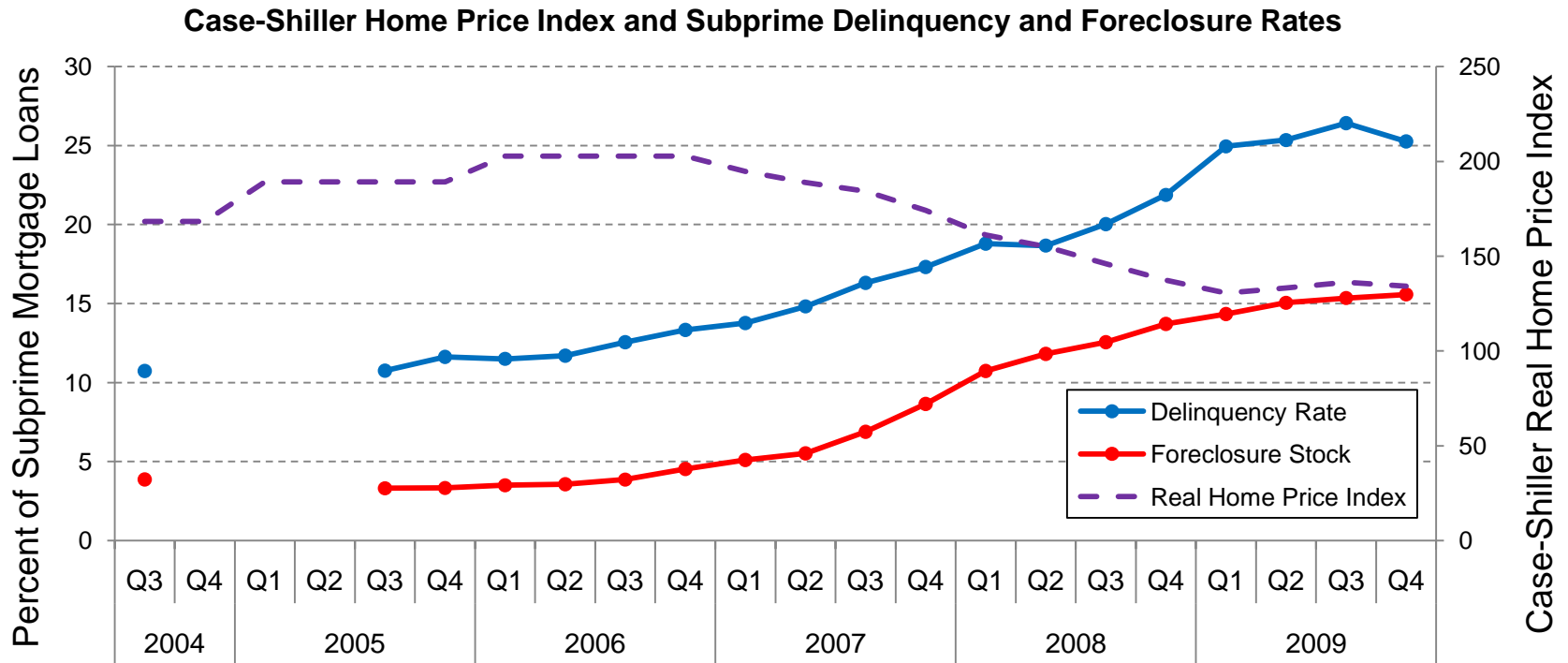
Note: These securities were created during the housing boom, so models could not use actual experience of how they would perform in a downturn

What Went Wrong in the Credit Crisis?

- Introduction of new types of collateral with limited historical information about how they would perform in a downturn
 - These securities were created during the housing boom, so models could not use actual experience of how they would perform in a downturn
- Economic downturn was more severe than expected
 - Housing prices declined further and more quickly than expected
- Underwriting standards in practice proved less strict than on paper
 - When downturn occurred, defaults were higher than expected

What Went Wrong in the Credit Crisis?

- Housing prices declined further and more quickly than expected
- When downturn occurred, defaults were higher than expected



Sources: Mortgage Bankers Association. Case-Shiller Home Price Index

What Went Wrong in the Credit Crisis?

- Originators unable or unwilling to fulfill pledges to replace defaulted/delinquent collateral
- Lack of liquidity caused additional haircuts for ABS prices

Resulting in ...

