Econ 352 - International Trade in Goods and Assets

(See Williamson Ch. 16)

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Introduction

- We have a model with nominal prices, discussed New Keynesian model, etc.
- But so far our model has just been of one country, no trade
- Now we'll model a "small open economy," an economy that trades but isn't big enough to affect prices in other countries
- We'll discuss what drives "current account surpluses," savings above investment

Current Account

- Rep. consumer has usual present-value budget constraint:

$$C + \frac{C'}{1+r} = Y - T + \frac{Y' - T'}{1+r}$$

- Where private savings is thus:

$$S^p = Y - T - C$$

- Government's present-value budget constraint is:

$$G + \frac{G'}{1+r} = T + \frac{T'}{1+r}$$

- And government savings is:

$$S^G = T - G$$

- If we shut down investment, all savings is the current account:

$$CA = S - I = (S^P + S^G) - 0 = (Y - T - C) + (T - G) = Y - C - G$$

- If we had investment (which we'll ignore) it would have been:

$$CA = Y - C - G - I$$

Combine Consumer & Govt

- Adding up the consume and govt budget constraints to get the national present-value budget constraint:

$$C + \frac{C'}{1+r} + G + \frac{G'}{1+r} = Y + \frac{Y'}{1+r}$$

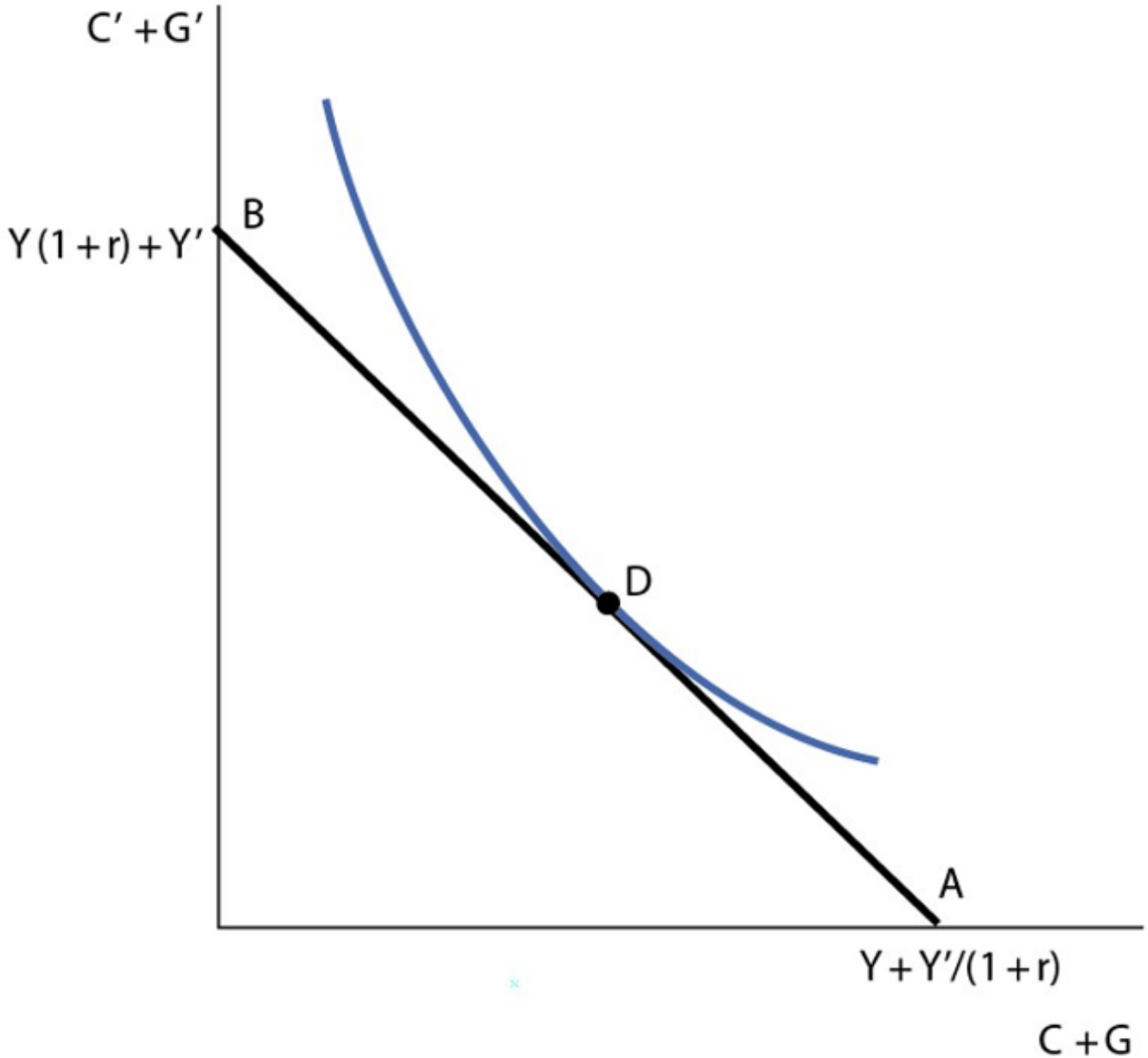
- Just like we would have had $Y = C + G + I$, now we have:

$$Y = C + G + CA$$

$$Y' + (1+r)CA = C' + G'$$

- So the CA acts like national savings.
- We'll generally ignore C vs G, combine into $C + G$
- Graphing the national budget constraint, we get:

National PV Budget Constraint



National Savings-I

- Current account is national savings (when we exclude investment)
- Note that this problem looks just like Chapter 9's household intertemporal problem
- Current account is just like savings, so we can analyze it in same way!

