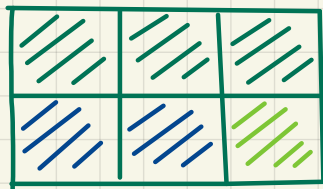


M339 Q : January 25th, 2021.

Riskless Asset: governed by a fixed, deterministic continuously compounded, risk-free interest rate; usually, denoted by r

Risky Asset:



Allow for **continuously valued** investment in the shares of stock, e.g., $\frac{11}{13}$ shares
or $e^{-0.05}$ shares

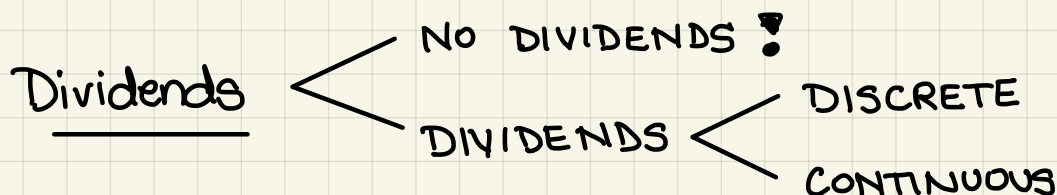
Google stock price of your favorite public company!
Shares of stock have prices that are **not deterministic** \Rightarrow this is, indeed, a risky asset.

Q: Why invest in the stocks?

Hope of higher returns.

Q: What is the structure of returns?

- dividend payments
- stock appreciation



Market Makers

{ Bid price ... the price the market maker is willing to pay for an asset
• Ask price ... the price they want to receive for an asset

Bid Prices < Ask Prices

⇒ Bid-Ask Spread

Brokers. Charge a commission per transaction

fixed amount proportional to the cashflow

Assume no bid-ask spread or transaction costs.