- Reduced cash flows to debt holders, leading junior tranches of ABS to experience downgrades and defaults

A. Home Equity ABS Rating Changes for 2005 Vintages

Rating as of October 2007

Previous Rating	Aaa	Aa	A	Baa	Ba	B	Caa	Ca	C	Total
Aaa	100.0%									2,058
Aa		100.0%								983
A			99.4%	0.6%						1,003
Baa				94.9%	3.5%	1.4%	20.0%			1,066
Ba					81.1%	14.5%	4.4%			318

B. Home Equity ABS Rating Changes for 2006 Vintages

Rating as of October 2007

Previous Rating	Aaa	Aa	A	Baa	Ba	B	Caa	Ca	C	Total
Aaa	100.0%									2,121
Aa		100.0%								1,265
A			43.9%	27.9%	17.8%	10.1%	0.2%	0.1%		1,295
Baa				17.3%	18.8%	32.4%	13.5%	11.1%	7.0%	1,301
Ba					6.2%	18.4%	8.2%	14.0%	53.1%	450

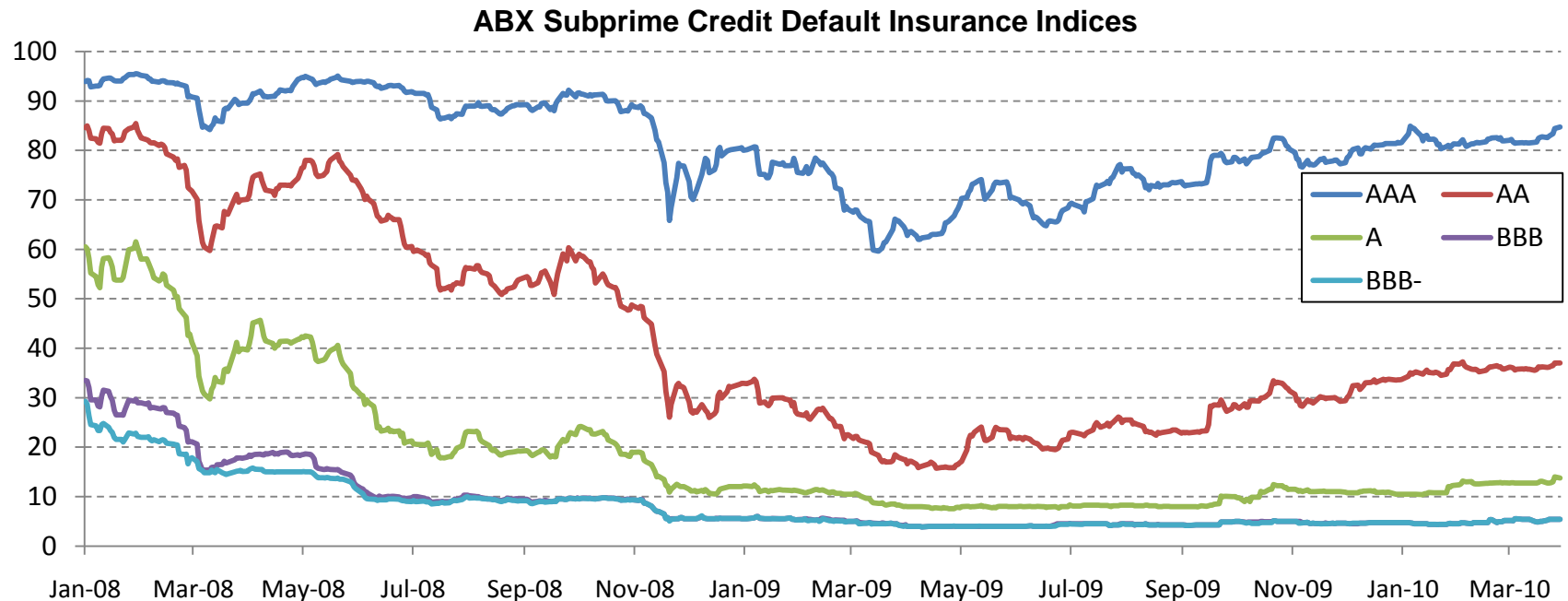
Source: Moody's

Resulting in ...

- Reduced cash flows to debt holders, leading junior tranches of ABS to experience defaults
- Declines in market values to both senior and junior tranches
 - For particularly complex deals (e.g., CDO-Squared), price declines triggered defaults
 - Prices have recovered, particularly for senior tranches and earlier vintages of debt, but remain below pre-crisis levels

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Source: ABX HE Series 6-1 from Bloomberg.

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- Declines in market values to both senior and junior tranches
 - For particularly complex deals (e.g., CDO-Squared), price declines triggered defaults
 - Prices have recovered, particularly for senior tranches and earlier vintages of debt, but remain below pre-crisis levels
- Despite the underlying collateral still being strong, the price declines and/or rating decreases precluded certain investors (e.g., pension funds) from holding the securities
- Prices of highly rated (AAA) ABS securities decreased more than actual default risk justified

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Questions?

Thank You

Thank you for attending this webcast.