Structured Finance Course

Lesson 1 - Introduction to the Course and Financial Markets recap

Prof. Riccardo Bruno

Luiss Guido Carli

1. Introduction to the Course

Structured Finance Course

Professor	Riccardo Bruno
Assistant Professor	Massimo Ceccobelli
Assistant Lecturers	Sara Abou Said / Enrico Erga

General Discipline (SSD)	SECS-P/09
Course Year	2
Teaching Language	English
Semester	I Semester
Credits	6
Total Workload	150
Total Lesson Hours	48

Contacts	rbruno@luiss.it;
Office hours	Friday (time to be agreed by email)

Course contents and objectives

Course contents

- **Analysis of Structured Finance and Capital Markets products**
- **Debt financing and Debt Capital Markets products, Derivatives**
- **Asset backed securities and NPL securitization**
- **Leverage Finance and Project Finance**
- **Equity Capital Markets financing (IPO, Capital increase, Convertibles)**
- **Equity Structured Finance products (Private Equity, Spac)**

Objectives

The goals of this course are to introduce students to how structured finance and financial markets work and to ways banks and corporates operate by means of analysis of specific case study

Course Prerequisites and books

Course prerequisites

Although formal prerequisites are not required, we would suggest to have a basic knowledge of:

- **Financial Math**
- **Corporate Finance**
- **Financial Economics**

Reference Books

There is not a course book matching completely the course contents, however we would suggest the following reference books:

- **FRANK J. FABOZZI, HENRY A. DAVIS, MOORAD CHOUDHRYG. – "Introduction to Structured Finance" Wiley**
- **G. IANNOTTA – "Investment Banking. A Guide to Underwriting and Advisory Services" Springer**
- **•F. S. MISHKIN S. G. EAKINS – "Financial Markets and Institutions" Pearson**

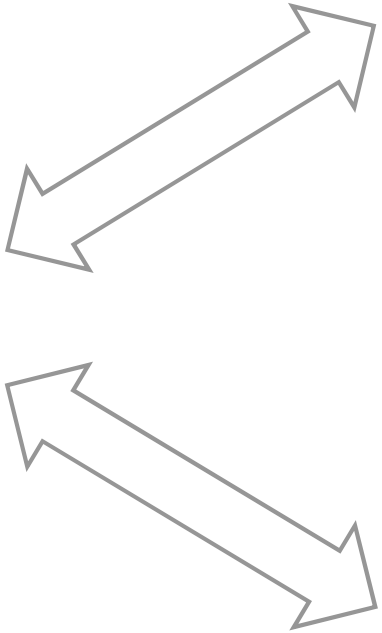
Teaching Method

Guest Speakers

Guest speakers will be invited to make presentations on specific selected topics

Traditional Lectures

Lectures on how structured finance and capital markets effectively work in real life. Slides and other support material will be used. Students interaction (Q&A) will be stimulated



Case Studies

Case studies discussions will be carried out during the course to allow students to fully understand mechanics and ways structured finance and markets work

Class Timetable

From September 10th to November 30th

Monday	Tuesday	Wednesday	Thursday	Friday
9.00-10.30 Room				**11.00-12.30 Room**

From November 5th to November 10th
Midterm Break for Reviews

Final exam (dates to be confirmed)

December (TBC)

January (TBC)

Written test

5 open questions (3 points each)
3 exercises (5 points each)

Project Work

- Split the class in groups of 2/3 members;
- Select one main topic for the group teamwork analysis;
- Prepare a 10/15 slides presentation on the topics, highlighting key aspects of the transactions and elaborate your own views/comments;
- Present and discuss in class the case study

Project work will account for 30% of the final score; each member of the project team will receive the same grade evolution.

Topic for the project Work

(1) DEBT MARKET

- IG Bond Issuance
- Securitization
- High yield bond issuance
- Leverage Finance

(2) EQUITY MARKET

- IPO
- Capital Increase
- Convertibles
- M&A through Capital Markets

(3) PRIVATE EQUITY

- LBO Investments
- Developments capital Investments
- PE Exit
- SPAC

Class Structure (1/3)

# Lesson	Date	Topics
1	10/09 @9.00	Introduction to the course Structured Finance and Financial Markets: principles, structures, mechanisms and players. Financial Markets recap
2	14/09 @11.00	Introduction to the Debt Market
3	17/09 @9.00	Debt Market
4	21/09 @11.00	Introduction to bonds math (yields, prices, duration, and convexity)
5	24/09 @9.00	Project Finance
6	28/09 @11.00	Leverage Finance
7	1/10 @9.00	Derivative Markets: different product characteristics; the Arbitrage principles and derivative pricing
8	5/10 @11.00	The use of derivative strategies in Structured Finance
9	8/10 @9.00	ABS and Hybrid Capital

Class Structure (2/3)

# Lesson	Date	Topics
10	12/10 @11.00	Equity Capital Markets & Initial Public Offering: IPO process, syndication, roadshow and bookbuilding
11	15/10 @9.00	Equity Capital Markets & Follow on offering: impact of equity issuance, dilution and pre-emptive rights, benefits and issues, TERP calculation, alternatives to rights offerings
12	19/10 @11.00	Other equity capital markets topics: EPS Dilution, trading comps warrants, sharebuyback, shares conversion, tender offers, ADRs
13	22/10 @9.00	DCM & ECM exercises
14	26/10 @11.00	Case Study/Group Presentations
15	29/10 @9.00	Convertibles
16	2/11 @10.00	Introduction to SPAC and case study analysis
17	5/11 @9.00	Mid Term Break
18	9/11 @11 .00	Mid Term Break

