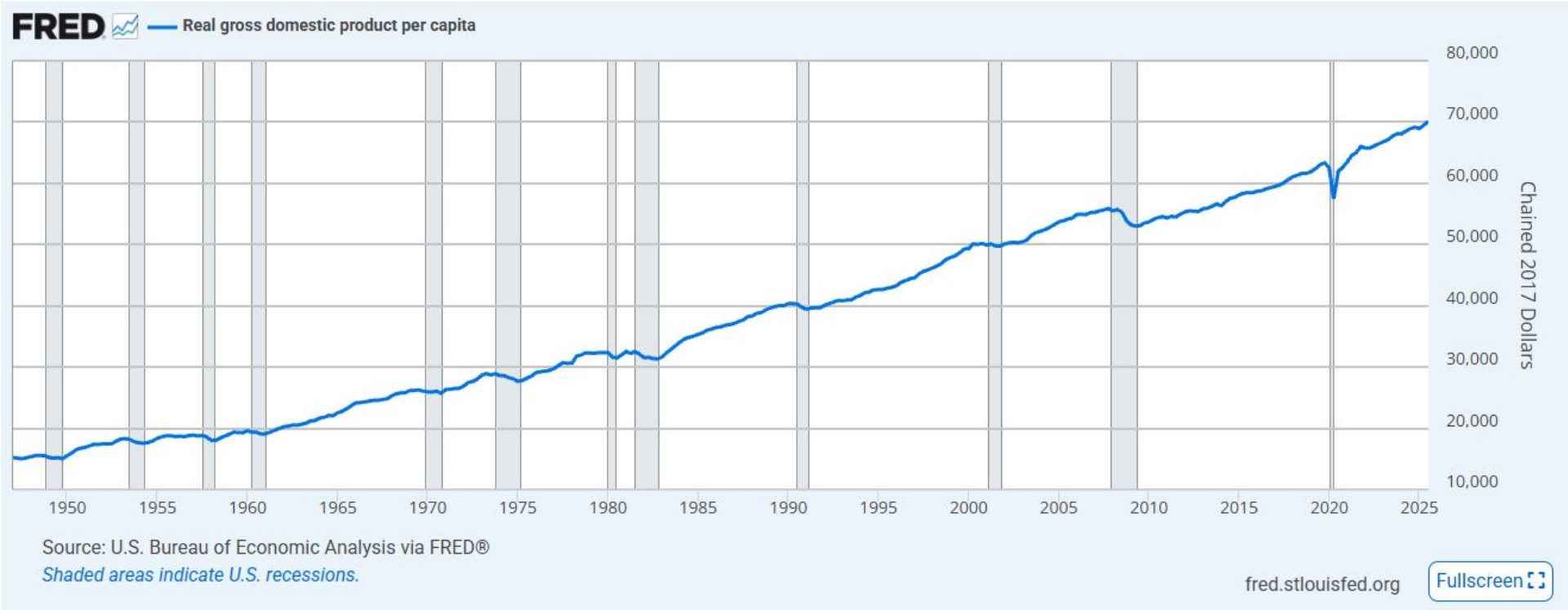
Introduction to Business Cycles

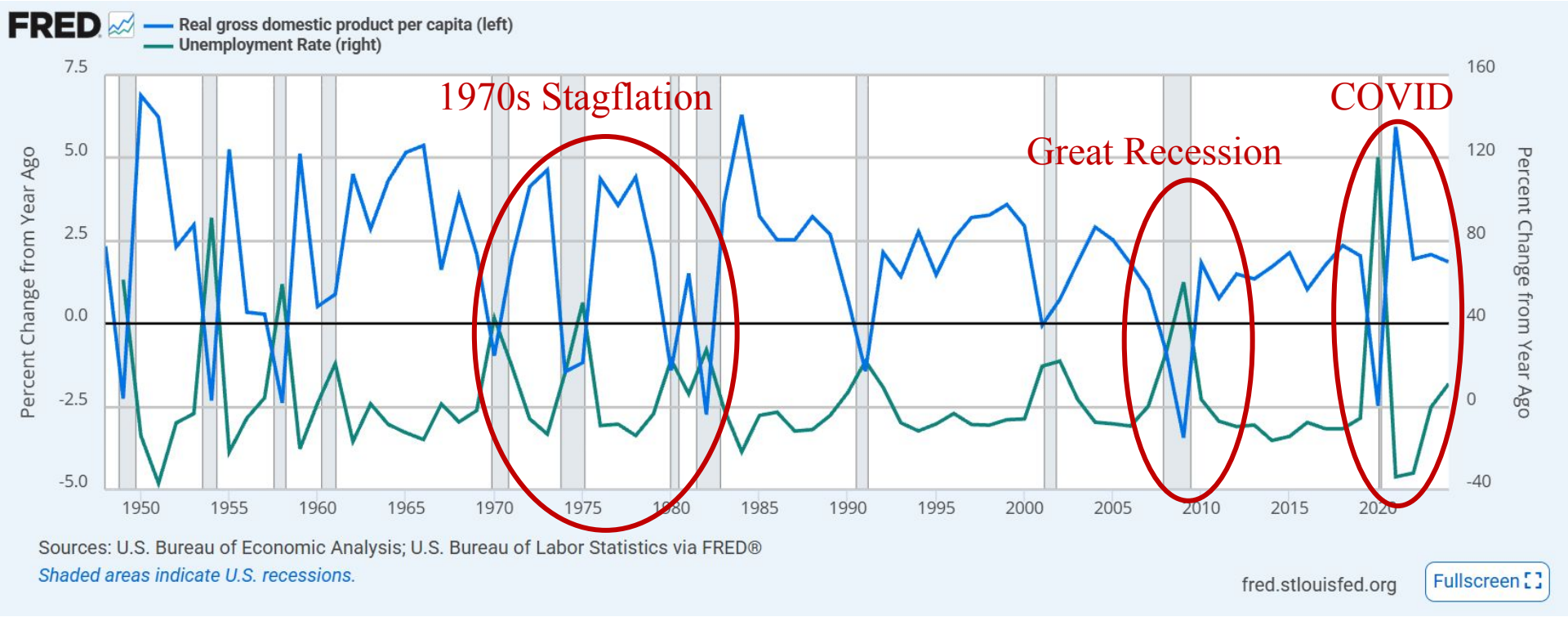
Spring 2026
Econ 256, College of the Holy Cross
Prof. Josh Abel

Chapter 12 and Krugman (1998)

