550.448
Financial Engineering and Structured Products

Module 1 – Structured Finance
An Abstract of Legal, Accounting, & the SPE as a Corporation

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Assignment

- Reading
  - Introduction and first 3 chapters of R&R (Securitization Law, Accounting and Corporate Structure)
  - Material on MBS – lecture slides and docs (CitiGroup, RBSGC, & JPM): focus on basics
  - Allman: Introduction and Chapters 1-2 (Excel, Dates, Day-Counts, & CF Generation)
  - Preinitz: Chapter 3 (Securitizing a Loan PF)

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Plan for This Module

- Briefly finish MBS material
- Elements of Structured Finance
  - Legal, Accounting & the Corporate Structure for Securitization
- Introduction to the Cash Flow Model (Allman)

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Brave New World of Structured Finance

- The Credit Collapse of 2007-2008
  - A Referendum on the Modern Fiduciary Conscience
  - NOT a repudiation of Structured Finance
- Structured Finance: a way to raise capital
  - Structured Finance is NOT Corporate Finance

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Brave New World of Structured Finance

- **What is Structured Finance?**
  - An information-based financial decision process
  - Unifies core financing, operating, and investing activities inside the corporation from a cash flow (CF) perspective
  - Emphasis on planning, process, & governance which promotes capital efficiency
    - By contrast, with corporate finance where resource decisions are made by human decision-makers and subject to discretion
    - In structured finance, resource governance is carried out within the inflexible control structure of the bond indenture – no discretion
  - Credit analysis takes place entirely within the transaction

Elements of Securitization Law

- **Securitization and off-balance-sheet financing are enabled through Law**
- **The two key issues have to do with**
  - Bankruptcy Law
    - Specifically as it relates to restructuring and counting the assets of the Transferor in a bankruptcy proceeding
  - Commercial Law
    - Specifically, as it relates to the ownership of the assets in the securitization transaction
    - Who gets legal claim of an asset for their balance sheet?
      - True Sale

Elements of Securitization Law

- **True Sale**
  - Determination of whether a structured transaction can claim its assets as the consequence of a true sale
  - The Trinity of True Sale
    - The structure is truly non-recourse
    - Assets under the structure are identifiable & countable
    - The exchange of assets for value takes place at “fair value”
      - If not, bankruptcy court can void the sale
  - Process of Legal Structuring
    - Bankruptcy Remoteness is the key analytical point

Elements of Securitization Law

- **Process of Legal Structuring**
  - Achieving Bankruptcy-Remoteness
    - A corporation is established, with the sole purpose of housing the transaction (the “transferor’s” off-balance-sheet vehicle), referred to as the Special Purpose Entity (SPE)
      - Special in that its only purpose is to hold assets, but also
      - To withstand attack should the transferor file under bankruptcy law
  - Attacks would assail the following
    - True Sale
    - Perfection of Security Interest – transfer must follow the procedures of the Uniform Commercial Code (UCC) and the interest is attached to the SPE
      - Seller empowered to make transfer
      - There is “consideration” for the transfer (it is paid for)
      - There is an authenticated security agreement itemizing the collateral
Elements of Securitization Law

**Process of Legal Structuring**
- Achieving Bankruptcy-Remoteness
  - Attacks would assail the following (continued)
    - Non-Consolidation: Show the SPE is inextricably linked to the seller
    - Sale at Fair Value (a real concern these days)
    - Others
  - While we focus on the protection of the SPE from the “seller”; investors in the SPE (bond buyers) need to be protected from the insolvency of the SPE
    - Legal & Tax – like any company
    - Solvency in its operation – the structure

**Registration, Disclosure, Distribution, and Trading**
- Securities Act of 1933 (disclosure details for registration)
- Securities Exchange Act of 1934
- Sarbanes-Oxley Act of 2002 (CEO/CFO identification)
- Trust Indenture Act of 1939
  - Trustee must file conflict of interest statement for each obligor
- Investment Company Act of 1940
  - Issuers of structured securities must demonstrate exemption
- Regulation AB (2004)
  - Disclosure of all parties/qualifications in a structured transaction

Elements of Securitization Law

**Regulating the Structured Finance Markets**
- Basel/Banking Supervision
- SEC
- Federal Reserve
- OCC
- FDIC
- OTS
- NAIC (Insurance Commissioners in the states)
- CFTC
- ISDA

**Regulating the Structured Markets (Continued)**
- AICPA (Accountants)
- FASB
- The SEC-designated NRSROs
  - Nationally Recognized Statistical Rating Organizations
Elements of Securitization Accounting