Class Structure (2/3)

# Lesson	Date	Topics
19	12/11 @9.00	Introduction to Private Equity
20	16/11 @11.00	Buy-out transactions Case Study/exercises on LBO
21	19/11 @9.00	Case study/exercises on Convertibles/LBO and PE transactions
22	23/11 @11.00	2008 financial and debt crisis: origins, transmission mechanics, consequences. Impact on current Italian banking crisis
23	26/11 @9.00	NPL's, Italian banking restructuring and Atlante Fund
24	30/11 @11.00	Case Study/Group Presentations

2. Financial Markets Recap

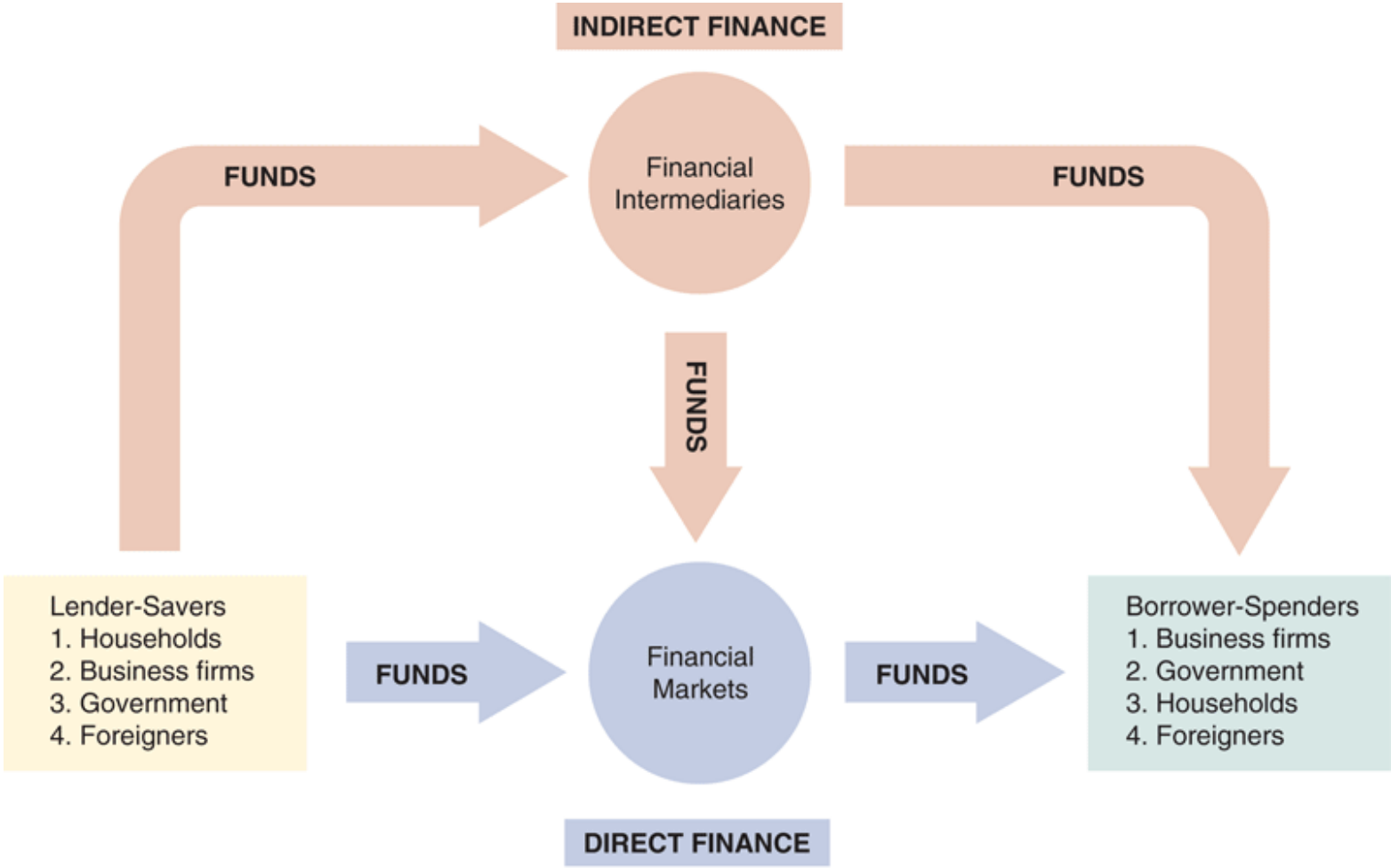
Financial System

- **The Financial System** is a system that allows and facilitates the transfer of funds between savers (also called investors) and borrowers
- The Financial System carries out a critical function by producing an efficient allocation of capital: allowing funds to move from people without productive investment opportunities to people who have them

- The Financial System can operate in different forms: direct funding and indirect funding
- In the direct funding, working through **Financial Markets**, savers lend directly money to borrowers while in the indirect one the exchange of money is facilitated by **Financial Institutions**

- In Financial Markets players must have same preferences in term of maturity, currency, amount, liquidity while in indirect funding Financial Institutions perform numerous services to match preferences between savers and borrowers: credit diversification, currency transformation, denomination divisibility, maturity flexibility…