The Business Cycle

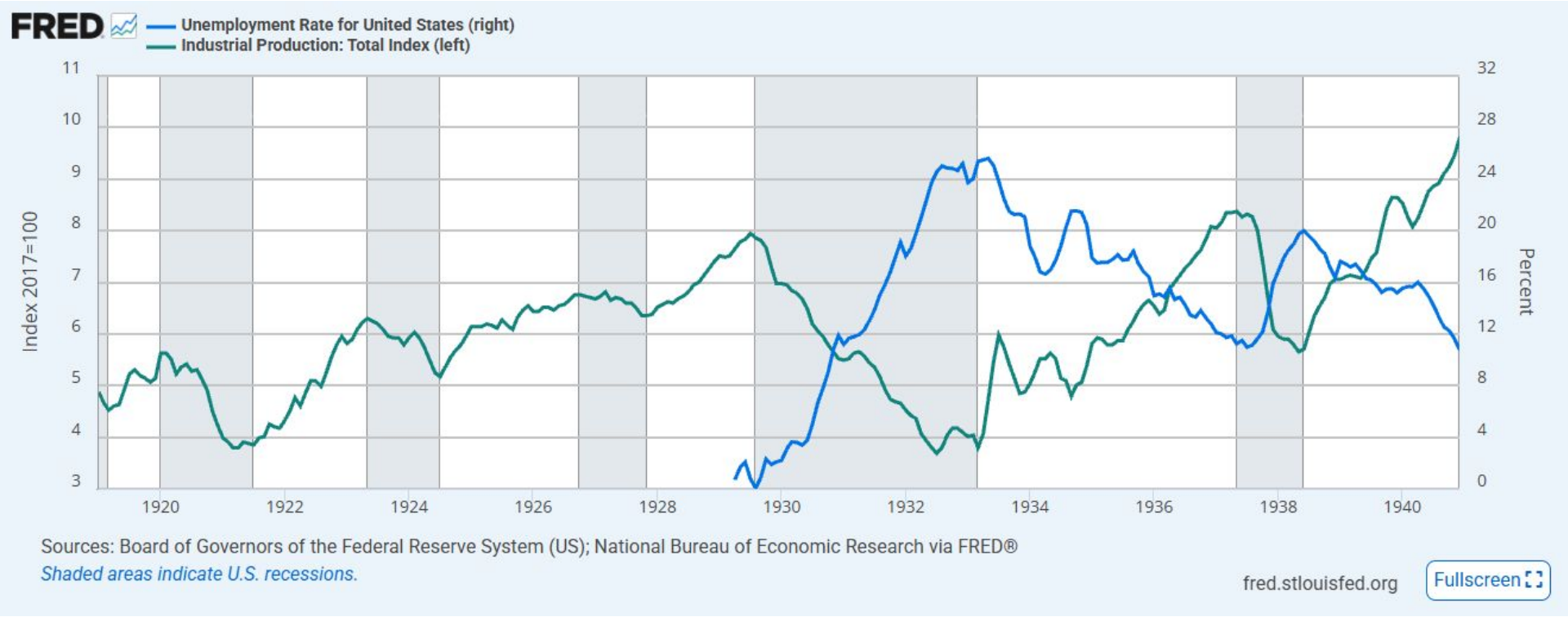


The Business Cycle



The Great Depression

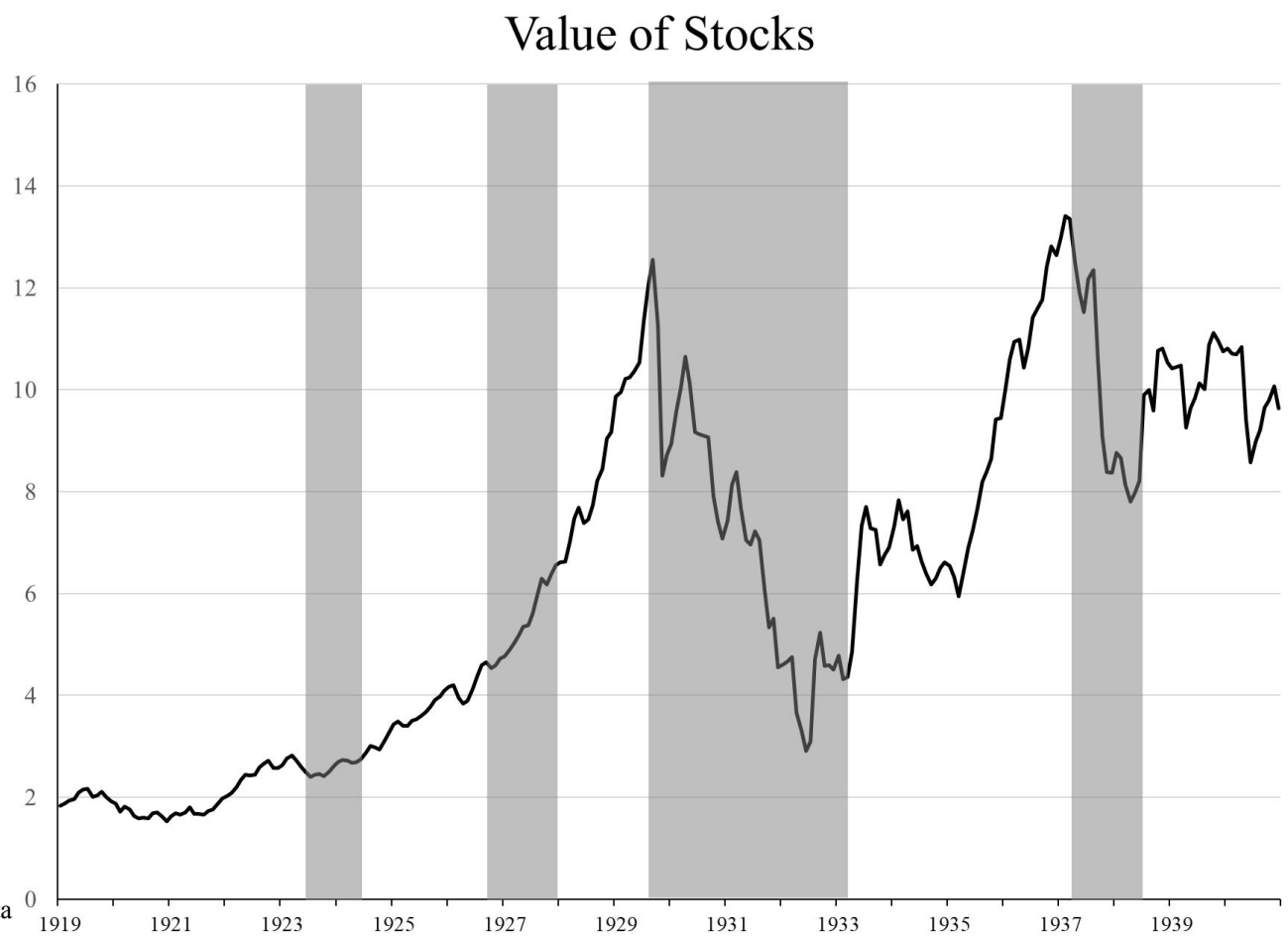
Economic activity collapsed and unemployment soared



