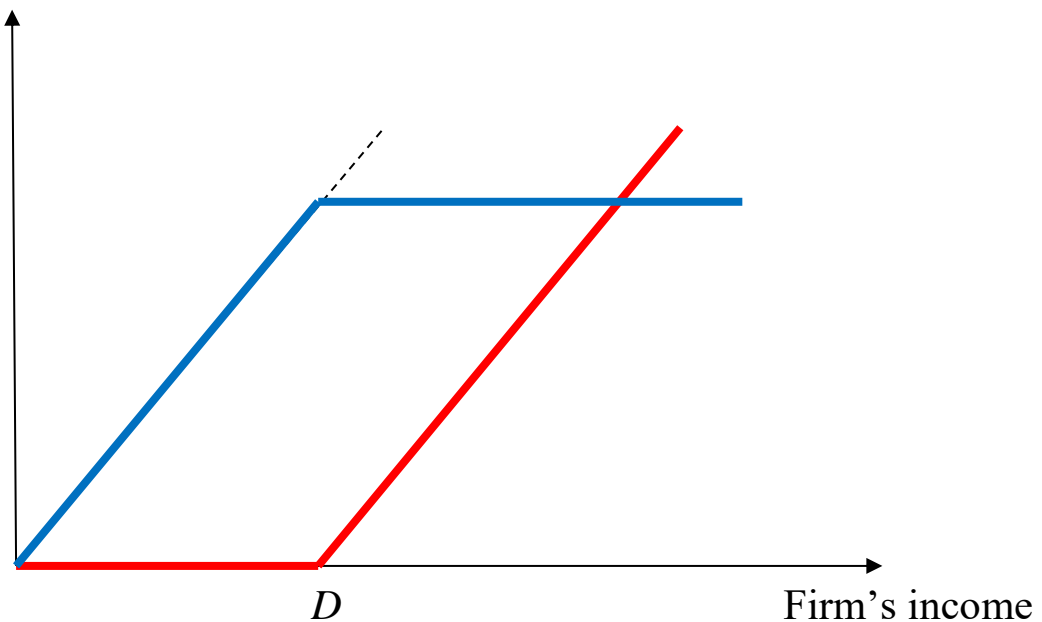


## Corporate financing

### Two main financial instruments

- debt
- equity

Essentially, debt has a concave return, and equity has a convex return.



Blue – Debt holders' return

Red – Equity holders' return

**Question:** Who would be more interested in taking risk – the debt holder or the equity holder?

## Modifying the picture

- The firm is ongoing, producing not only a single return.
- Who holds the claim matters
  - Equity: insiders (managers, etc.) vs outsiders
  - Debt: banks vs bond holders
- Claims also bring various *control rights* (rights to make decisions)
  - Example: debt holders may seize control if payment is not done according to contract.
- Returns may be hard for outsiders to verify, particularly in small firms.
- Ordinary debt vs secured debt
  - Collateral
- Richness of claims
  - Senior debt vs junior (or subordinated) debt
    - Return for junior debt neither concave nor convex
  - Preferred stock
    - Fixed payment, like debt, but the firm is not obliged to pay.
  - Convertible debt
    - An option for holder to convert from debt to equity.
  - *Mezzanine finance*: in between debt and equity
    - Junior debt, preferred stock, convertible debt.

## Financial structure

- The firm's debt-equity mix
- Under some circumstances, it does not matter
  - Modigliani and Miller (1958).
  - Simple illustration: Assume risk neutrality, and consider the case from slide 1.

$D$  – debt repayment

$V_E$  – value of equity

$V_D$  – value of debt

$R$  – firm income

Total firm value =  $V_E + V_D$

$$= E[\max(0, R - D)] + E[\min(R, D)]$$

$$= \begin{cases} E[0] + E[R], & \text{if } R < D; \\ E[R - D] + E[D], & \text{if } R \geq D. \end{cases}$$

$$= E[R].$$

- The firm's total value is independent of  $D$ .
- Also, *dividend policy* has no effect on firm value.
- The Modigliani-Miller theorem does not hold when corporate insiders do not have proper incentives to maximize total firm value.

