# 180.101 Elements of Macro - TA Section - Week 13

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Slides on `https://github.com/QingyuanFang/TA_ElementsOfMacro`

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# Aggregate Demand

**AD: total demand of all final goods/services in the economy**

$$AD(P) = C + I + G + NX$$

- **Q**: Why is individual demand curve downward sloping?
- **Q**: Why is aggregate demand curve downward sloping?
    1. Wealth effect
    2. Interest rate effect
    3. International trade effect

# Movements Along vs Shifts of the AD Curve

$$AD(P) = C + I + G + NX$$

**Consumers**

- Expected future income increase: Consumption smoothing $C \uparrow \Longrightarrow AD \rightarrow$
- Tax cut for households: Higher real disposable income $Y \uparrow \Longrightarrow C \uparrow \Longrightarrow AD \rightarrow$
- Higher MPC: Consumers want to consume more: $C \uparrow \Longrightarrow AD \rightarrow$
- Higher wealth of households: Consumers are richer: $C \uparrow \Longrightarrow AD \rightarrow$
- Lower interest rate: Easier to borrow: $C \uparrow \Longrightarrow AD \rightarrow$

# Movements Along vs Shifts of the AD Curve

$$AD(P) = C + I + G + NX$$

**Firms**

- Lower interest rate: Cheaper to borrow money: $I \uparrow \Longrightarrow AD \rightarrow$
- Investment tax subsidy increase: Cheaper to invest: $I \uparrow \Longrightarrow AD \rightarrow$
- Investment tax cut: Cheaper to invest: $I \uparrow \Longrightarrow AD \rightarrow$

**Government**

- Increase of spending: $G \uparrow \Longrightarrow AD \rightarrow$
- Fiscal transfers: Real disposable income increases: $Y \uparrow \Longrightarrow C \uparrow \Longrightarrow AD \rightarrow$

**Rest of the world**

- Weak global economy: Other countries want less of our goods: $EX \downarrow \Longrightarrow NX \downarrow \Longrightarrow AD \leftarrow$
- Exchange rate appreciation: Dollar gets relatively more valuable: $EX \downarrow$ AND $IM \uparrow$ $\Longrightarrow NX \downarrow \Longrightarrow AD \leftarrow$

## Short Run Aggregate Supply (SRAS)

**AS: total supply of final goods/services**

**Short Run**: wages and prices are not completely flexible (but not completely fixed either)

**Q**: Why is SRAS upward sloping

- Sticky input prices, Menu costs, Money illusion

**Q**: Shifts of SRAS

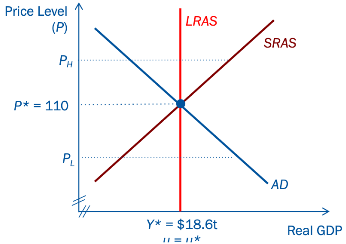
- Increase in minimum wage: Wages $\uparrow \Longrightarrow$ Labor costs $\uparrow \Longrightarrow SRAS \leftarrow$
- Workers increase bargaining power: Wages $\uparrow \Longrightarrow$ Labor costs $\uparrow \Longrightarrow SRAS \leftarrow$
- Expected future price level $\Longrightarrow$: Wages $\uparrow \Longrightarrow$ Labor costs $\uparrow \Rightarrow SRAS \leftarrow$
- Oil price increase: Production costs $\uparrow \Longrightarrow SRAS \leftarrow$
- A *temporary* boost in productivity: Production costs $\downarrow \Longrightarrow SRAS \rightarrow$

# Long Run Aggregate Supply (LRAS)

**Long Run**: wages and prices are completely flexible. Therefore, they are set such that we reach full-employment ($Y^*$). This also means economy is at natural rate of unemployment ($U^*$).

$$Y^* = E^* \cdot LP = (1 - U^*) \cdot LF \cdot LP$$

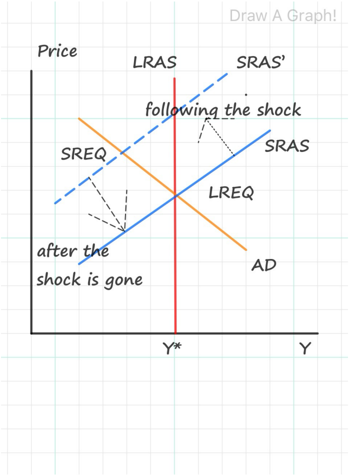
**Equilibrium**



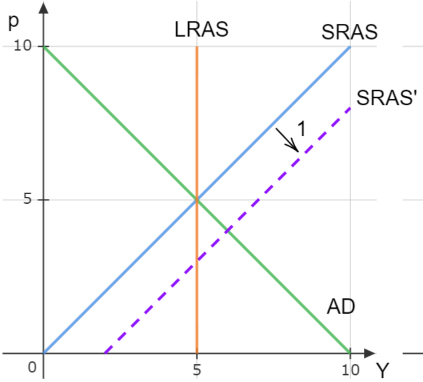
# Shocks

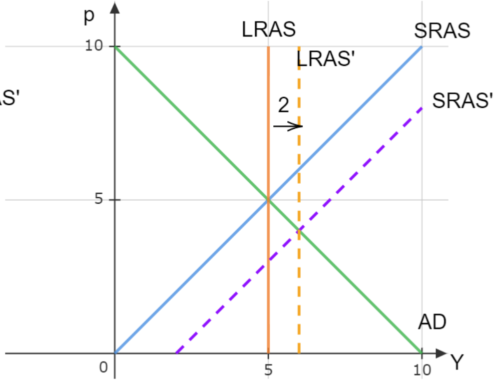
1. Is the shock temporary or permanent? If not clear, make assumptions!
2. Is it supply or demand shock?
3. Do we have a new long term equilibrium?
4. Are we already there?
   - If yes: We are done
   - If not: Which curve is shifting towards the new equilibrium?

# A temporary negative supply shock - increase in oil prices

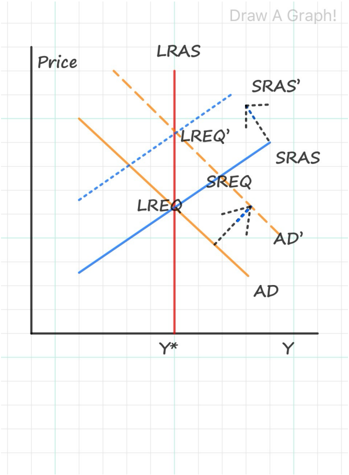


# A permanent positive supply shock - increase in education level



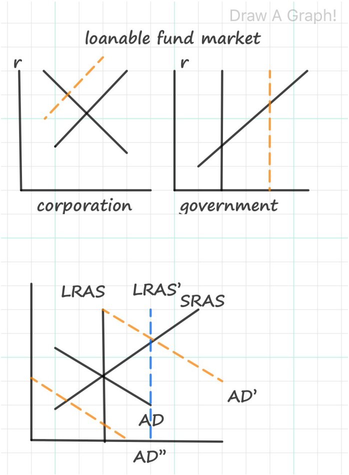
# A (permanent) positive demand shock - increase in MPC



# Connection with Other Models

- AD curve and AE model
- AD-AS and loanable funds model
    - Government building infrastructure
    - Fed monetary expansion
- From AD-AS to Phillips Curve

# Government building infrastructure



# From AD-AS to Phillips Curvce