



Vietnamese-German University

# Investments

## Finance 2 - BFIN

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Lecture 1

## ❖ Intro

- Content & Objectives
- Course Materials

## ❖ Rules of the Game

- Expectations & Norms
- Attendance & Participation
- Grading

## ❖ Lecture

- The Investment Environment; Asset Classes and Financial Instruments

## ❖ Course Content

- The Investment Environment
  - ✓ Asset Classes and Financial Instruments
- Fixed-Income Securities
- Portfolio Theory and Practice
- Asset Pricing Models
  - ✓ Index Models and The Capital Asset Pricing Model
  - ✓ Arbitrage Pricing Theory
  - ✓ Multifactor Models of Risk and Return
- The Efficient Market Hypothesis
  - ✓ Behavioral Finance
  - ✓ Empirical Evidence on Security Returns
- Derivatives
  - ✓ Futures, Forwards, and Swaps
  - ✓ Option Markets and Option Valuation

## ❖ Objectives

- The analytical tools and theoretical concepts necessary for
  - ✓ Making good investment decisions,
  - ✓ Understanding the paradigms by which financial securities are valued.
- The students should
  - ✓ acquire basic professional and methodological skills in the field of financial economics.
  - ✓ be able to name and explain the characteristics and modes of operation of the most important financial instruments and the respective financial markets.
  - ✓ possess the knowledge to present the most important models for the analysis of financial instruments, their assumptions as well as their limitations and apply the models to practical examples.
  - ✓ be capable of presenting, interpreting and applying simple risk management strategies for securities portfolios.
- In this context,
  - ✓ The lectures will explore issues closely related to asset pricing, asset allocation, and risk management.

## ❖ Course Materials

### ➤ Books

- ✓ **BKM**, Bodie, Z., A. Kane and A. Marcus , Investments, 2021, 12th edition, International Student Edition, McGraw-Hill.

### ➤ Lecture slides

- ✓ Before each class (without exercises)
- ✓ Updated after class (with exercises, if any).

# Rules

## ❖ Expectations & Norms

- Be prepared for the class
  - ✓ Assigned readings
  - ✓ Previous class(es)
- Avoid scholastic offenses and adhere to the student conduct policies

## ❖ Attendance

- Lectures will not be based solely on the book.
- Attendance and active class participation are important for achieving the learning goals.
- Students must comply with the University's attendance policy to earn credits for this course.
- **Remember!:** "Late arrivals to class are disruptive."

## ❖ Participation

- We will have interactive classes and you are expected to contribute.
- You cannot contribute if you don't attend and participate.
- Cold calls should be expected.

## ❖ Grading

### ➤ Lecturer's approach

- ✓ Grading is just a tool for measuring your relative performance.
- ✓ Do not act grade oriented.
- ✓ Our main goal is to learn collectively.

### ➤ Assessment based on portfolio approach

- ✓ Class contribution
- ✓ Individual Assignment
- ✓ Group Assignment
- ✓ Final exam

Questions?