How the Financial System works



Financial Markets

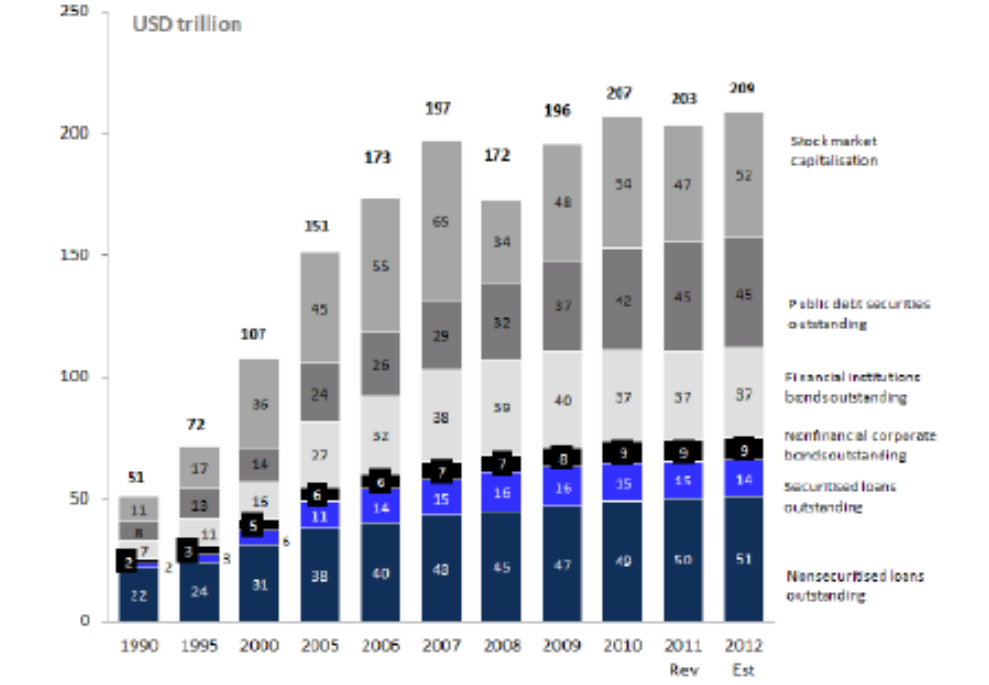
- Financial Assets traded in Financial Markets can have different maturities: short term financial assets (maturity < 1 year) are traded in the **Money Market** while long term financial assets (maturity > 1 year) are traded in the **Capital Market**

Key Features

- Money market
  - wholesale market
  - high liquidity
  - low risk and low yield
  - dealer/OTC more than organized exchange
- Capital Market
  - less liquidity
  - higher risk/return in most cases
  - normally traded in exchanges and in OTC markets

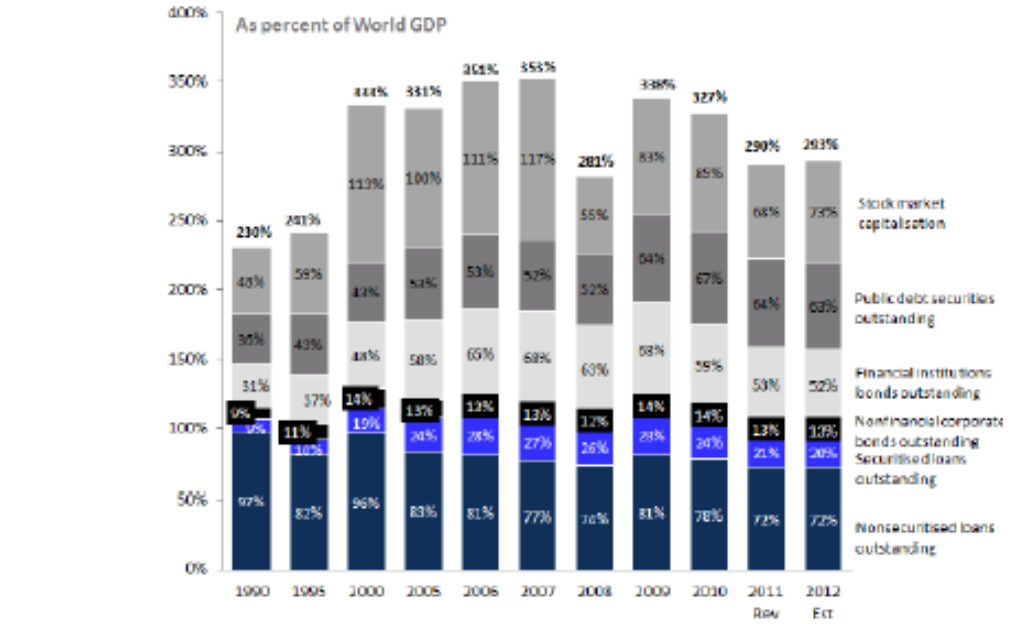
Estimated size of financial markets

Figure 1: Stock of Global Financial Assets



Source: McKinsey Global Institute, Haver, BIS, DB estimates

Figure 2: Global Financial Assets as percent of World GDP



Source: McKinsey Global Institute, Haver, BIS, DB estimates, IMF

- More than $200.000 billions
- 3x global GDP

Financial Markets: exchanges and OTC

- **Exchanges**
  - Stock exchanges, NYSE, Borsa Italiana
  - Exchanges oversees transactions between parties

- **OTC – Over the Counter**
  - Bilateral, between two counterparties
  - Taking place normally through telephone and communication networks connecting principals, dealers, brokers