Incomes plummeted accordingly

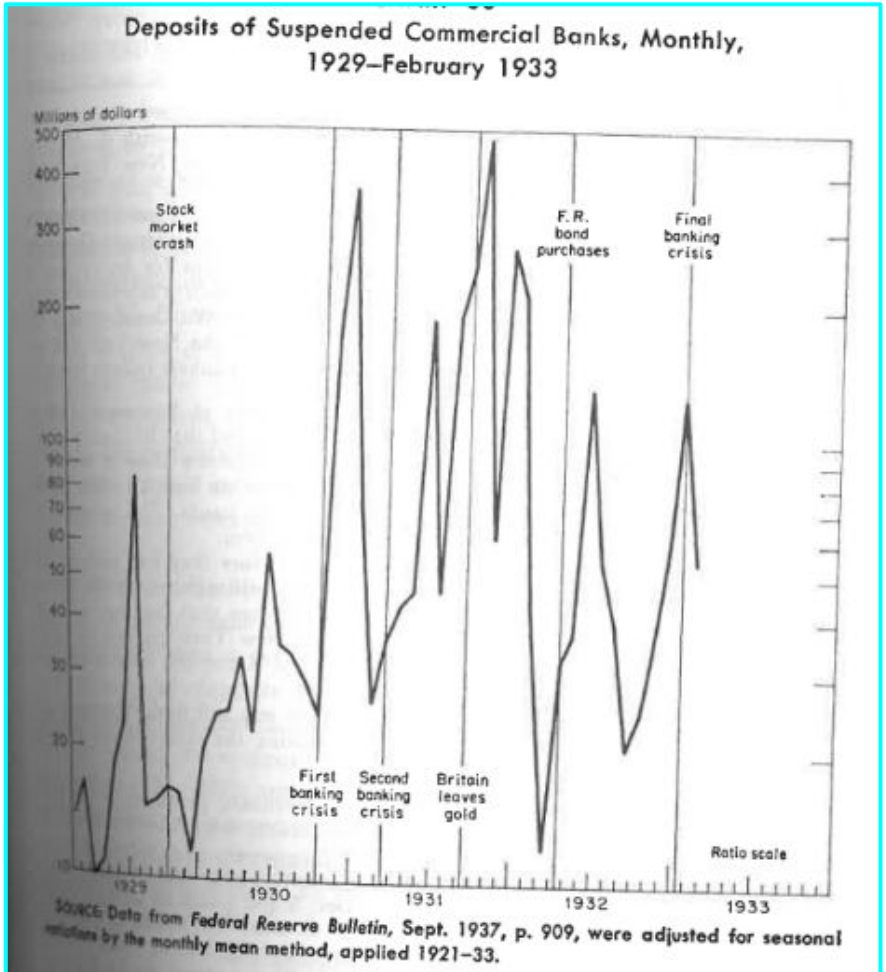
Source: Bureau of Economic Analysis

The stock market did, too



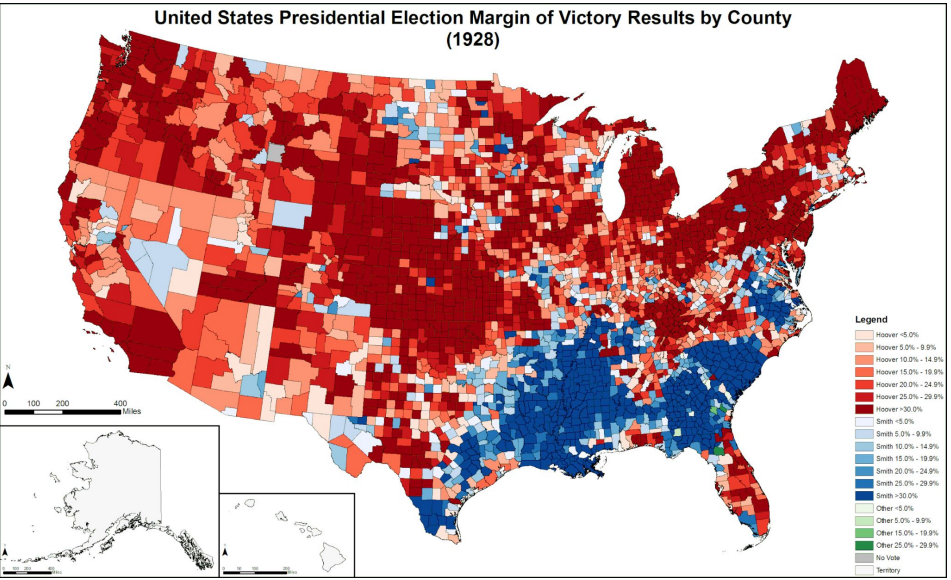
Source: Robert Shiller data

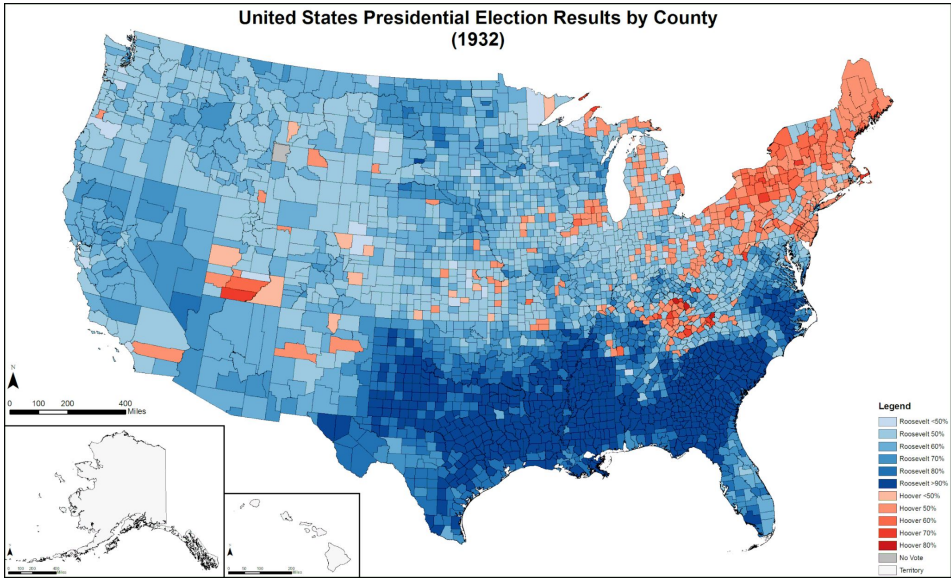
Bank runs crippled the financial system and erased people's savings



Source: Friedman and Schwartz (1964), p. 309

Political backlash against Republicans in power was enormous





Source: Wikipedia

The fallout was too much for some democracies

1932 Federal Election in Germany

Party		Votes	%	+/–	Seats	+/–
Nazi Party	[Far right]	13,745,680	37.27	+19.02	230	+123
Social Democratic Party	[Centrist]	7,959,712	21.58	−2.95	133	−10
Communist Party of Germany	[Far left]	5,282,636	14.32	+1.19	89	+12
Centre Party	[Centrist]	4,589,430	12.44	+0.63	75	+7
German National People's Party		2,178,024	5.91	−1.12	37	−4
Bavarian People's Party		1,192,684	3.23	+0.20	22	+3

Source: Wikipedia

A New Type of Macroeconomics

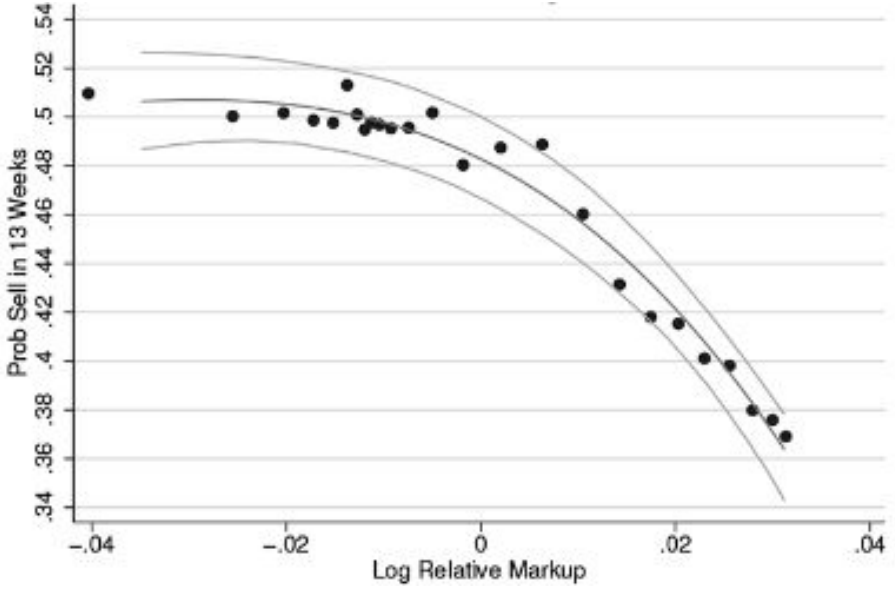
Inadequacy of Standard Models

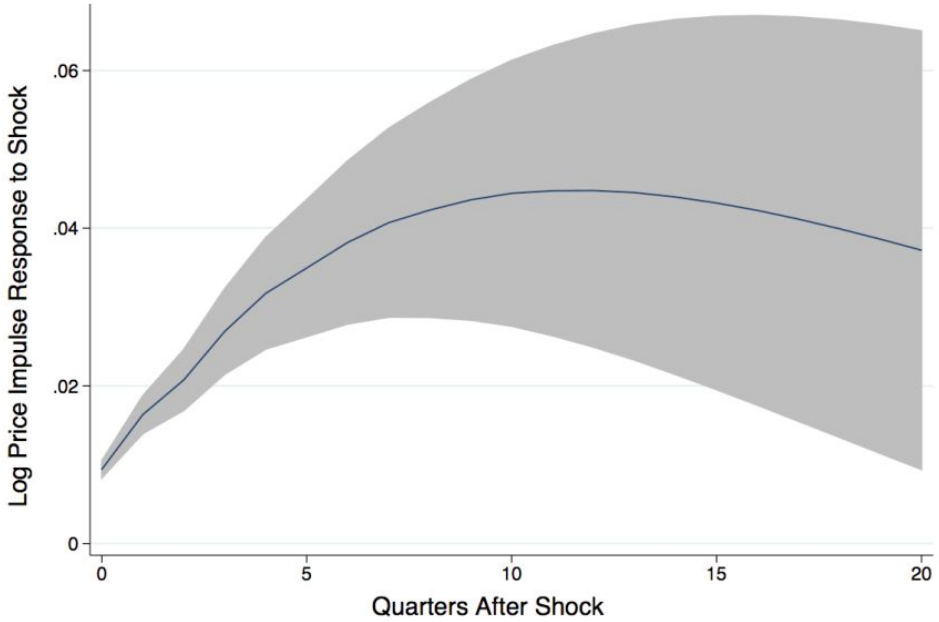
- Prior to the Great Depression, Macro as we know it did not really exist
- Macroeconomic phenomena were explained with standard microeconomic tools
- At the heart of such analyses was standard supply-and-demand:
  - Prices adjust to clear markets
  - If markets clear, then all resources (i.e. K and L) will be utilized
  - If all resources are utilized, TFP is the key driver of output
- Such models struggle to explain recessions
  - TFP ***declines!***?
  - Some academics in the 1980s tried to revive this line of reasoning ("Real Business Cycle" theory):
    - TFP may not decline, but if its growth slows down, people may work less in the present and delay working until the future when TFP growth is stronger (i.e. recessions = vacations)
    - Clever but…come on
- The enormity of the Great Depression demanded answers, which necessitated new types of models