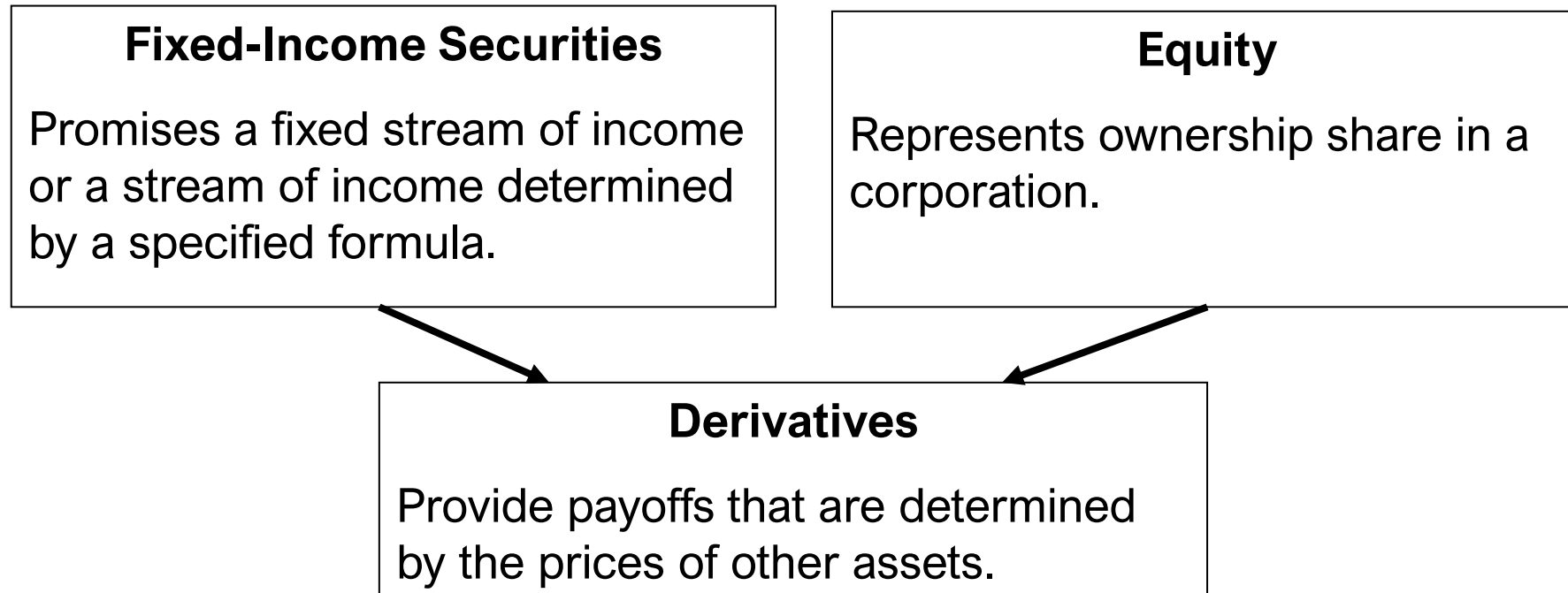


# The Investment Environment

## ❖ Real Assets vs. Financial Assets

- Real Assets
  - ✓ Have productive capacity
- Financial Assets
  - ✓ Claims on real assets
  - ✓ Do not contribute directly to productive capacity

### Financial Assets



# The Investment Environment

## ❖ Financial Markets and the Economy

### ➤ The Informational Role

- ✓ Stock prices reflect “collective” assessment of a firm’s current performance and future prospects.

### ➤ Consumption Timing

- ✓ Use securities to store wealth and transfer consumption to the future
  - Store of wealth in financial assets
  - Buying/selling in different life periods

### ➤ Allocation of Risk

- ✓ Allows investors to select securities consistent with their risk preferences
  - From high to low (shares/bonds) to different categories of investors

### ➤ Corporate Governance

- ✓ Monitoring by large investors and security analysts
- ✓ Takeover threat

# The Investment Environment

## ❖ Financial Markets and the Economy

- Capital markets recognize and drive funds to the best ideas and enterprises.
- Markets facilitate the transfer of funds from those who seek a return on their assets to those who need capital to expand.
- Capital, raised through equity and debt, can be used to
  - ✓ grow businesses,
  - ✓ finance investments in new property, equipment, technology,
  - ✓ fund infrastructure projects.
- Individuals and businesses can invest in securities to generate wealth.

# The Investment Environment

## ❖ The Investment Process

### ➤ Asset allocation

- ✓ Choice among broad asset classes (stocks; bonds; commodities; real estate; etc.)

### ➤ Security selection

- ✓ Choice of securities within each asset class

### ➤ Portfolio: Collection of investment assets

#### ✓ “Top-down” approach

- Asset allocation followed by security analysis

#### ✓ “Bottom-up” approach

- Investment based solely on the price-attractiveness
- Not much interest in asset allocation

# The Investment Environment

## ❖ Competitive Markets

### ➤ Risk-Return Trade-Off

- ✓ Higher-risk assets are priced to offer higher expected returns than lower-risk assets
- ✓ Expected returns are compensation for accepting the discomfort of higher risk.

### ➤ Efficient Markets

- ✓ Prices quickly adjust to all relevant information
- ✓ There should be neither underpriced nor overpriced securities

### ➤ Passive Management

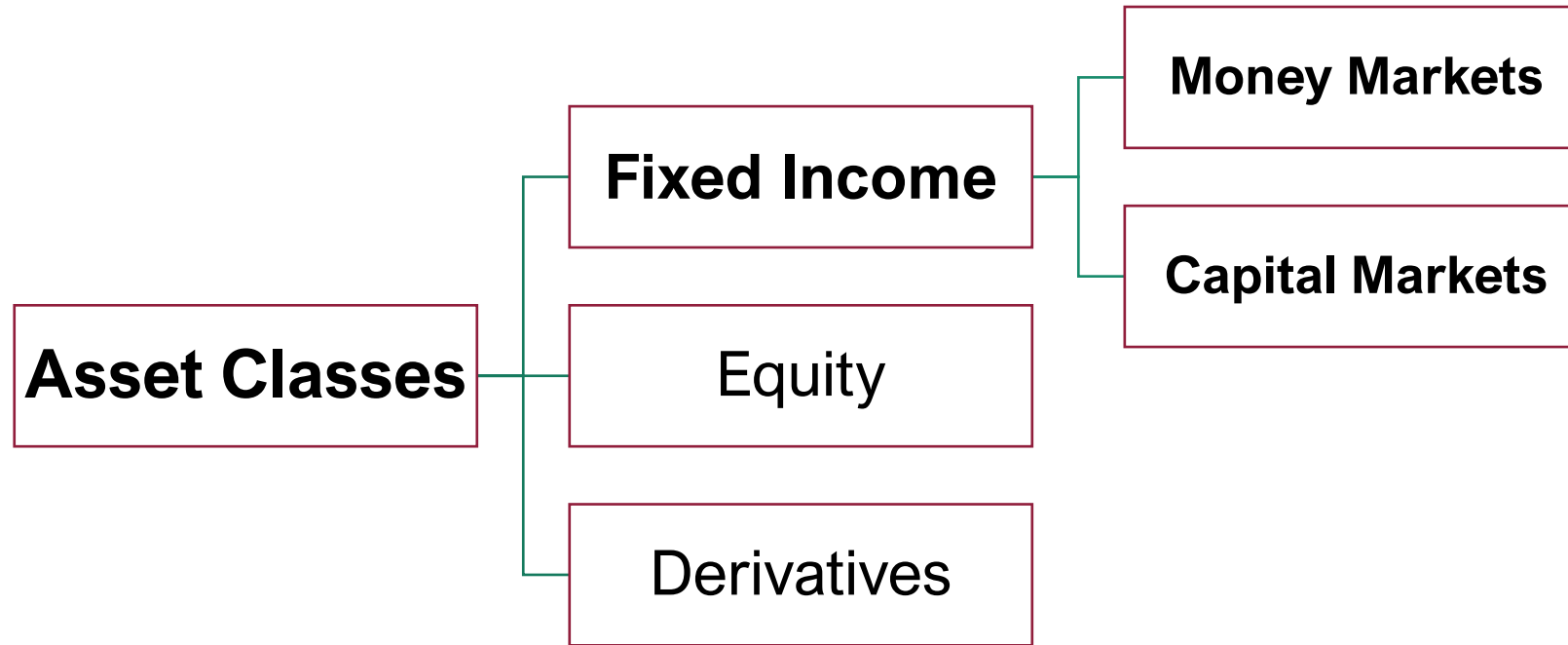
- ✓ Holding a highly diversified portfolio
- ✓ No attempt to find undervalued securities
- ✓ No attempt to time the market