Financial Markets: Primary and Secondary Market

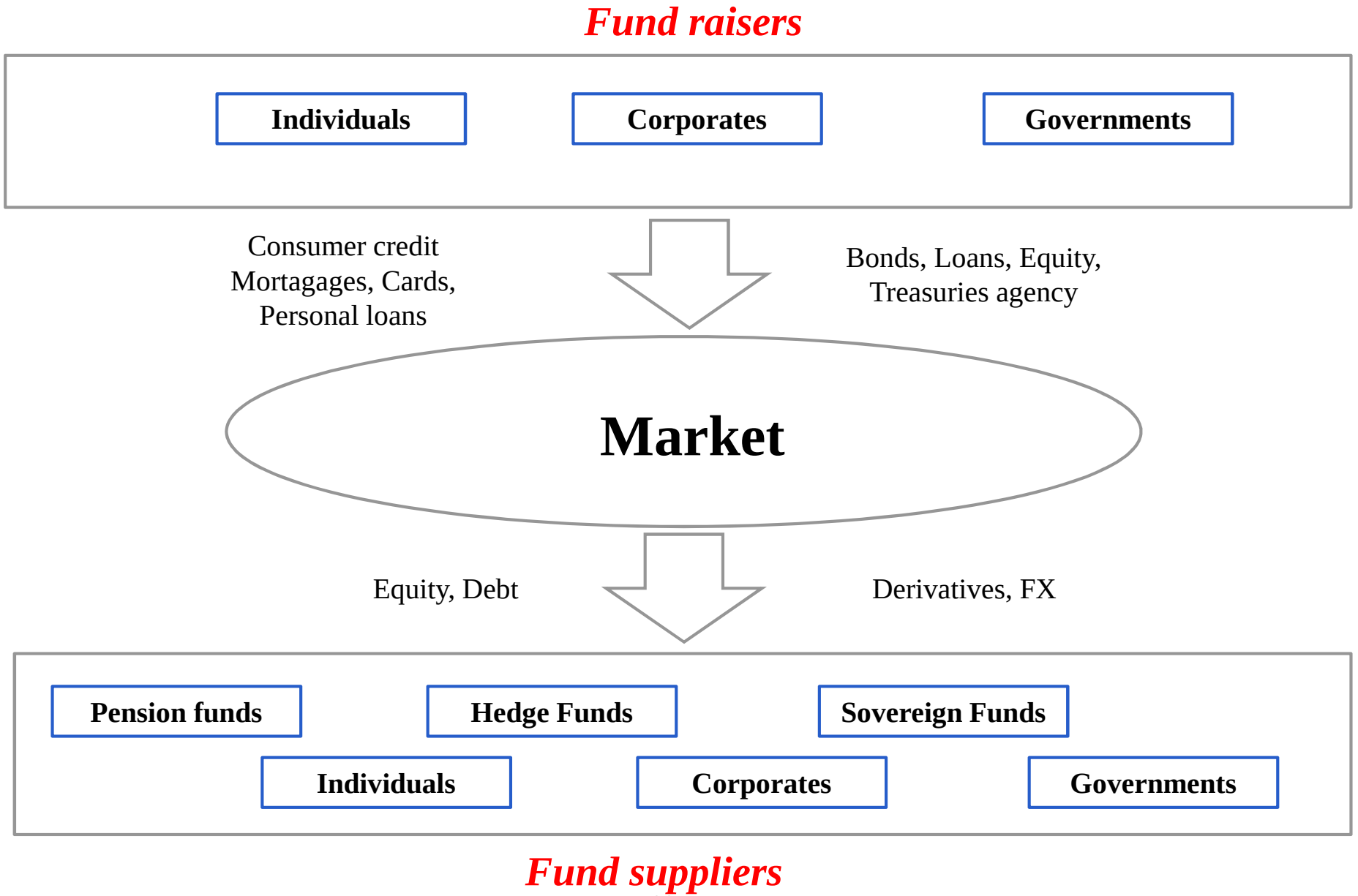
- **Primary Market**
  - First issuance of securities
  - Activities of advisory, distribution, underwriting

- **Secondary Market**
  - Transactions subsequent to initial issuances
  - Activity of brokers, selling and trading securities

- **Secondary Market can be split in Spot and Future Market**
  - Spot Market - Sold and delivered immediately
  - Futures Market - Sold and delivered in the future

3. Basic concepts of Financial Markets

Capital Markets: An interchange of suppliers and users of funds



Market Participants

- **Fundamental distinctions of roles between Principals and Intermediaries in Financial Markets**

- **Principals**
  - Act on their own interests and accounts
  - Individuals, Corporates, Governments, Investment Banks, Commercial Banks, Dealers
- **Intermediaries**
  - Act on behalf of their clients
  - Investment Banks, Brokers
  - Structure and place initial issuances in primary markets
  - Market makers providing prices and liquidity in secondary markets

Who are the Principals?

- **Householders**
  - Retail, High Net Worth Individuals
- **Corporates and Financial Institutions**
  - Companies, Insurances, Banks, Hedge Funds, Pension Funds, Asset Managers
- **Governments**
  - Sovereign Wealth Funds
  - Municipalities
  - Agencies

The development of Financial Markets has allowed Principals Issuers to access directly the sources of liquidity to fund their own investments and benefit greater availabilities and lower financial costs

Market Participants: Commercial and Investment Banks

- **Commercial Banks** essentially accept deposits and make loans
- They raise funds primarily by issuing short time debt (savings, time deposits, payable deposits) which are used to make commercial, consumer and mortgage loans
- Collectively, these banks comprise the largest financial intermediary and have the most diversified asset portfolios
- **Investment Banks** advise companies on securities to issue, underwriting security offerings, offer M&A assistance, and act as brokers/dealers in security markets.