National Savings-II

- Four predictions about national savings excluding investment (current account)

1. Current account surplus rises with an increase in current income (smoothing!)
2. Current account surplus falls with an increase in future income (smoothing!)
3. Tax changes, holding constant govt spending, should not effect current account surplus (no change in BC, no change in allocation!)
4. If current account surplus is less than zero (dissaving), then an increase in the interest rate increases CA (inc & sub same direction)
5. If a current account surplus is greater than zero (savings) then an increase in the interest rate has an ambiguous effect on current account (conflicting inc and sub effects)

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Credit Market Imperfections and Default

- So far, debt (current account deficits) aren't such a big deal
- But national default is a big deal!
- Think about limited commitment, in which a country can walk away from its debts
- Letting B be debt, the budget constraint is:

$$C + G = Y + \frac{B'}{1+r} - B$$

- And the future budget constraint:

$$C' + G' = Y' - B'$$

- Where B' is the newly-issued debt in the first period (income then, debt next period)

Credit Market Imperfections and Default-II

- Combining the budget constraints, we get:

$$C + \frac{C'}{1+r} + G + \frac{G'}{1+r} = Y + \frac{Y'}{1+r} - B$$

- And the current account in the first period is the change in indebtedness (net new resources from abroad):

$$CA = B - \frac{B'}{1+r}$$

- We live in a world of limited commitment, like in Chapter 10: countries can walk away from debt.

- Can't post collateral, but can be punished (pursued in debt markets, for instance), call this penalty ν, like collateral:

$$-B' \leq \nu$$

Credit Market Imperfections and Default-III

- We have the non-default constraint on debt:

$$-B' \leq \nu$$

- Which, plugged into the first period budget constraint, gives:

$$C + G \leq Y - B + \frac{\nu}{1+r}$$

- Country has a choice of default: if default, don't pay B, but get locked out of debt markets ($B' = 0$) and suffer penalty (ν)

- Graph out two problems: intetermporal b.c's with and without default

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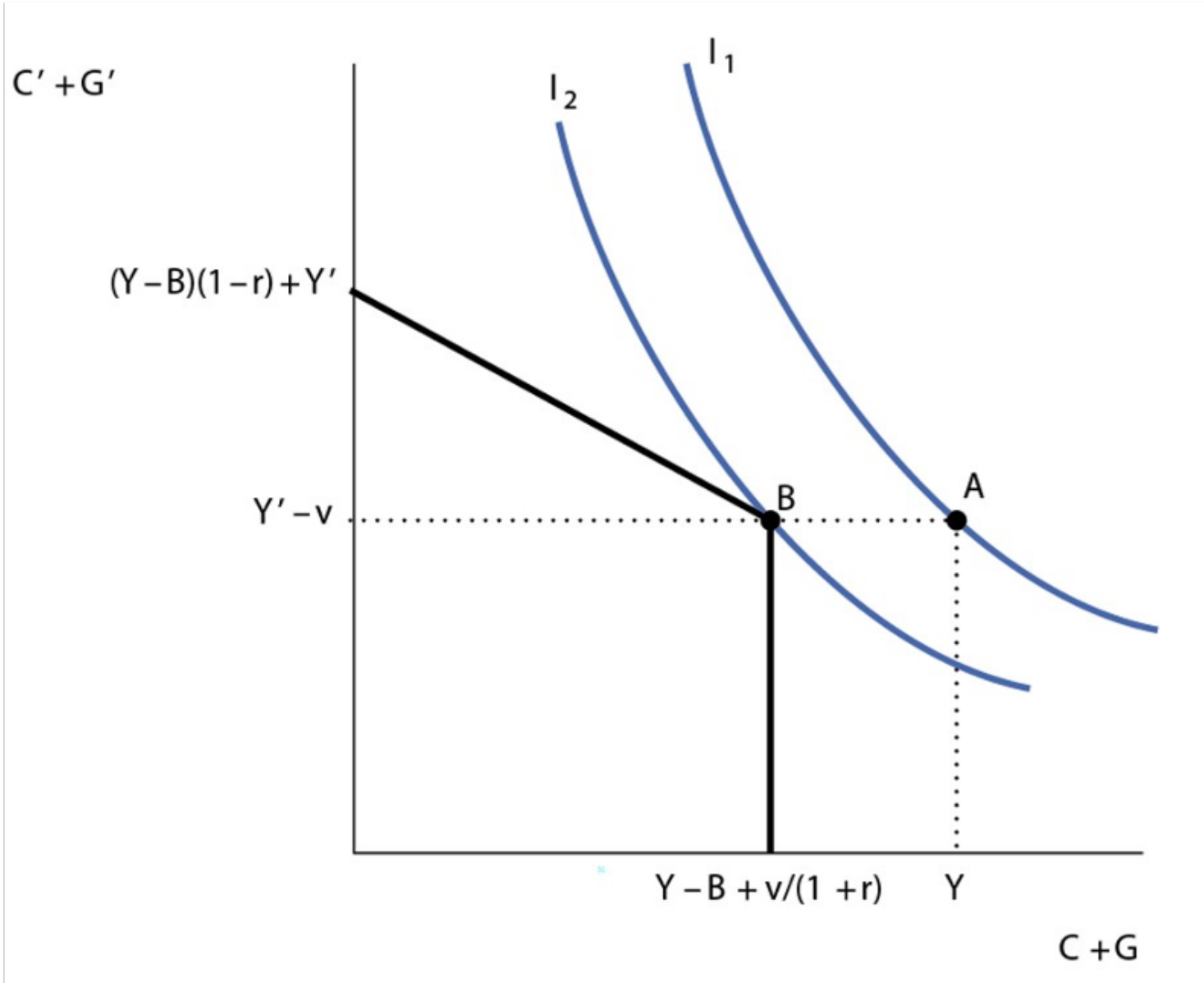
Default Optimal

