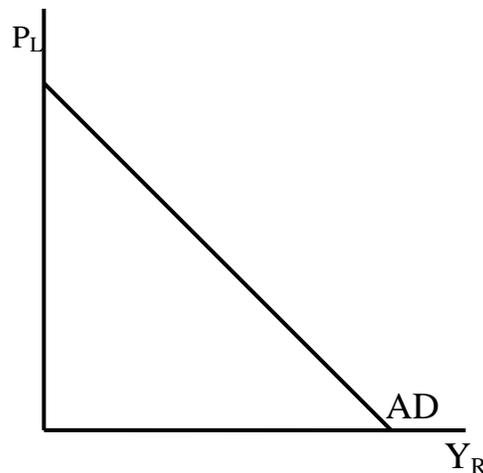


## LECTURE 28: AGGREGATE DEMAND

- I. The Axes
  - a. We begin with something that looks a bit familiar. We have something like “price” on the y-axis and something like “quantity” on the x-axis.
  - b. This is the beginning of our aggregate (total) model.
    - i. Thus y-axis is the *price level*: all prices. Note this isn’t the same thing as inflation. Inflation is a rate; inflation describes how the price level is changing. It’s like the difference between velocity and distance traveled.
    - ii. Similarly, the x-axis is *real GDP*: all quantities. It is the total output of the entire economy.
- II. The Shape of Things
  - a. There is also a downward sloping line which should remind us of demand. Indeed, it is demand but now we look at demand across the whole economy, not just a single sector. We look at *aggregate demand*.



- b. Like the demand curves of yore, aggregate demand assumes *certeteris paribus*. As the price level increases, all other things being equal, real output will fall.
        - c. That the aggregate demand slopes down might make sense just like a normal demand curve. As prices across the board rise, people should buy less stuff. That intuition is wrong; it’s not why the aggregate demand curve slopes down.

- i. Why is it wrong? Recall what real GDP is. Income equals expenditures. If prices rise, people might have to spend more to afford something but they also get more income. Money is neutral in the long-run.
- d. So why does AD slope down? Here's a big reason:<sup>1</sup>
  - i. *Interest Rate Effect*. As the price level rises, people will want more money; they will borrow more. But the amount of money in the system is the same (remember, *ceteris paribus*). So if more people are borrowing but there is the same amount available to borrow, the interest rate—or the price of borrowing money—will rise. Higher interest rates will cut investment and consumption and thus real GDP falls. We can see this with our old friend:

$$Mv = p_L Y_R$$

If  $p$ , the price level, increases and the left half of the equation remains the same, real GDP must fall.

### III. Shifting AD

- a. Like our microeconomics demand curve, our aggregate demand curve can shift. These changes are all unexpected changes.
- b. Consumer spending
  - i. *Real interest rates*. The interest rate is the cost of borrowing. Unexpected higher interest rates not only encourage savings, they discourage investment spending. Decrease the real interest rate and AD will shift right/up.
  - ii. *Expectations*. Similarly, changes in expectations can change spending habits. If people think the economy will pick up, spending will increase.
  - iii. *Wealth*. If consumers' assets suddenly become more valuable, AD shifts right/up.
  - iv. *Personal Taxes*. Lower taxes means more disposable income and thus more spending and a rightward/upward shift in AD.
- c. Investment spending
  - i. *Real interest rates*. Same story for demand.
  - ii. *Expectations*. If interest rates are the cost of investment, expected returns are the benefit. Whether the returns are higher

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<sup>1</sup> There are two other reasons—real-balances (wealth) effect and foreign purchases effect—but the interest rate is the big one and what we'll focus on for this class.

because of lower taxes, better technology, better business conditions, or something else, higher expected returns shifts AD right/up.

- d. *Government spending*. Not much nuance to this one. As government spends more, AD shifts right/up. Again, remember *ceteris paribus*: we assume taxes and interest rates are not changing because of this government spending.
- e. Net Export spending
  - i. *National income abroad*. If other countries are suddenly wealthier, AD shifts right/up because they will buy more U.S. goods.
  - ii. *Exchange rates*. Suppose the dollar suddenly becomes less valuable (for some reason other than the price level). For our purposes that's effectively the same thing as incomes abroad increasing. In both cases, foreigners will buy more U.S. goods. AD will shift right/up.
- f. *Money supply*. Like government spending, this is pretty straightforward. More money means AD shifts right; less money means it shifts left.