Lecture 14: Building the Aggregate Supply

- Current Events
- Wage and price determination
- The natural rate of U
  - From natural U to natural Y
- Aggregate Supply
Building the Aggregate Supply

- The labor market
- Simple markup pricing
- Long run (Natural rate: Aggregate demand factors don’t matter for Y)
- Short run
  - Impact: Same as before but P also change (partial)
  - Dynamics (go toward Natural rate)
Wage Determination

- Bargaining and efficiency wages

\[ W = P^e F(u, z) \]

- Real wages
- Nominal wage setting
- Bargaining power
- Fear of unemployment
- Unemployment insurance
- Hiring rate (reallocation)
- Bargaining
Price Determination

• Production function (simple)

\[ Y = N \]

\[ \Rightarrow \]

\[ P = (1+\mu) W \]
The Natural Rate of Unemployment

• “Long Run” \( P = P^e \)

• The wage and price setting relationships:

\[
\frac{W}{P} = F(u,z)
\]

\[
\frac{P}{W} = 1 + \mu
\]

\( \Rightarrow \)

The natural rate of unemployment

\[
F(u,z) = \frac{1}{1 + \mu}
\]
W/P

\[ \frac{1}{1+\mu} \]

Price setting

Wage setting

Unemployment

\[ u_n \]

z, markup
From $u^n$ to $Y^n$

$$u = \frac{U}{L} = \frac{L - N}{L} = \frac{1 - N}{L} = \frac{1 - Y}{L}$$

$$F(1 - \frac{Y_n}{L}, z) = \frac{1}{1 + \mu}$$
W/P

Wage setting

Price setting

\[
\frac{1}{1 + \mu}
\]

\( Y_n \)

\( Y \)

z, markup

[note: A=1 again]
Aggregate Supply

\[ W = \hat{P} F(1-Y/L,z) \]

\[ P = (1+\mu) W \]

\[ \Rightarrow \]

\[ P = P^e (1+\mu) F(1-Y/L,z) \]
\( P = P^e (1 + \mu) F(1-Y/L, z) \)

\[
\begin{align*}
P^e(t) &= P(t-1) \quad \text{[for now]} \implies \\
\text{AS:} \quad P(t) &= P(t-1) (1 + \mu) F(1-Y(t)/L, z)
\end{align*}
\]