

# ECONOMIC POLICY

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## Week 5

### Sticky prices

### Neoclassical synthesis

### Sticky prices

- Nominal variables influence real variables due to nominal price stickiness. Therefore in the short run individual prices change unevenly due to an increase in the money supply. As relative prices change temporarily, real adjustment will follow.
- In the short run output can deviate from potential. Depending on aggregate demand, it can be above or below the natural level.
- Output is not fully supply determined.

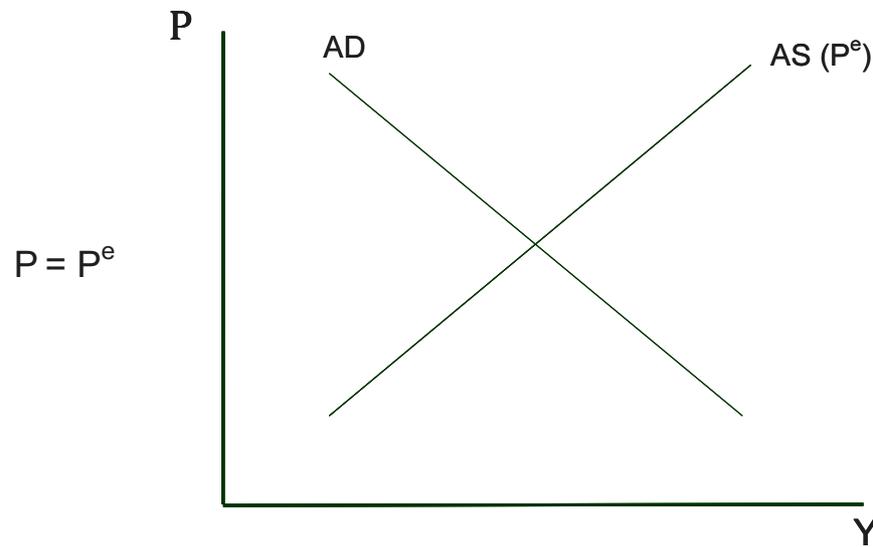
## Potential output

- By definition it is the level of output that would prevail if nominal prices were perfectly flexible, therefore demand would not count. This is assumed in the RBC model, that is why we could ignore money in that model.
- Macroeconomic policy: stabilization around the natural rate
- Countercyclical policy is understood in the short run only, as prices are flexible in the long run.

## The AS-AD model

- An elaborated static aggregate macromodel
- $Y = D(Y, r, T) + G$  IS curve
- $M/P = L(Y, r)$  LM curve
- AD is derived from IS-LM equilibrium
- $Y = Y^* + \alpha(P - P^e)$  AS
- Given  $P^e$  AS depends positively on current price level

## AS-AD equilibrium



### Demand side

- Formally it is the same as demand in the keynesian model. It reflects two empirically observed facts:
  1. Aggregate demand depends on the real interest rate
  2. In the short run monetary policy is able to manipulate the real interest rate
- Unlike in the RBC model, there is no dynamic root for the real rate here

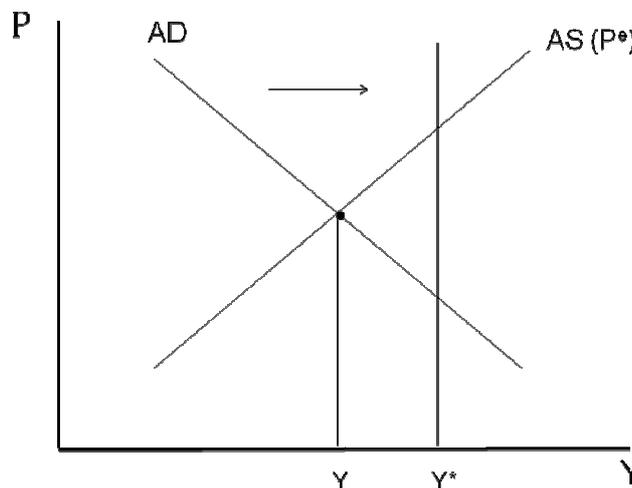
# Supply side

- $Y^*$  is exogenous in the long run, the model does not explain its behavior.
- **There is** supply behavior for the short run, but it does not depend on the interest rate.
- Equilibrium in the goods market is established by movements in the price level. This connects real variables with nominal ones.
- Lucas surprise supply function
- $Y = Y^* + \alpha(P - P^e)$  AS
- Adjustment to unexpected changes
- In a monetized economy adjustment to shocks goes through changes of nominal variables.
- Price rigidities, lack of information, institutional rigidities (contracts fixed in nominal terms) makes nominal adjustment slow and uneven.
- If we expected the shock, then we can adjust beforehand. Therefore  $P = P^e$  will hold. This also happens in the long run.
- Short run:  $P$  changes unexpectedly, some will still behave according to the price level they expected before,  $P^e$ .
- Given  $P^e$  supply is a positive function of  $P$ .
- A general form, it can refer to behavior in many sectors.

