

Demand Management Policies (Chapter 16)

Questions

What are the costs of inflation?

Why is there business cycles?

How should business cycles be responded?

Outline

Demand management

- ▶ Keynesian and neoclassical views

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Costs of Inflation

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Demand management

- ▶ Keynesian and neoclassical views

Costs of Inflation

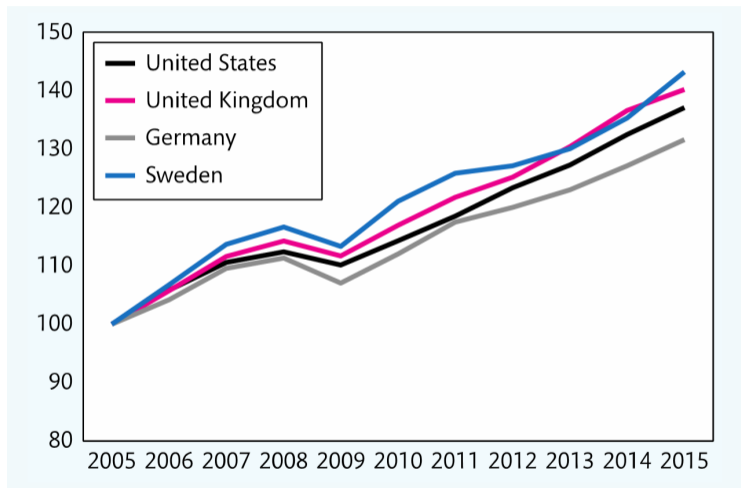
Business cycles

Tove Jansson: Snorkmaiden at the Casino

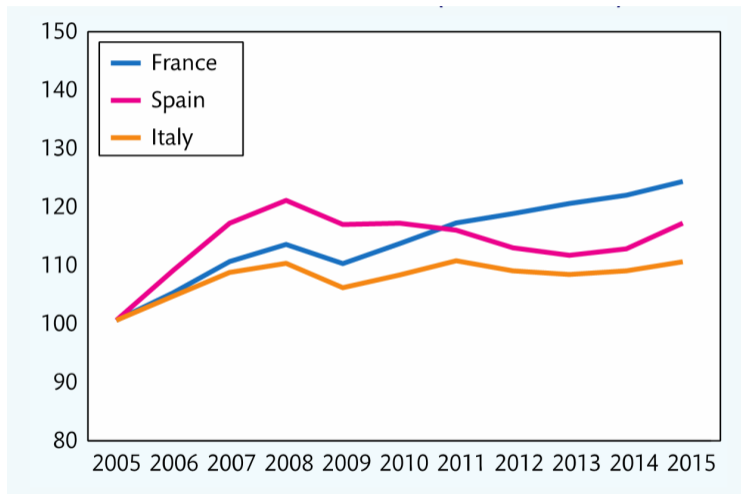


From the comic book *Moomins on the Riviera*

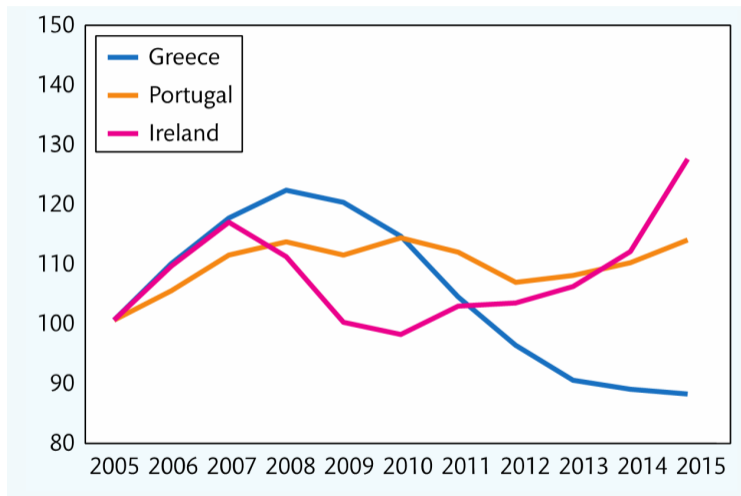
Real GDP Levels



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Extent of Price Stickiness

Neoclassical perspective

- ▶ price adjustment is fast
- ▶ economy is most of the time in LAS line
- ▶ better aim at low inflation