### ➤ Active Management

- ✓ Finding mispriced securities
- ✓ Timing the market

# Asset Classes and Financial Instruments

## ❖ Fixed Income



- The Money Market
  - ✓ Short-term
  - ✓ Liquid
  - ✓ Low risk

- The Capital Market
  - ✓ Long-Term
  - ✓ Liquid
  - ✓ Low risk (but not as low as the Money Market)

# Asset Classes and Financial Instruments

## ❖ Fixed Income

### ➤ The Money Market

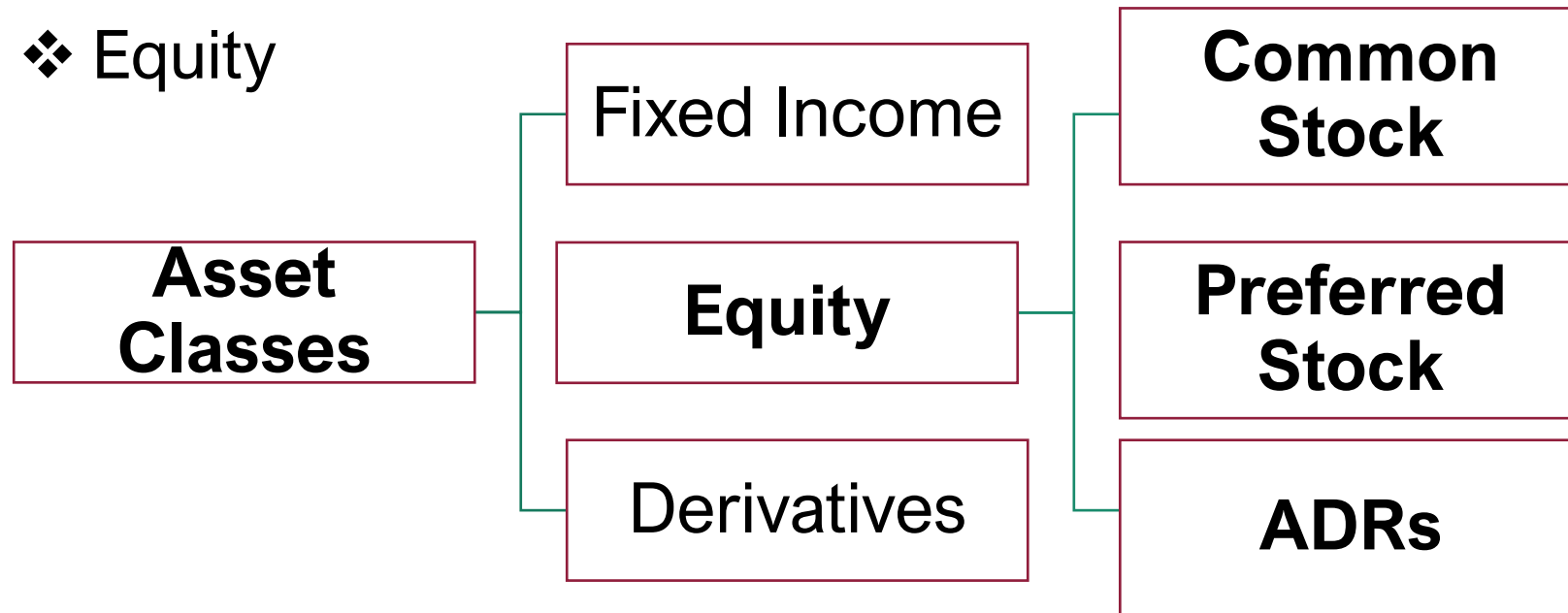
- ✓ Treasury Bills
- ✓ Certificates of Deposit
- ✓ Commercial Paper
- ✓ Eurodollars
- ✓ Repos and Reverses
- ✓ Federal Funds
- ✓ The LIBOR Market
- ✓ Money Market Funds

### ➤ The Capital Market

- ✓ Treasury Notes and Bonds
- ✓ Inflation-Protected Treasury Bonds
- ✓ Federal Agency Debt
- ✓ International Bonds
- ✓ Municipal Bonds
- ✓ Corporate Bonds
- ✓ Asset-Backed Securities
- ✓ Mortgage-Backed Securities