# Expectations

- Exogenous or adaptive (like.  $P^e = P_{t-1}$ )  $Y$  adjusts to  $Y^*$  slowly in time, resulting in the existence of output gap.
- Adjustment can be fastened via manipulating demand through monetary and fiscal policy actions.
- Condition: the government has an information advantage over the rest of the public.
- If the private sector utilizes all available information (rational expectations), then only unexpected shocks can cause an output gap. Even so it will be temporary, it disappears in the next period. Therefore, systematic economic policy cannot be practiced. One period after the shock  $P^e = P$  holds.

## Economic policy in AS-AD



## Evaluation

- Fits several empirical observations
- Lacks micro foundation
- Cannot build forward looking expectations into behavior
- It is particularly missing if we analyse economic policy – Lucas critique
- Expectations with respect to future economic policy greatly influence economic behavior.

## Phillips-curve

- A dynamic version of the surprise supply curve

$$P_t = \alpha(Y_t - X^*) + P_t^e + g_t$$

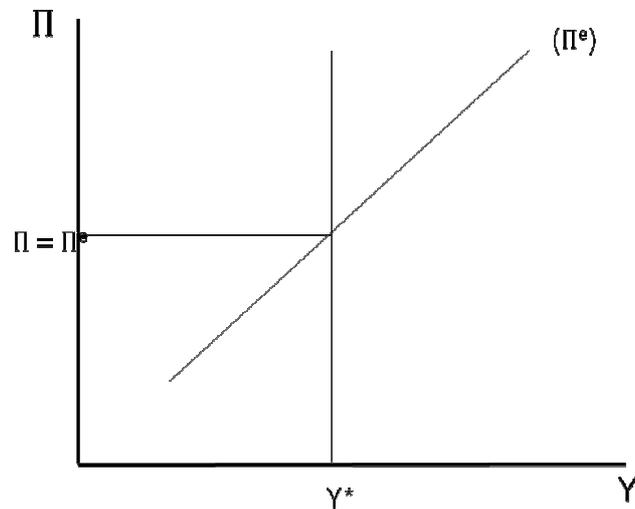
- Given  $P_{t-1}$   $\pi_t = \alpha(Y_t - Y^*) + \pi_t^e + g_t$
- Where  $\pi_t = P_t - P_{t-1}$ ;  $\pi_t^e = P_t^e - P_t$

- If expectations are backward looking, then surprises cause output gaps

## Monetary policy

- Assumption? The Central Bank can determine current inflation via manipulating demand
- Goal function of the Central Bank
- In case of rational expectations the curve is vertical
- Dynamic inconsistency, inflationary bias

## Phillips-curve



## Features

- The model explains present inflation.
- Reasoning goes from inflation towards the output gap, not backwards.
- It is dynamic, but does not go further than the Lucas supply curve.

## Presentation

- Monetary policy in the 80's
- Benjamin M. Friedman (1988):
- Lessons on Monetary Policy from the 1980s, *The Journal of Economic Perspectives*, Vol. 2, No. 3
- Marvin Goodfriend (2007): How the World Achieved Consensus on Monetary Policy, *The Journal of Economic Perspectives*, Vol. 21, No. 4

## Observations in the US 1979–82

- 1973,'79: oil price shock -> inflation and depreciation
- Fed manipulating the money supply fails
- 1978–81: M1 decreases 1% annually
- Both the nominal and real interest rate becomes volatile and relatively high.

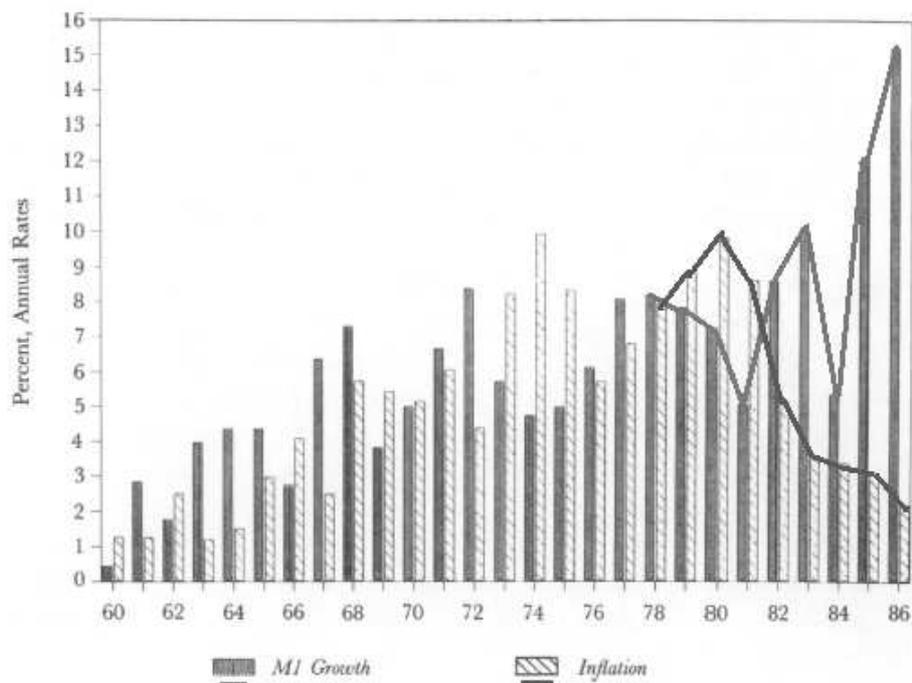


Fig. 1. Money growth and price inflation

## Changing macro relationships

- 1982: the worst recession since the Great Depression.
- Relationship between money and income as well as money and the price level breaks down.
- Money supply grows faster than income does.