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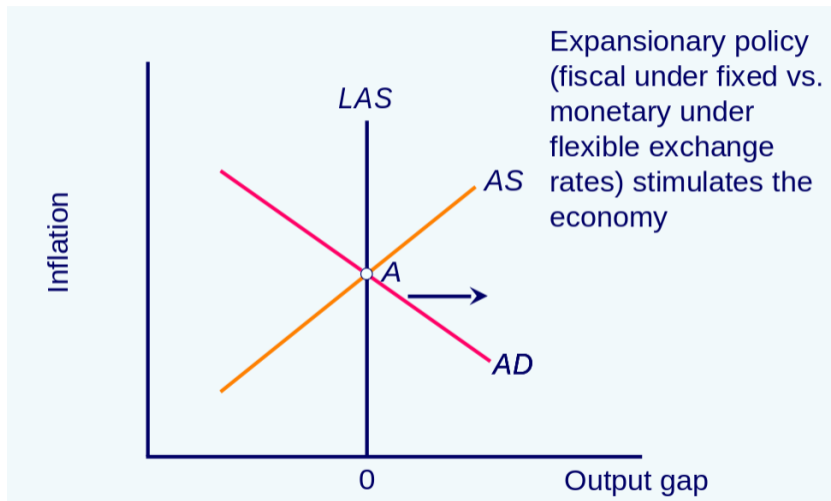
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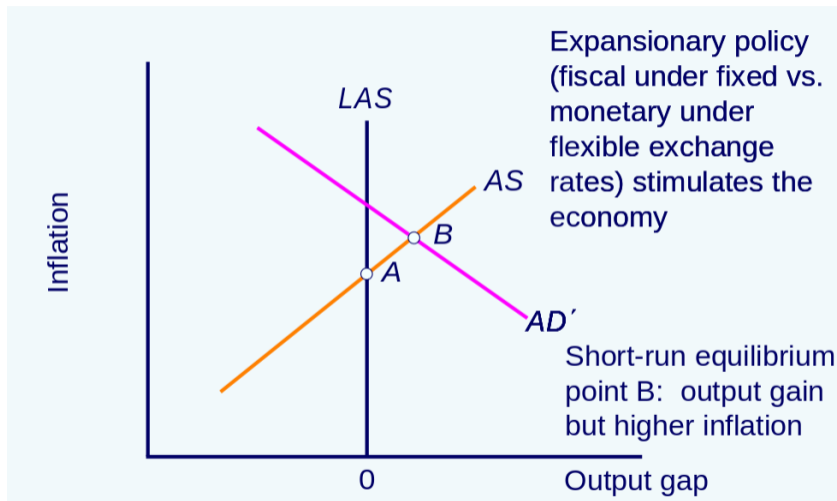
Keynesian view

- ▶ economy is most of the time far from LAS
- ▶ active demand management policy is functional
- ▶ adjustment of underlying inflation is slow
- ▶ temporal inefficiency and unemployment is possible and then expansionary policy is preferred

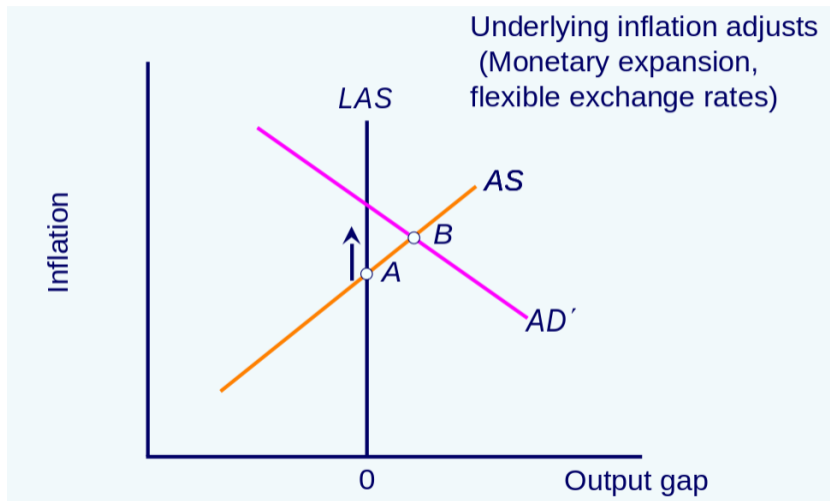
The Neoclassical Case: Short Run (FIX/FLEX)



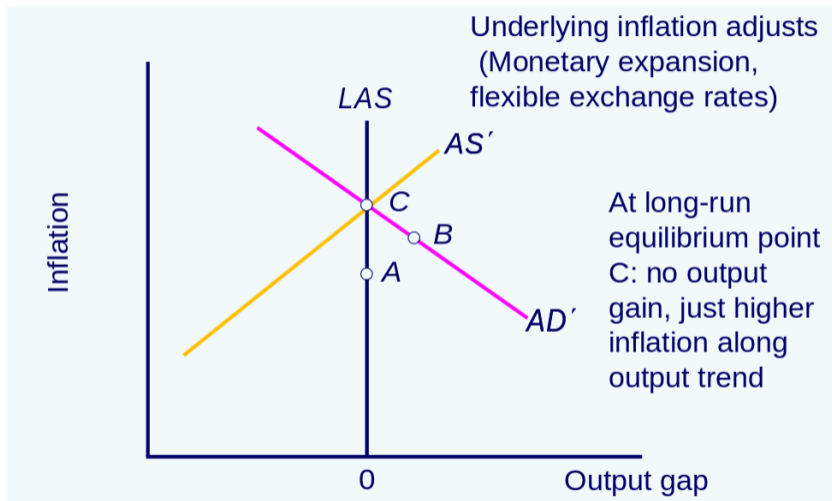
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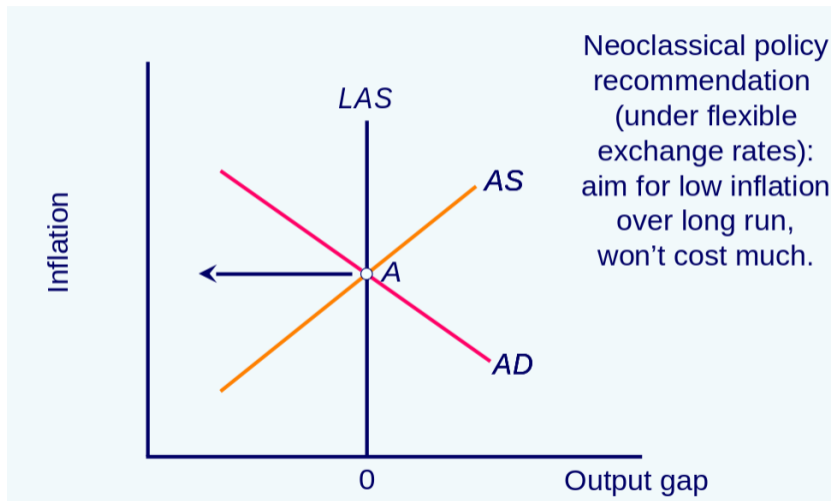
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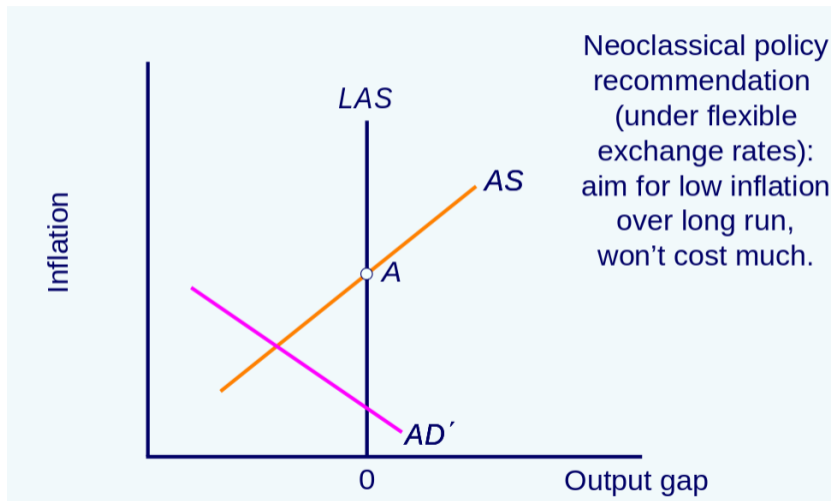
The Neoclassical Case: Long Run (FLEX)