# Asset Classes and Financial Instruments

## ❖ Equity



- Common stock
  - ✓ Ownership
  - ✓ Residual claim
  - ✓ Limited liability

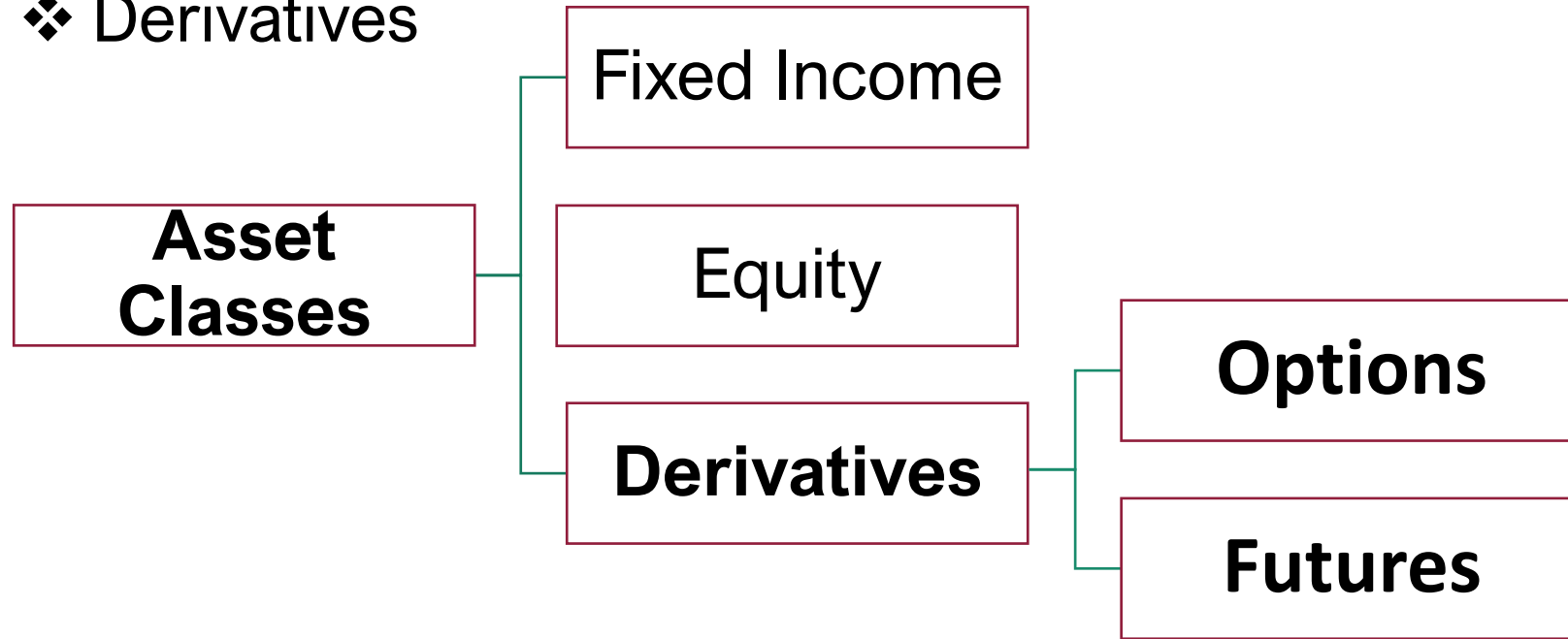
- Preferred stock:
  - ✓ Perpetuity (infinite-maturity bond)
  - ✓ Fixed dividends (Like a bond)
  - ✓ The firm retains discretion to make the dividend payments to the preferred stockholders
  - ✓ Priority over common
  - ✓ Tax treatment

- American Depositary Receipts (ADR)
  - Certificates traded in U.S. markets that represent ownership in shares of a foreign company
  - Makes it easier for foreign firms to satisfy U.S. security registration requirements



# Asset Classes and Financial Instruments

## ❖ Derivatives



- A derivative is a security that gets its value from the value of another asset, such as commodity prices, bond and stock prices, or market index values
  - ✓ Their values derive from the values of other assets.
  - ✓ Also called contingent claims because their payoffs are contingent on the value of other values.
- Options: Right to sell/buy
- Futures/Forwards: Obligation to deliver/receive in exchange for cash

