

Econ 2 - Lecture 9 - 4/30/25

Midterm Exam

26-30: ~ 20% 😊👍

22-25: ~ 35% 🙌

18-21: ~ 30% 😬

< 17: ~ 15% 😞

Course Grading

30%: Quiz / Activity

30%: Midterm

40%: Final

Grading Calculator on Website

Weekly Lecture Quizzes restart next week

Discussion Activity in weeks 6, 8, 10

Final Exam on June 10th (40 Questions)

1st Part of Course

→ Recent macroeconomic events

→ Macroeconomic statistics (What is GDP, CPI, etc.)

2nd Part of Course

→ Macroeconomic equilibrium

→ Why is $GDP = Y = 23$ Trillion?

→ Policy Responses → Fiscal & Monetary Policy

Last Lecture: History of GDP

Total Spending

Proposed Equilibrium @ $Y = AE$ (Aggregate Expenditures)

$$Y = GDP = C + I + G + (X - M)$$

What does AE consist of?

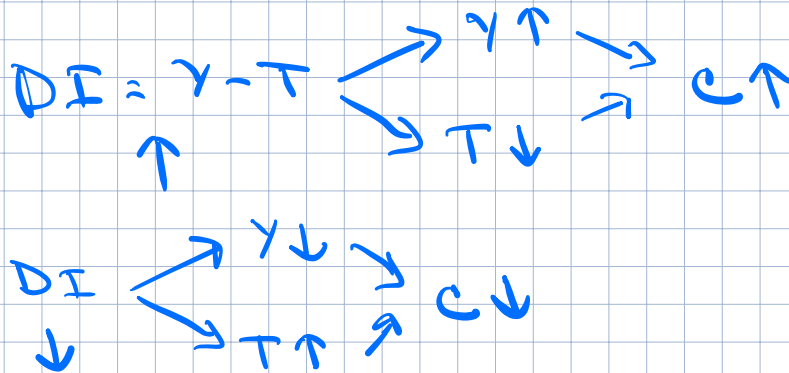
Household Consumption is responsible for ~70% of AE!

Biggest determinant of AE? Income = $Y = GDP$!

Determinants of Consumption (C)

1. Income (Y) \Rightarrow Take-Home Income

$$\text{Income (Y)} - \text{Taxes (T)} = \text{Disposable Income (DI)}$$



2. Wealth = Value of What we own - Liabilities - What we owe

- Assets**
 - \rightarrow House
 - \rightarrow Car
 - \rightarrow Jewelry
 - \rightarrow Stocks, Bonds
 - \rightarrow Investments
 - \rightarrow NFT / crypto
- Liabilities**
 - \rightarrow Mortgage
 - \rightarrow Car Loan
 - \rightarrow Student Loans!
 - \rightarrow Credit Card

As wealth increases \Rightarrow C increase

3. Interest Rates (r) = cost of borrowing, reward for saving

As interest rates \uparrow , Consumption \downarrow

As interest rates \downarrow , Consumption \uparrow

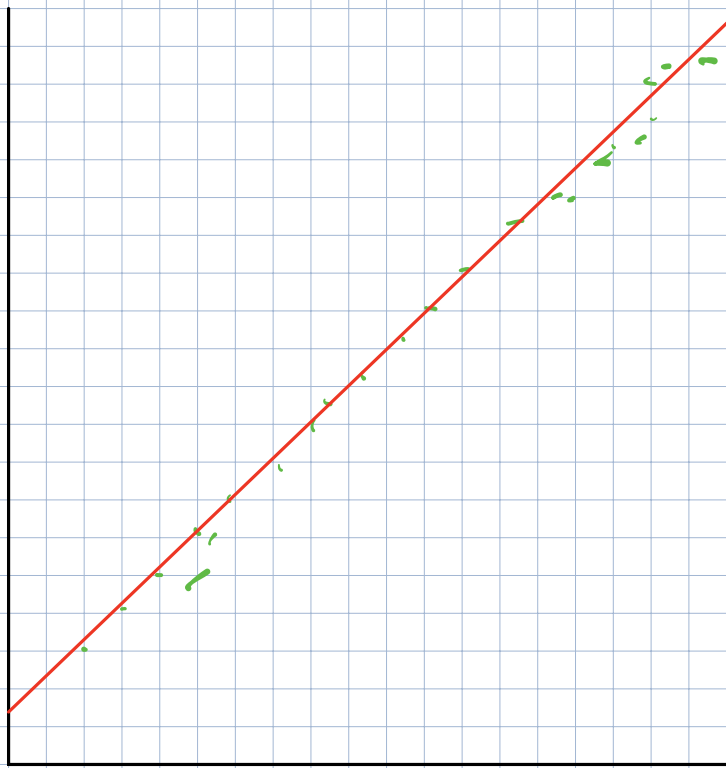
4. Expectations: Get first job offer \Rightarrow expect more income \Rightarrow celebrate today, C \uparrow
Low expectations \rightarrow C \downarrow (save more)