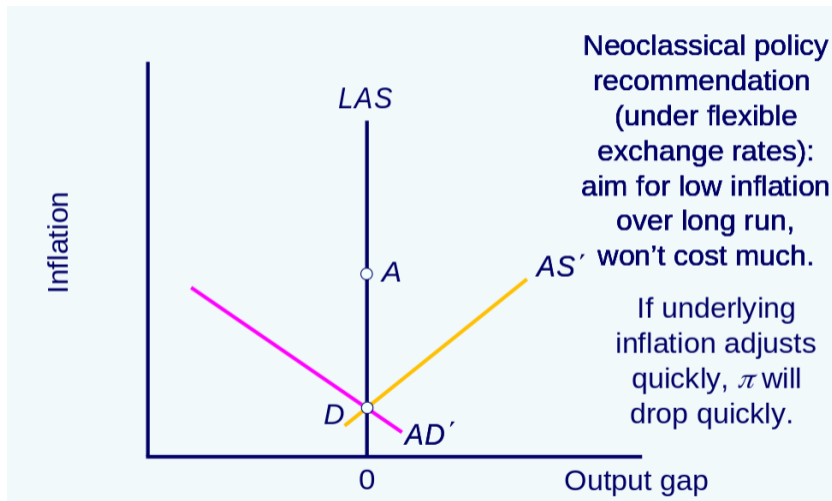
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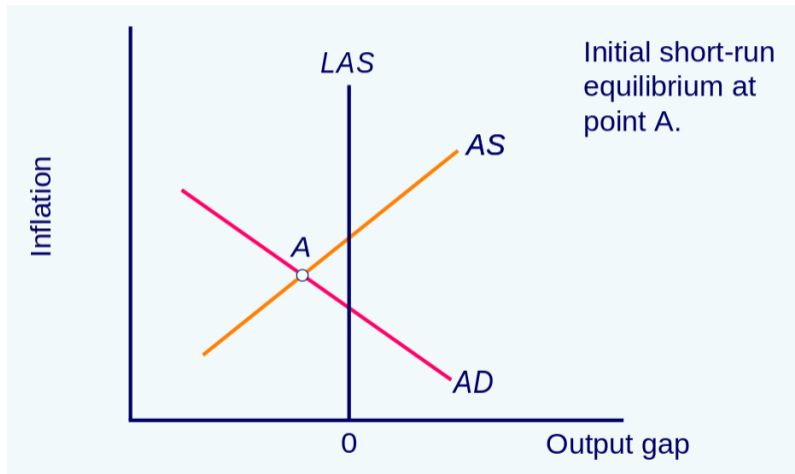
The Neoclassical Case: Optimal Policy (FLEX)