# Asset Classes and Financial Instruments

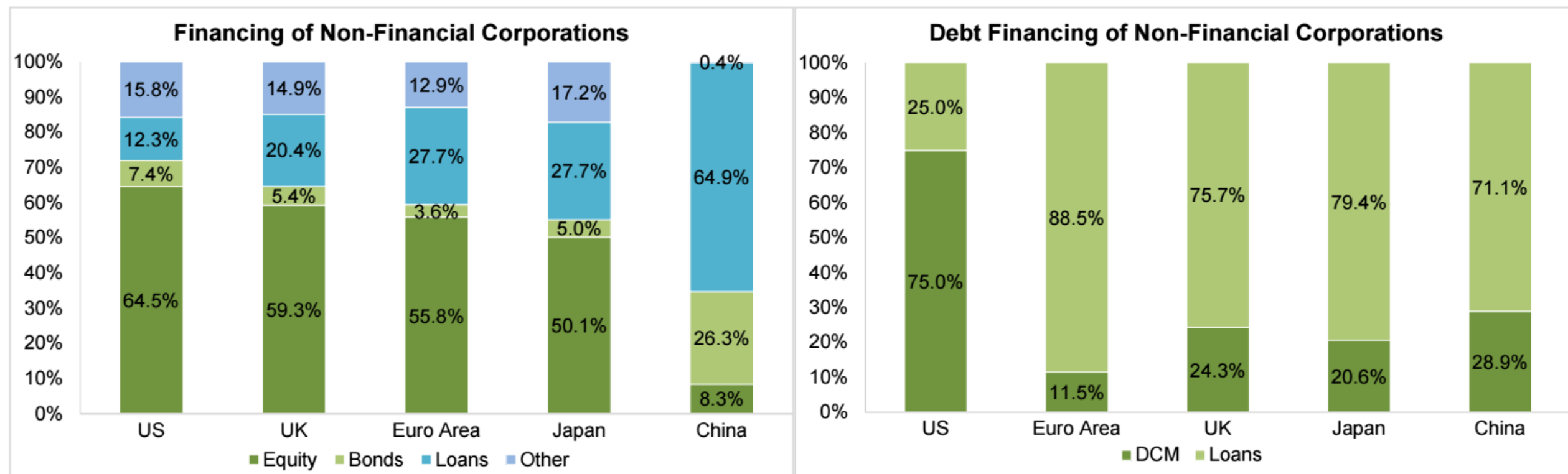
## ❖ Options

- A call option gives its holder the right to purchase an asset for a specified price, called the exercise or strike price, on or before a specified expiration date.
- A put option gives its holder the right to sell an asset for a specified exercise price on or before a specified expiration date.
- Options may or may not be exercised.

## ❖ Futures/Forwards

- A futures contract calls for delivery of an asset (or, in some cases, its cash value) at a specified delivery or maturity date for an agreed-upon price, called the futures price, to be paid at contract maturity.
  - ✓ The long position is held by the party who commits to purchasing the asset on the delivery date.
  - ✓ The party who takes the short position commits to delivering the asset at contract maturity.

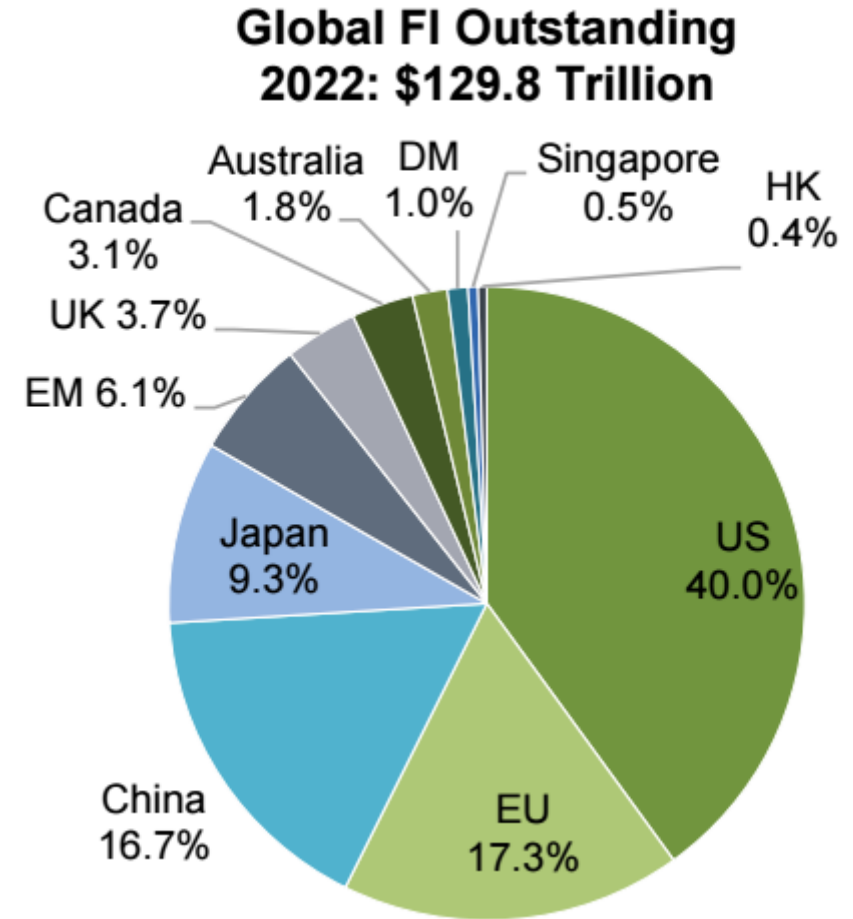
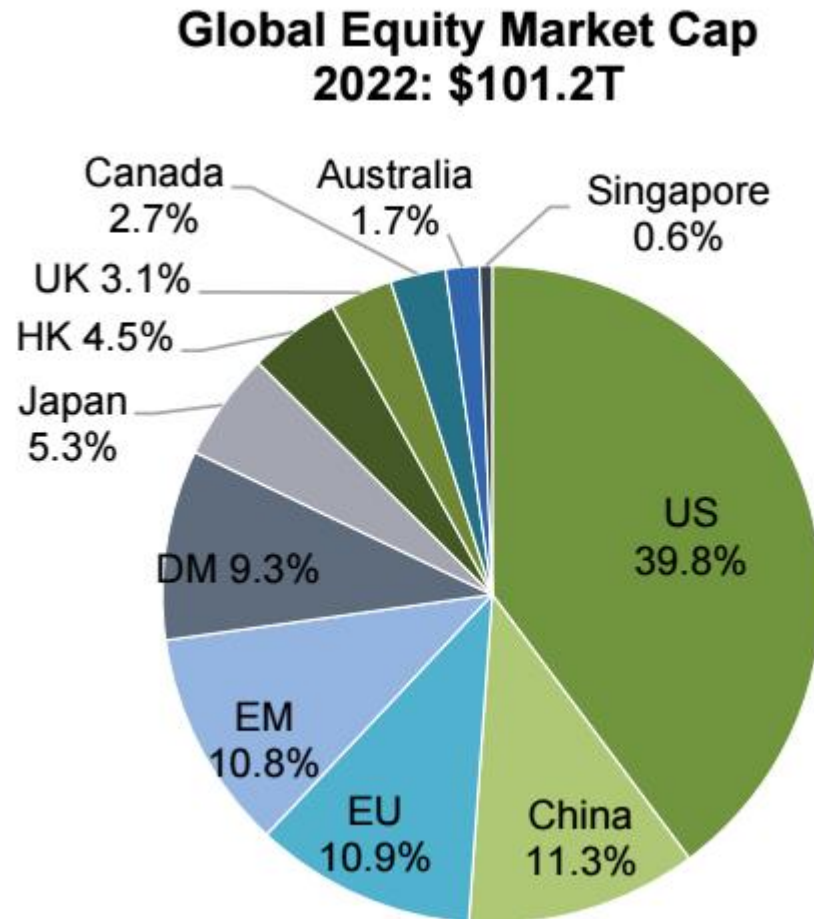
# Asset Classes and Financial Instruments