Price Stickiness and Strategic Complementarities

- Sustained, mass unemployment is evidence of markets failing to clear
  - Prices aren't doing what microeconomic theory says they do!
- Why might prices fail to adjust and clear markets?
  - Imperfect attention to market conditions
  - Contractual commitments
  - Costs of adjustment
  - For labor: downward nominal rigidity → it's very hard to cut people's salaries
- Evidence for stickiness is robust
  - Textbook's Table 12-1 suggests that firms adjust prices on average once per year
- So if firms adjust prices every year, how can a recession more than 1 year?
  - Since not all firms adjust at the same time, they may do so in small increments so as not to get too far out of line with competition
    - Known as "strategic complementarities"

Price Stickiness and Strategic Complementarities in Action





Source: Guren (2018) and pre-print (2015 version)

Downward Nominal Wage Rigidity

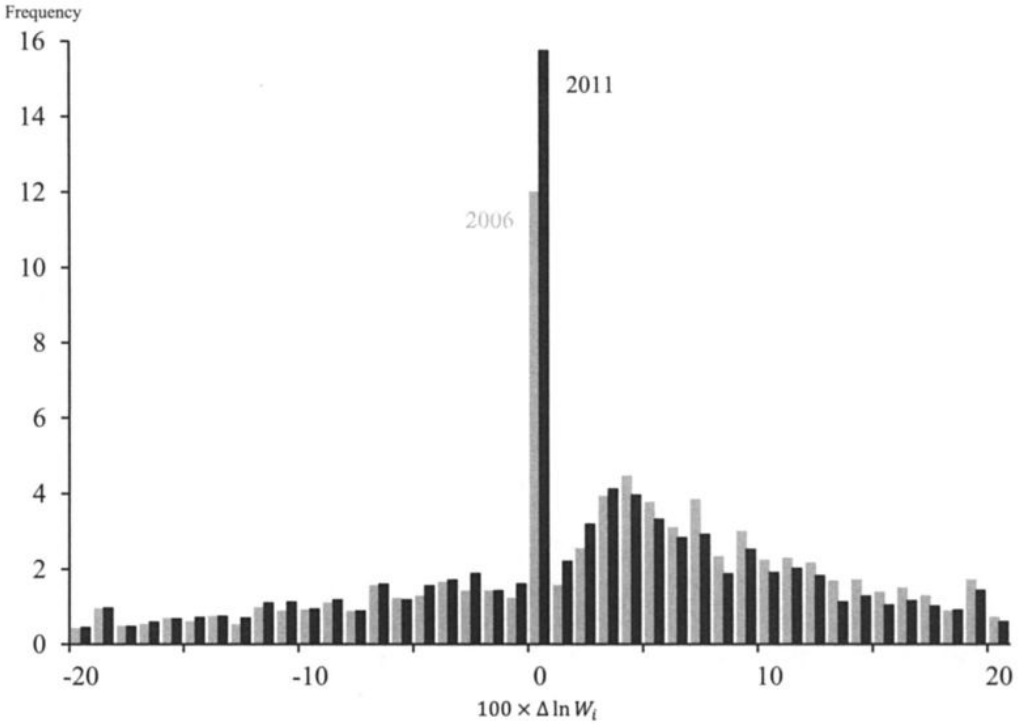


FIG. 1. Distribution of 12-Month Log Wage Changes in 2006 and 2011.

SOURCE: Current Population Survey and authors' calculations.

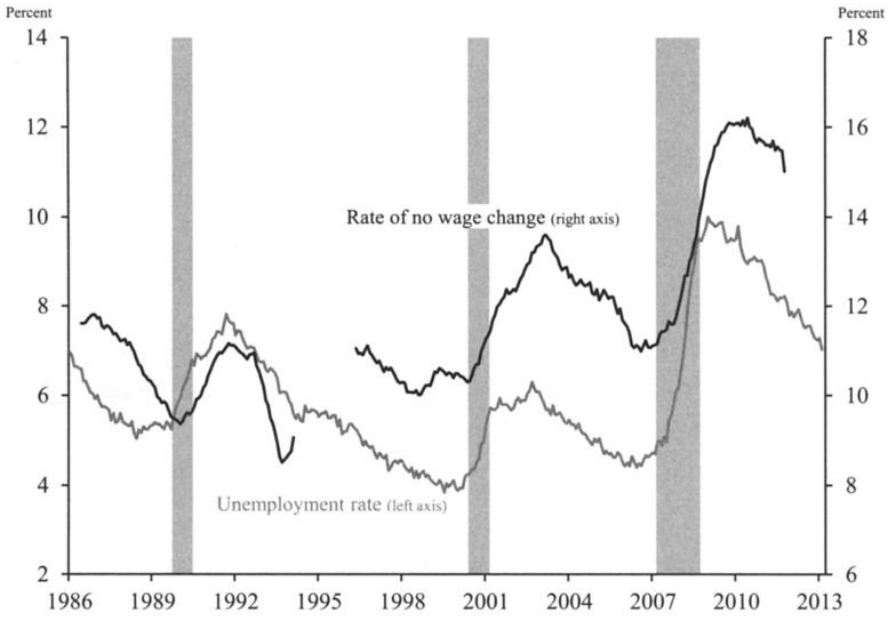


FIG. 2. Fraction of Workers Reporting the Same Wage as 1 Year Prior and the Unemployment Rate.

SOURCE: Bureau of Labor Statistics and Current Population Survey. 12-month centered MA of rate of wage change.

Source: Daly and Hobijn (2014)

A Simple Model with Money

$$\text{Real: } Y = C + I + G$$

$$\text{Nominal: } P*Y = P*(C + I + G)$$

Define money, M, to be a medium of exchange. All spending requires money. So:

$$P*(C + I + G) = M$$

So output (supply) and spending (demand) are equal to the real money supply:

$$Y = C + I + G = M/P$$

Variables: Policy and Endogenous

$$Y = C + I + G = M/P$$

Let's assume some simple behavior – households and business spend more when their money goes further:

$$Y = C(M/P) + I(M/P) + G = M/P$$

(+ over C(M/P), + over I(M/P))

Flexible Prices

If prices are flexible, then all labor and capital will be used, so we have:

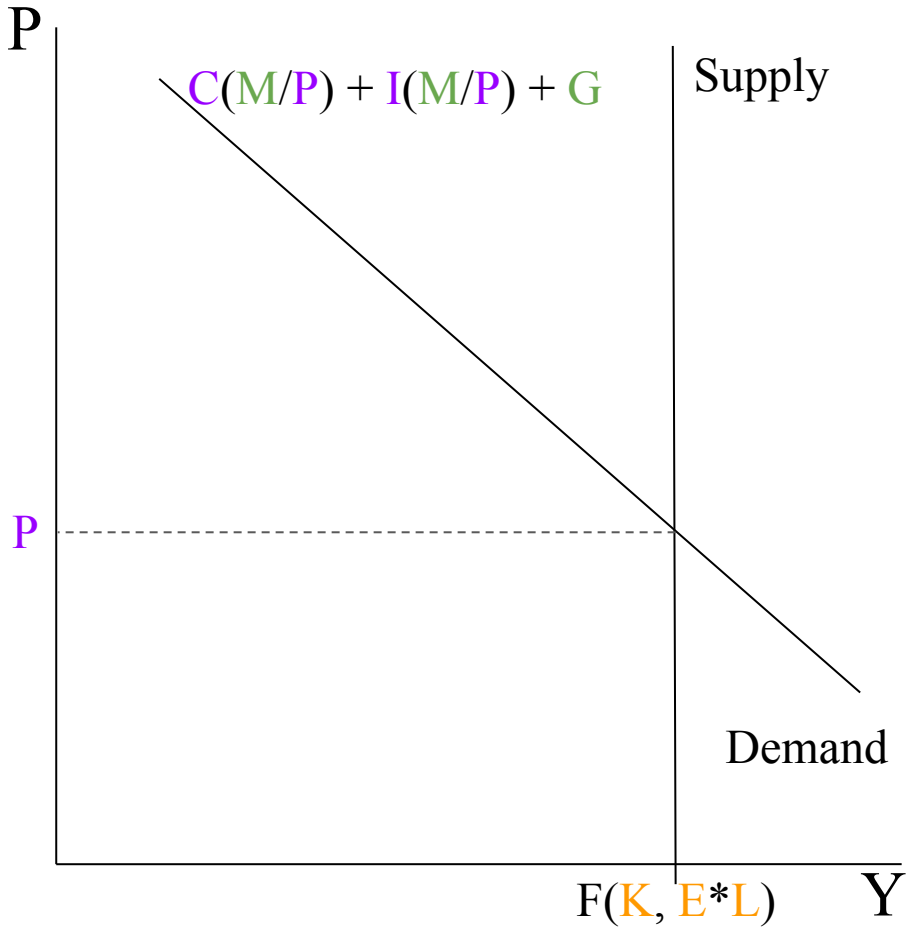
$$F(K, E*L) = Y = C(M/P) + I(M/P) + G = M/P$$