5. Preferences: Kids \Rightarrow Family Size $\uparrow \Rightarrow$ C \uparrow , Response to Pandemic

How important is income (Y) to Consumption (C)?

Disposable Income ($Y-T$)

C (cons)



Straight Line

represents relationship
between $DI = Y-T$
and Consumption = C

Linear function:

$$y = mx + b$$

m = constant slope
 b = intercept

Consumption function

$$C = \text{Intercept} + \text{Slope} \cdot (Y-T)$$



Intercept

→ Level of C when $Y-T = 0$
→ Capturing spending that is
unrelated to $Y-T$

→ Intercept = Autonomous Consumption
(AC)

→ Everything you consume that
does depend on income = AC!

Food, water,
bills, shelter / rent,
necessities

→ Savings,
loans, family,
friends, etc.

$$\text{Slope} = \frac{\text{rise}}{\text{run}} = \frac{\text{Change in } C}{\text{Change in } Y-T} = \frac{\Delta C}{\Delta Y-T}$$

Constant slope \Rightarrow Linear function

Same increase in consumption for every additional dollar we take home (\uparrow in $Y-T$)

$$\text{Maximum Slope} = 0.9999 \Rightarrow 1.0$$

Slope \Rightarrow marginal propensity to consume (mpc)

Fraction of $Y-T$ / Take-Home Income we put towards consumption

Save the rest \Rightarrow marginal propensity to save (mps)

$$\text{mpc} + \text{mps} = 1$$

Redefine Consumption Function

$$C = AC + \text{mpc} \cdot (Y-T)$$

$$C = AC + mpc \cdot (Y - T)$$

$Y - T$	C
0	2000
2000	3200
4000	4400
6000	5600
8000	6800
10000	8000

→ When $Y - T = 0$,

$$C = 2000$$

$$\Rightarrow AC = 2000$$

What is mpc?

How much will C increase if $Y - T$ increases by 1?