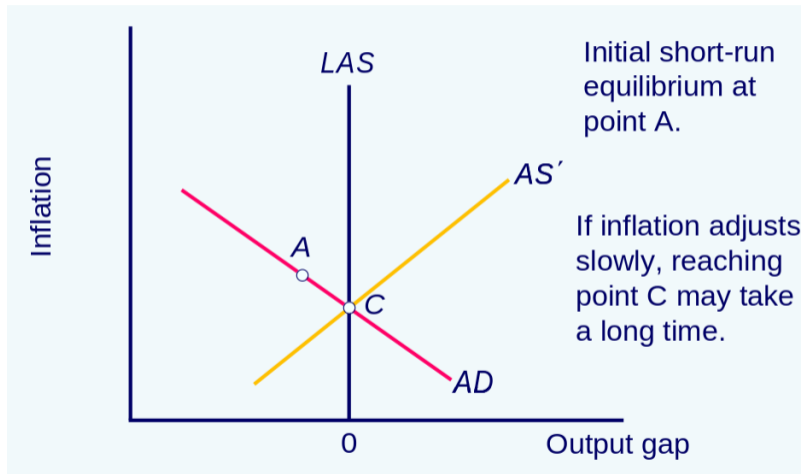
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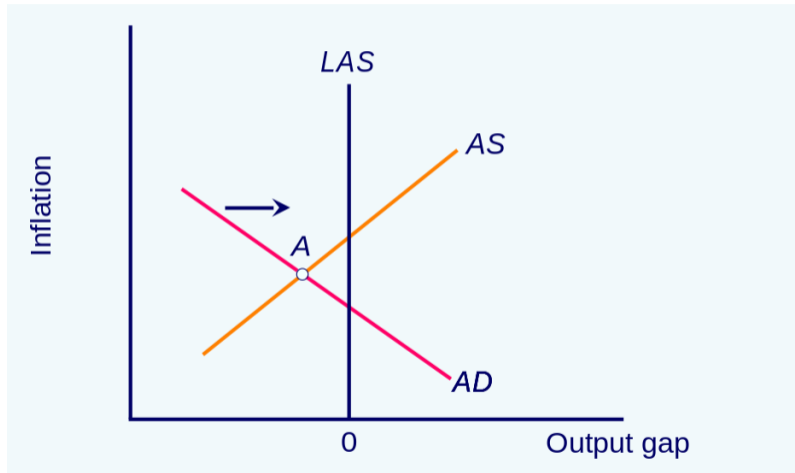
The Keynesian Case (FLEX)



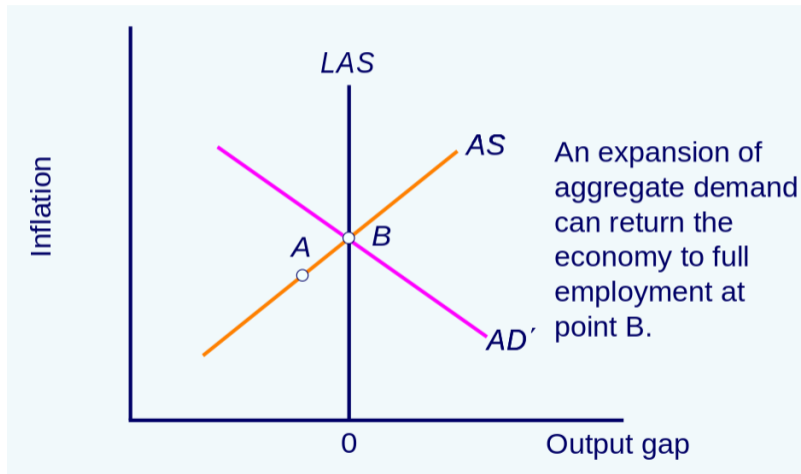
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Demand Management

If the economy is far from LAS, it makes sense to conduct active demand management policy

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Fast adjustment

- ▶ small room for policy, only surprises and errors work
- ▶ but prices may still be sticky if there are long term contracts that bind them

The Costs of Inflation

Costs to firms and consumers

- ▶ if wages increase fast, firms' profitability decreases, investments decrease
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Redistributive impact

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- ▶ real values of assets are changed

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- ▶ price signal becomes distorted
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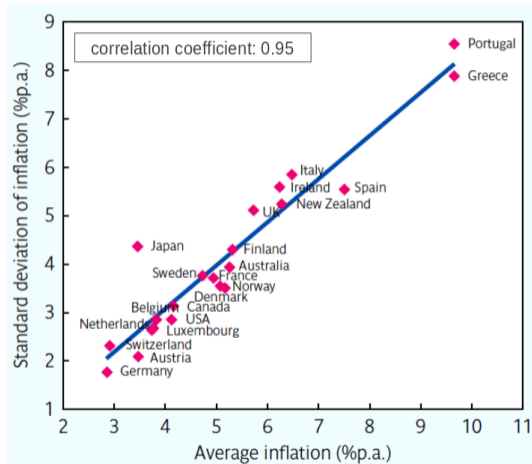
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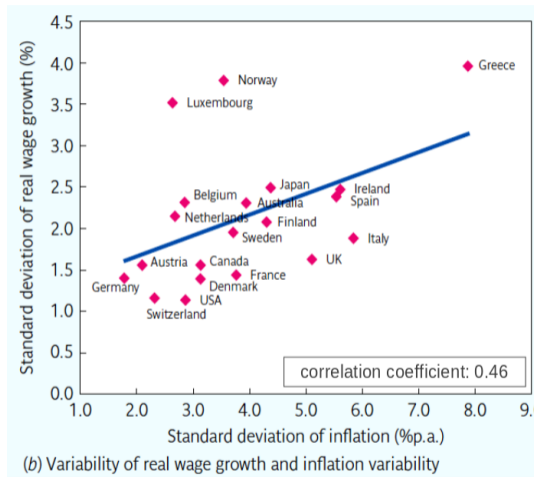
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Those who hold money suffer