Source: [2023 SIFMA Capital Markets Factbook](#)

Note: As of 2022, China 2020; Economic activity defined as financing of non-financial corporations. Euro Area = 19 EU-member states using the Euro. Other financing, ex-China = insurance reserves, trade credits and trade advances; other financing, China = bankers' acceptances, FDI, other foreign A/D, misc. and errors; DCM = debt capital markets, corporate bonds only.

# Asset Classes and Financial Instruments



Source: [2023 SIFMA Capital Markets Factbook](#)

Note: DM = developed markets, EM = emerging markets, DM/EM exclude countries listed in the chart.

# Asset Classes and Financial Instruments

**Global Derivatives Outstanding: \$ Billions**

	Exchange Traded	Over-the-Counter	Total
2008	52,963.0	598,141.0	651,103.9
2009	67,416.4	603,893.3	671,309.7
2010	62,309.9	601,042.8	663,352.7
2011	53,692.9	647,807.0	701,499.9
2012	49,033.2	635,681.0	684,714.1
2013	57,459.4	710,092.3	767,551.7
2014	57,594.2	627,786.0	685,380.2
2015	63,485.8	492,536.2	556,022.0
2016	67,244.9	482,421.1	549,665.9
2017	80,984.1	531,911.1	612,895.1
2018	94,849.7	544,383.3	639,233.0
2019	95,812.8	558,512.7	654,325.5
2020	65,949.7	582,055.3	648,005.1
2021	80,091.8	598,416.0	678,507.7
2022	80,628.2	617,958.9	698,587.1

Average	68,634.4	588,842.5	657,476.9
Y/Y Change	0.7%	3.3%	3.0%
5Y CAGR	-3.2%	2.6%	1.8%
10Y CAGR	3.4%	-1.4%	-0.9%

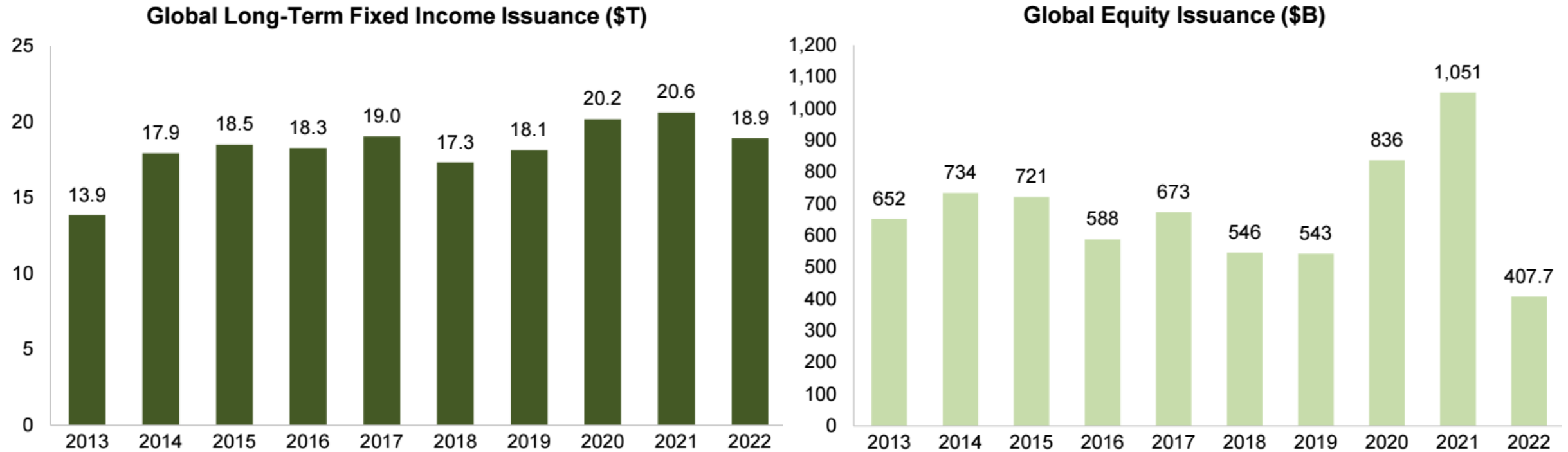
**Global Derivatives Outstanding: % Change Y/Y**

