Econ 2 - Lecture 12 - 5/12/25

Discussion Practice Quiz this week (week 7)

Week 8: Discussion Activity #4 = Gamification of Economics

↳ Economics Games Sign-in ⇒ Net ID + Passcode

↳ Passcode = 6-digit number (no comma)

↳ In Canvas ⇒ Same place you get your seat assignment

Prizes up for grabs ⇒ 🥑 = 🏆

Lecture Quiz 6 Released Wednesday, due Monday, May 19th

Coffee Hours Update: Today will be the last day to add name to waitlist → running out of time!
Additional hour added every week
→ Waitlisters will get an email with option to sign up this week
→ first 5 to sign up

Last Class: Using Y = AE to describe the economy

Today: Fiscal Policy ⇒ Deficits + Debts

Warm-up Questions

What is the level of Y when change in inventory = -600?

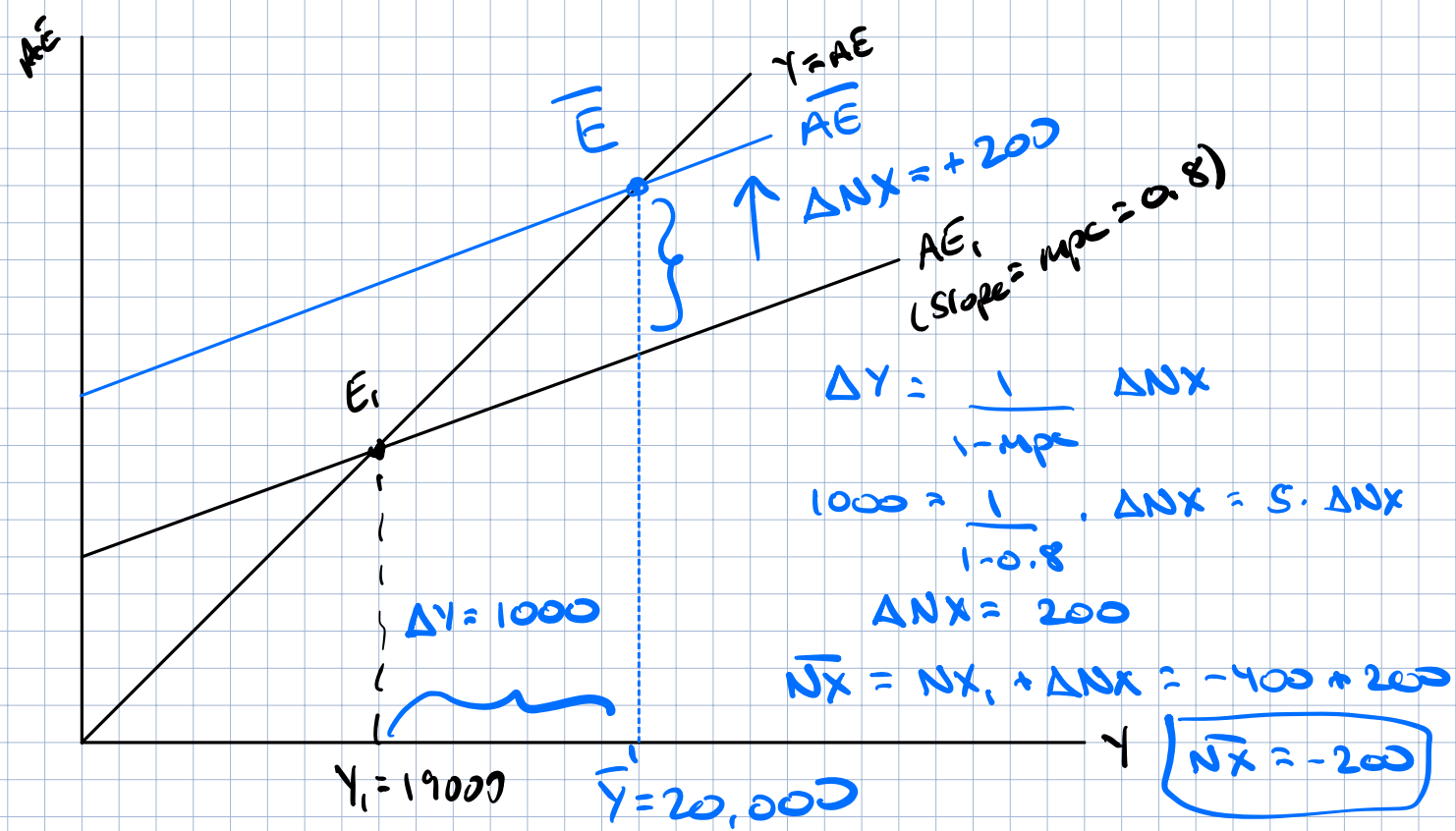
C + 840

Real GDP (Y)	Consumption (C)	Planned Investment (Ip)	Government Expenditures (G)	Net Exports (NX)	Aggregate Expenditures (AE)	Change in Inventories