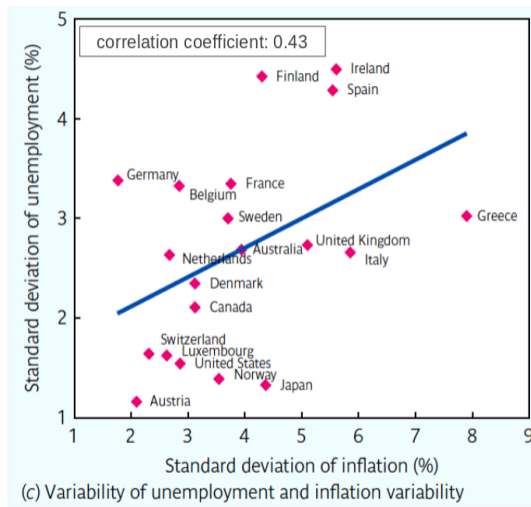
Variability of Inflation



Variability of Wages



Variability of Unemployment



Revolution Comes with Inflation



E. Delacroix: Liberty Leading the People

French Revolution

Ludwig XVI era

- ▶ unfair taxes, overspending, wars
- ▶ sovereign default
- ▶ high inflation (printing of money), large unrest which lead to collapse of the monarchy in 1792

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More on the topic: [Sargent & Velde 1995](#)

Weimar Republic Hyperinflation

Period of high inflation 1921–1923

Reason: Germany had to pay its debt in foreign currency or gold

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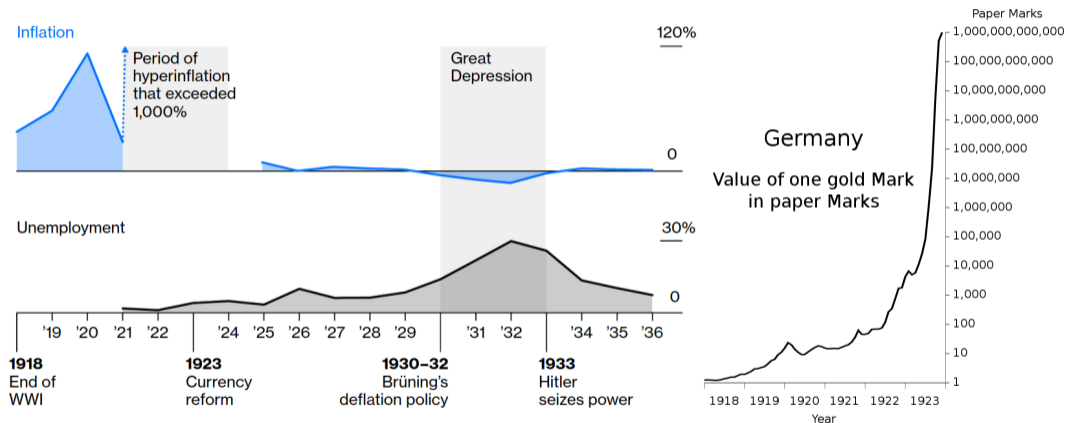
Consequences

- ▶ general unrest
- ▶ Ruhr occupation by France and Belgium
- ▶ long-run implications to German and European monetary policy

Literature

- ▶ J.M Keynes, The Economic Consequences of the Peace, 1919
- ▶ L Haffert et al., *Misremembering Weimar: Hyperinflation, the Great Depression, and German collective economic memory*, 2021

Weimar Republic: From Hyperinflation to Deflation



Revolution Comes with Inflation, 1990's version



Boris Yeltsin giving a speech in 1991

Russian 1990's hyperinflation

Dissolution of Soviet Union

- ▶ lifting price controls
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Expansionary monetary policy in 1992–1993 (in 1992 money supply grew 18-fold)

- ▶ financing of favoured industries: increase of budget deficit, which was financed by printing money
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Interenterprise arrears

- ▶ underdeveloped financial system: interenterprise borrowing in important role
- ▶ end of June 1992: arrears (unresolved loans) 70 % GDP

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Cash and non-cash roubles

- ▶ non-cash money was used for transaction between firms (motivation: financing industry without causing hyperinflation, no cashing out)
- ▶ in 1988 cashing out was made possible!

Exchange Rate Anchors

One way to deal with inflation is to use fixed exchange rate

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Example of success: Bulgaria 1998–

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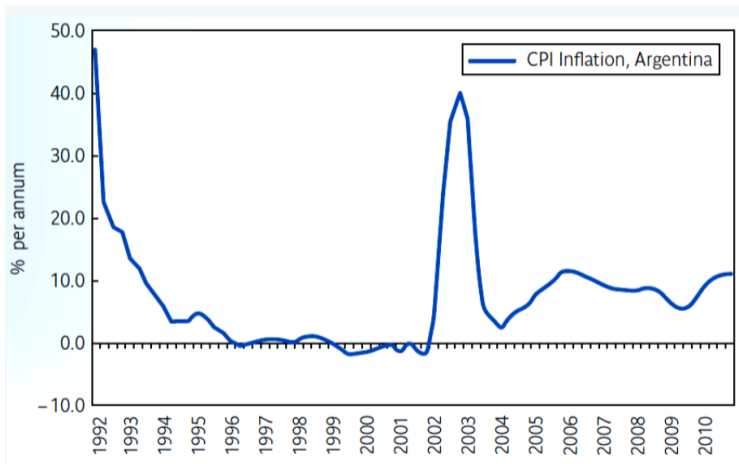
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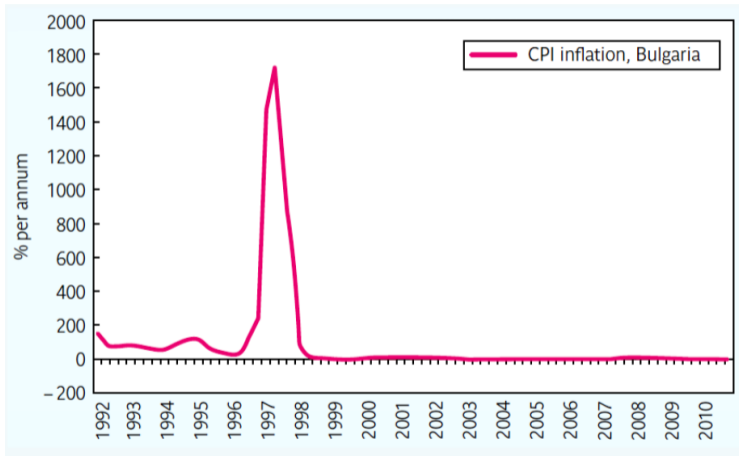
Example of failure: Argentina 1992–2002