	Exchange Traded	Over-the-Counter	Total
2009	27.3%	1.0%	3.1%
2010	-7.6%	-0.5%	-1.2%
2011	-13.8%	7.8%	5.8%
2012	-8.7%	-1.9%	-2.4%
2013	17.2%	11.7%	12.1%
2014	0.2%	-11.6%	-10.7%
2015	10.2%	-21.5%	-18.9%
2016	5.9%	-2.1%	-1.1%
2017	20.4%	10.3%	11.5%
2018	17.1%	2.3%	4.3%
2019	1.0%	2.6%	2.4%
2020	-31.2%	4.2%	-1.0%
2021	21.4%	2.8%	4.7%
2022	0.7%	3.3%	3.0%

Source: [2023 SIFMA Capital Markets Factbook](#)

Note: Includes interest rates, foreign exchange, equity linked, commodities, credit, and credit default swaps.

# Asset Classes and Financial Instruments



Source: [2023 SIFMA Capital Markets Factbook](#)

Note: Long-term includes securities with maturity >13 months; global equity issuance includes non-convertible IPOs and follow-on equity deals, excludes preferred shares, rights issues, closed-end funds, business development companies, and special purpose acquisition companies .

# Asset Classes and Financial Instruments

## International Security Offerings by All Issuers: \$ Billions

	Straight Debt	Convertible Debt	Total Debt	Common Stock	Preferred Stock	Total Equity	Total
2008	1,804.3	53.6	1,858.0	272.3	10.7	283.0	2,140.9
2009	2,568.0	55.5	2,623.6	396.1	13.7	409.8	3,033.4
2010	2,335.5	51.9	2,387.4	365.6	6.6	372.2	2,759.7
2011	2,263.9	36.4	2,300.3	235.1	10.5	245.7	2,546.0
2012	2,695.1	44.0	2,739.0	236.2	15.6	251.7	2,990.8
2013	2,736.0	54.8	2,790.8	307.2	8.3	315.5	3,106.3
2014	3,082.9	56.1	3,139.0	351.2	15.6	366.8	3,505.8
2015	2,534.8	38.4	2,573.2	393.6	14.4	408.0	2,981.2
2016	2,640.8	42.3	2,683.1	225.5	7.3	232.8	2,915.9
2017	3,164.6	35.6	3,200.2	348.6	24.1	372.6	3,572.8
2018	2,729.9	31.8	2,761.7	293.2	8.2	301.4	3,063.1
2019	3,025.4	70.3	3,095.7	286.9	6.2	293.1	3,388.8
2020	3,571.2	131.5	3,702.7	390.4	6.3	396.7	4,099.5
2021	3,712.4	137.1	3,849.6	525.1	10.5	535.6	4,385.2
2022	2,571.3	51.8	2,623.1	194.5	2.6	197.2	2,820.2

Source: [2023 SIFMA Capital Markets Factbook](#)

Note: Long-term includes securities with maturity >13 months; global equity issuance includes non-convertible IPOs and follow-on equity deals, excludes preferred shares, rights issues, closed-end funds, business development companies, and special purpose acquisition companies .



# Asset Classes and Financial Instruments

**Major Global Stock Market Indexes: Local Currency Price**

	US: S&P 500	Canada: S&P/TSX	France: CAC 40	Germany: DAX	Hong Kong: Hang Seng	Japan: Nikkei 225	UK: FTSE 100
2008	903.25	8,987.70	3,217.97	4,810.20	14,387.48	8,859.56	4,434.17
2009	1,115.10	11,746.11	3,936.33	5,957.43	21,872.50	10,546.44	5,412.88
2010	1,257.64	13,443.22	3,804.78	6,914.19	23,035.45	10,228.92	5,899.94
2011	1,257.61	11,955.09	3,159.81	5,898.35	18,434.39	8,455.35	5,572.28
2012	1,426.19	12,433.53	3,641.07	7,612.39	22,656.92	10,395.18	5,897.81
2013	1,848.36	13,621.55	4,295.95	9,552.16	23,306.39	16,291.31	6,749.09
2014	2,058.90	14,632.44	4,272.75	9,805.55	23,605.04	17,450.77	6,566.09
2015	2,043.94	13,009.95	4,637.06	10,743.01	21,914.40	19,033.71	6,242.32
2016	2,238.83	15,287.59	4,862.31	11,481.06	22,000.56	19,114.37	7,142.83
2017	2,673.61	16,209.13	5,312.56	12,917.64	29,919.15	22,764.94	7,687.77
2018	2,506.85	14,322.86	4,730.69	10,558.96	25,845.70	20,014.77	6,728.13
2019	3,230.78	17,063.43	5,978.06	13,249.01	28,189.75	23,656.62	7,542.44
2020	3,756.07	17,433.36	5,551.41	13,718.78	27,231.13	27,444.17	6,460.52
2021	4,766.18	21,222.84	7,153.03	15,884.86	23,397.67	28,791.71	7,384.54
2022	3,839.50	19,384.92	6,473.76	13,923.59	19,781.41	26,094.50	7,451.74
Average	2,328.19	14,716.91	4,735.17	10,201.81	23,038.53	17,942.82	6,478.17
Y/Y Change	-19.4%	-8.7%	-9.5%	-12.3%	-15.5%	-9.4%	0.9%
5Y CAGR	7.5%	3.6%	4.0%	1.5%	-7.9%	2.8%	-0.6%
10Y CAGR	10.4%	4.5%	5.9%	6.2%	-1.3%	9.6%	2.4%