Other causes for the theorem to break down

- Tax considerations
- Bankruptcy costs

## Debt instruments

- Collateral
  - Securing the debt
  
- Public vs private placement: the liquidity of debt
  - Public bonds
  - Securitization
  
- Maturity
  - Short term vs long term
  - Trade credit: borrowing from suppliers
  - Long-term: debt covenants

## Debt covenants

- Covenants preventing value reduction: the “*conflict view*”
  - Preventing actions that do not increase risk
    - Restrictions on payments to shareholders
    - Limits on further indebtedness
  - Preventing actions that increase risk: *asset substitution*
    - Prohibitions against new lines of business
    - Earmarking
- Covenants defining control rights: the “*control view*”
  - Shift of control if performance is bad
    - Leverage constraint: total debt not exceeding a certain fraction of total assets
    - Minimum amount of liquidity (working capital)
  - Completing the control view
    - Informational covenants
      - reports to lenders, rights of inspection, etc.
    - Covenants limiting accounting manipulations

## Bankruptcy process

- Priority rules
  - 1. administrative costs; 2. unpaid taxes; 3. wages; 4. secured debt; 5. junior debt; ...; equity holders
- Reorganization

## Two dichotomies in the credit market

- One among lenders, the other among borrowers
- Lenders
  - Sophisticated lenders
    - Concentrated, well-informed
    - Relationship investors
    - Banks, institutional investors, etc.
  - Dispersed lenders
    - Public bondholders, trade creditors
    - Numerous, with a free-rider problem
  - Claims issued to the two groups differ greatly
    - Screening: *ex-ante* monitoring
    - Covenants: sophisticated creditors have more and tighter covenants
    - Seniority, security, maturity
    - Financial distress
      - Renegotiation easier with sophisticated investors
    - Certification
      - Having a sophisticated creditor conveys good news to outsiders

## Two dichotomies in the credit market, cont.

- Borrowers
  - High-quality vs low-quality borrowers
  - High-quality borrowers have more long-term debt
  - High-quality borrowers can borrow from dispersed investors, low-quality ones must stick to sophisticated investors.
  - High-quality borrowers have less restrictive debt covenants.

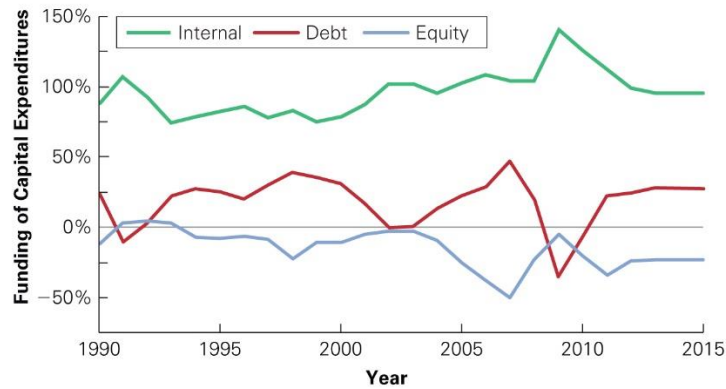
## The life cycle of equity financing

- Start-up financing
  - Privately held by sophisticated investors
    - Venture capitalists, large customers, etc.
  - Screening, conditions
  - Venture capital: Similar to sophisticated debt holders, with the addition of equity-like control rights (firing manager, controlling financing, etc.)
- Initial public offerings (IPOs)
  - Going public: Most firms don't get this far
  - The costs of going public
    - Information disclosure
    - Underpricing of IPOs: winners' curse?
      - Shares traded at a premium shortly after IPO
    - Private information
    - Giving away control rights: hard for family firms
  - The benefits of going public
    - Diversifying sources of finance
    - Facilitating exit
    - Provides a better measure of firm value
    - Helps disciplining managers: takeover threats
      - But reduced monitoring: dispersed owners
- Seasoned public offerings (SPOs)



## Sources of corporate finance

- Most important: internal financing, that is, retained earnings



US Firms. Source: Berk & DeMarzo. See also Tirole, p. 96.

- External financing: mostly banks, well ahead of new equity
  - *Net* equity issuance often negative: issuing debt to buy equity.
- Bond market: particularly strong in the US.
- Tradeoff retained earnings vs payout to investors.
  - Tradeoff funds now vs funds later
    - Retaining earnings now makes it difficult to attract external funds today but provides funds for later.
    - Growth opportunities call for retention
    - Financial constraints call for payout
    - Earnings size calls for payout
  - Fixed payout to debtholders vs. flexible dividends
    - Related to *financial structure*: debt vs equity
    - International differences. Tirole, table 2.5, p. 99.
    - Risky firms have a low debt/equity ratio.