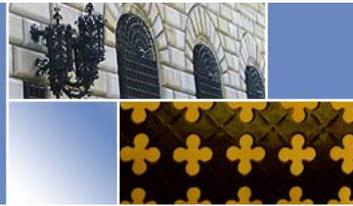


Lessons from the recent crisis about structured credit

Adam B Ashcraft
Vice President and Head of Structured Credit



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Outline

I. Overview of Hull (2010)

1. Non-agency MBS credit ratings were reasonable
 - Observed subordination levels broadly consistent with model
 2. ABS CDO credit enhancement levels were not defensible
 - Limited opportunities for diversification within non-agency MBS
 3. Re-securitizations should not exist
 - Markets should achieve diversity in first-order securitizations
- ### II. How do we get a robust securitization market?
- Required risk retention, better disclosure, underwriting standards?



Outline

I. Overview of Hull (2010)

1. Non-agency MBS credit ratings were reasonable
 - There were severe conceptual flaws in MBS and CMBS ratings
 2. ABS CDO credit enhancement levels were not defensible
 - Agree, but would note non-trivial role of MBS rating model error
 3. Re-securitizations should not exist
 - Achieving diversity through first-order securitization is impractical
- ### II. How do we get a robust securitization market?
- No magic bullet, but effective and credible credit rating agencies are very important



1. Non-agency MBS ratings reasonable

- Analysis is general framework not closely connected to any particular asset class or transaction
 - Fundamental problem was measurement of parameters taken as given (ρ , pd), not how they were combined into a loss distribution
- Authors need to overlay more realistic structural features on simulation
 - Ignores soft components of required credit enhancement
 - Excess spread is a non-trivial component to credit enhancement
 - Use of exotic interest rate derivatives became increasingly important
 - Amortization and prepayment were expected to be significant, and directed to senior class
 - Pro-rata vs sequential principal distributions affect required subordination of the marginal AAA tranche
- Results are not very precise for required credit enhancement ($\rho = .10$, $pd = 0.05$), with little guidance on which assumption to use
 - 11.6% for Gaussian distribution with stochastic recovery
 - 27.2% for t-distribution with stochastic recovery



Actually, non-agency MBS ratings were bad ex ante

Conceptual flaws in non-agency MBS ratings*

- Distribution over future path of home prices
- Limited historical data used to project the performance of loans underwritten with out-of-sample features / over-reliance on FICO scores
- Originator risk factor (i.e. borrower income/occupancy fraud)
- Refinancing liquidity risk factor

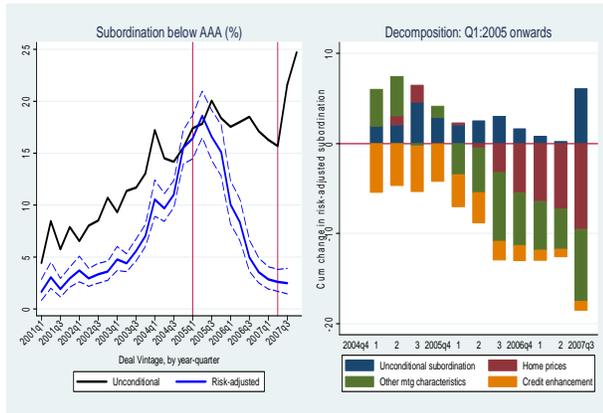
Why have non-prime consumer ABS ratings out-performed non-prime MBS?

- Issuers typically retain first-loss positions and rely on term ABS for funding their business, limiting scope for weaker underwriting standards
- Shorter-term transactions where credit enhancement is "marked-to-market" more quickly and often supported by issuer
- Collateral (i.e. autos, equipment) is expected to depreciate in value, eliminating investors as class of borrowers
- Loan performance does not depend on availability of refinancing

*CGFS (2008): "Ratings in structured finance: what went wrong and what can be done to address shortcomings"



MBS ratings and the mortgage boom



AAA subordination stopped increasing during boom as risk increased, so ex ante risk-adjusted enhancement levels fell by over 10 percentage points:

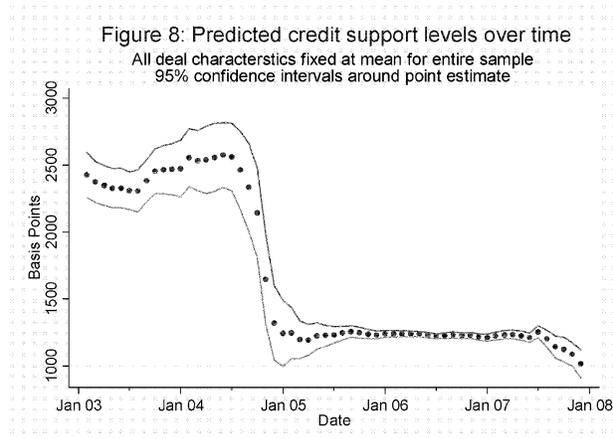
- About half of decline from failure to inadequately update home price forecast from observed deceleration using simple AR(1)

- Rest largely from failure to require higher subordination in face of more risky loan pools

Source: Ashcraft, Vickery, and Goldsmith-Pinkham (2009)



Rating shopping in the CMBS market



Risk-adjusted AAA subordination for fixed-rate conduit/fusion CMBS fell by 1000 bps between 2004 to 2005

