# Introduction to Finance

## 1.1 Financial Securities

* Debt: to this class belong, in general, those securities that are “secure”, in the sense of been risk-free, such as bonds, commercial notes and bank deposits.
* Equity: refers generally to a company’s stocks or share value
* Derivatives: in this class are securities whose value depend on the values of other, more basic underlying variables. Examples of derivatives are: futures and forward contracts, swaps, and options. A stock option, for example, is a contract whose value depends on the price of a stock at a certain date

### Bonds and the Continuous Compounding of Interest Rates

* Compounding the interest

==> monthly

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as n -> infinity

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* Payoff and profit of bonds. The payoff of any security is its value at maturity.

## 1.1.2 Stocks: Trade, Price and Indices

[market capitalization = (number of shares outstanding) × (price of share).]

* Market order: An order that is send to the market demanding for the trade on the security to be executed immediately at the current market price.
* Limit order: An order that is send to the market demanding for a given or better price at which to buy or sell the security.
* Stop orders: An order that is held by the broker and only send to the market when the price of the security reaches a specified amount (the stop price).
* Reading a stock quotes table
  + Ticker: the company’s id for the market (e.g. for General Electric Co. is GE).
  + Open: the price of the stock at the opening time of the market session
  + Close: the price of the stock at the current time, if the market is in session, or the last price traded when the market closes.
  + High: (or Max) is the maximum price reached by the stock between the Open and the Close price.
  + Low: (or Min) is the minimum price reached by the stock between the Open and the Close price.
  + Volume: is the number of shares traded between the times of Open and Close.
* -Adjusted Close: is the closing price adjusted to include any dividend payments plus any other corporate actions that affect the stock price (e.g. splits and rights offerings).
* Payoff and profit of stocks

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* Stock indices:A measure of the value of the market, or of a sector, is given by the stock indices
* rice weighted:only the price of each component stock is consider.
* Capitalization-weighted:onsiders the market capitalization of each stock composing the index; that is, the stock price times the number of shares outstanding.siders theof each stock composing the index; that is, the stock price times the number of shares outstanding.
* A price weighted index
* A capitalization weighted index
* Value Line Stock Index
* Comparing the performance of two or more stocks:. As mentioned before, a way that investors have to gauge the performance of their stock investments is to compare their price behavior with another reference stock’s price history, or usually with the history of the market index.

## 1.1.3 Options and Other Derivatives

* Options. An option is a contract that investors can buy for a fee in order to have the opportunity, but not the obligation, to trade an asset in an exchange market at a future date, and at a given price
* European: these options may only be exercised on expiration date.
* American: may be exercised on any trading day on or before the expiration date.
* Bermudan: may be exercised only on predetermined dates before expiration; so this option is somewhat between European and American.
* Asian: the payoff of these type of options is determined by the average of the price of the underlying asset during some period of time within the life of the option
* Barrier: these options may only be exercised if the price of the underlying asset passes a certain level (i.e. a barrier) during a certain period of time
* Reading an option quotes: The price of an option, also known as the premium, is given on a per share basis.
* Payoff and profit of options

call

put

call option profit:

* Forward and futures contracts:. Forward and futures contracts are derivatives that differ from options essentially in their terms of liability.
* Payoff and profit:. If K is the delivery price of the asset written in the contract and is the price at exercise date T , the payoff for the buyer in the contract on one unit of the asset is , while the payoff for the seller on one unit of the asset is .

## 1.1.4 Portfolios and Collective Investment

* Mutual funds and ETF:An alternative to personally manage your own portfolio is to put your money, alongside other investors money, in a collective investment vehicle managed by a professional company that does the selection of securities, monitors their performance, and the subsequently asset allocation of the portfolio.