- Two choices, default or don't
- Assume country would have borrowed maximum amount if it doesn't default, so $B' = v$
- In that case, $(C + G)_1 = Y - B + \frac{v}{1+r}$, and $(C + G)_2 = Y' - v$ (pay v because $B' = v$)
- Or we could default: $(C + G)_1 = Y$ (pay off no debt), and $(C + G)_2 = Y' - v$ (now pay v b/c default)
- Obviously default is optimal here

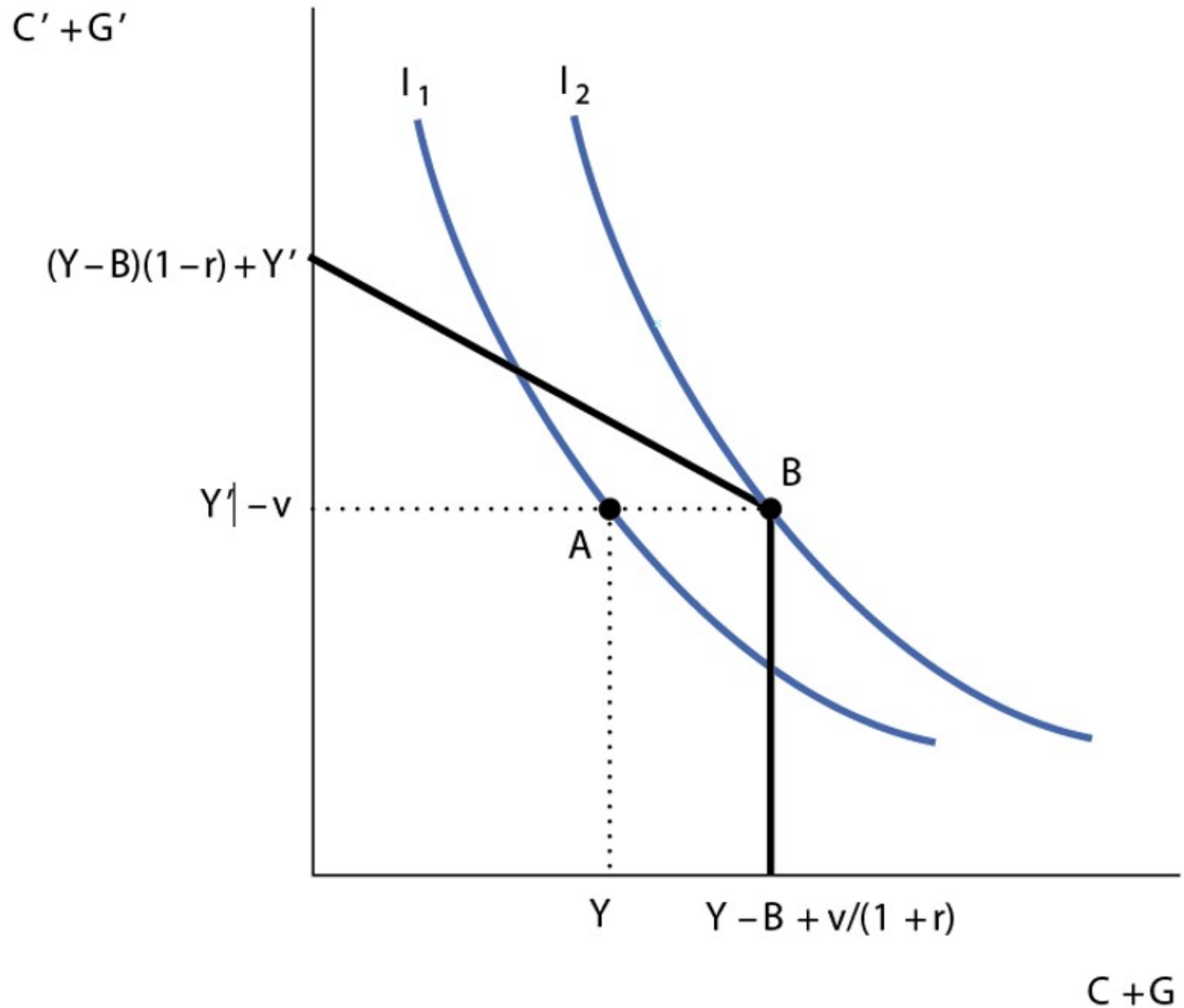
Default



Default Not Optimal

- Two choices, default or don't
- Say v is very high, so can borrow a lot, and Y is low, so want to borrow
- In that case, default gets: $(C+G)_1 = Y$, $(C+G)_2 = Y' - v$
- And no default gets: $(C+G)_1 = (Y - B + v/(1+r))$ and $(C+G)_2 = Y' - v$
- Key is if v is big, shifts out budget constraint and makes us happier

Default not optimal



Making Sense of Default vs Not

- If limited commitment holds, we have the budget constraints:

$$C + G = Y - B + \frac{\nu}{1+r}$$

$$C' + G' = Y - \nu$$

- Total consumption in future is always same no matter what (either pay back ν or lose ν b/c didn't pay back)
- So, we default only based on what default does to today's consumption (does nothing to tomorrow). We compare consumption under no default against consumption under default:

$$Y - B + \frac{\nu}{1+r} < Y$$

- Which says we default if and only if:

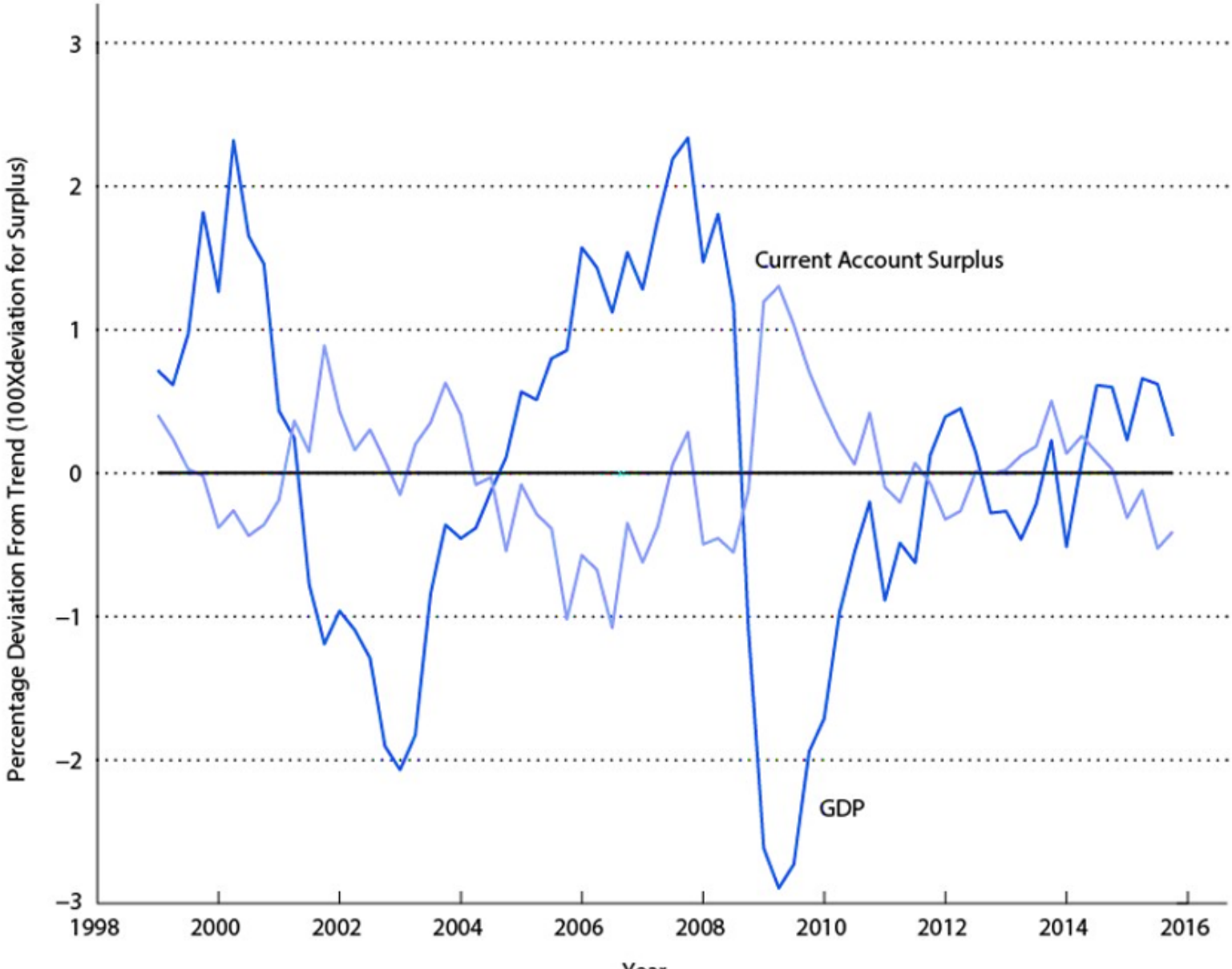
$$B > \frac{\nu}{1+r}$$

- When debt is higher, should default, when pain of default higher, don't default

Is Current Account Deficit Bad?

- Borrowing seems bad
- But it has its uses (particularly when investing, but also when smoothing)
- Let's see if the U.S. uses its current account deficit to smooth consumption (when GDP low, is CA also low?)

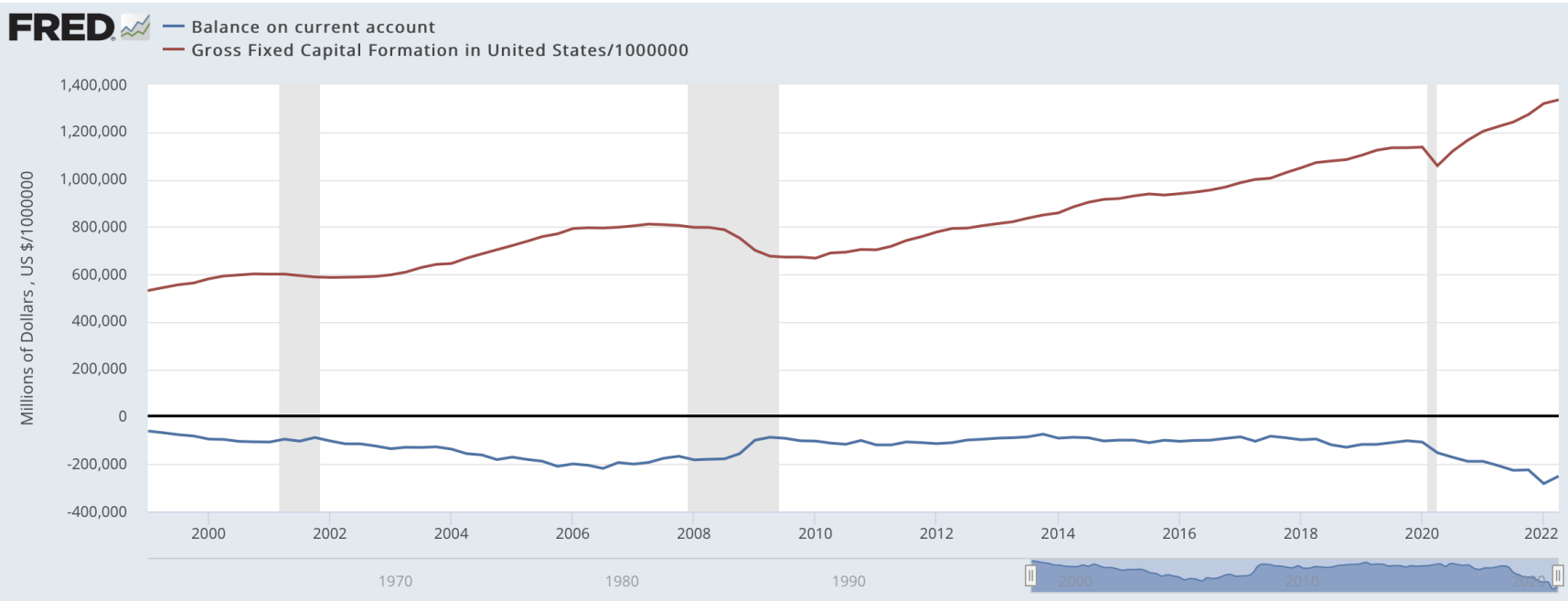
Current account negatively correlated with GDP??