  Some Investment Banks offers asset management services as well
- **Universal Banks** perform both commercial and investment banking activities

Functions of Intermediaries in Markets

- **Reduction of transaction costs**
  - Developing expertise and taking advantage of economies of scale
- **Reduction of Asymmetric information - ex ante**
  - Solution of adverse selection problem
  - Expected ability to repay borrowers is unknown before loans are granted. Loan rate reflects average quality, which can be a good interest rate for bad issuers but not for a good one
  - Therefore borrowers will not borrow unless someone develops reputation and checks for repaying
- **Reduction of Asymmetric information – ex post**
  - Solution of Moral Hazard problem
  - Stakeholders cannot control whether managers uses money properly for right investment projects
  - Therefore investors are reluctant to provide funds unless someone does DD and put its reputation on that

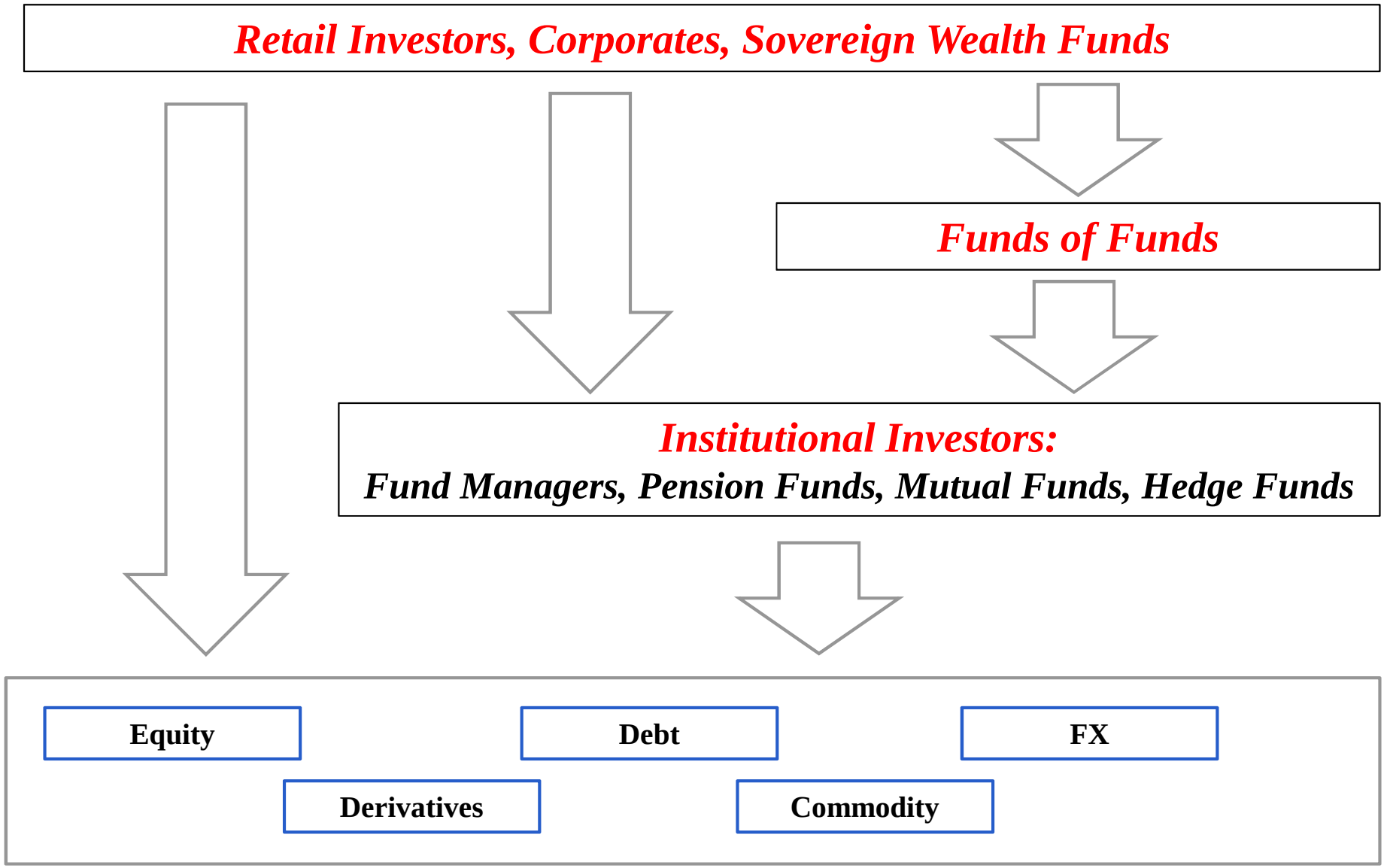
Role of Intermediaries in the Primary Market

- **Advisory Services**
  - Structure, Size, Timing of issuance, kind of securities, alternative financing options
- **Administrative Functions**
  - Dealing with regulation authorities
  - Satisfy legal, regulatory and markets requirements
- **Underwriting**
  - Purchase securities from issuers and resell them to the market
  - Can be firm commitment or best effort
  - Putting its reputation behind the issue
- **Distribution**
  - Marketing and distribution of the issuance to the market
- **Stabilization**
  - Stabilization of aftermarket

Role of Intermediaries in the Secondary Market

- **Research**
  - Analysis securities and issuing of investing recommendation
  - Equity and Debt research, Economics and stock allocation
- **Brokerage**
  - Buying and selling securities on behalf of Investors
  - Earning fees
- **Trading**
  - Buying and selling securities as a principals
- **Market Making**
  - Dealers activity
- **Structuring**
  - Building securities

