Ch 11: Income Expenditure Model

Goals

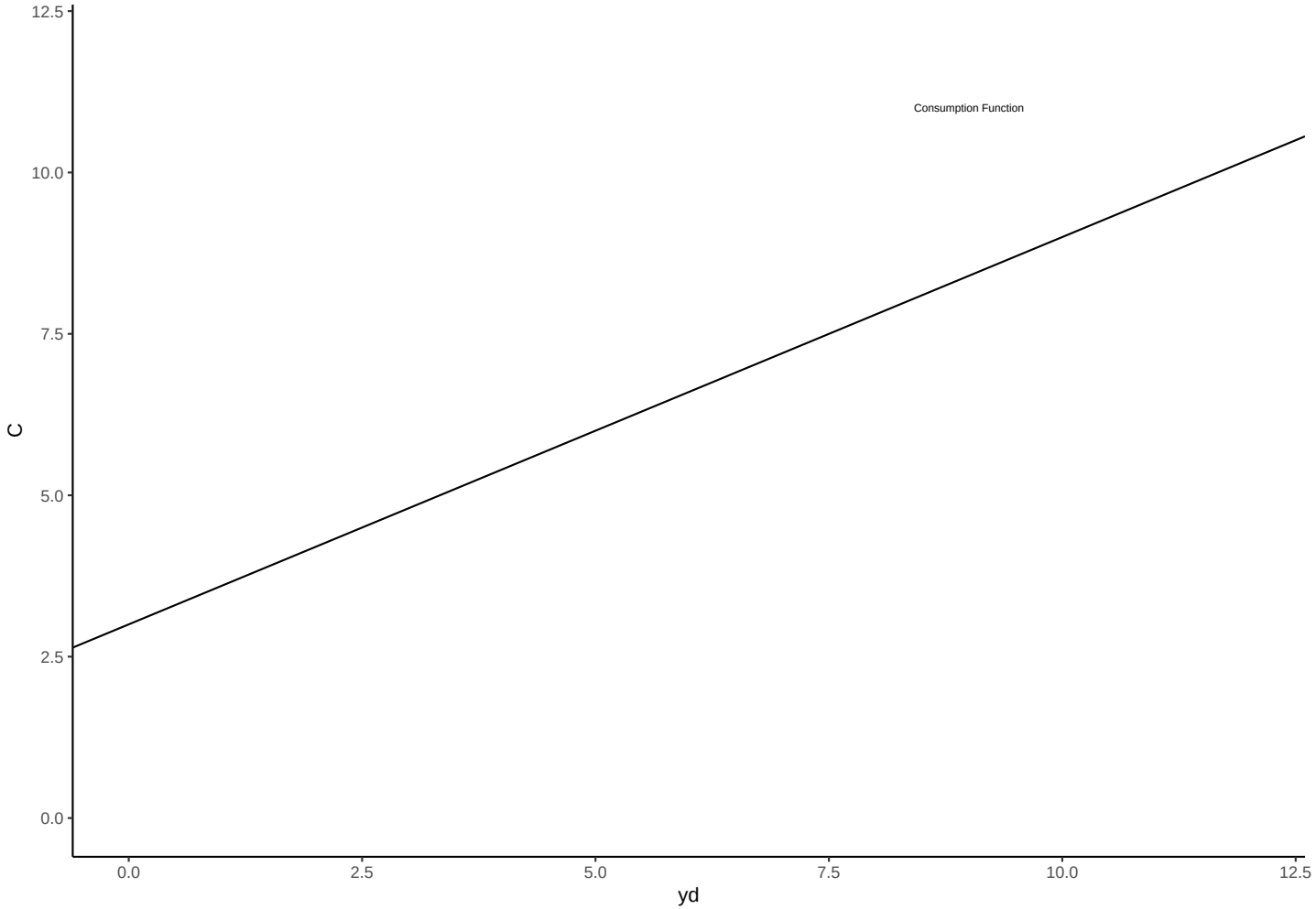
- Look at the simple income-expenditure model
- Talk about some limitations
- Examine one of the many multipliers

A Simple Idea

- People get disposable income, yd.
- They spend some money just because, a. This is called autonomous consumption.
- They save some fraction, the marginal propensity to save (MPS), of each additional dollar of disposable income and spend other fraction, the marginal propensity to consume, (MPC), $MPC = 1 - MPS\$$.

$$C = a + MPC * yd$$

Picture


Consumption Function
C
yd
12.5
10.0
7.5
5.0
2.5
0.0
0.0
2.5
5.0
7.5
10.0
12.5

Of Note

- MPC, the slope, does not tell you the average savings rate $\frac{yd-C}{yd}$ but the fraction of each additional dollar of income that you save.
- At low levels of income, you spend more than you earn.
- At high levels of income, you spend less than you earn.
- a is the intercept and MPC is the slope

What Moves the Consumption Function?

- Beliefs about the future
  - If you think your income will be higher in the future, spend more now and save less, i.e., shift up.
  - If you think your income will be lower in the future, spend less now and save more, i.e., shift down.
- Wealth
  - Adequate or inadequate wealth depends on where you are in your earning years.
  - Booming stock market often indicates an increase in wealth, and an increase, shift up, in the expenditure function.

Massive Simplifications

- Why are you saving?
- Why linear?
- When do I die/retire/have my rainy day?

Lets Build an Economy

- C is as described, $C = a + MPC * yd$
- No government or international sector
- I is the same for all yd but can move based on the interest rate.
  - It has two components, planned ($I_{planned}$) and unplanned ($I_{unplanned}$)
- The aggregate expenditure function (AE) is the sum of C and $I_{planned}$.