Is Current Account Deficit Bad-II

- Should think about total savings, which includes investment!

Current Account vs Investment



Greece and Sovereign Default

- In 2001, Greece abandoned the Drachma and began using the Euro
- Before that, its debt traded at a higher interest rate (lower price for lenders) than Germany's
- These differences are likely due to a fear of default (explicit or via inflation)
- But 2008 and after, Greece was in a bad situation, and the possibility it would default spiked: interest rates followed that spike
- Let's take a look!

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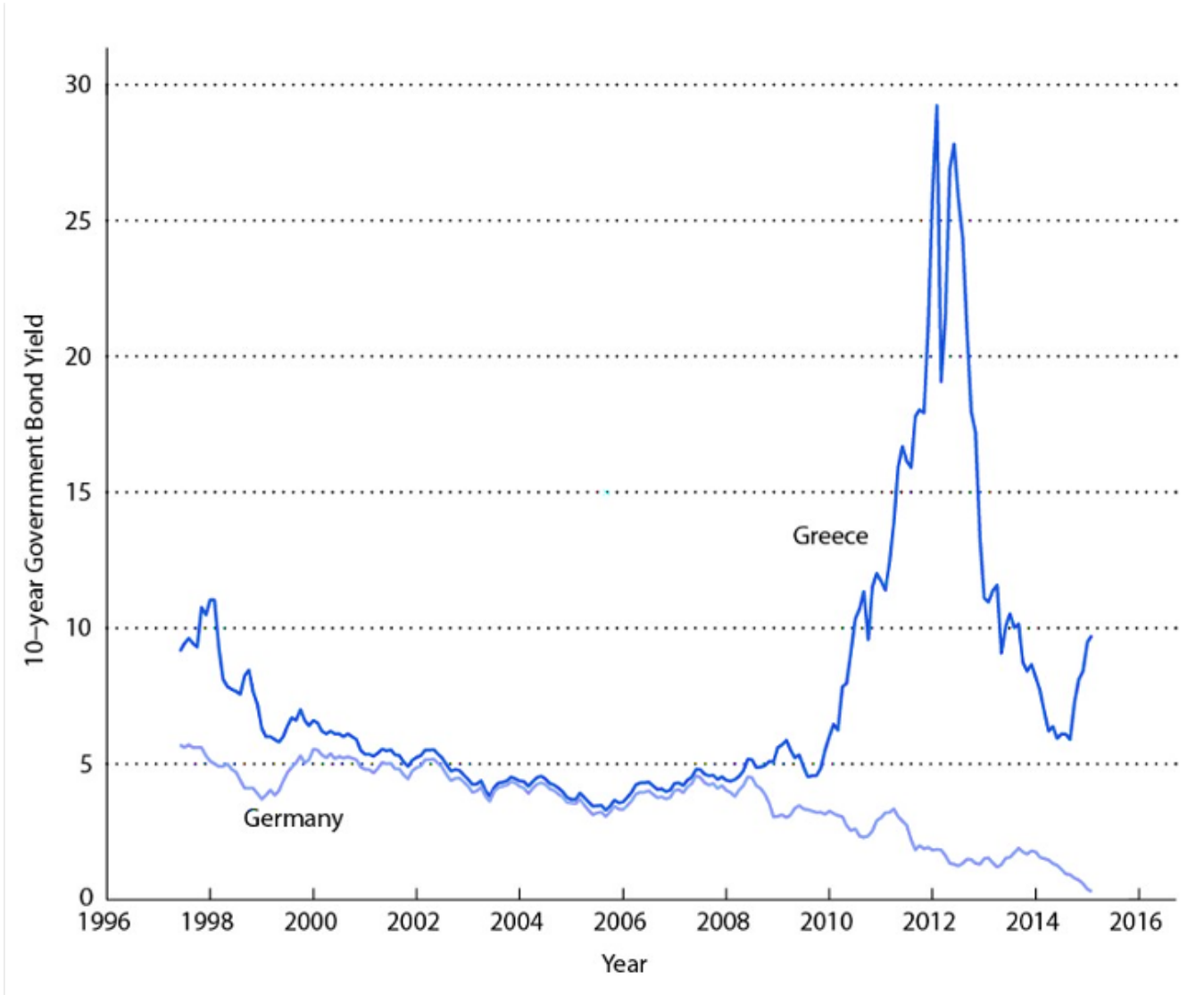