where orange variables are exogenous. Therefore, output is effectively exogenous:

$$Y = C(M/P) + I(M/P) + G = M/P$$

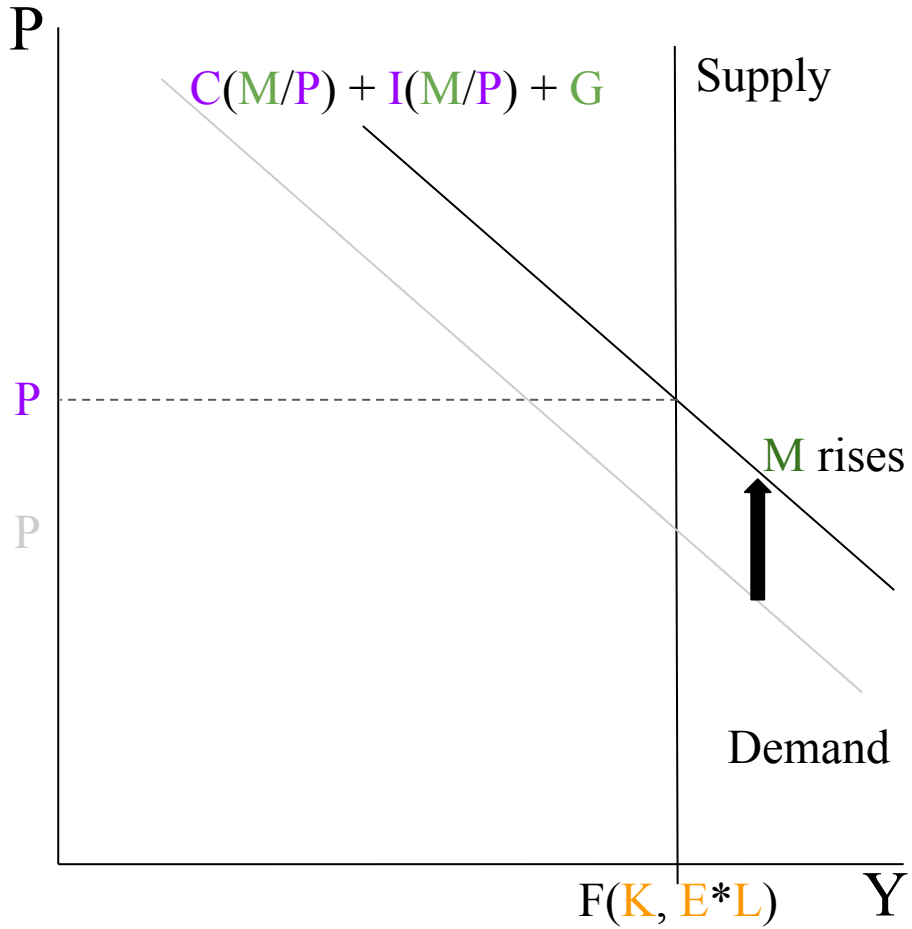
1. What happens if we increase M?
2. What happens if we increase G?

Results with Flexible Prices



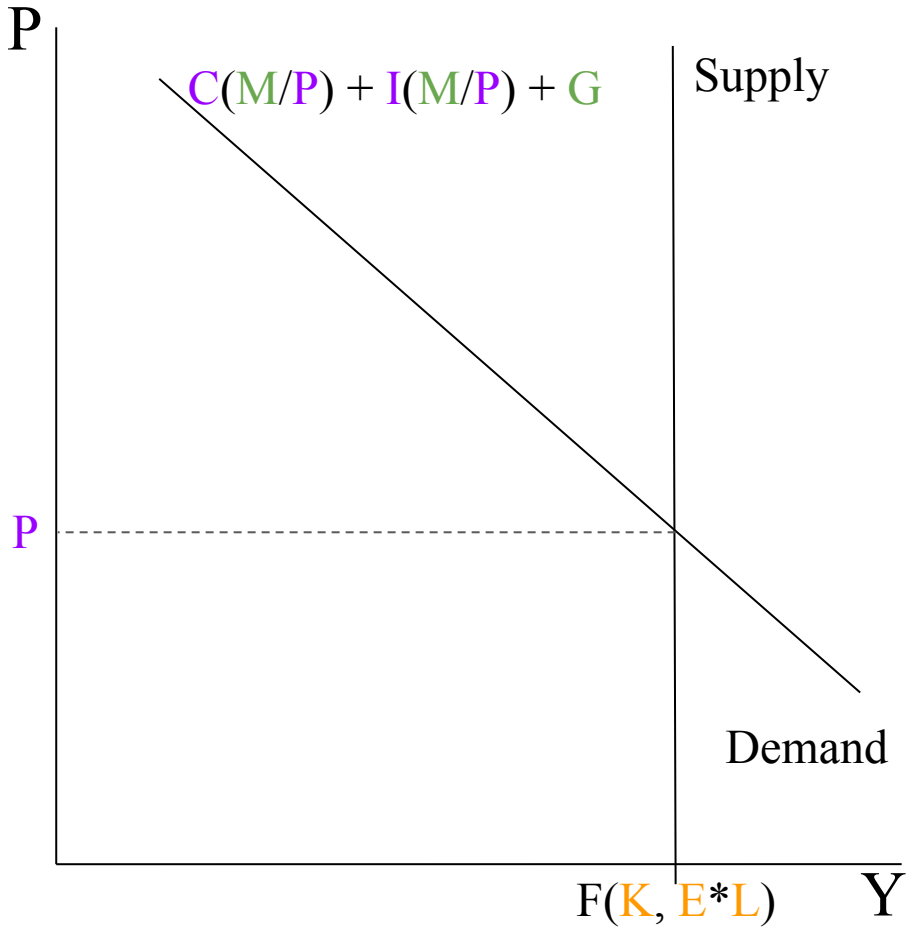
- Output is pinned down by supply
- Price is set so that ***real*** money supply leads spending to be consistent with that level of output

Results with Flexible Prices



- Output is pinned down by supply
- Price is set so that ***real*** money supply leads spending to be consistent with that level of output
- Increasing M increases ***nominal*** demand
- More dollars chasing the same amount of goods
  - Prices get bid up until ***real*** money supply is back where it started
- This is the "Classical Dichotomy"
  - Nominal variables only affect other nominal variables
  - So M only affects P, no component of real output
    - Increasing M causes inflation, no impact on real economy

Results with Flexible Prices (G shock)