15000	14960	1000	240	-400	15800	-800
16000	15760	1000	240	-400	16600	-600
17000	16560	1000	240	-400	17400	-400
18000	17360	1000	240	-400	18200	-200
19000	18160	1000	240	-400	19000	0
20000	18960	1000	240	-400	19800	+200

1000 → 800

MPC = 0.8

= 840



$$\Delta Y = \frac{1}{1-mpc}\,\Delta NX$$

$$1000 = \frac{1}{1-0.8}\cdot \Delta NX = 5 \cdot \Delta NX$$

$$\Delta NX = 200$$

$$\bar{NX} = NX_1 + \Delta NX = -400 + 200$$

$$\boxed{\bar{NX} = -200}$$

Inventory is decreasing ⇒ spending greater than output making up difference by taking products out of inventory

Not producing enough ⇒ $Y < Y_1$

$\bar{Y} = 20,000$, currently at $Y_1 = 19,000$

Net Exports will change and new $Y_2 = \bar{Y} = 20,000$

What will NX be if $\bar{Y} = 20,000$?

Recap: Find short-run equilibrium ($Y = AE$)

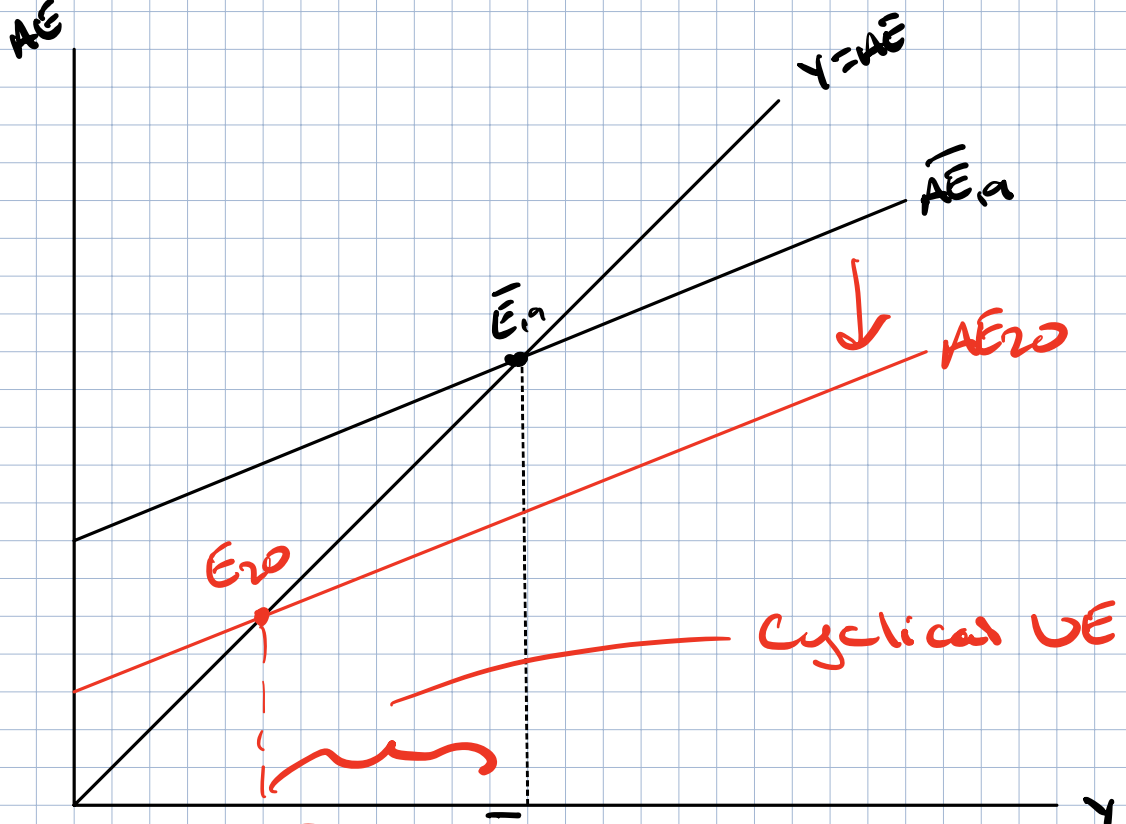
Table, graph, math, story, etc.