- ▶ dollar peg worked until large current account deficits lead to capital outflow

Argentina



Bulgaria



Nature of Business Cycles

Deterministic view

- ▶ there are economic forces generating the cycles
- ▶ example: Kondratiev cycles

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Stochastic view

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- ▶ impulse propagation mechanism transforms random shocks into irregular cyclical oscillations

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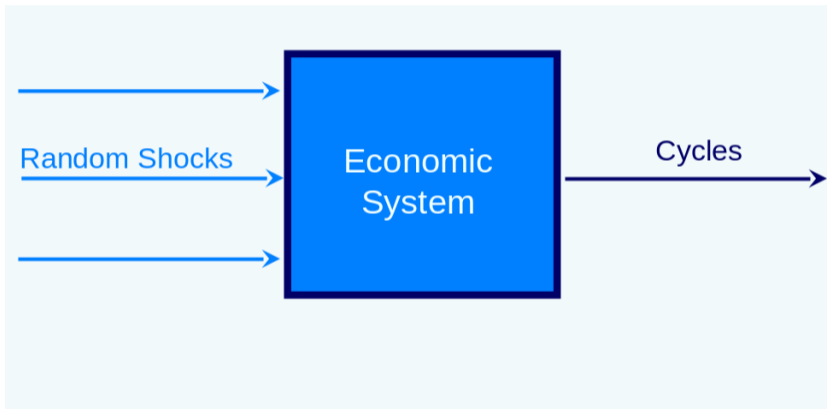
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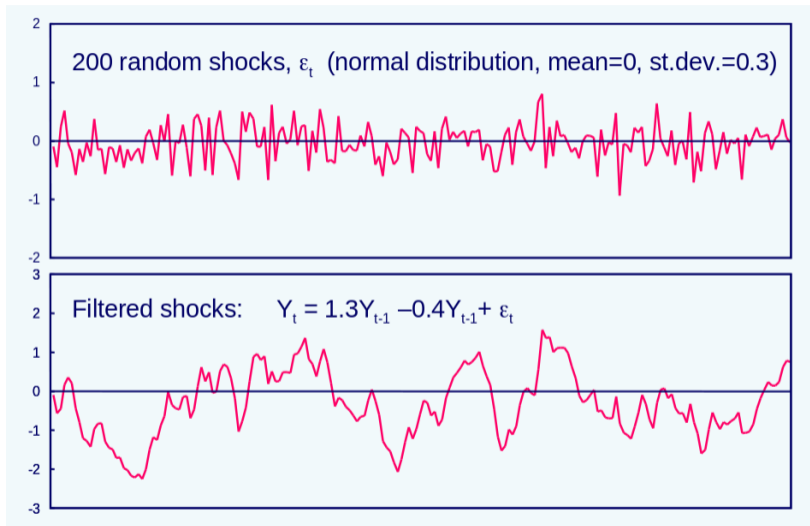
AS-AD

