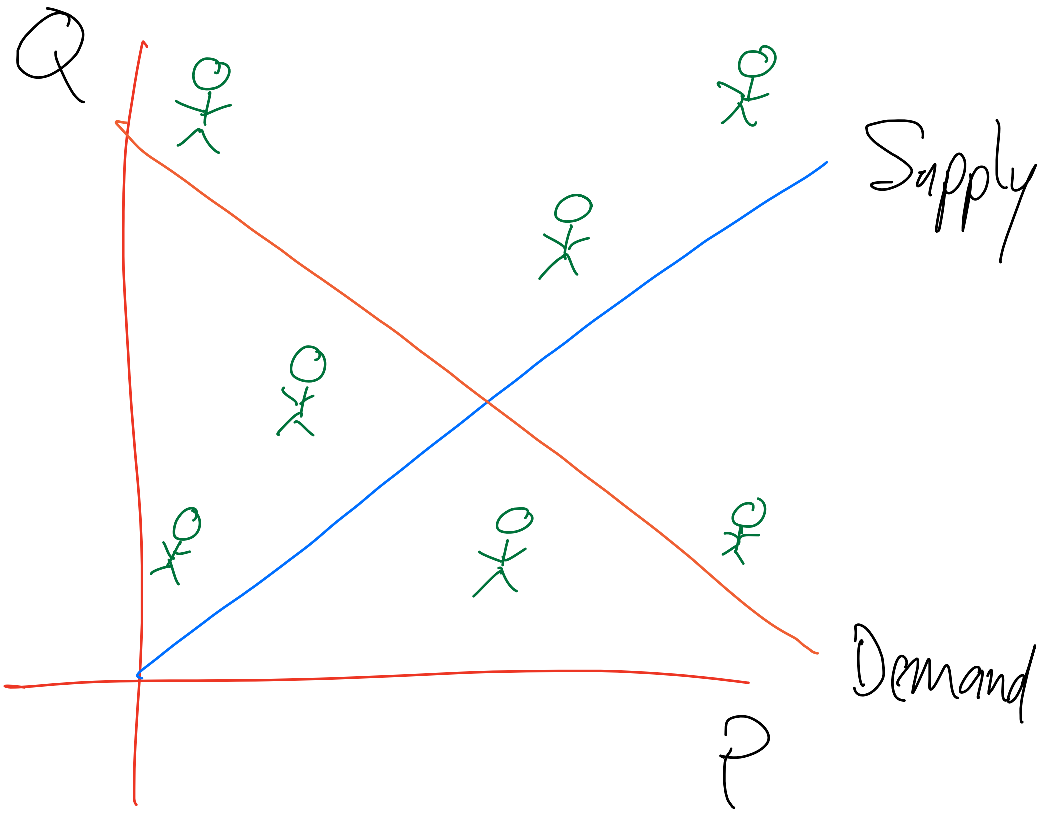
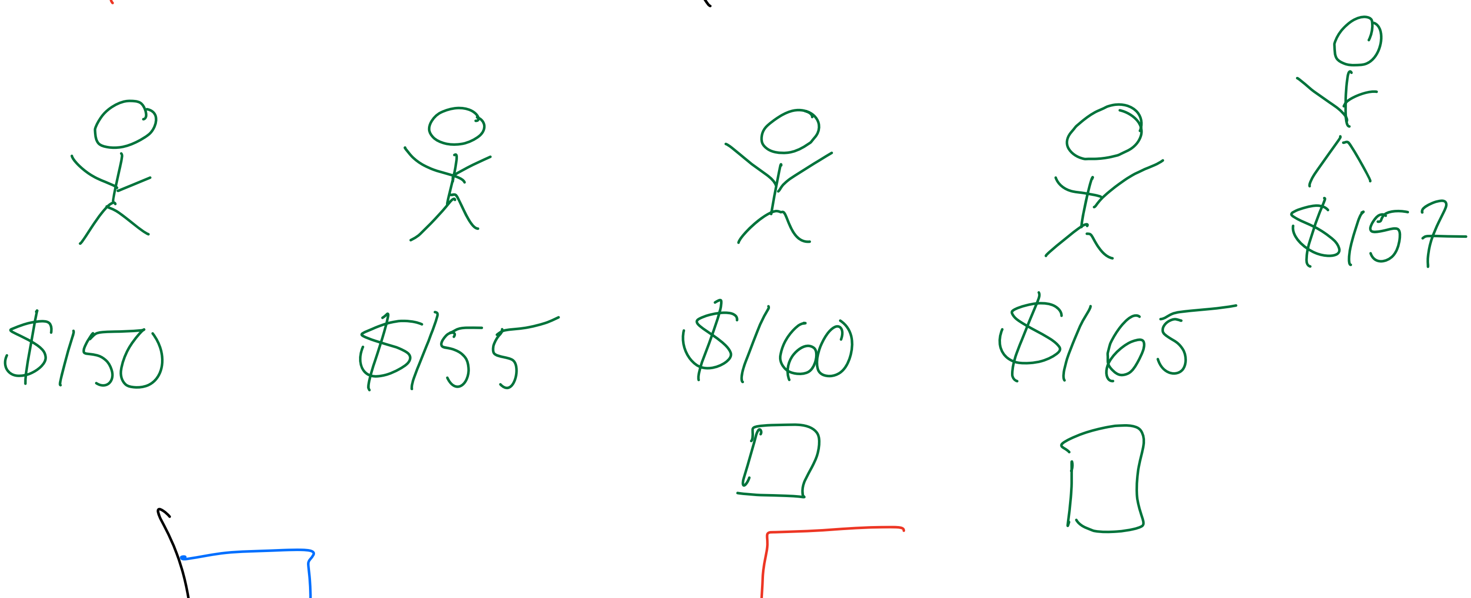