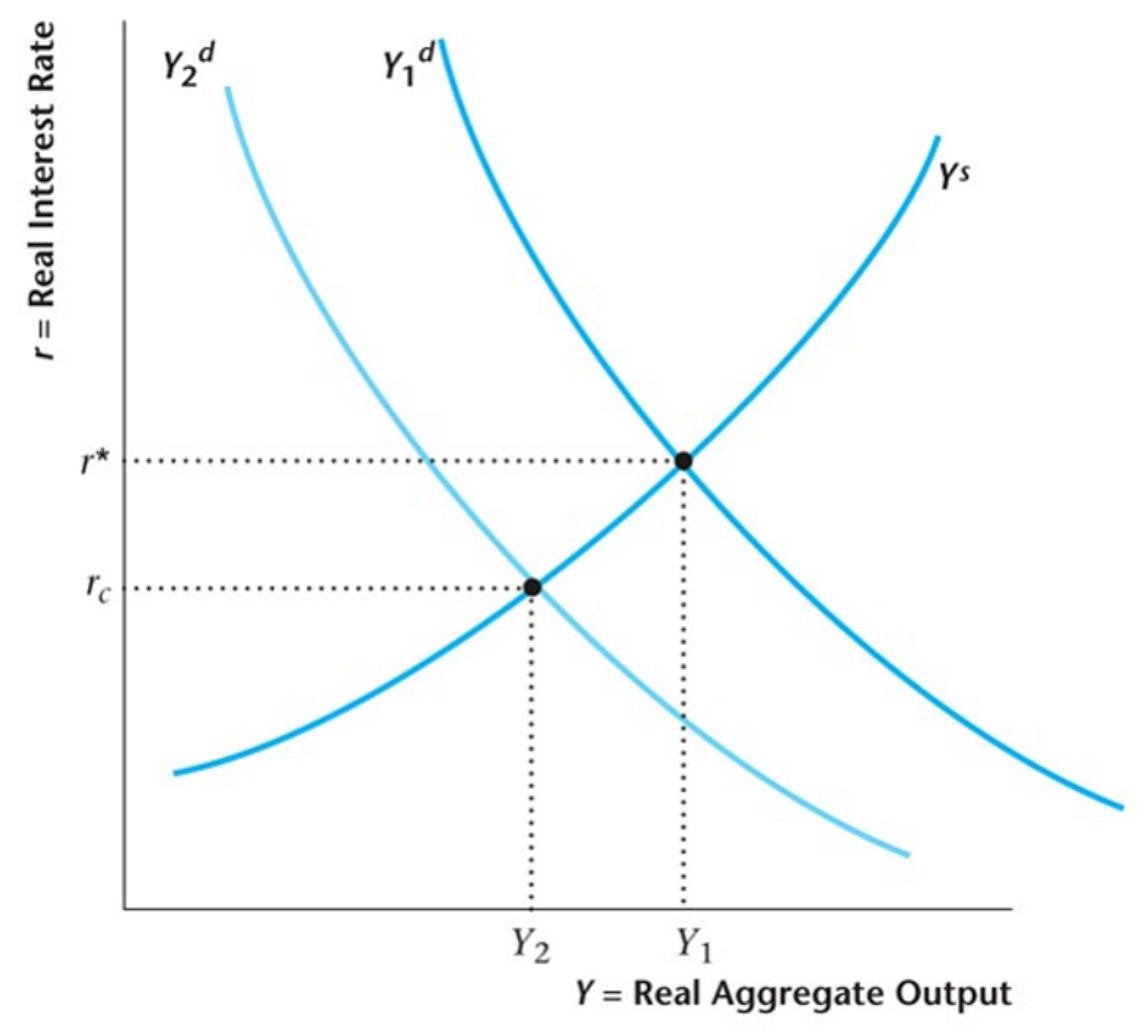
Production, Investment, and the Current Account

- So far our model of savings=current account is embarassing!
- There are ways to save other than trade...investment!
- Getting back to GDP:

$$Y = C + I + G + NX$$

- World real interest rate is r^*, Y^d shifts until it intersects Y^s at r^*
- So if the r that would cause $Y^d = Y^s$ if no trade is too low, you export
- Let's take a look!