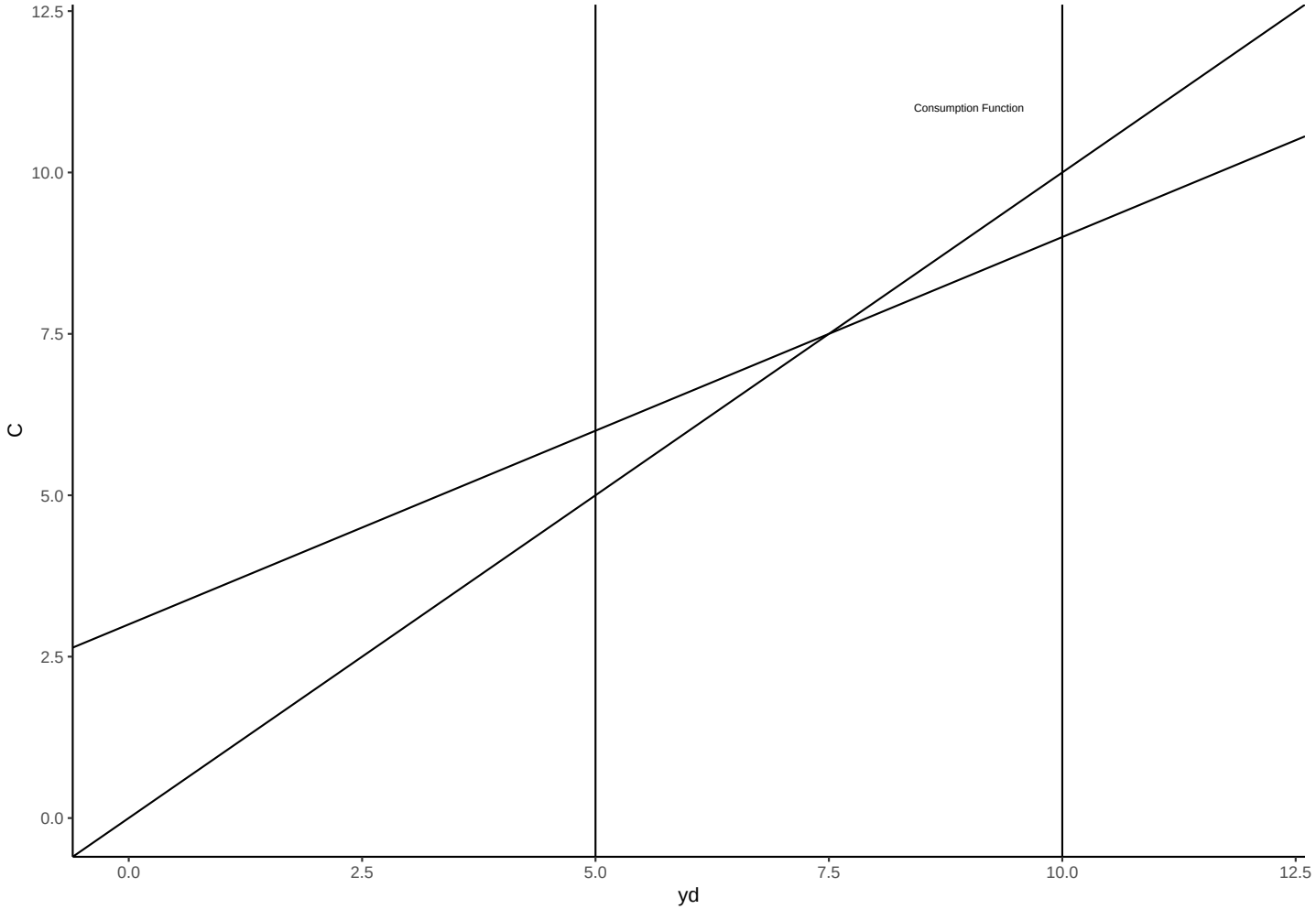
$$AE = a + MPC * yd + I_{planned}$$

A Principle Returns

Principle #10: One person's spending is another person's income.

- We need to have expenditures, AE, equal to income, yd.
- If AE is higher than yd, then inventories shrink, $I_{unplanned} < 0$
- If AE is lower than yd, then inventories expand, $I_{unplanned} > 0$

On the Graph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Note

- If $AE > yd$, i.e, when yd is low, inventories shrink
- if $AE < yd$, i.e, when yd is high, inventories build
- Inventory change is what makes the income expenditure equilibrium stable.
- Often called the "Keynesian Cross"

So, what is the equilibrium

$$yd = a + yd(MPC) + I_{planned}$$
$$(1 - MPC)yd = a + I_{planned}$$
$$yd = \frac{a + I_{planned}}{(1 - MPC)}$$

(One of the) Multiplier(s)

$$\frac{1}{1 - MPC}$$

- This is one of many 'multipliers' in introductory macroeconomics.
- Often goes by, "Fiscal Policy Multiplier". You will see why in later chapters.

Numerical without Investment

$$
\begin{aligned}
yd &= 3 + yd(.6) + 0 \\
(1 - .6)yd &= 3 \\
yd &= \frac{3}{(1 - .6)} = 7.5
\end{aligned}
$$

Here is where it gets odd

Lets start saving more because we think the economy is going to tank. a drops from 3 to 2.

$$\begin{aligned} yd &= 2 + yd(.6) + 0 \\ (1 - .6)yd &= 2 \\ yd &= \frac{2}{(1 - .6)} = 5 \end{aligned}$$

Equilibrium GDP dropped from 7.5 to 5. This is called the paradox of thrift.

The Paradox of Thrift

- If you believe the economy will be worse, lower GDP, in the future
- You act like it and save more now.
- When you save more now, GDP falls.

Next Up

Getting the Price Level and GDP to talk to each other. The next two chapters are very graph heavy.