- ▶ shocks shift either AS or AD curves
- ▶ underlying inflation catches up

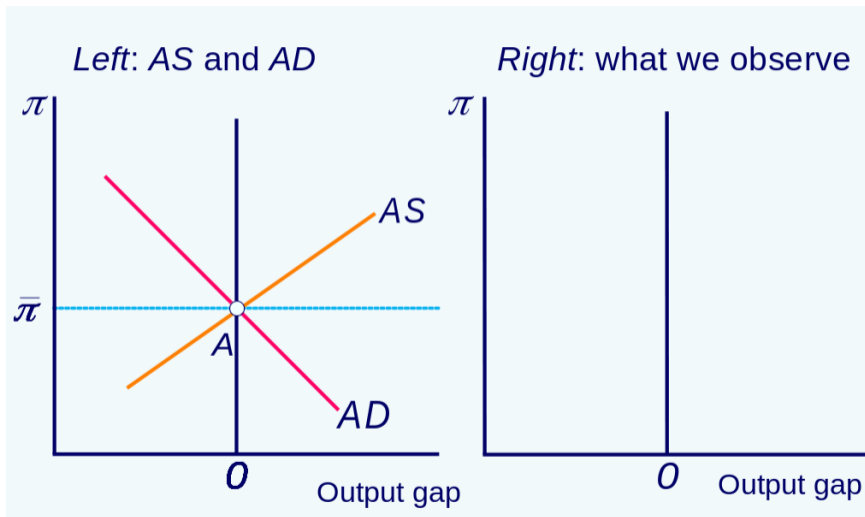
Impulse Propagation



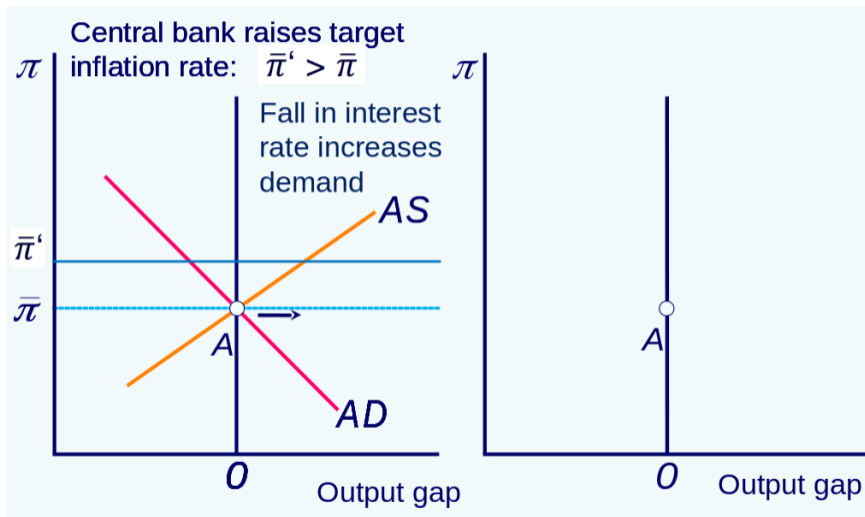
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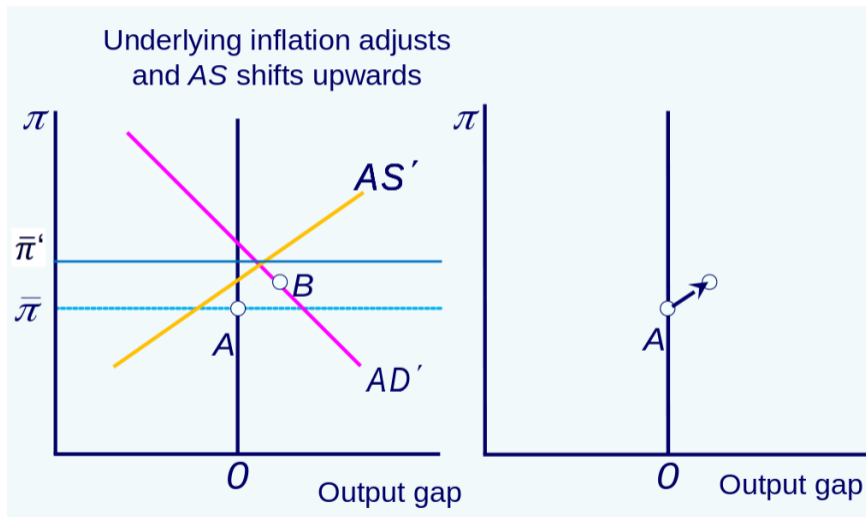
Impulse Propagation in AS-AD Framework (FLEX)



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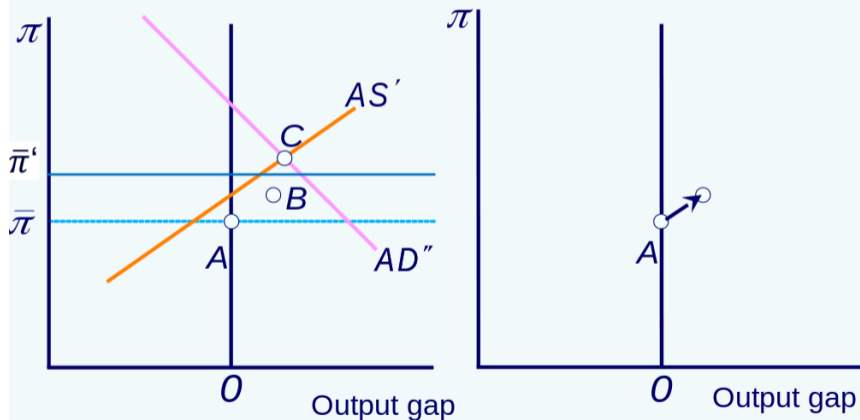


Impulse Propagation in AS-AD Framework (FLEX)



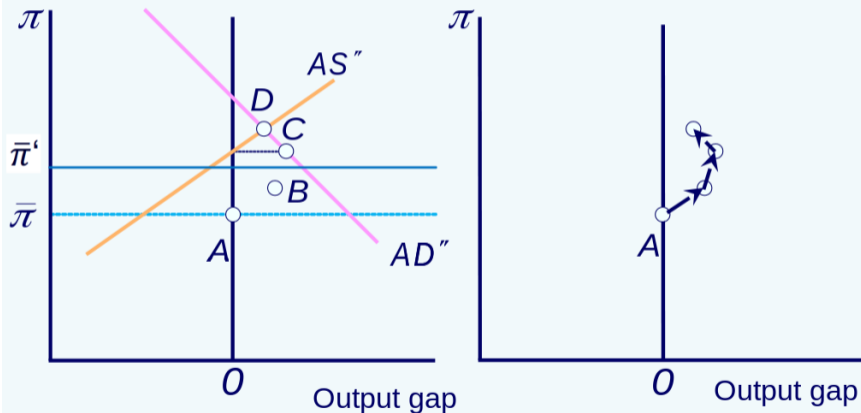
Impulse Propagation in AS-AD Framework (FLEX)

Lagged responses of AD to change in target inflation rate shift AD curve further to AD'' .