Source: [2023 SIFMA Capital Markets Factbook](#)



# Asset Classes and Financial Instruments

**Major Global Stock Market Indexes: % Change Y/Y**

	US: S&P 500	Canada: S&P/TSX	France: CAC 40	Germany: DAX	Hong Kong: Hang Seng	Japan: Nikkei 225	UK: FTSE 100
2009	23.5%	30.7%	22.3%	23.8%	52.0%	19.0%	22.1%
2010	12.8%	14.4%	-3.3%	16.1%	5.3%	-3.0%	9.0%
2011	0.0%	-11.1%	-17.0%	-14.7%	-20.0%	-17.3%	-5.6%
2012	13.4%	4.0%	15.2%	29.1%	22.9%	22.9%	5.8%
2013	29.6%	9.6%	18.0%	25.5%	2.9%	56.7%	14.4%
2014	11.4%	7.4%	-0.5%	2.7%	1.3%	7.1%	-2.7%
2015	-0.7%	-11.1%	8.5%	9.6%	-7.2%	9.1%	-4.9%
2016	9.5%	17.5%	4.9%	6.9%	0.4%	0.4%	14.4%
2017	19.4%	6.0%	9.3%	12.5%	36.0%	19.1%	7.6%
2018	-6.2%	-11.6%	-11.0%	-18.3%	-13.6%	-12.1%	-12.5%
2019	28.9%	19.1%	26.4%	25.5%	9.1%	18.2%	12.1%
2020	16.3%	2.2%	-7.1%	3.5%	-3.4%	16.0%	-14.3%
2021	26.9%	21.7%	28.9%	15.8%	-14.1%	4.9%	14.3%
2022	-19.4%	-8.7%	-9.5%	-12.3%	-15.5%	-9.4%	0.9%

Source: [2023 SIFMA Capital Markets Factbook](#)

# Asset Classes and Financial Instruments

- ❖ Which of the following correctly describes a repurchase agreement?
  - a. The sale of a security with a commitment to repurchase the same security at a specified future date and a designated price.
  - b. The sale of a security with a commitment to repurchase the same security at a future date left unspecified, at a designated price.
  - c. The purchase of a security with a commitment to purchase more of the same security at a specified future date.
- ❖ What would you expect to happen to the spread between yields on commercial paper and Treasury bills if the economy were to enter a steep recession?
- ❖ Assuming that all other relevant features of the stocks and options are identical, which security should sell at a greater price?
  - A 10-year Treasury bond with a 4% coupon rate versus a 10-year T-bond with a 5% coupon.
  - A 3-month expiration call option with an exercise price of \$40 versus a 3-month call on the same stock with an exercise price of \$35.
  - A put option on a stock selling at \$50 or a put option on another stock selling at \$60.

# Asset Classes and Financial Instruments

- ❖ Why do call options with exercise prices greater than the price of the underlying stock sell for positive prices?
- ❖ Both a call and a put currently are traded on stock XYZ; both have strike prices of \$50 and expirations of 6 months. What will be the profit to an investor who buys the call for \$4 in the following scenarios for stock prices in 6 months? What will be the profit in each scenario to an investor who buys the put for \$6?
  - a. \$40
  - b. \$45
  - c. \$50
  - d. \$55
  - e. \$60
- ❖ What is the difference between a put option and a short position in a futures contract?
- ❖ What is the difference between a call option and a long position in a futures contract?

# Asset Classes and Financial Instruments

❖ What are the key differences between common stock, preferred stock, and corporate bonds?

	Corp. Bonds	Preferred Stock	Common Stock
Voting Rights (Typically)			Yes
Contractual Obligation	Yes		
Perpetual Payments		Yes	Yes
Accumulated Dividends		Yes	
Fixed Payments (Typically)	Yes	Yes	
Payment Preference	First	Second	Third

# Asset Classes and Financial Instruments

- ❖ Lanni Products is a start-up computer software development firm. It currently owns computer equipment worth \$30,000 and has cash on hand of \$20,000 contributed by Lanni's owners. For each of the following transactions, identify the real and/or financial assets that trade hands. Are any financial assets created or destroyed in the transaction?
  - Lanni takes out a bank loan. It receives \$50,000 in cash and signs a note promising to pay back the loan over 3 years.
  - Lanni uses the cash from the bank plus \$20,000 of its own funds to finance the development of new financial planning software.
  - Lanni sells the software product to Microsoft, which will market it to the public under the Microsoft name. Lanni accepts payment in the form of 1,250 shares of Microsoft stock.
  - Lanni sells the shares of stock for \$100 per share and uses part of the proceeds to pay off the bank loan.
- ❖ The average rate of return on investments in large stocks has outpaced that on investments in Treasury bills by about 8% since 1926. Why, then, does anyone invest in Treasury bills?
- ❖ What are some advantages and disadvantages of top-down versus bottom-up investing styles?

# What is next?

## ❖ Fixed-Income Securities

➤ Readings: Ch. 14 & 15



Vietnamese-German University

# Investments

## Finance 2 - BFIN

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Dr. Omer CAYIRLI

Lecture 1