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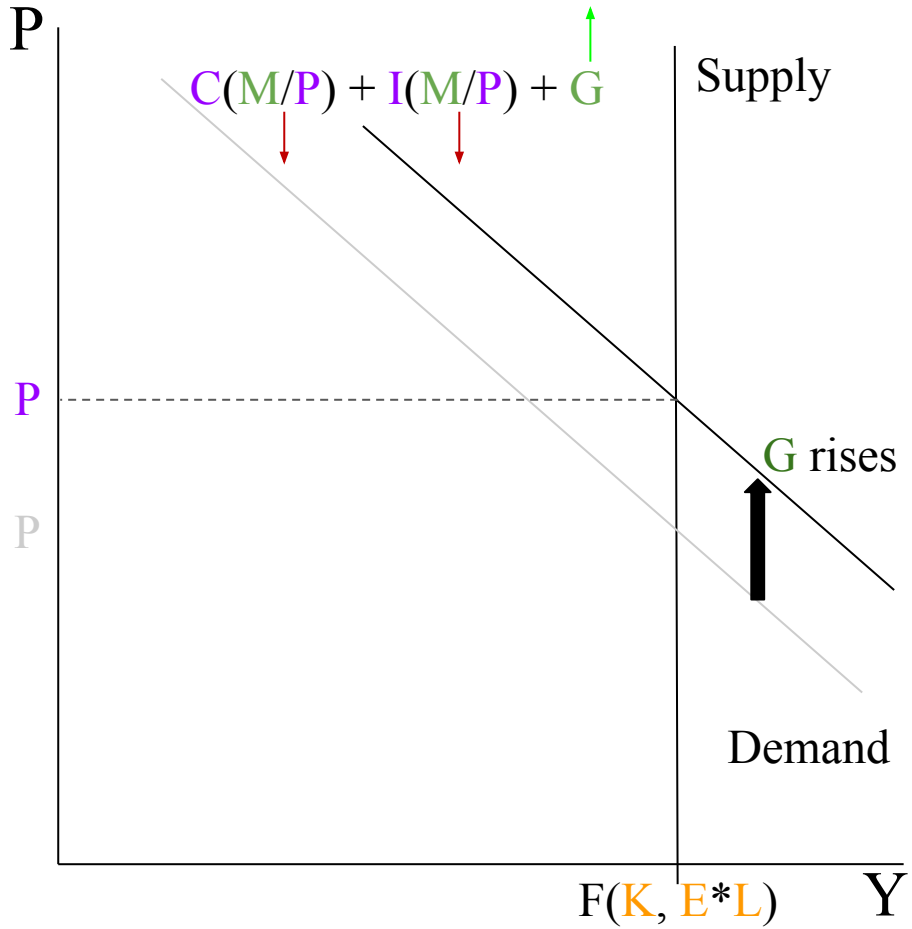


- Increasing G increases ***nominal*** demand
- More dollars chasing the same amount of goods
  - Prices get bid up
  - ***Real*** money supply declines
  - C and I fall to compensate for G's rise
- G does have real effects, but they're not good
  - Essentially government taking resources away from private sector

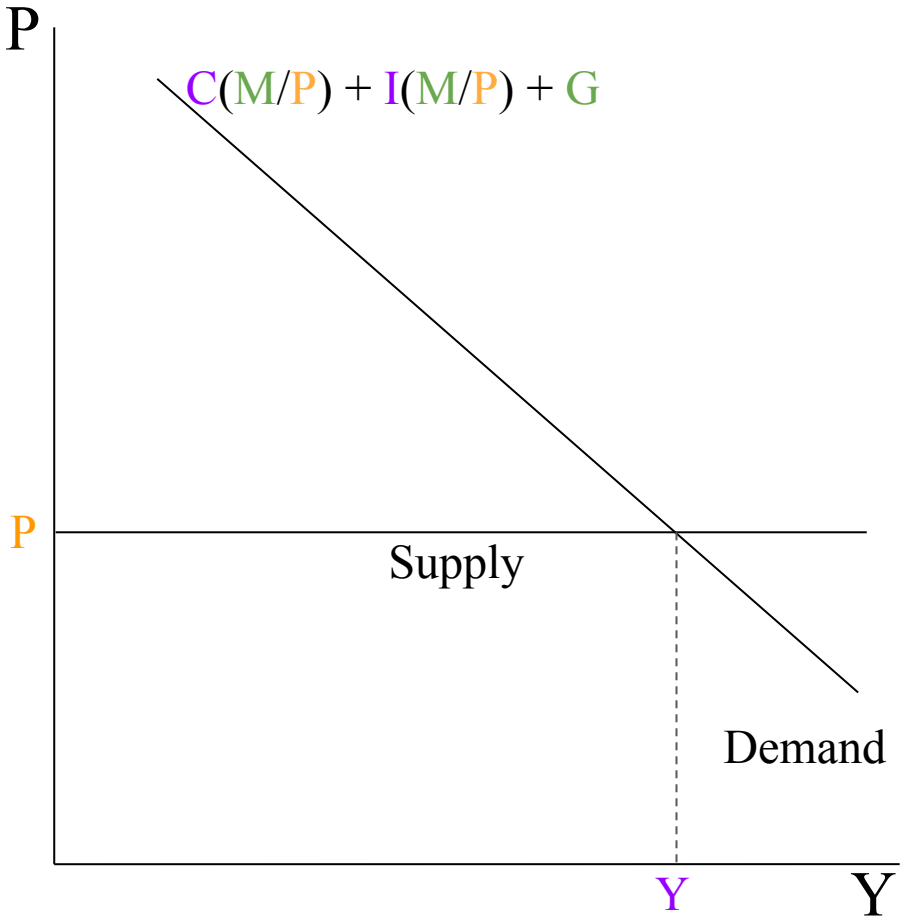
Sticky Prices

If prices are stuck, then P is exogenous:

$$Y = C(M/P) + I(M/P) + G = M/P$$

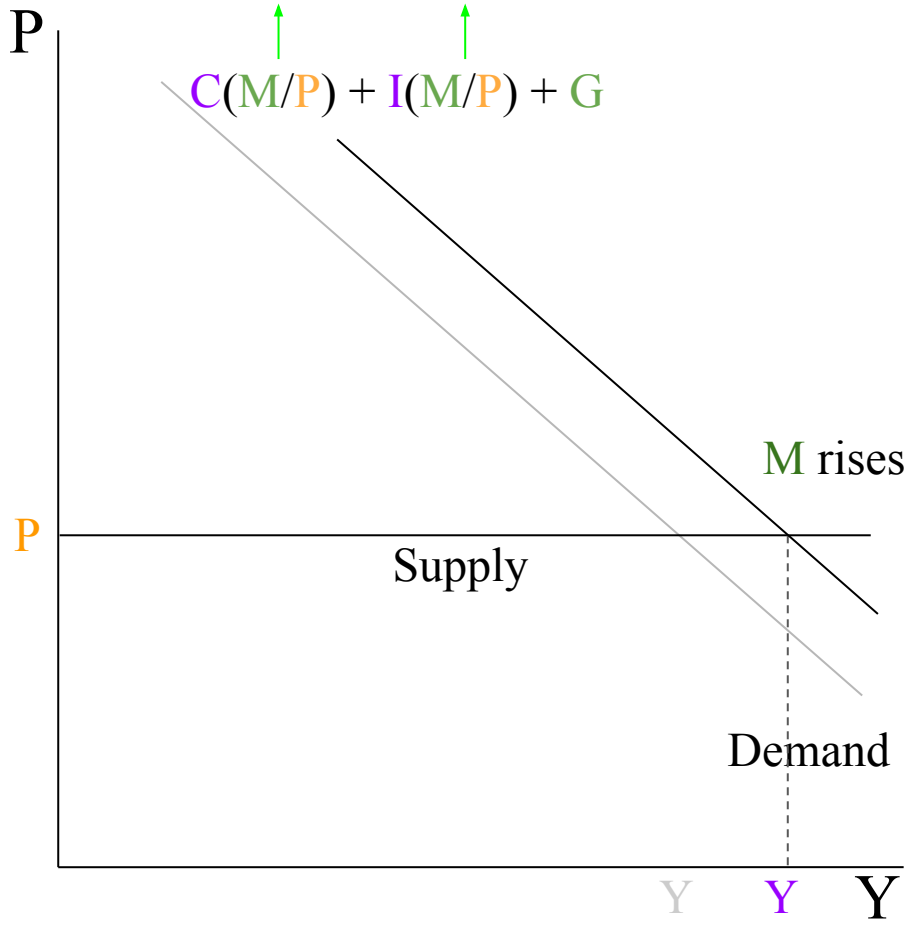
1. What happens if we increase M?
2. What happens if we increase G?