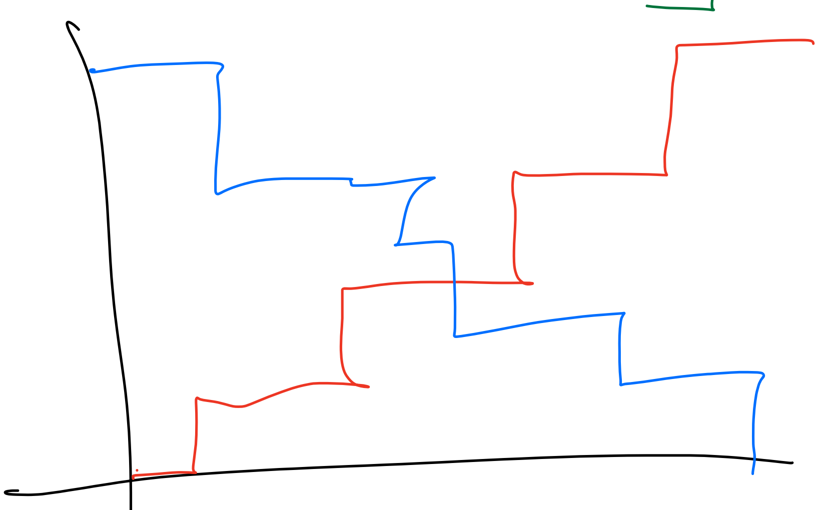
Oliver Wyman 9/25 12:00 PM
1010 Comm. Ave. Rm 420