- Standards-setter for corporate accounting
  - Financial Accounting Standards Board (FASB)
  - What to do with securitization accounting?
    - Still unresolved
    - Where are we?
- Crux of the issue: materiality and "state"
  - For corporate finance, state and materiality exists at a courser level than suitable for structured finance
    - For example, in structured finance, "state" includes the term structure of delinquencies – relevant in measuring risk and the prospect of repayment

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Elements of Securitization Accounting

- Crux of the issue: materiality and “state”
  - For corporate finance state and materiality exists at a courser level than suitable for structured finance
    - For example, in structured finance, “state” includes the term structure of delinquencies – relevant in measuring risk and the prospect of repayment
  - Nonexistent in a traditional corporate finance accounting structure of Generally Accepted Accounting Principles (GAAP)
    - The term structure of delinquencies is un-measurable and un-reportable under GAAP as it is not in the state space of GAAP

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Elements of Securitization Accounting

- Rationalizing Securitization Finance under GAAP
  - Accounting approach can take one of several paths depending on who (what kind of institution) is reporting
    - Borrower vs. Investor
    - Mortgage (FAS 115) or Non-mortgage (FAS 65)
      - Agency MBS vs. ABS
    - Even worse than multiple treatments for the same transaction
      - Rule for valuation depends on whether intent is to hold to maturity: value depends on intent?!

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Elements of Securitization Accounting

- Rationalizing Securitization Finance under GAAP
  - Sell-side institutions under GAAP treated according to their exposure to operational risk
    - Traditional entities fund on-balance-sheet: ops risk is high
      - Equity holders (ultimately) control the decision process; absorb asset and earnings risk; & provide excess cushion to debt holders
      - Equity > E(L), where L is loss
    - Follows ARB 51 (Accounting Research Bulletin – SEC enforced)
    - Classic off-balance sheet issuer: the Qualified Special Purpose Entity (QSPE)
      - A passive machine with no discretion, therefore little operational risk
      - Equity = E(L)
    - Follows FAS 140

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## Elements of Securitization Accounting

### Rationalizing Securitization Finance under GAAP
- Sell-side institutions under GAAP treated according to their exposure to operational risk
  - Variable Interest Entity (VIE): a hybrid
    - May have recourse to borrower; absorb most operational risk, but not all; whoever bears the majority of risk must absorb to balance sheet if it does not sell 51% or more of expected losses to a 3rd party
    - Equity < E(L)
    - Follows FIN 46(R)
    - Created for structures that violate trinity of true sale; liability holders price-in recourse to a 3rd party for unknown risks hidden in the structure

### True Sale Securitization: FAS 125/140
- FAS 140 motivated creation of a new financial object, a special category issuer that qualifies (under FAS 140) for deconsolidation: Qualifying Special Purpose Entity (QSPE)
  - To achieve deconsolidation under FAS 140 requires
    - True sale and nonrecourse opinion
    - Two-step (Double-SPV) transfer process
  - The QSPE – What is it / What does it do?
    - Purchase financial assets (and associated ownership rights)
    - Simultaneously issues nonrecourse debt
    - Scope of operations is restricted under its limited-purpose charter
      - Rights and Responsibilities expressly spelled out in the operating covenant known as the Pooling and Servicing Agreement (PSA)
    - PSA is the single most important document for modeling, and therefore understanding, the transaction

### FAS 115: Debt/Equity Accounting for Investors
- Specifies Valuation based on Intent
  - If the asset trades principally for near term sale
    - Carried on the balance sheet at fair market value
    - Changes in value are reflected in the Income Statement as Current Earnings
  - If the asset is Available for Sale (AFS)
    - Carried on balance sheet at fair market value
    - Changes in value are reflected in Other Comprehensive Income, but not in Current Earnings
    - If fair value drops below its amortized historical cost for more than a temporary period, then it is deemed impaired – the unrealized loss is recognized as a current loss in the Income Statement
  - If the asset is Held to Maturity (HTM)
    - Carried at an amortized historical cost basis subject to write-downs
    - Difficult to change status or liquidate
Elements of Securitization Accounting

- FAS 157: Fair Value Measurement
  - Defines “fair value” within GAAP and provides additional guidance to prevent too much model risk or manipulation of the numbers being reported
  - FAS 157 recognizes impact of market distress with the “forced” sale
  - Stipulates a framework for allowable valuation techniques
    - Market Prices – preferred, but in light of market-distress events;
    - Income/Cash Flow;
    - Replacement Cost