## Money supply and output

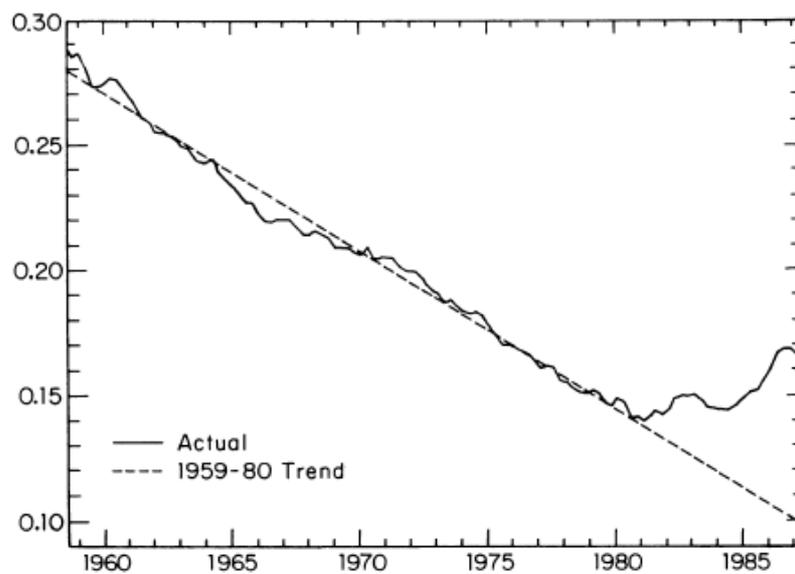


Fig. 2. Ratio of *M1* to GNP

## Money supply and price level

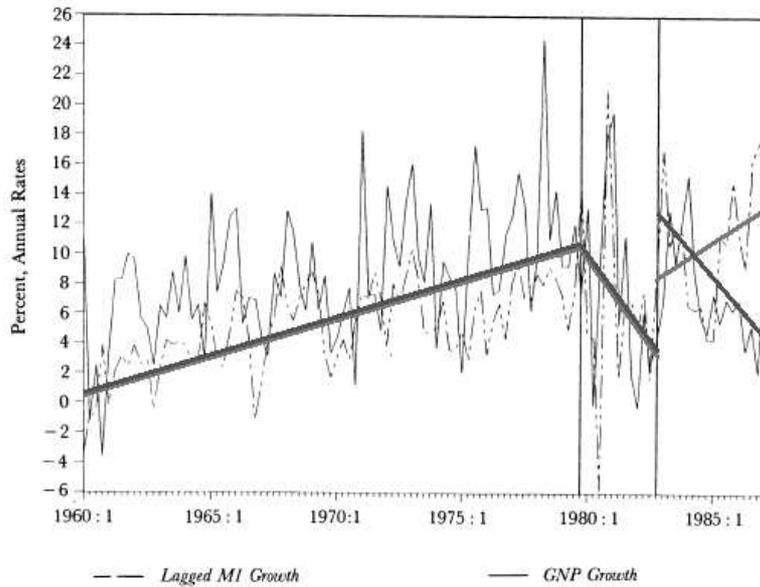


Fig. 3. Growth rates of GNP and lagged money

## Inflation and unemployment

- Dezinflationary monetary policy -> increasing unemployment
  - With credible inflationary target the negative unemployment effect can be minimized.
  - Instead of M1 the FED targets nominal interest rate and the dollar exchange rate
- Nominal anchor is needed.

## Policy in the 90's

- From 1994: The FED coherently communicates interest rate targets again.
- Goal of monetary policy is long run stabilization.
- Great Moderation, stable growth, no recessions, no inflation

## Inflation targetting

- 1990 –92: New Zealand, Canada, Sweden, Great Britain
- 1998–2002: Korea, Thailand, the Philippines
- Main features of inflation targeting:
  - Numerically stated inflation target
  - Medium term inflation path
  - Transparent interest rate policy
  - Accountability

## Literature

- Benjamin M. Friedman (1988): Lessons on Monetary Policy from the 1980s, The Journal of Economic Perspectives, Vol. 2, No. 3
- Marvin Goodfriend (2007): How the World Achieved Consensus on Monetary Policy, The Journal of Economic Perspectives, Vol. 21, No. 4