Market Efficiency

How likely it is that the Market Price is equal to the true Value of the asset.

Interest?

- Accelerating / Postponing Consumption
- Price of borrowing money

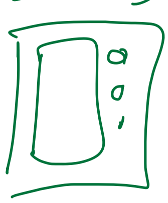
Why do interest rates change?

$$P = Fr\,a_{\overline{n}|} + Cv^n \qquad i$$

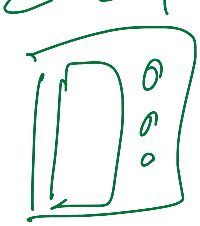
- Market Forces
- Inflation

EX

2023 — 2% inflation → — 2024



5% (nominal) interest



cash $100 — $105

price $100 $102

Buying Power: 1 TV 1.03 TV

real interest

So if inflation were expected to be 5%, what would the nominal rate of interest be to maintain a constant real rate?

$$1.03 = \frac{1+i}{1.05} \Rightarrow 1+i \approx 1.08$$

$$i \approx 8\%$$

Why do people (pay / receive) different interest rates?

- Bid - Ask Spread
- Risk of Default

EX My bank needs 5% return on loans to stay profitable. 1000 people ask for $1000 loans. The expected default rate is 10%. What interest rate must I charge?

Sol'n

loaning out $(\$1000)(1000) = \$1M$

need back $(1.05)(\$1{,}000{,}000) = 1{,}050{,}000$

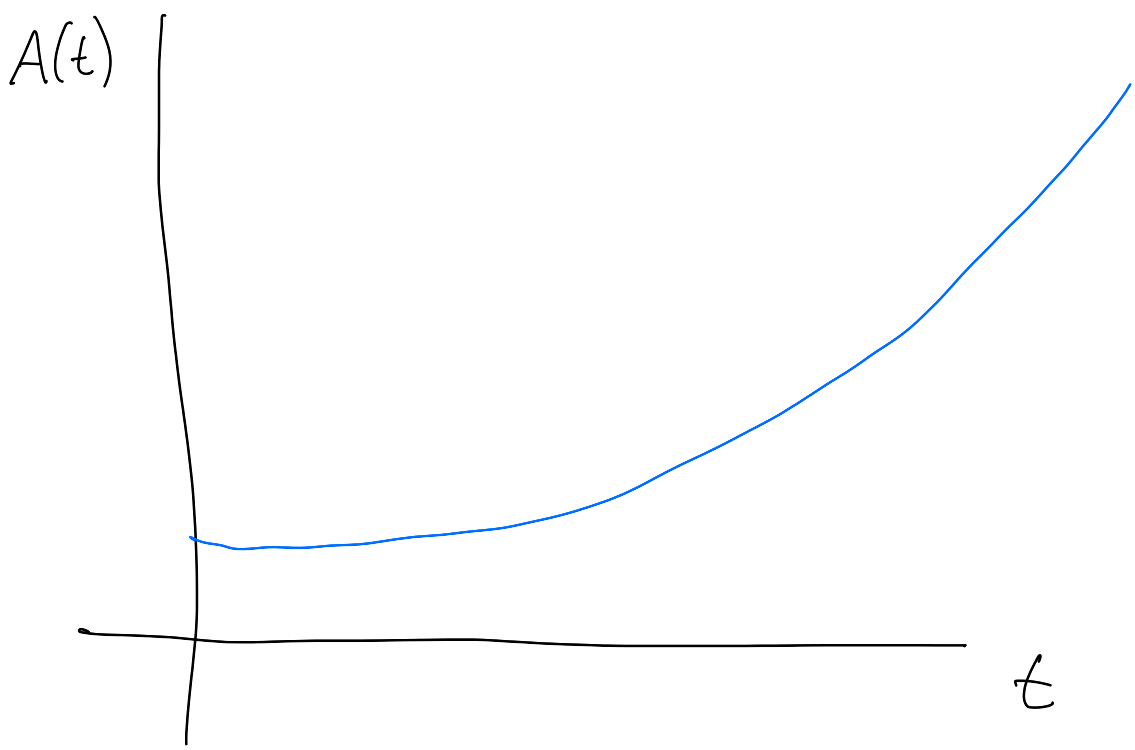
expecting only $(1-.1)(1000) = 900$

$$\frac{1{,}050{,}000}{900} = \$1{,}166.67$$

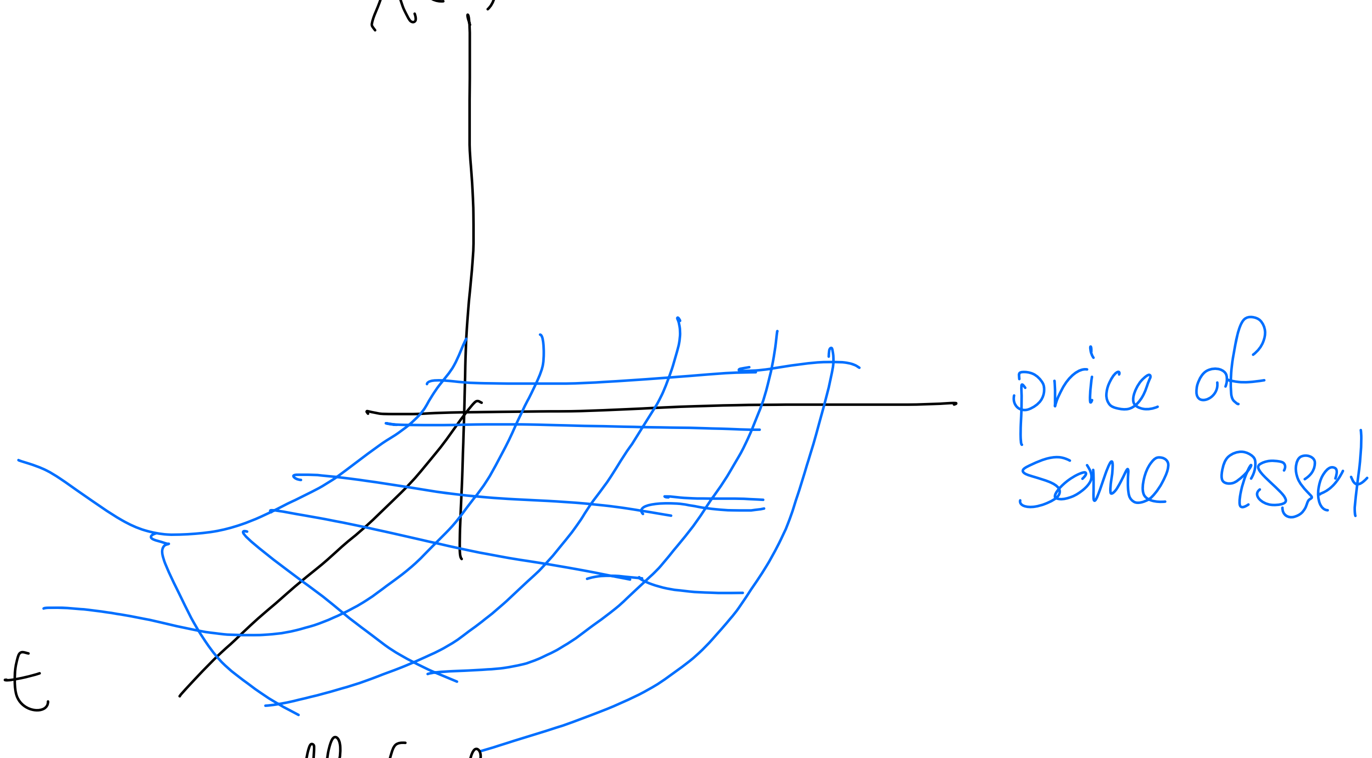
I must charge 16.7% interest.