A small open economy model with production and investment

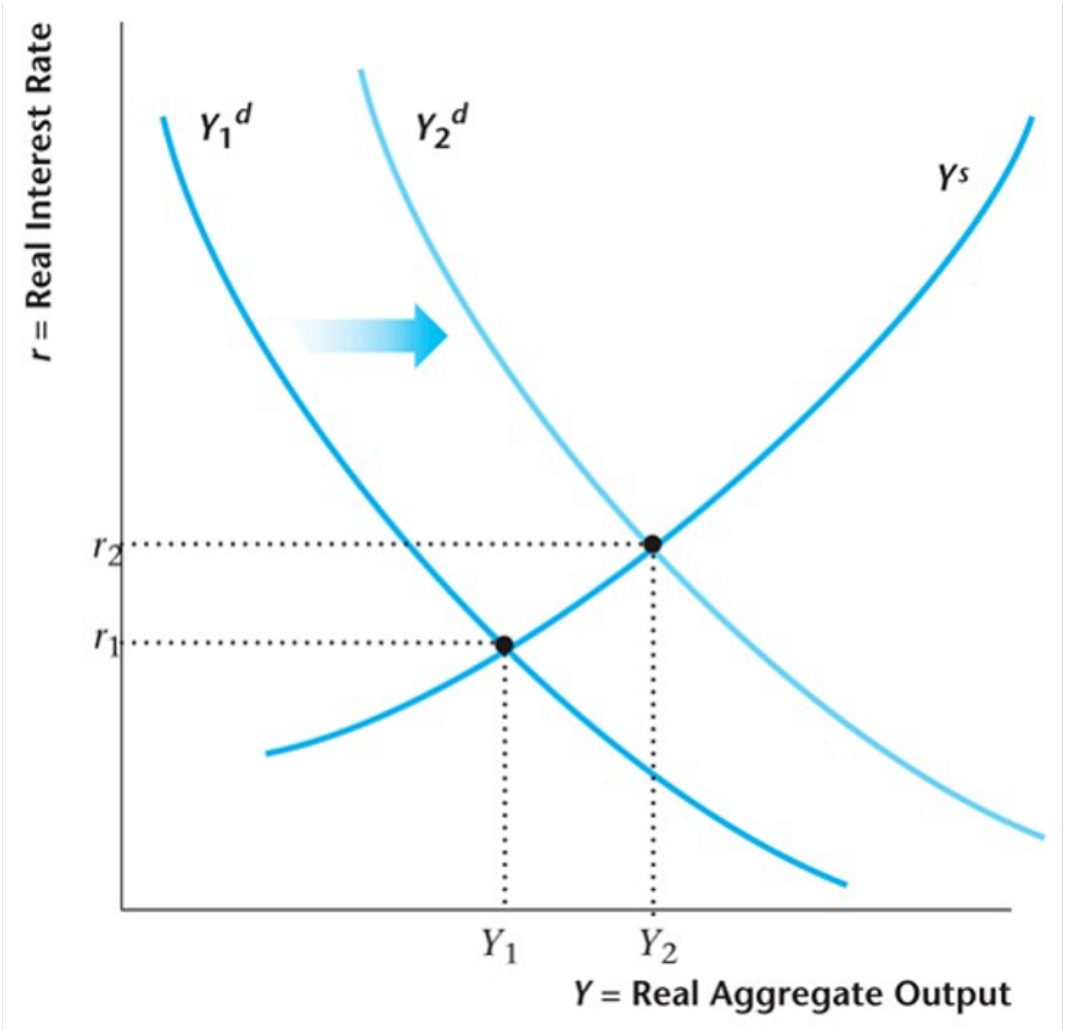


Possibly easier to think of r^* as determining quantity Y^d, and slope is domestic

Experiment 1: Effects of an Increase in the World Real Interest Rate

- Our model is the same as before, except now, rather than $Y^s = Y^d$ determining r, world r determines the point at which Y^d intersects Y^s
- Take the case in which r^* rises
- This is a shift out in demand: overall Y increases
- I decreases (higher MPK required) but C may rise or fall (substitution pushes down, income pushes up)

An increase in the world real interest rate



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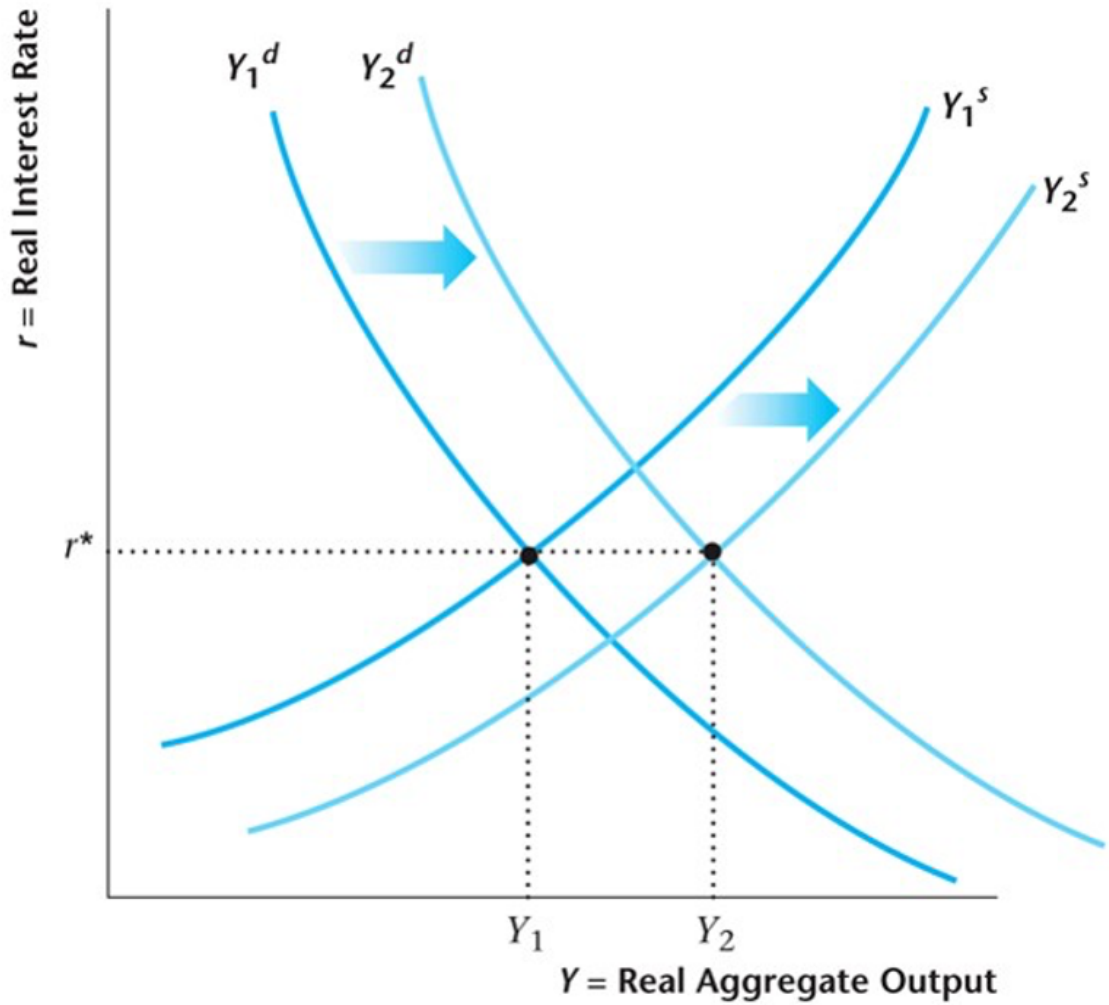
Experiment 2: Effects of Government Expenditure on the Current Account