Investor flows of money



Traditional vs new institutional investors

- **Traditional Institutional Investors**
  - Commercial Banks, Insurance Companies, Asset Managers like
  - Mutual Funds (Fidelity, Amundi…) and Pension Funds (Calpers, Cometa…)
  - Investment approach is typically strategic and long term oriented
- **Hedge Funds**
  - Investing in a different markets using a wide variety of investment styles and financial instruments
  - Generally distinct from mutual funds as their use of leverage is not capped by regulators and as they enjoys a wide rage of flexibility
  - Don’t be fooled by the name: hedging attempts to reduce risk but the main goal is to maximize returns through absolute and relative investment strategies. Hedge funds are made available only to certain sophisticated or accredited investors and cannot be offered or sold to the general public
  - Investment approach is typically opportunistic and short term oriented
- **Sovereign Wealth Funds**
  - State-owned investment fund investing in real and financial assets

Investment performance and management style

- **Relative performance vs absolute performance**
  - Relative to other fund managers, to the market index and to quartile ranking
  - Absolute performance means simply the asset or portfolio return over a certain period of time regardless markets and indexes

- **Investment management style**
  - Passive style, also knows as beta investment, means invest in the market performances
  - Active style, also knows as alpha investment, means use of selection criteria to extract absolute performance

4. Introduction to Structured Finance

Structured Finance Definition

". . . techniques employed whenever the requirements of the originator or owner of an asset, be they concerned with funding, liquidity, risk transfer, or other need, cannot be met by an existing, off-the-shelf product or instrument. Hence, to meet this requirement, existing products and techniques must be engineered into a tailor-made product or process. Thus, structured finance is a flexible financial engineering tool....

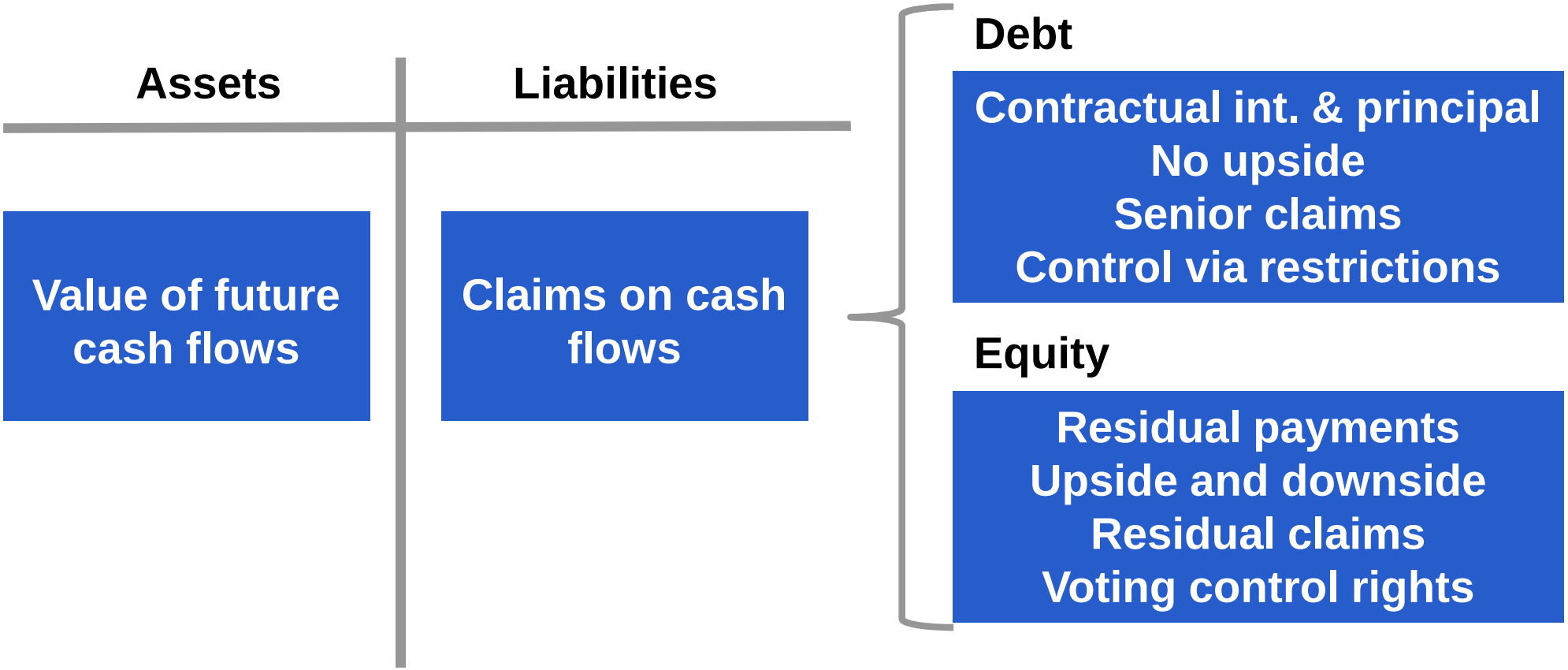
In conclusion, it is probably best to say that there is no one definition of structured finance, and that the term can be used to describe any financial transaction or instrument that is not plain vanilla."