Documents that variables measuring issuer bargaining power and incentives to shop for ratings explains part of the decline

When issuer hires CRA used infrequently in past, get 100 bps lower AAA subordination

Source: Cohen (2010)



2. ABS CDO credit ratings not reasonable

- The source of correlation in BBB MBS tranche default is as much MBS model error as home prices
 - Replicate analysis with BBB subordination of 14-15 percent
- Authors should acknowledge that sophisticated players made same mistake (e.g. monolines, banks) and not just single out credit rating agencies
- Authors should acknowledge a significant pool-level risk factor (originator, servicer, vintage) masked by home price inflation, and only realized ex post
- What do the simulations suggest for other structured credit CDOs (high-grade ABS CDOs or CRE CDOs)



ABS CDO rating criteria updated

- Fitch appears to have updated criteria. Base correlation of 20% with add-ons for same country (10%), sector (10%) and vintage (20%)
 - Portfolio of 100 BBB-rated subprime tranches would have correlation of 60%, and required AAA credit enhancement of 94%

Table 13: Sample Portfolio of 100 'BBB' 10 Year Assets					
Sample portfolio	Maximum concentration			Required credit enhancement	
	Country	Sector	Vintage	A	AAA
Single sector single vintage	100	100	100	49	94
Mixed vintage Single sector	100	100	33	37	79
Mixed sector	100	33	100	35	74
Mixed country	33	100	100	31	64
Highly diverse	10	10	10	24	50
Diversified Corporate	10	10	10	12	19

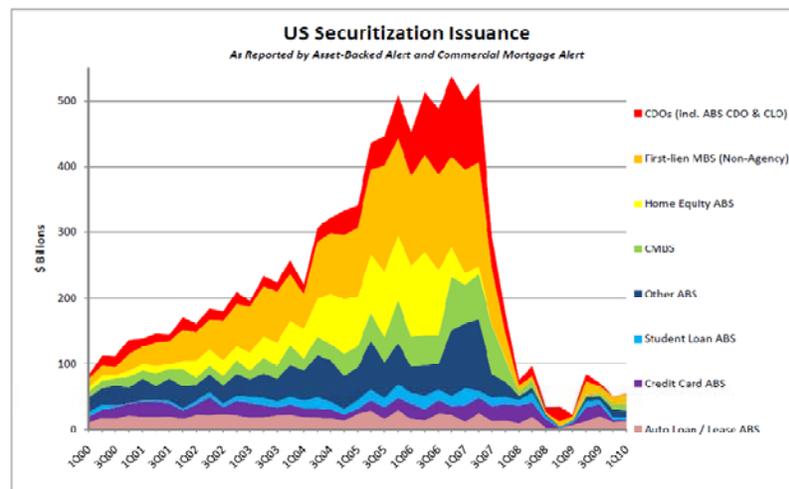


3. No more re-securitizations?

- While scope for diversification within a single country-sector-asset class, is clearly limited, there is empirical evidence of significant diversification benefits across country, sector, vintage
- It could be costly diversify within a single ABS transaction in a single transaction across country or vintage, which would offset benefits
 - Currency risk would be additional risk factor which would be difficult to hedge
 - Diversification across vintage requires significant use of lender balance sheet
- Moreover, it could be impractical to diversify across issuers/sectors:
 - Significant timing and coordination issues
 - Would require longer time funding loans on balance sheet
 - Optimal rating agency choice could be quite different across issuers
 - Transaction structures are tailored to collateral, vary significantly
 - Stronger issuer would likely do better in stand-alone transaction
 - Lower enhancement by itself than from average
 - Issuer may not want threat of contagion from other issuer/collateral
 - Credit analysis would be significantly more complicated



ABS supply will limit future ABS CDO issue



II. How do we get a safe and robust market?

- Having all credit originated and funded on lender balance sheets is not a good outcome
 - Significant part of excess liquidity in residential and commercial real estate from balance sheet lenders in form of second lien and mezzanine debt financing
 - Credit cycles existed long before securitization
- Securitization can increase availability of credit and reduce financial sector volatility
 - Diversify issuer funding sources
 - Better asset-liability duration mismatch than funding with deposits
 - Reduce concentrations to obligors and geography
 - Realize economies of scale in servicing
 - Impose market discipline on otherwise opaque asset
 - Present investors with high-quality fixed-income investments that have superior risk-return properties



How do we move forward?

- Lack of disclosure, risk retention, limited time to review, no cash flow models, are symptoms of larger problem: investors have limited bargaining power in the securities underwriting process
 - Ineffective to regulate symptoms, need to restore investor bargaining power
- Credible, effective credit rating agencies are crucial
 - Other investors can free ride off of the screening and monitoring by any one investor, which leads to the under-provision of these services
 - Spreads are simply too low to justify the expense of independent credit work without significant scale or leverage
 - Anti-trust laws prevent investors from combining forces
 - Need effective and credible third-party intermediary to act on behalf of small, dispersed investors in order to push back on aggressive security underwriting
- Realistic policy options to strengthen current model
 - Third party choice of agency
 - Regulator, investor representative, or third-party
 - Disclose all communication between issuer and rating agencies
 - Effective during TALF enhanced credit review
 - Deferred and/or subordinated compensation
 - Offset incentives created by issuer-pay by paying fees as investor principal returned