If $Y - T \uparrow$ by \$2000, $C \uparrow$ by \$1200

If $Y - T \uparrow$ by \$1000, $C \uparrow$ by \$600

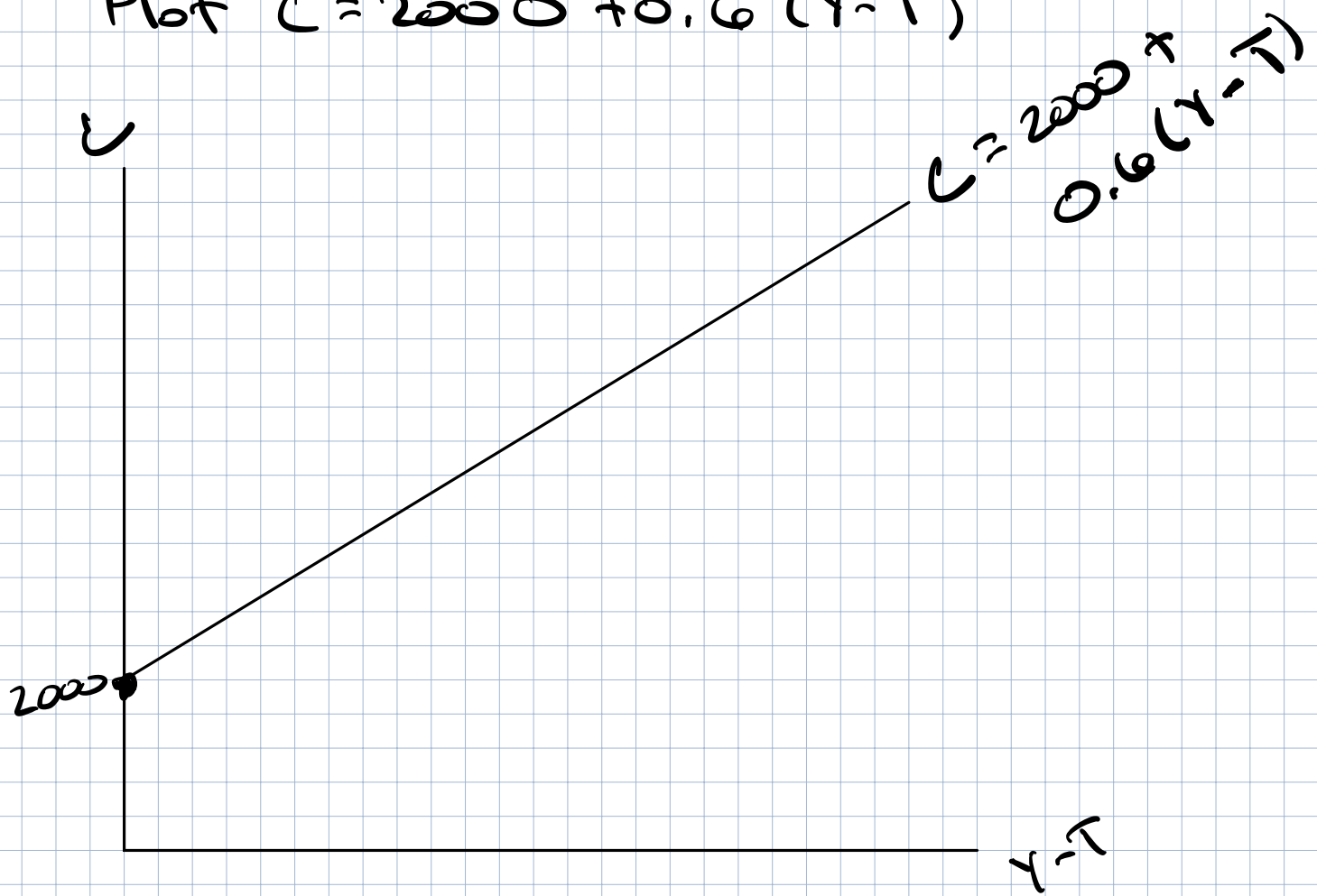
If $Y - T \uparrow$ by \$100, $C \uparrow$ by \$60

If $Y - T \uparrow$ by \$1, $C \uparrow$ by \$0.60

$$mpc = \text{slope} = \frac{\Delta C}{\Delta Y - T} = \frac{1200}{2000} = 0.60$$

$$C = 2000 + 0.6(Y - T)$$

Plot $C = 2000 + 0.6(Y - T)$



Remember Goal: Find where $Y = AE$ (not $Y - T$)

Account for taxes \rightarrow Assume taxes T are fixed

\hookrightarrow Do not change T when Y changes

\hookrightarrow Possible for T to change, but it changes for all values of Y

Assume $T = 2000$

<u>Y</u>	<u>T</u>	<u>Y-T</u>	<u>C</u>
2000	2000	0	2000
4000	2000	2000	3200
6000	2000	4000	4400
8000	2000	6000	5600
10000	2000	8000	6800
12000	2000	10000	8000

