ECON 402 Discussion: Week 8

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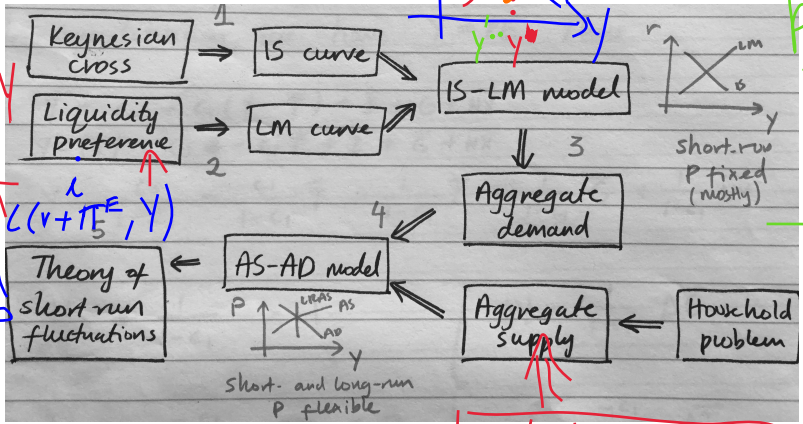
Fluctuations and if/how government should best respond



Equilibrium in the money market

People hold assets in various forms: money (liquid), stocks, bonds

- Bonds: debt obligations by firms/govts that pay interest, bought/sold at some price
- Bond yield: % difference between current price and "face value" aka price at maturity
- Interest rate at which banks are willing to lend must exceed current bond yields (otherwise, banks would just buy bonds)

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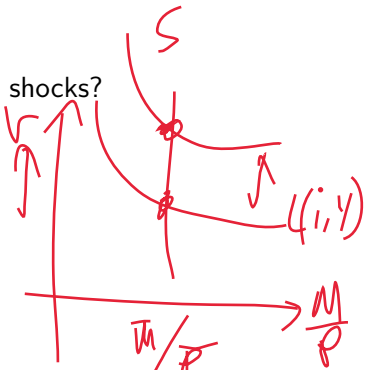
How does this process restore equilibrium the money market given shocks?

- Increase in money demand $L(Y, \underbrace{r + \pi^E}_{:=i})$ holding supply fixed
- How do people satisfy this? Sell bonds for ca$h
- Increased bond supply $\Rightarrow$ lower bond price
  $\Rightarrow$ great bond yields
  $\Rightarrow$ banks charge higher interest rates!



How do central banks change money supply?

1. Open market operations: Fed buys/sells government bonds on *secondary* market, changing money supply, bond demand, price, yields...
   aaand finally, interest rates!

2. Interest rate policy: Fed changes rate paid on bank reserves or reserve requirements, changing rates at which banks lend to each other (FFR), changing interest rates...
   aaand finally, money supply!

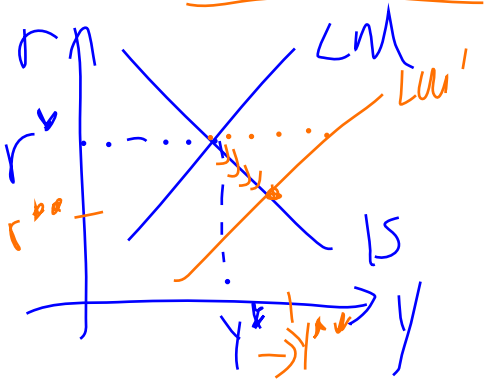
3. Quantitative easing: Fed buys government bonds on *primary* market, or other assets like mortgage-backed securities (usually only if it has to, like at zero lower-bound...)

