Lesson 9: Aggregate Demand and Aggregate Supply

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1 Part One

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2.1 3 Conclusions

1. No long run trade-offs between unemployment and inflation, because prices adjust
2. There is a short run trade-off
3. There are two types of Phillips Curves (SRPC, LRPC)

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# TODO insert SRPC vs LRPC graph here
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2.2 The Modern Phillips Curve

In 1973 and 1979 the United States economy encountered "oil shocks."

$$\pi = \pi^e - \omega(u - u_n) + \rho$$

2.2.1 Phillips Curve with Adaptive Expectations

"What has the pattern been? I am going to predict according to that pattern."

$$\pi^e = \pi_{-1}$$

$$\pi = \pi_{-1} - \omega(u - u_n) + \rho$$

Two advantages:

1. Provides reason for sticky prices and sticky wages
    - π may not fully adjust because people only look backwards

2. We can look at $\Delta\pi = \pi - \pi_{-1}$

$$\pi - \pi_{-1} = -q(u - u_n) + \rho$$

Assume $\rho = 0$

Therefor $\Delta\pi = 0$ if and only if $u = u_n$, so we call u_n NAIRU. This is Non-Accelerating Inflation Rate of Unemployment.

3 Part Three: Aggregate Supply Curves

Aggregate Supply Curves are the relationship between the output (Y) that firms are willing to supply and inflation (price level π).

3.1 Long Run Aggregate Supply Curve (LRAS)

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# TODO insert LR graph
```

"Input prices are going to change to what output prices are changing"

3.1.1 Shifts

1. Increase in Productivity shifts LRAS right (ΔA)
2. Increase in Capial, Labor, etc... shifts LRAS right ($\Delta inputs$)
3. Institutions (policy or such to create incentive for economic growth)
    - Property Rights, Rule of Law, education system, healthcare system...

3.2 Short Run Aggregate Supply Curve (SRAS)

Take the Phillips curve and replace the unemployment gap $(u - u_n)$ with the output gap $(Y - Y^p)$.

Okun's Law:

- For each percentage point Y is above Y^p
- u is 1/2 percentage point below the natural rate u_n
- $(u - u_n) = -0.5(Y = Y^p)$

SRAS equation (plug in Okun's law to PC):

$$\pi = \pi_{-1} + 0.5\omega(Y - Y^p) + \rho$$

$$\pi = \pi_{-1} + \gamma(Y - Y^p) + \rho$$

```
# TODO make SRAS curve
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3.2.1 Shifts

1. Increase in expected inflation $\Delta\pi^e = \Delta\pi_{-1}$
2. Increase in price shock shifts curve up (left) ($\Delta\rho$)
3. The output gap ($\Delta(Y - Y^p)$)
    - If $Y \neq Y^p$ the we have $\Delta\pi$, so π_{-1} changes