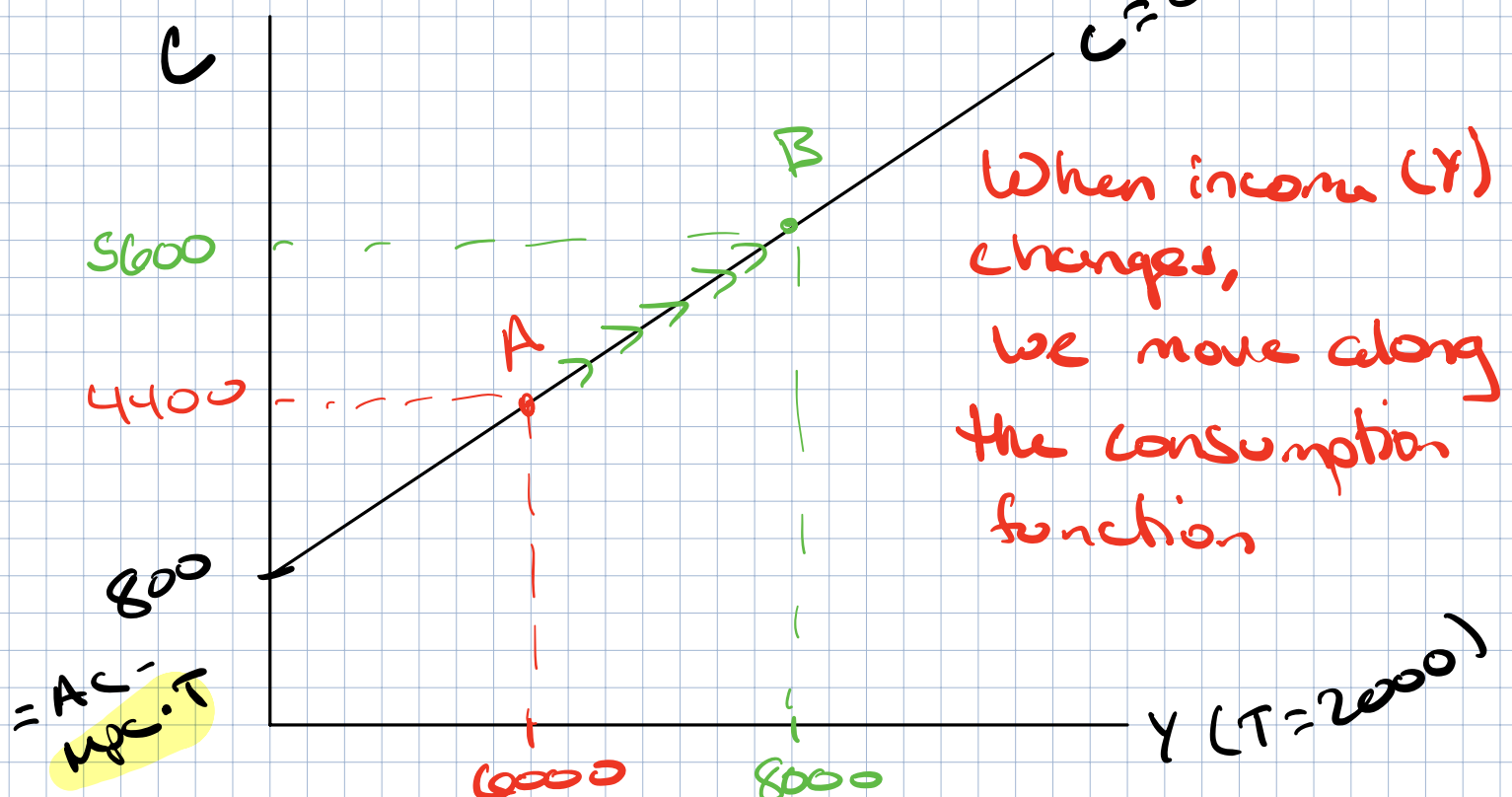
Calculate C-function if $T = 2000$

$$C = 2000 + 0.6(Y - T)$$

$$C = 2000 + 0.6(Y - 2000) \quad \text{--- } 1200$$

$$C = 2000 + 0.6Y - (0.6 \times 2000)$$

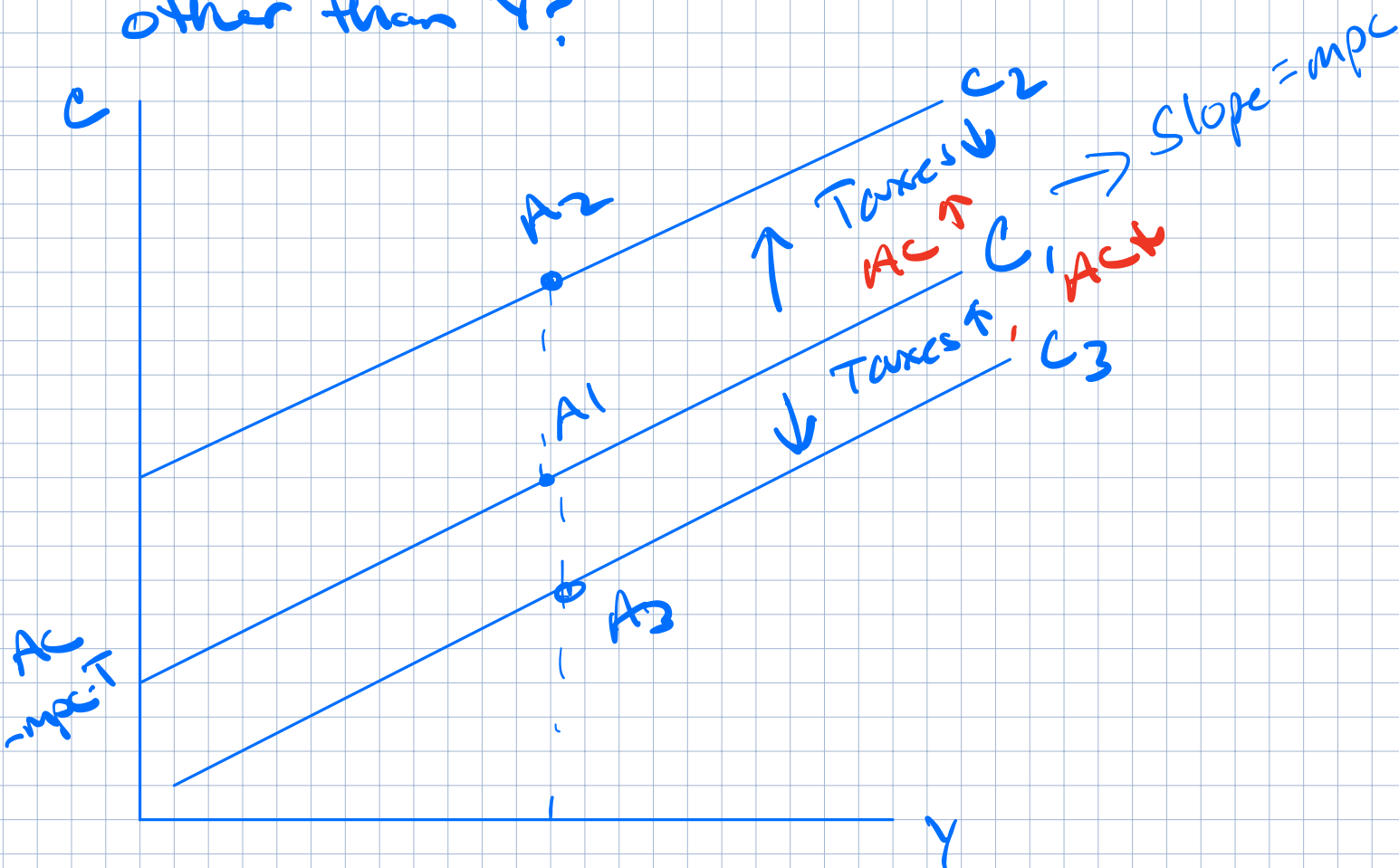
$$C = 800 + 0.6 \cdot Y$$



Changing $Y \Rightarrow$ move along C -function

What shifts Consumption Line?

What changes household consumption other than Y ?



1.) Taxes!

If $T \downarrow \Rightarrow Y - T \uparrow$, but Y is the same
 $\rightarrow C \uparrow$

If $T \uparrow$, $Y - T \downarrow$, $C \downarrow$

2.) Autonomous Consumption

Pandemic, $C \downarrow$, Lottery, $C \uparrow$