Results with Sticky Prices



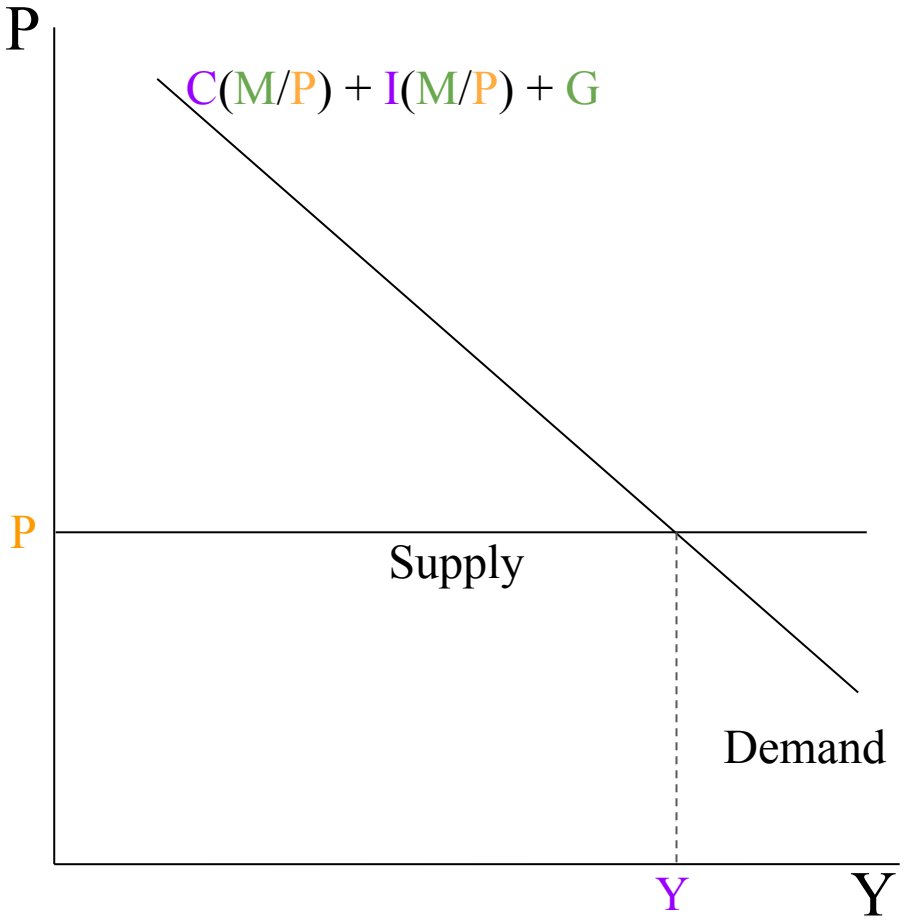
- Price is fixed at P
- Firms supply what is demanded at that price

Results with Sticky Prices



- Price is fixed at P
- Firms supply what is demanded at that price
- Increasing M now increases ***real*** demand
- Output rises as real C and I increase
  - "Demand creates its own supply"
- Implicit in this is some sort of slack in resource utilization
  - So when demand rises, those resources can be pulled in to produce more output
  - Unemployment rate is always > 0, so there's some basis for this

Results with Sticky Prices (G shock)



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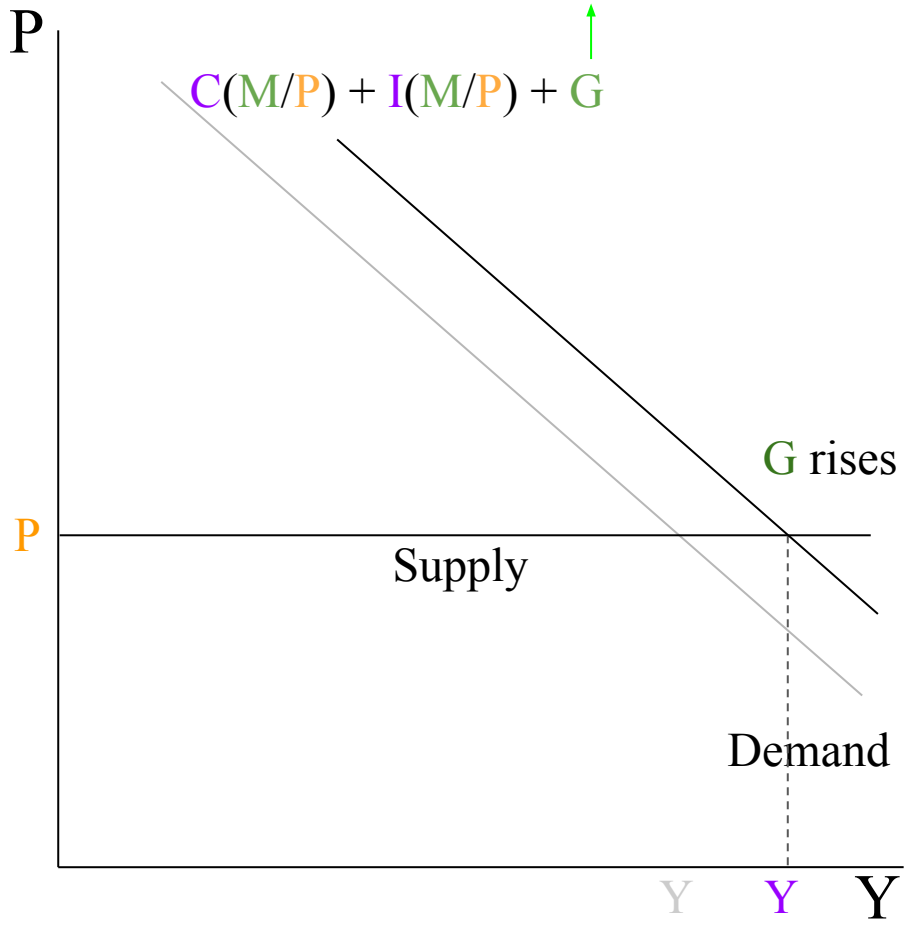
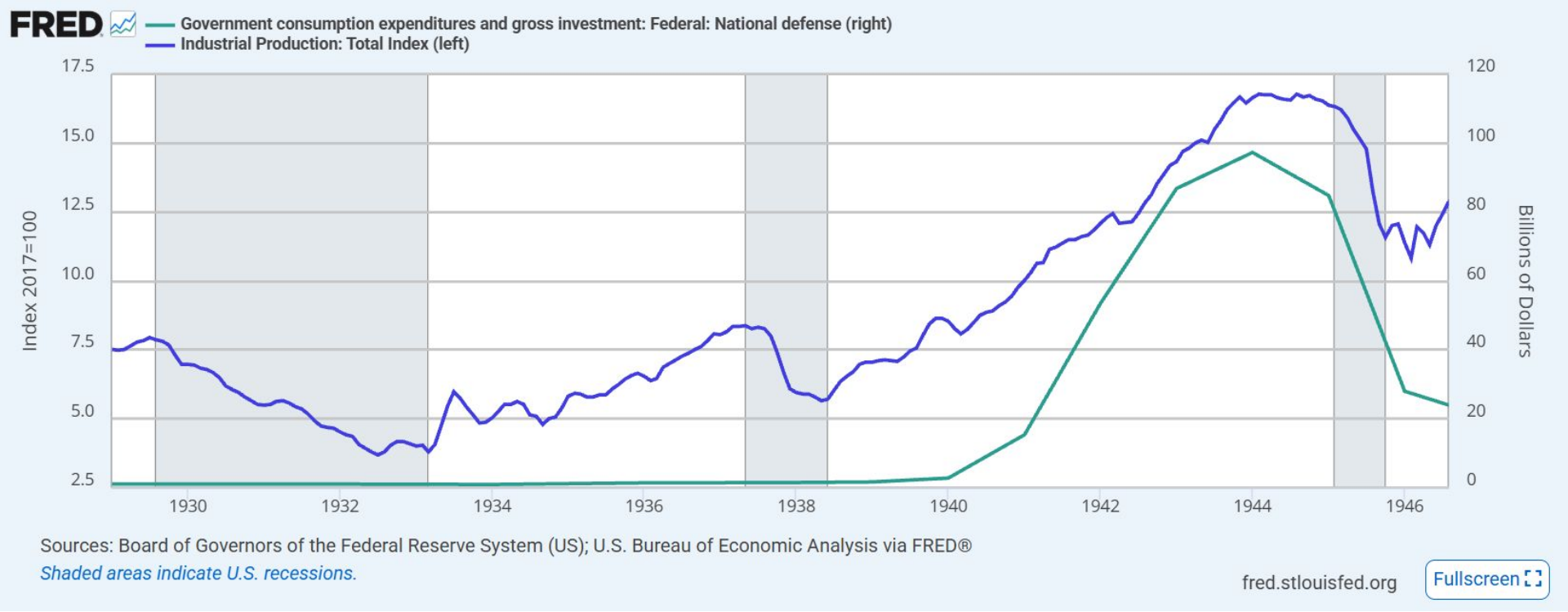
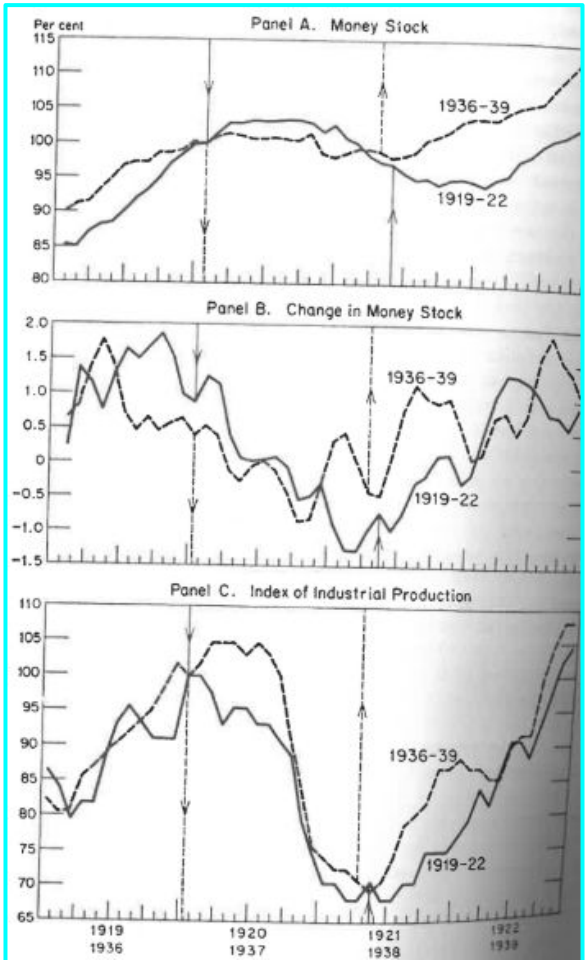


