Lecture 13:
Expectations and the Macroeconomy

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Updates for the Course

- Assignments
  - Assignments due before Midterm 2 have due dates set to Monday, April 13
  - Final two assignments due on Monday, April 27

- Exams
  - Exams will be done remotely with open book/notes
  - You need to have access to computer and internet during your regular exam time
  - Special arrangements for students in Eastern hemisphere
Current State of the Economy

- We are in the midst of a public health crisis with severe economic consequences

- Monetary response:
  - Interest rates reduced to lowest possible levels
  - Asset buying program to keep credit available

- Fiscal response:
  - Ongoing
  - Direct monetary payments and support for businesses closed by containment measures
Nationwide unemployment claims

Note: Official figures are seasonally adjusted. This week's claims are not seasonally adjusted and represent a third of total national employment. Source: Department of Labor, state level reporting.
Why are stock prices down so much?

Stock Price = EPV of dividends + EPV of Sell Price

If expected dividends (earnings) and future sell prices fall dramatically, then stock price can fall.

May also reflect supply/demand: if laid off, workers must liquidate stock to meet living expenses.

Could also be panic.
Why does epidemic affect the economy?

- Massive disruption to firms
  - Workers, supply chains
  - Consumers
  - Uncertainty reduces investment

- Lower consumption by households
  - Layoffs reduce spending
  - Isolation reduces many forms of spending
  - Uncertainty reduces large purchases
NEW YORK
11:15 AM

BREAKING NEWS
NY GOV. ANDREW CUOMO GIVES UPDATE ON CORONAVIRUS

TRAIL FOR NEW DRUG THERAPY
HYDROXYCHLOROQUINE + ZITHROMAX
FDA ACQUIRING 10,000 DOSES
HEALTH COMMISSIONER ZUCKER RECOMMENDS TRIAL
Understanding the Government Response

- Fed: Cheap credit
  - This crisis is expected to be temporary
  - Give businesses/people the ability to borrow to get through it

- Fiscal Policy: Mitigate the economic damage
  - Public health: Contain the epidemic
  - Stimulate spending with direct transfers
  - Maintain incomes of people losing their jobs
Our next topic is the business cycle

It is possible, or even likely, that the US economy is now moving into a recession

- A “recession” is a general decline in business activity, associated with negative GDP growth

In this part of the class we will study how recessions play out and what the government can do about them

Today: focus on the important role played by expectations
Expectations

- Expectations are the predictions that people make about what will happen in the future.
- Most economic decisions depend strongly on expectations.
Investment Decisions

- Should you build a factory?
- It will take several years to build
- The product will be sold for years after that
- Will people want to buy my product in the future? Price? Costs?
Education Decisions

- What should I major in?
- What will the job market be like?
- Will there be jobs available where I want to live?
- Will my skills be valuable over the course of my whole career?
Consumption Decisions

- Should I buy this product?
- Will the price go down in the future?
- Should I be saving my money for the future instead?
- ...will the product be available in the future?
Macroeconomic Expectations

- The macroeconomy can be affected if everyone’s expectations change at once
- Expectations change based on new information
  - For example, one month ago people did not expect much impact from coronavirus
- Changes in expectations are an important part of how the economy is affected by recessions and how the government can respond
Government Policy Can Change Expectations

- An important aspect of how the government can respond to a recession is by *changing* expectations.

- The government is the only entity in the economy large enough to be able to unilaterally change expectations with its own actions.

- Examples:
  - **Investment:** Lower tax rates or greater spending => higher expected future profit
  - **Consumption:** Economic stimulus makes me think I’m more likely to keep my job.
Price Expectations

- Future prices play an important role in expectations

- Fiscal and monetary policy are important for determining future prices
  - If the Fed prints a lot of money, prices rise
  - If the government runs large deficits, prices rise

- Particularly important in a crisis is how the economy reacts when there is *new information*
  - That is, expectations have to adjust
Unexpected Changes in Prices

- To understand how changes in price expectations actually affect the economy, think about the price level $P$ and price expectations $P_E$.
- During normal times $P = P_E$, meaning that prices are equal to what people expect.
- At these times we define the “natural rate of output” $Y_N$ to be how much the economy is capable of producing during normal times.
- Then a macroeconomic event occurs that changes prices temporarily.
- How might that affect real GDP $Y$ relative to $Y_N$?
1. The Sticky-Wage Theory

- Nominal wages are **sticky** in the short run, they adjust sluggishly.
  - Due to labor contracts, social norms

- Firms and workers set the nominal wage in advance based on $P_E$, the price level they expect to prevail.
  - So if actual prices are **higher** than expected, labor is relatively **cheap**
  - With lower production costs, firms produce more, increasing GDP.
2. The Sticky-Price Theory

- Many prices are sticky in the short run.
  - Due to **menu costs**, the costs of adjusting prices.
  - Firms set sticky prices in advance based on expected prices $P_E$.
  - If prices are unexpectedly high, then the firm’s good is relatively cheap.
  - Hence, people buy a lot of it, increasing GDP.
3. The Misperceptions Theory

- If firms see a lot of people buying their goods, they can’t tell the difference between:
  - Their price being “too low” \( (P > P_E) \), but the firm hasn’t adjusted its price
  - Demand from their product is high, but \( P = P_E \) causing them to increase production
- If they sometimes confuse the two, inflation can cause them to produce more.
- Then inflation causes GDP to increase due to this misperception.
What these Theories Have in Common:

In each theory, \( Y \) deviates from \( Y_N \) when \( P \) deviates from \( P_E \).

\[
Y = Y_N + \alpha (P - P_E)
\]

- Output
- Natural rate of output (long-run)
- \( \alpha > 0 \), measures how much \( Y \) responds to unexpected changes in \( P \)
- Expected price level
- Actual price level
What the Theories Have in Common:

\[ Y = Y_N + a(P - P_E) \]

- **When** \( P > P_E \)
  - the expected price level

- **When** \( P < P_E \)

Short Run

\[ Y < Y_N \quad \text{or} \quad Y > Y_N \]
Short Run and Long Run

- The imperfections in these theories are temporary. Over time,
  - sticky wages and prices become flexible
  - misperceptions are corrected

- In the LR,
  - $P_E = P$
  - AS curve is vertical
Short Run and Long Run

\[ Y = Y_N + a(P - P_E) \]

In the long run, \( P_E = P \)

and \( Y = Y_N \).
Long Run: Change in Expectations

Everything that shifts LRAS shifts SRAS, too.

In addition, $P_E$ shifts SRAS:

If $P_E$ rises, workers & firms set higher wages.

At each $P$, production is less profitable, $Y$ falls, SRAS shifts left.
Next Lecture

- Use this observation to develop a model to study recessions and government response
  - Called the AD-AS model
- Be sure to keep up with the assignments
- Stay well!