Notation. Assumptions. Conventions.

Assumptions.

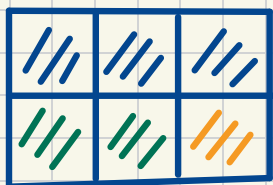- There is a single prevailing interest rate
  - the same for borrowing & lending
  - the same for everyone
  - deterministic and constant
- There is an infinite line of credit.
- Money is continuously valued.

  e.g.,
  $$100e^{0.02 \cdot 2} = 100e^{0.04}$$

Note: Borrowing & Lending via savings accounts, loans, bond are all RISKLESS INVESTMENT.

RISKLESS ASSET: governed by a fixed, deterministic continuously compounded, risk-free interest rate r

RISKY ASSET:

We assume that shares of stock are continuously valued, e.g.,

$$\frac{11}{17} \text{ share}$$

or

$$e^{-0.04} \text{ share}$$

Return < dividends / stock appreciation

Dividends < NO DIVIDENDS (This class!) / YES < DISCRETE / CONTINUOUS