- Now, increasing G increases Y
  - No "crowding out" of C and I

World War 2 demonstrated that G almost certainly affects Y



The Fed made some disastrous decisions to shrink M

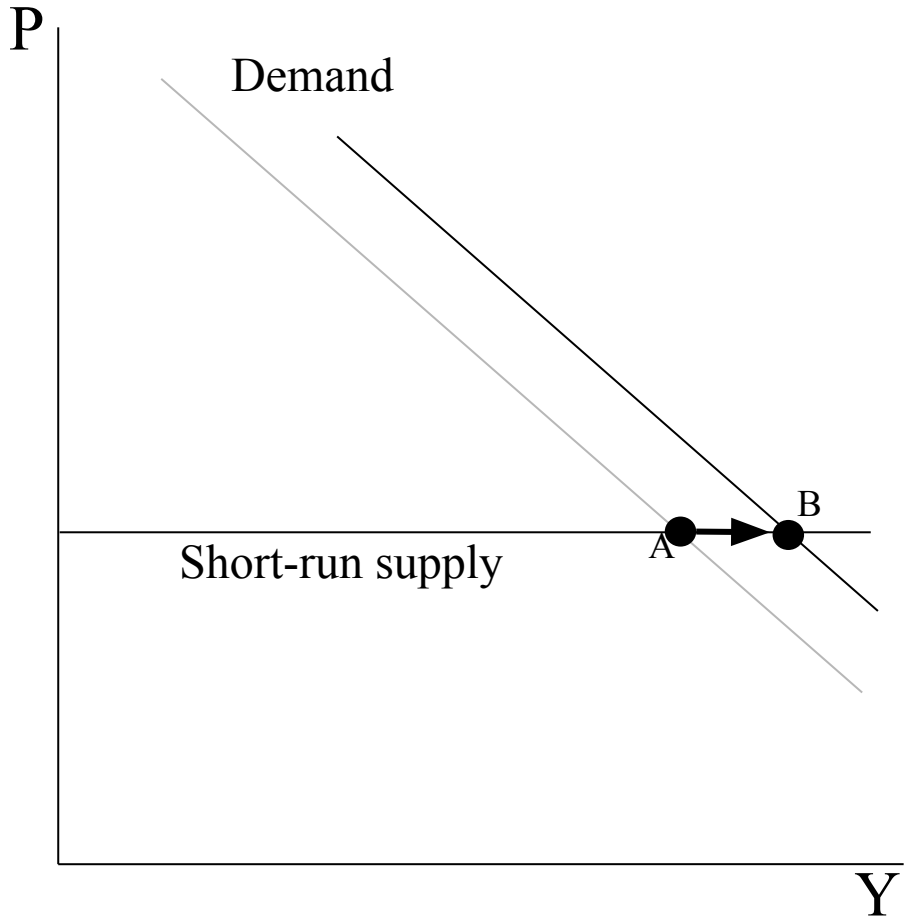


Source: Friedman and Schwartz (1964), p. 530

Validation for Sticky Prices

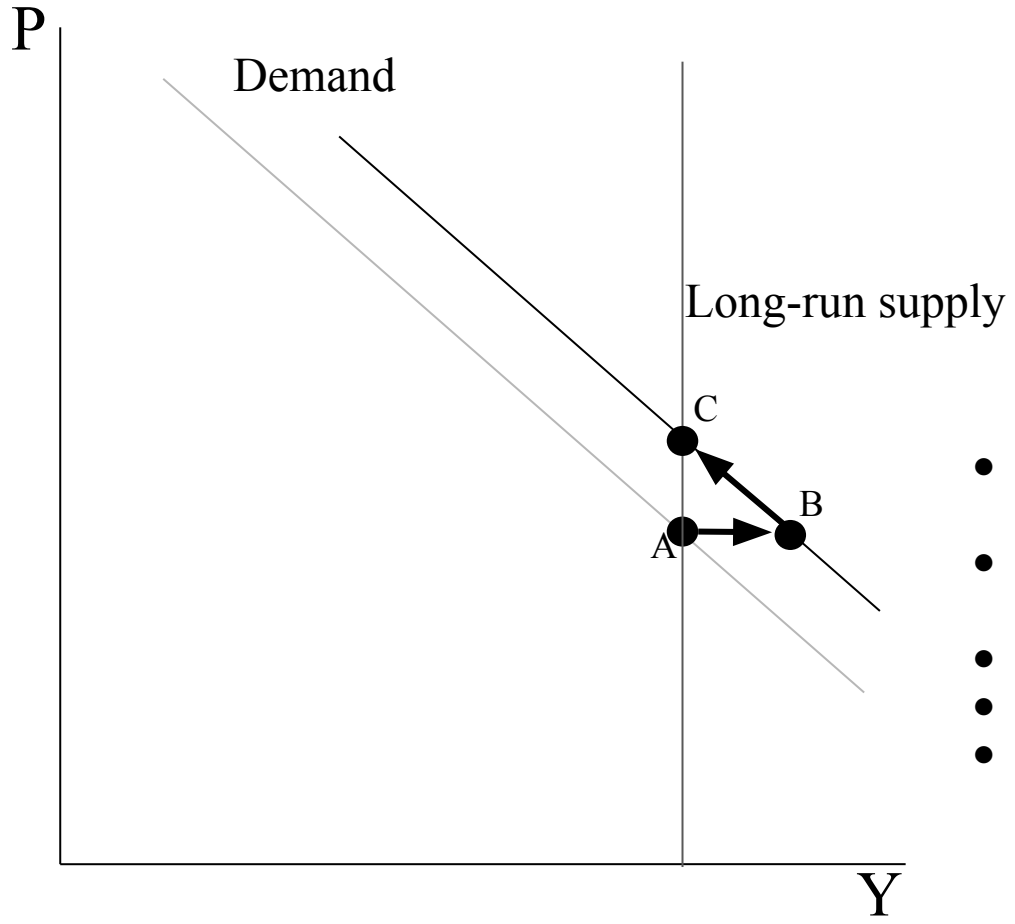
- G ↑ ⟶ Y ↑
  - Consistent with sticky prices moreso than flexible prices
    - RBC proponents argue that when G goes up, people work more because their taxes will go up
      - ➢ Clever, but again…
- M ↑ ⟶ Y ↑
  - Makes sense with sticky prices, not flexible prices
    - RBC has no real response to this

Long-Run vs. Short-Run



- Prices are sticky in the short-run, so demand can have real effects

Long-Run vs. Short-Run



- Prices are sticky in the short-run, so demand can have real effects
- In the long-run, prices adjust and so demand only ends up affecting prices
- Long-run growth is all about the supply curve
- In the short-run, both supply and demand matter
- We will spend the next few months greatly enriching this story