

LECTURE 23: THE GREAT DEPRESSION & THE MULTIPLIER

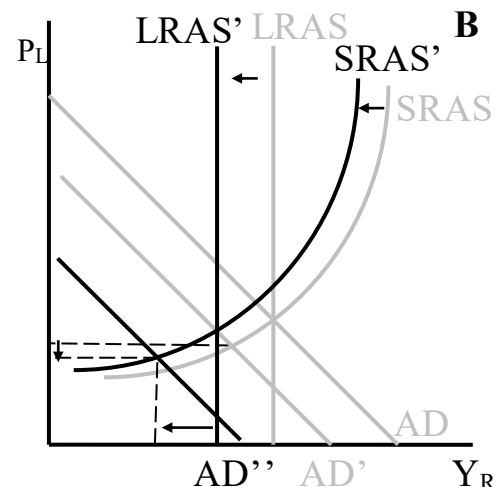
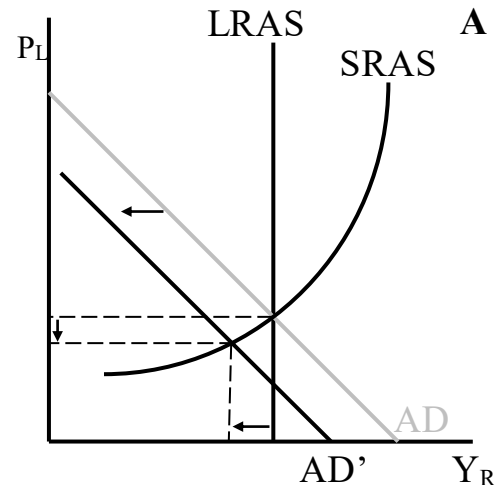
I. Turnaround

- a. The creation of deposit insurance and exiting the gold standard, both in 1933 (in the U.S.), marked the bottoming out of the Great Depression. Indeed, the gold standard proved to be poison—a method that functioned in the past but no longer worked.
 - i. Bernanke and James (1990) showed that the faster a country left the gold standard, the faster it recovered. For example, Spain, which never got back on the gold standard after leaving it during World War I, largely avoided the Depression.

- b. The damage, however, was deep. Even though the economy started recovering in 1933, it would slide again in 1937. Not until World War II would the U.S., and eventually the whole world, would recover.

II. The Great Depression with AD-AS

- a. To understand why the GD was so bad, it's worth connecting it to AD-AS. We'll tackle this in three ways.¹
- b. **First**, a decline in the money supply shifted AD to the left. **(A)**
- c. **Second**, the subsequent failure of banks amounted to a real shock because financial intermediation fell away. This also shifted AD left even more because there's less money creation. **(B)**
- d. **Third**, the New Deal had both good and bad parts to it. We'll touch on the good parts (employing



¹ To be clear, there are other things going on, such as the Federal Reserve raising interest rates before the economy's recovered, that help explain the 1937 "Roosevelt Recession." Remember Bernanke's quote at the start of these notes: understanding the Great Depression is the Holy Grail of macroeconomics for a reason—it's deeply complex.

unemployed people, for example) when we do fiscal policy. But the bad parts help explain the length of the Great Depression. (This chart is getting busy so I'll just describe the shift.)

- i. FDR had a famous “try anything” attitude about assuaging the Great Depression. While this sounds pragmatic, it created a lot of uncertainty. AD shifts left *even further*.
 - ii. The New Deal tried to force prices higher (remember, they were fighting deflation!) by paying farmers to not grow crops, established a federal minimum wage, and strengthened unions.² Input prices increased and SRAS shifts left *even further*.
 - iii. The thinking at the time was that capitalism was “too good” at making stuff and needed to be reigned in, so the New Deal also reduced industry production. For example, the National Industrial Recovery Act (and the National Recovery Administration which enforced it) put quotas on production and allowed firms to conspire together to increase prices (antitrust laws were suspended). This shifts LRAS and SRAS left *even further*.
- e. World War II solved many of these problems. There was a massive increase in government spending, an increase in regime stability because wars create clear goals, and a repelling of many the anti-production policies.

III. Marginal Propensities

- a. In order to understand what FDR should have done (and, to his credit, he did some of this), we must first understand some basic macroeconomic relationships.
- b. One of the strongest relationships in macroeconomics is the relationship between disposable income (DI) and consumption (C). The more you make, the more you spend.
 - i. *Disposable income* is income after taxes.
- c. *Savings* (S), or anything that's not spending, is also positively correlated with disposable income. It becomes investment.
 - i. Or, $S = DI - C$
- d. *Marginal propensity to consume* (MPC) describes what portion of an additional amount of income goes to consumption. It ranges from zero to one (but sometimes more).

$$\text{marginal propensity to consume} = \frac{\Delta C}{\Delta DI}$$

² For example, the National Labor Relations Act (1935) allowed union workers to force all other workers for that industry to join the union, effectively creating a monopoly of workers.

- i. Typically people with a low income have a high MPC. MPC decreases as income rises. The same is true for whole economies. But for simplicity, we will be assuming MPC is constant.
- e. *Marginal propensity to save* (MPS) describes what portion of an additional amount of income goes to saving. Ranging from zero to one.

$$\text{marginal propensity to save} = \frac{\Delta S}{\Delta DI}$$

- i. Since you can either save or spend your income,

$$MPS + MPC = 1$$

IV. The Keynesian (or Fiscal) Multiplier

- a. Suppose I give you \$1. What could you do with it?
 - i. Some of it you will save, some of it you will spend.
 - ii. The portion you spend will be added to someone else's income.
 - iii. This additional income will be partly spent as well, adding to someone else's income.
 - iv. And so on...
- b. All these individual transactions, added together, increase GDP and it increases it by more than the initial \$1 I gave you. We call this the Keynesian Multiplier, after John Maynard Keynes (rhymes with brains), the father of macroeconomics.

$$\text{Keynesian Multiplier} = \frac{\text{change in real GDP}}{\text{initial change in spending}}$$

- i. How much more depends on the MPC.
- ii. If $MPC = 0.9$, GDP increases by $\$1 + \$0.90 + \$0.81 + \$0.73 + \dots$
- iii. If $MPC = 0.8$, GDP increases by $\$1 + \$0.80 + \$0.64 + \$0.51 + \dots$
- iv. This infinite series converges such that total multiplier equals

$$\text{Keynesian Multiplier} = \frac{1}{1 - MPC} = \frac{1}{MPS}$$

- v. So a 0.9 MPC is a multiplier of 10; at 0.8, the multiplier is 5.
- c. Economists estimate the actual multiplier is much lower than what we predict here. This equation gives us an upper bound. The actual value (somewhere between zero and 2.5) is lower because...
 - i. New income is dissipated in the form of taxes and imports.
 - ii. Inflation from extra spending reduces the real GDP gains.
 - iii. Savings becomes investment, which is also spent but on different things. This process takes longer than spending, but it does decay the spending gains thanks to opportunity cost.

- iv. The equation derives from an infinite series, but it can take a long time for money to change hands that often! In practice, it might only change hands a few times before the year runs out. On the other hand such spending *will* increase real GDP; it's just a matter of time.