IS-LM Example 1: Increase in government spending G

- IS curve shifts to the right
- Output increases, and so does demand for money (at current rates)
- Without more money supply (assumed fixed), people sell bonds for ca$h
- Bond prices fall, yields rise, interest rates rise...
- Investment, consumption fall (smaller change in Y than predicted by Keynesian multiplier)

IS-LM Example 2: Increase in money supply M

- Fed buys government bonds, increasing money
- LM curve shifts to the right
- Interest rates drop, so investment/consumption increase (move along IS)
- This is the transmission mechanism behind monetary policy



IS-LM Example 3: Perils of fixed rates and negative demand shocks

- Suppose consumer confidence drops for some reason
- IS curves shifts to the left (planned expenditures fall)
- Demand for money goes down, since lower Y

- If the Fed wants constant interest rates it will reduce money supply M...
  but this makes recession worse!
- If the Fed wants constant output it will increase M...
  now interest rates drop even more, so investment/consumption increase

IS-LM Example 4: Long-run effects when prices can adjust

- Suppose government spending goes up for some reason
- IS curves shifts to the right
- Positive output gap $\Rightarrow$ prices rise, LM shifts left until original long-run equilibrium restored

- Why must interest rates be higher now?
- Why is the long-run effect unchanged like the GE model?

Aggregate Supply-Aggregate Demand (AS-AD) model

(i) Aggregate Demand (AD)

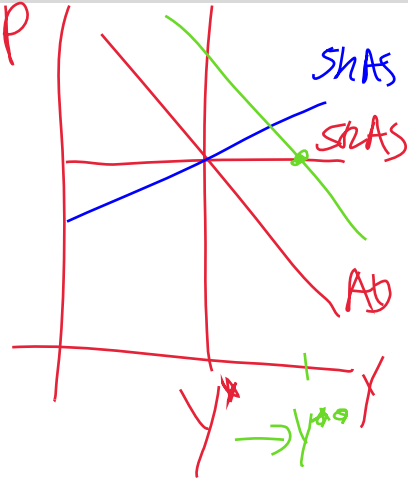
- (IS-LM equilibrium) $Y = f(P; M, \text{other stuff})$
- (simple) $Y = \frac{MV}{P}$

(ii) Short-run Aggregate Supply (SRAS)

- (fully sticky) $P = E[P]$
- (partial sticky) $P = E[P] + \frac{1}{\alpha}(Y - Y^*) + \varepsilon$

(iii) Long-run Aggregate Supply (LRAS)

- (real side) $Y = Y^* = F(K, L^*; A)$



New Keynesian Phillips Curve (NKPC) and upward sloping SRAS

$$P = s \cdot E[P] + (1-s)[P + a(Y - Y^*)]$$

$$P = E[P] + \frac{1}{\alpha}(Y - Y^*)$$

$$Y = Y^* + \alpha(P - E[P])$$

$$\pi = E[\pi] - \beta(u - u^*) + \varepsilon$$

- Implication: unemployment related to "unexpected" movements in inflation
- SRAS logic: output related to "unexpected" movements in prices

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...channel through which expected inflation enters the new-Keynesian Phillips curve is especially contrived... contracting mechanism is such that producers are required to supply as much output as is demanded at the fixed contract price.[10] *[Similarly, models with wage contracts require workers to supply as much labor as is demanded at the contracted wage. Such assumptions violate the principle of voluntary exchange (and common sense).] ...firms are therefore concerned with their current and expected real (that is, relative) price, since a future decline in their relative price will result in additional demand that could be less profitable to meet at the previously contracted nominal price.* - Rudd (2021)

Something un-legit going on here, feat. Rudd (2021) + this meme

footnote 2

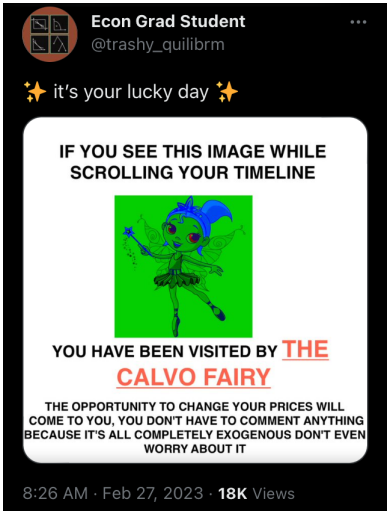
Why Do We Think That Inflation Expectations Matter for Inflation? (And Should We?)