Deconstructing the Corporation

- The Context for Describing Operations and Operational Risk
  - Structured Finance Micro-Market
    - Timely incremental movements of cash through accounts in the payment system
    - Risks associated w/corresponding title/custody arrangements governed under the indenture
  - Macro Market
    - Relationship between
      - Buyers
      - Sellers
      - Others (Agents, Professional support, Regulators and Data Vendors)

Deconstructing the Corporation

- Market Micro-Structure
  - Operation
    - Servicing an amortizing loan pool is simple, compared to operating a corporation
    - Enables the true sale SPE (QSPE under FASB 140) to be amenable to rule-based governance and automation
      - Fortunate for the borrower as it facilitates the capture of cost-of-funds arbitrage
    - SPE is structured to satisfy bankruptcy-remoteness with rigorous constraints on scope of operations – the funding “machine”
      - Servicers, trustees, custodians, swap counterparties are the proverbial cogs in the machine
Deconstructing the Corporation

Market Micro-Structure

- Constitution: The Pooling and Servicing Agreement
  - The most important operational document is the PSA
  - Spells out precisely how to
    - Segregate cash inflows from the general accounts of the seller/servicer
    - Set up trust accounts
    - And to whom funds of the trust are distributed, including for reinvestment
  - All important to analysis when modeling the deal because it is the definitive, contractually binding transaction structure

Payment Mechanics

- Following the Money – The Time Line
  - Record Date – end of each collection period
  - Collection Period (usually, 1 month)
    - Collection Account & the daily sweep – nothing is left exposed
  - Determination Date (focus on the asset side of SPE balance sheet)
    - Servicer summarizes the most recent collection period: interest, penalty interest, principal, prepaies, delinquencies, defaults/recoveries, surety bond payments, etc.
  - Calculation Date (focus on the liability side of SPE balance sheet)
    - Servicer establishes the amounts due bond holders and all third parties as a consequence of the Determination
    - Includes trigger provisions, reserve/spread accounts, etc
  - Distribution Date
    - Servicer passes the amounts Calculated to the paying agent with payment instructions to pay the ultimate recipients
  - Payment Date
    - Amounts sitting in the various sub-accounts are wired to their intended recipients (servicer, note holders, trustee, etc)

Primary Market & the Closing

- Lien on title is transferred to issuer in exchange for cash at closing
- Investors receive the notes in exchange for cash at closing

3rd Parties not in flow

- IB: advisor, underwriting, distribution (commission)
- Lawyers: Opinions (TS & NC) + Documents (fees)
- Accountants (fees)
- Ratings Agencies (commission)
Deconstructing the Corporation

- Market Micro-Structure
  - Operational Flows
    - 3rd Parties not in flow
      - Ratings Agencies (annual fee)
      - Mark-to-market Advisories
      - Data Vendors
        - Data from trustee
        - Clean & normalize
        - Publish in raw form or with value-add

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Deconstructing the Corporation

- Market Macro-Structure
  - Buyers
  - Sellers – Originator, (Transferor), Issuer (SPE)
  - Agents
    - Intermediaries bringing buyer & seller together
    - Collateral Managers/Servicers/ Program Administrators
    - Custodians/Trustees
    - Clearing & Settlement Agents
    - Issuing & Paying Agents
  - Professional Services – Lawyers & Accountants
  - Regulators
  - Data Vendors

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Deconstructing the Corporation

- More About Agents
  - Arranging the Transaction (prior to Origination)
    - An Investment/Commercial Bank
      - Placement
      - Underwriting/Structuring the Transaction
    - Structuring: Creating the design for redistributing the risks of the pool across different classes of securities
      - According to prevailing market risk/return demands
      - Meeting investor appetite
      - In “compliance” with rating agency criteria
      - As the underwriter may become an investor, has the potential to represent both sides of the transaction
  - Servicer – Sell-side allegiance
  - Trustee – Buy-side allegiance

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Deconstructing the Corporation

- More About Agents
  - Clearing Agent – collects funds and verifies transaction information
  - Settlement Agent – Finalizes sale and oversees transfer of ownership from seller to buyer
  - Data Vendors – Huge, new role in supporting this market
    - Aggregation and transmission of performance data (servicer reports) and trustee reports
    - Describing the “state” of a transaction adds value

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Deconstructing the Corporation

- Market Meta-Structure: To Build A Better Model
  - Nationally Recognized Statistical Rating Organization (NRSRO)
    - SEC-licensed credit rating agency
    - Designs contracts for off-balance sheet financing
      - Focus is on primary issuance
      - Little support for secondary trading
    - What is in the future?
  - Over the Counter Market
    - Can this be improved?