Incorporate economic shocks into model

Housing Crash: $\downarrow AC$, $\downarrow I^p$ ⇒ $\Delta Y = \frac{1}{1-mpc}(\Delta AC + \Delta I^p)$

More Recently: Model Covid-19 Pandemic

In 2019, full-employment level of Y ⇒ $\bar{Y}$ = No cyclical UE



Show Pandemic in model

→ Decreased AC immediately, Decreased I^P immediately

⇒ ↓AE ⇒ ↓Y ⇒ Increase in cyclical UE

Job of Government ⇒ Respond to large shocks

Unreasonable to ask a private citizen

Government = Congress / President

Government Carries out Fiscal Policy

What can gov't change in model?

1.) Government Purchases (G)

2.) Taxes (T)

Fiscal Policy $\Rightarrow \Delta G$ or ΔT

If $Y_{20} < \bar{Y}$, what should gov't do?

$\Rightarrow$ Increase G $\Rightarrow$ Increase AE $\Rightarrow$ Increase Y

$\Rightarrow$ Decrease T $\Rightarrow$ Increase Y-T $\Rightarrow$ Increase AE $\Rightarrow \uparrow Y$

$\Rightarrow$ "Let it be", wait for long-run adjustments

Tradeoff between efficiency & time.

Counter-cyclical Fiscal Policy

If $Y < \bar{Y} \Rightarrow \Delta G > 0, \Delta T < 0$

If $Y > \bar{Y} \Rightarrow \Delta G < 0, \Delta T > 0$

Categories of Fiscal Policy

1. Discretionary Fiscal Policy

G: National Parks, TSA, Infrastructure, etc.

T: Changes in tax bracket (2017), cutoffs, corporate, etc.

2. Automatic Stabilizers: Automatic changes in G or T when Y changes

If $Y < \bar{Y} \Rightarrow$ lost jobs $\Rightarrow$ automatically eligible for UE benefits ($\Delta G > 0$)

If $Y > \bar{Y} \Rightarrow$ more income $\Rightarrow$ more tax revenue $\Rightarrow \Delta T > 0$

How can we use fiscal policy to ΔY?