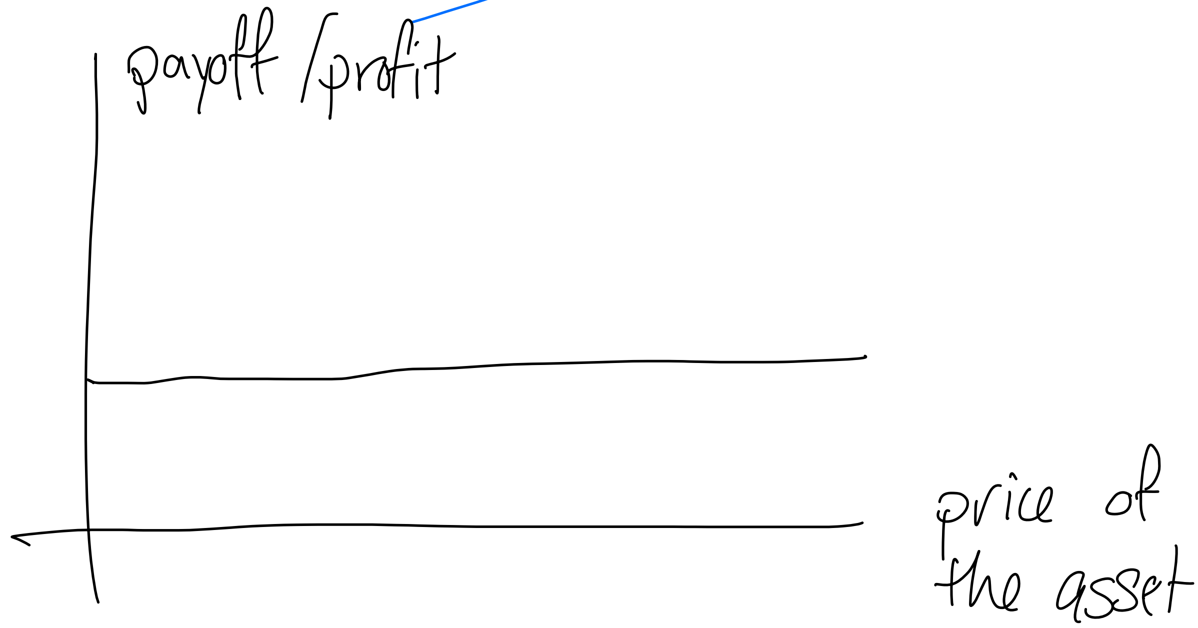
"Risk-Free" Rate

Credit Risk



$A(t)$

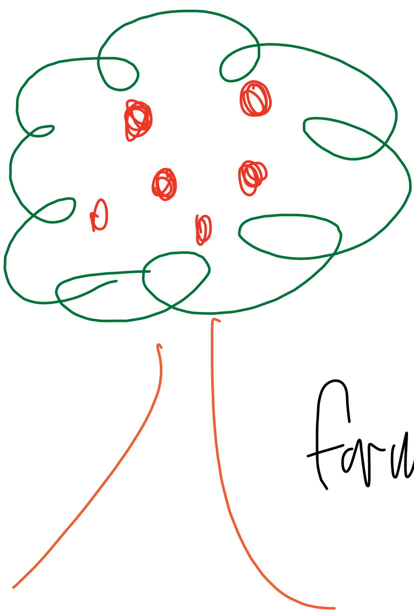




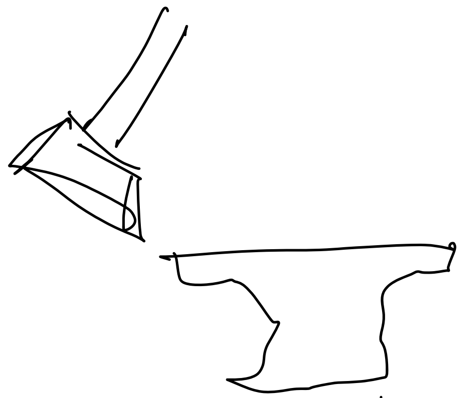
Derivative - A financial instrument whose price is derived from the price of some underlying asset

<u>How goods can transfer</u>

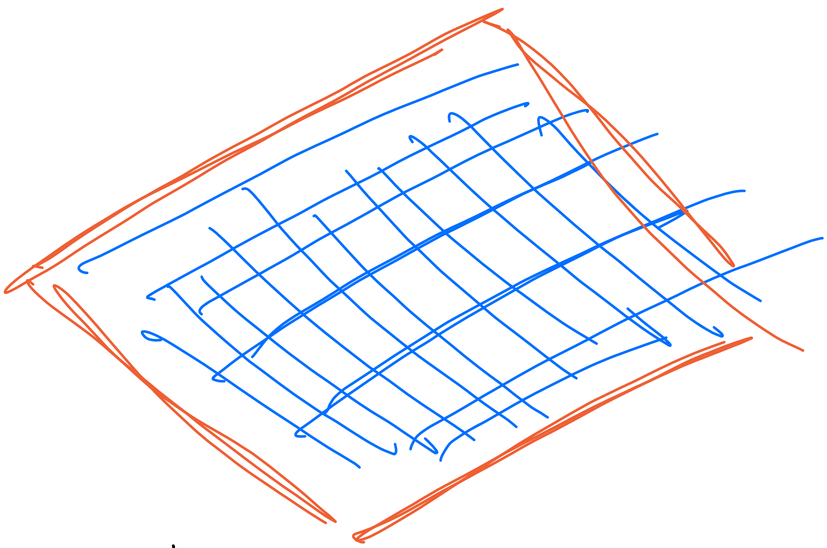
0) Theft
1) Immediate Barter
2) Time-Shifted Barter
   ↳ derivative = "Forward"
3) Trading Debts