Jeremy B. Rudd
Federal Reserve Board*

September 23, 2021

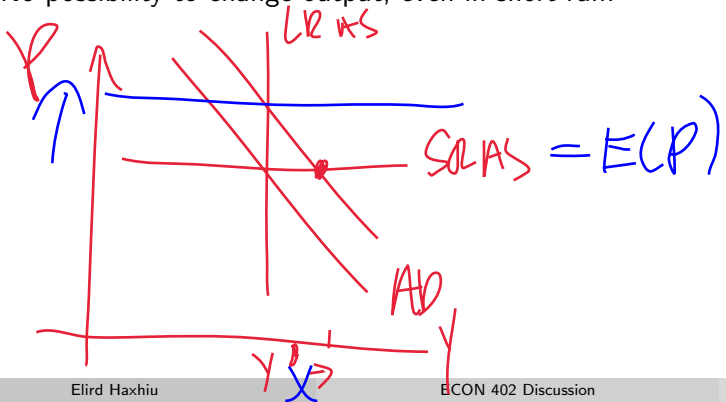
Abstract

Economists and economic policymakers believe that households' and firms' expectations of future inflation are a key determinant of actual inflation. A review of the relevant theoretical and empirical literature suggests that this belief rests on extremely shaky foundations, and a case is made that adhering to it uncritically could easily lead to serious policy errors.



NKPC Example 1: Only unexpected ↑ in nominal demand ↑ Y

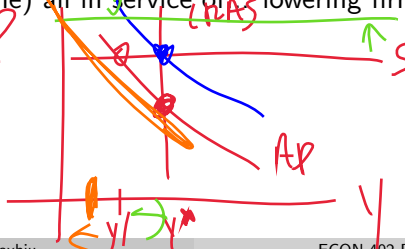
- Suppose increase in money supply M announced
- $E[P]$ immediately adjust upwards, in anticipation of inflation
- Firms then increase their prices... causing that which they anticipated (lol)
- No possibility to change output, even in short-run!



NKPC Example 2: Expectations imply perverse response by govt (imo)

- Suppose cost-push factors lead to recession (and inflation...)
- $E[P]$ immediately adjust upwards, in anticipation of inflation
- Firms then increase their prices... causing (more of) that which they anticipated (lol)

- Not a good idea to stimulate with higher M or higher G or lower T... Why?
- It would make $E[P]$ go up even more, causing a spiral
- Should increase interest rates to reduce demand (causing recession or exacerbating existing one) all in service of lowering firms' $E[\pi]$ so we get less π



Who the bears pain of reducing inflation?

Costs of dis-inflation based on "Natural-Rate Hypothesis"

- States that changes in AD only change Y and u in short-run
- In the long-run, economy always returns to Y^* and u^* implied by classical model
- With expectations lurking, just not worth "running economy hot" to avoid short-run pain, if all we get in the long-run is more expensive stuff. Fine, but...

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- Hysteresis: persistent unemployment above u^* may permanently damage real economy (long-term unemployed skills deteriorate, can't match/bargain with firms again, etc)
- If expectations don't matter then *excessively worrying* about disturbing them by restraining expansionary policy in times of need just serves inflation haters (lenders)
- "Wage-price spiral" boogey-man justifying this policy over-stated
- May exist "real" benefits to some expansionary policies that boost supply side (avoid hysteresis-type issues in the labor market)

Concluding Comments

As this discussion shows, research has not yet yielded any firm conclusions about the costs of inflation and the optimal rate of inflation. Thus economists and policymakers must rely on their judgment in weighing the different considerations. Loosely speaking, they fall into two groups. One group views inflation as pernicious, and believes that policy should focus on eliminating inflation and pay virtually no attention to other considerations. Members of this group generally believe that policy should aim for zero inflation or moderate deflation. The other group concludes that extremely low inflation is of little benefit, or perhaps even harmful, and believes that policy should aim to keep average inflation low to moderate but should keep other objectives in mind. The opinions of members of this group about the level of inflation that policy should aim for generally range from a few percent to close to 10 percent.