Introduction to
Structured Finance
FRANK J. FABOZZI
HENRY A. DAVIS
MOORAD CHOUDHRY

Potential Structured Finance Transactions

- A synthetic transaction that transfers risk; such a transaction may or may not involve raising capital.
- A complex financial transaction involving the transfer of assets to raise cash, frequently with the additional goal of achieving certain accounting, regulatory, and/or tax treatment. Such a transaction may or may not involve a securities offering.
- The monetization of any rights to payments by a party having the legal right to transfer those payments to others.
- A financing transaction where legal structures are used to isolate asset or entity risk, resulting in decreased risk for the originator.
- The identification and isolation of inherent risk in a particular asset (or liability) or portfolio of assets (or liabilities) and the financing of such asset or assets (or liability or liabilities) in an economically efficient manner using specific risk transfer mechanisms when justified.
- The process whereby cash flows from cash-generating assets are molded into legal and financial structures designed to insulate those cash flows from insolvency risk and to invest those cash flows with greater predictability than they would be in their natural state.

Another way to consider Structured Finance: when Debt and Equity are not enough



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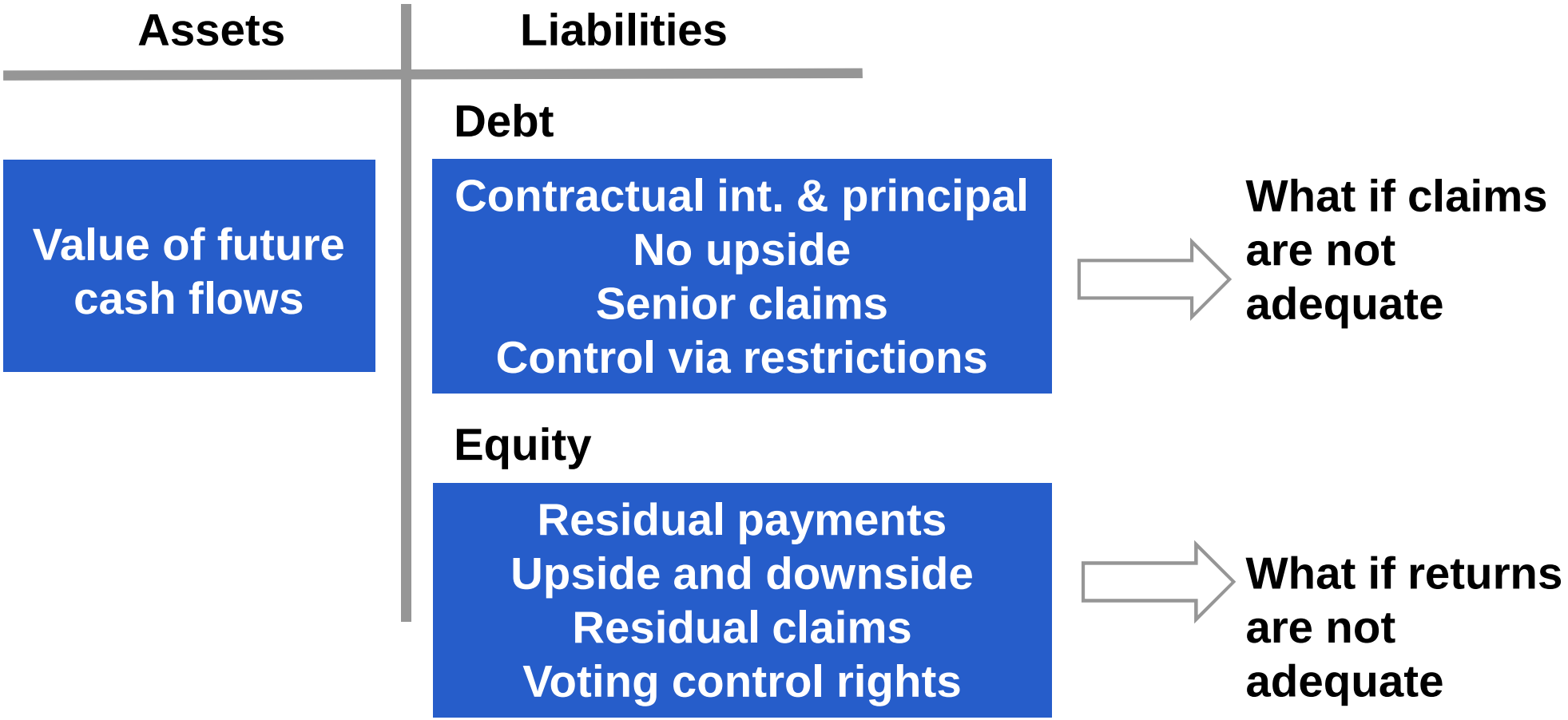