- Suppose there's an increase in G (temporary)
- Negative income effect shifts labor (and thus output supply) out
- Government demand shifts output demand out, but r stays fixed (world interest rate) so Y^d
- Y^d increases, but r does not, so no investment or consumption crowding-out (unlike in Ch. 11!)
- Here, if Y increases by less than G, so overall income increases. Net exports decline.

An increase in the world real interest rate



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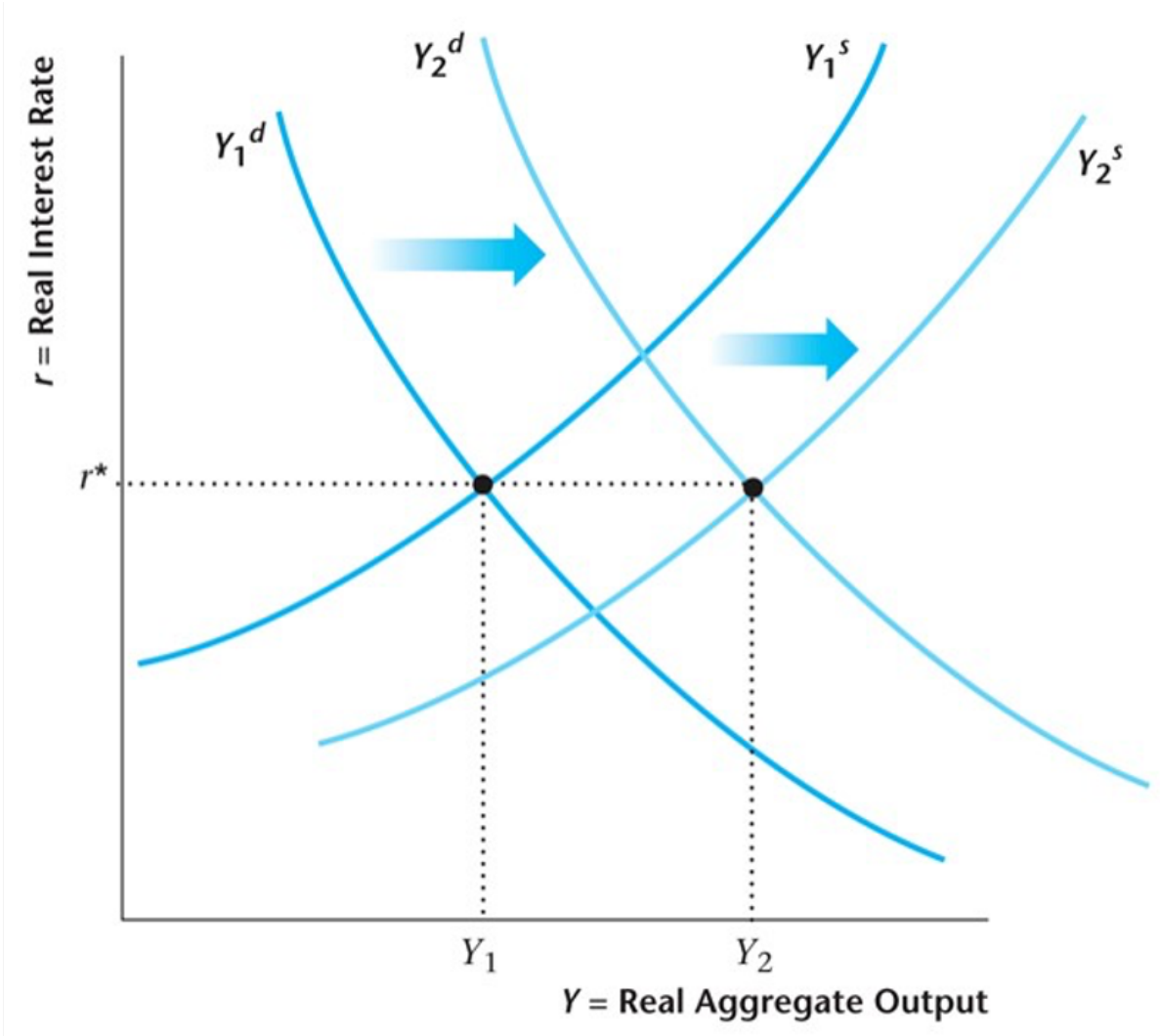
Experiment 3: Effects of TFP Increases

- Previously, TFP increased labor demand, wages, employment, and output, and decreased the interest rate
- But now r can't fall (we are small part of global)
- Now, when z increases, output supply and demand both shift out
- Output supply increases the current account surplus
- More income means increased consumption. Interest rates stay same, so investment constant, C increases

An increase in the world real interest rate



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