farmer



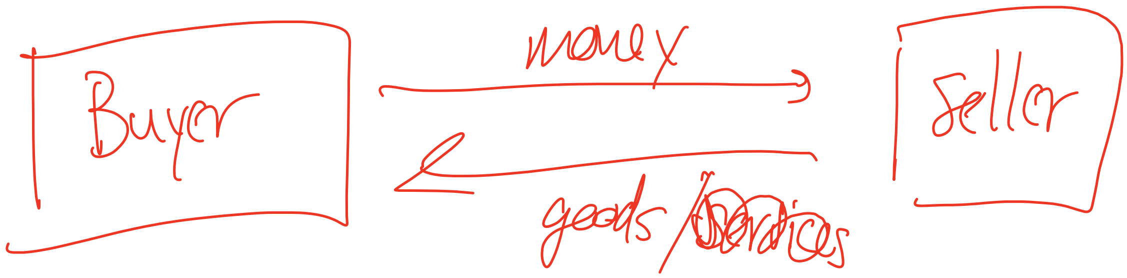
smith

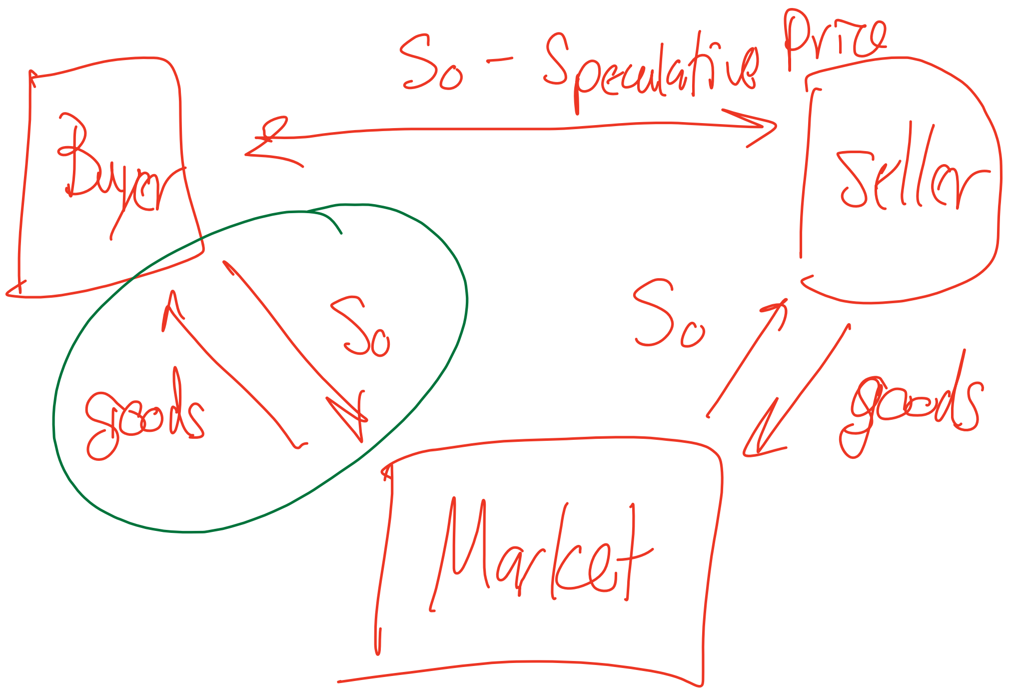


weaver

4) Money
5) Markets

6) Interest
7) Leveraged Investments
8) Naked Speculation
9) Financial Settlement





Buyer and Seller agree \$1000/oz gold
let's say S_0 = \$1200/oz.

10) Futures = Forwards plus
Standardization and
Risk Mitigation

11) Options (remove obligation)

Loosen requirements
time / location / cost / obligation
Abstracting a layer

How are Derivatives used now?

Mitigating Risk
Speculation
Arbitrage (Regulatory or other)

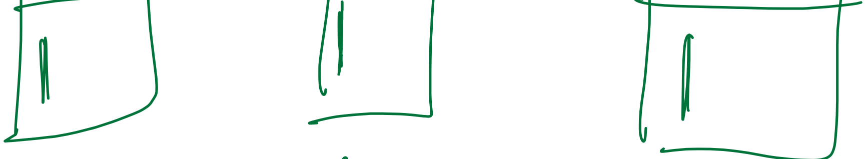
What is Insurance?

Insurance is a Put option.