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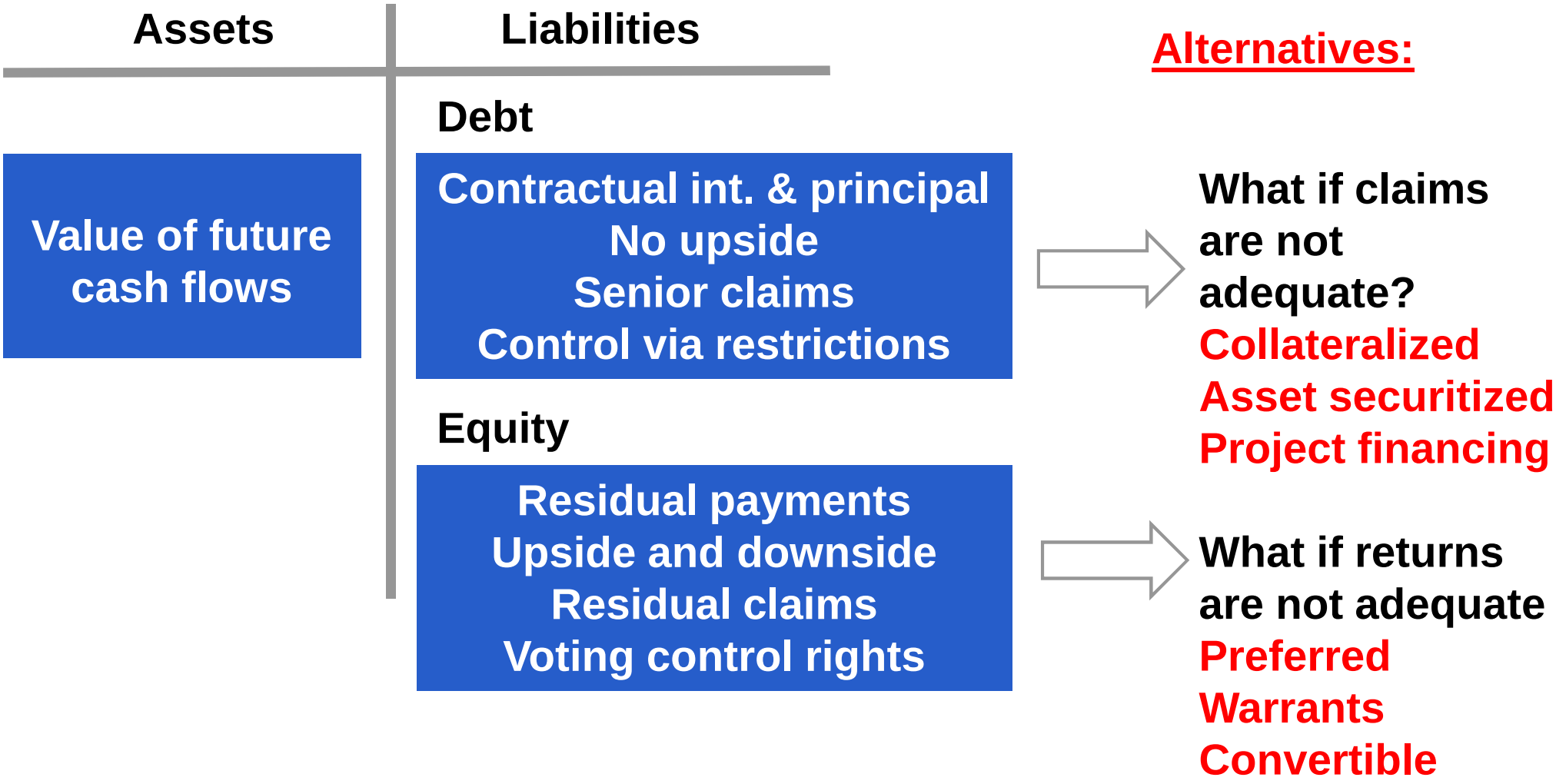


Cost of capital analysis

Capital Structure

- Debt
- Equity
- Mezzanine and hybrids
- Structured notes fully hedged cost
- Cost of securitized debt
- Cost of capital leases

Cost of capital analysis

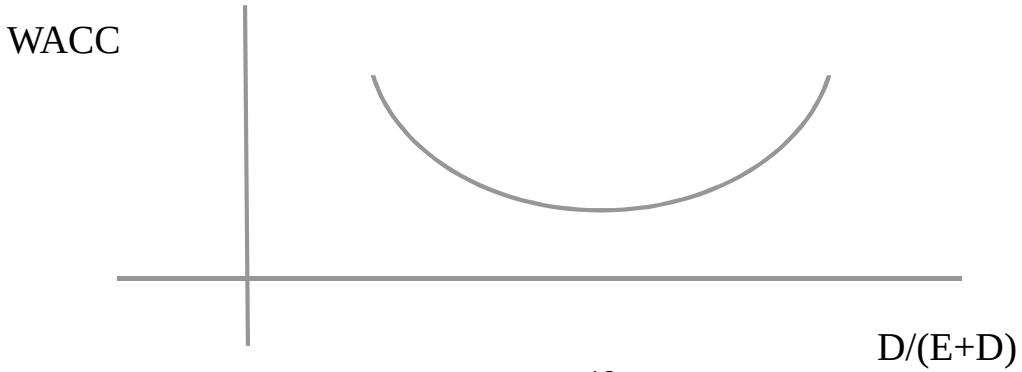
- Cost of equity
  - depends upon riskiness of the stock
  - will be affected by level of interest rates
  - Cost of equity = riskless rate + beta * risk premium
- Cost of debt
  - depends upon default risk of the firm
  - will be affected by level of interest rates
  - tax advantage due to tax-deductibility
- Cost of debt = Borrowing rate (1 - tax rate)

- Debt + equity = Cost of capital = Weighted average of cost of equity and

- Cost of capital = kd [D/(D+E)] + ke [E/(D+E)]

Cost of capital analysis

•The first step in reducing the cost of capital is to change the mix of debt and equity used to finance the firm.
•Debt is always cheaper than equity, partly because lenders bear less risk and partly because of the tax advantage associated with debt
•However increasing debt increases the risk (and the cost) of both debt (by augmenting the probability of bankruptcy) and equity (by making earnings to equity investors more volatile)
•The net effect will determine whether the cost of capital will increase or decrease if the firm takes on more or less debt



A bit more complex effective cost of capital analysis

- Asset-backed securities: off-balance sheet financing creates effective lower debt cost
- Convertible bonds: option embedded in bond create lower debt cost
- Index-linked Eurobonds with derivative hedges the linkage
- Swapped Eurobonds: nominal rate +/- swap cost