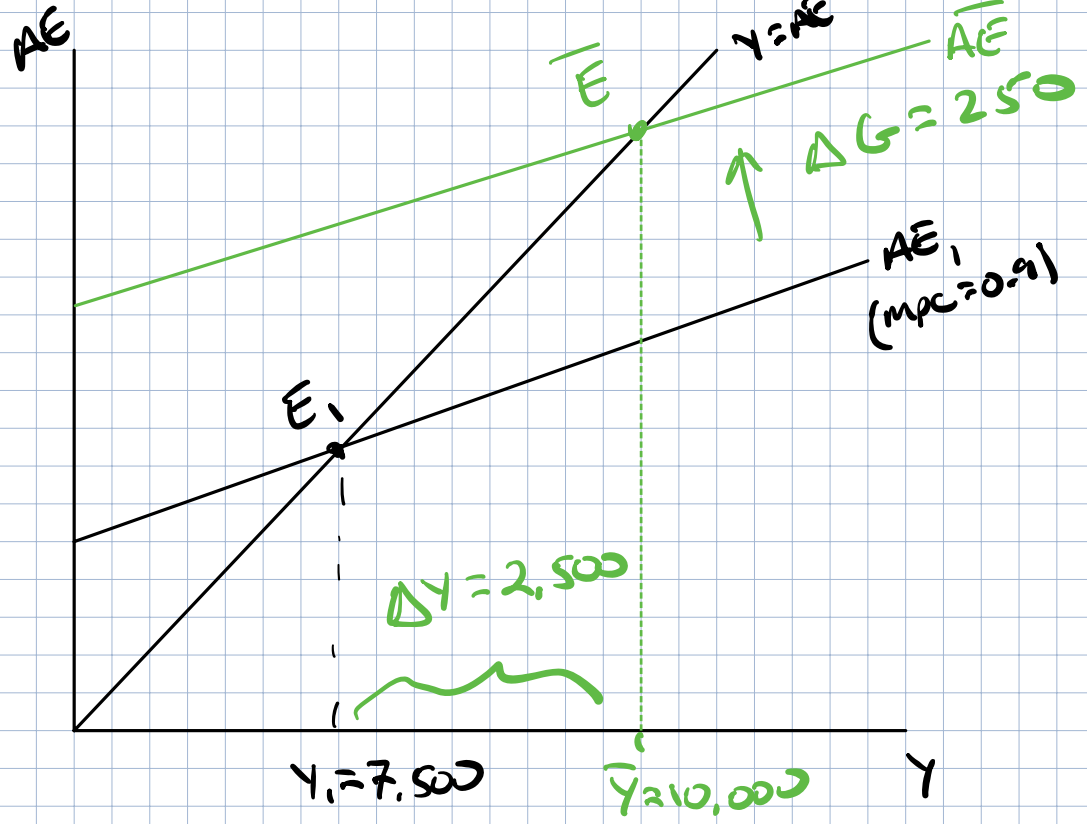
Option #1: Change in G

$$\Delta Y = \frac{1}{1-mpc}\Delta G \Rightarrow 2{,}500 = \frac{1}{1-0.9}\cdot \Delta G = 10 \cdot \Delta G$$

$$\Delta G = 250$$

Setting: $Y_1 = 7{,}500$, $\bar{Y} = 10{,}000$, $mpc = 0.9$

What should ΔG be to get us to $\bar{Y} = 10{,}000$?



If $\Delta G = 250 \rightarrow \Delta Y = 2500$, back at $\bar{Y}$!!

$\Delta G \Rightarrow$ involves a lot of debate

Cincinnati Bridge $\Rightarrow$ #1 infrastructure problem in US!

4% of US GDP crosses bridge every year

Implementing G is time consuming

Best-case: idea to funding in a year

Who builds bridge? Cheapest contract? Expensive?

If ΔG is not going to work → ΔT?

Option #2: Change T

Note: If you want $\Delta Y > 0$, $\Delta T < 0$

When mpc = 0.9 & we want $\Delta Y = 2500$, $\Delta G = 250$

	ΔT	$\Delta G = 250$
Round 1	Give a \$250 tax cut (No change in Y)	Build bridge for \$250 ↑ G by 250 ↑ Y by 250
Round 2	Spend mpc × 250 = \$225	Spend mpc × 250 = 0.9 × 250 = 225 ↑ Y by 225
Round 3	Spend mpc × 225 = \$202.50	Spend mpc × 225 = 202.50
Total	$\Delta Y = 2500 - 250$ $\Delta Y = \$2250$	$\Delta Y = 2500$

$250 tax cut increased Y by $2250, not $2500

Tax Multiplier = -9 instead of 10 $\left(\frac{1}{1-mpc}\right)$

$$\text{Tax Multiplier} = \frac{-mpc}{1-mpc}$$

If $mpc = 0.9$, Tax Mult. $= \frac{-0.9}{1-0.9} = \frac{-0.9}{0.1} = -9$

$$\Delta Y = -\frac{mpc}{1-mpc} \cdot \Delta T, \quad \Delta T = -250$$

$$\Delta Y = -9 \cdot (-250) = \$2,250$$

Question: $mpc = 0.8$, want $\Delta Y = 4{,}000$

What should ΔT?

$$\text{Tax Multiplier} = \frac{-0.8}{1-0.8} = \frac{-0.8}{0.2} = -4$$

$$\Delta Y = -4 \cdot \Delta T = 4000$$

$$\Delta T = -1000$$

Motivated ΔT instead of ΔG because of complexity of ΔG

Give a tax cut → only to a single group

Which group?