Characteristics of Money

1) Store of Value
2) Unit of Account
3) Medium of Exchange

Deflation

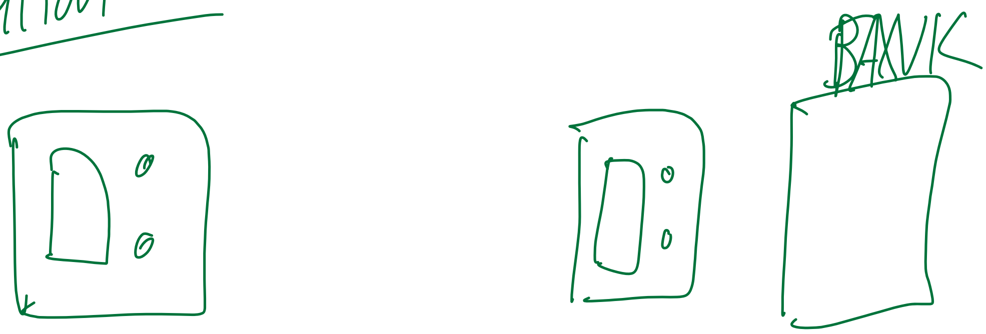


yesterday
$1000

today
$950

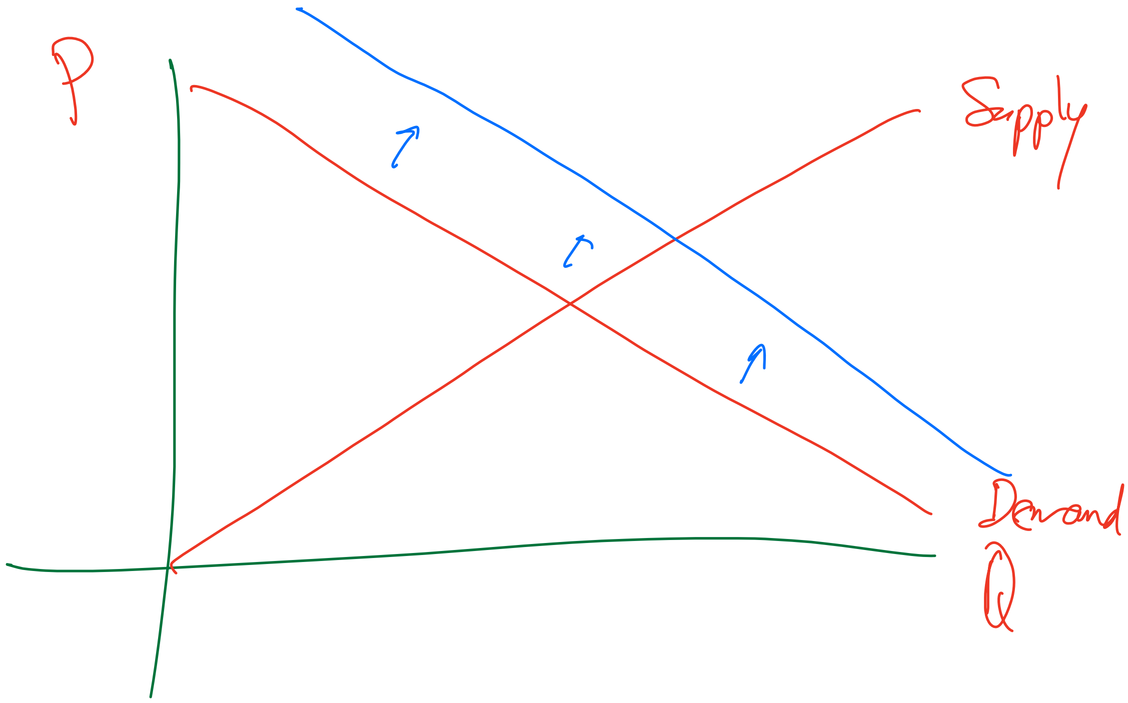
tomorrow

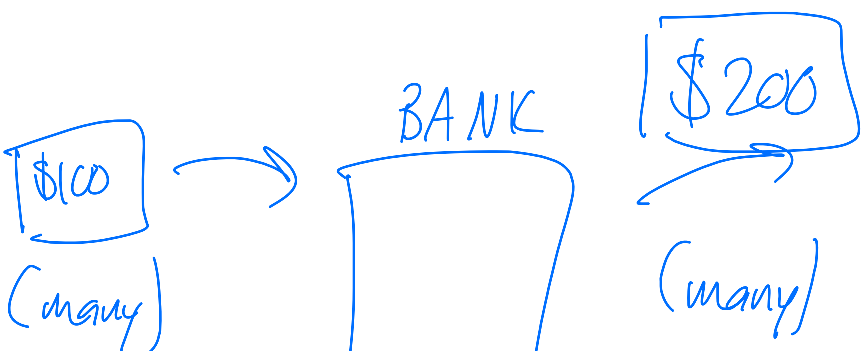
Inflation



$100 (2023)

$102 (2024)





(many)

(many)

Same Facti

Fractional Reserve

BANK #2