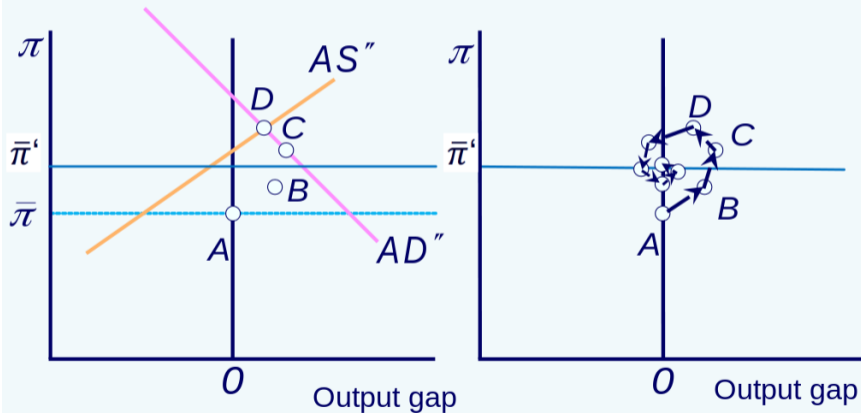
Impulse Propagation in AS-AD Framework (FLEX)

Lagged responses of underlying inflation shift AS curve to AS'' .
Rising inflation reduces demand to D .



Impulse Propagation in AS-AD Framework (FLEX)

Lower income due to lower output reduces demand even further. AD curve shifts left, underlying inflation adjusts...



Impulse Propagation in AS-AD Framework (FLEX)

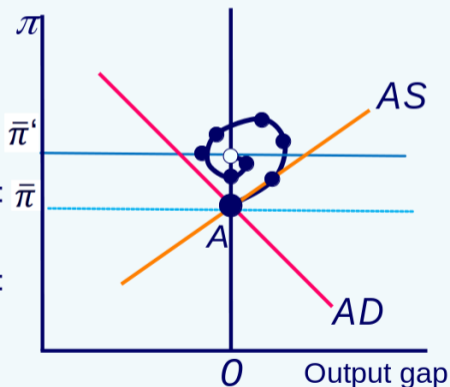
Starting from equilibrium A , where $\pi = \tilde{\pi} = \bar{\pi}$, the economy follows a loop in response to a change in inflation target rate

$\pi < \bar{\pi}'$; zero output gap:
AD shifts right.

$\pi > \bar{\pi}'$; positive output gap:
AS shifts left, AD shifts left.

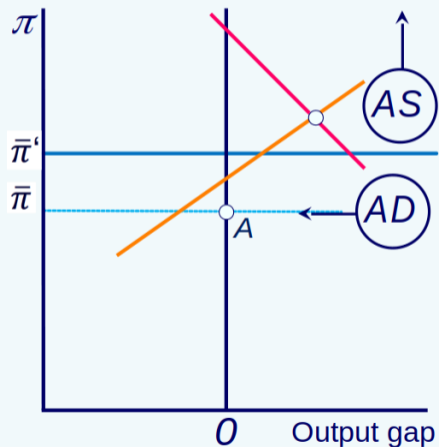
$\pi > \bar{\pi}'$; negative output gap:
AD shifts left.

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AS shifts right, AD shifts right.



Impulse Propagation in AS-AD Framework (FLEX)

$\pi > \bar{\pi}'$; positive output gap:



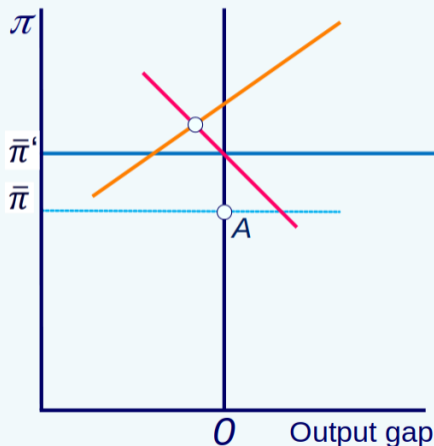
Impulse Propagation in AS-AD Framework (FLEX)

$\pi > \bar{\pi}'$; positive output gap:

Underlying inflation catches up with actual inflation; AS curve shifts up (left)

Higher inflation and positive output gap lead to rise in interest rate (Taylor rule): *AD* curve shifts left.

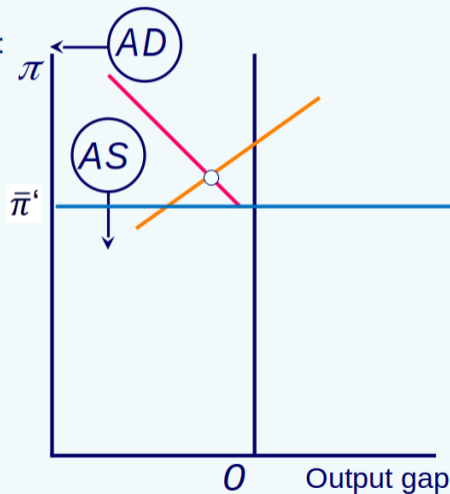
Output decline leads to income decline: *AD* curve shifts further left.



Impulse Propagation in AS-AD Framework (FLEX)

$\pi > \bar{\pi}'$; negative output gap:

Lower output=lower income:
AD curve shifts further left.



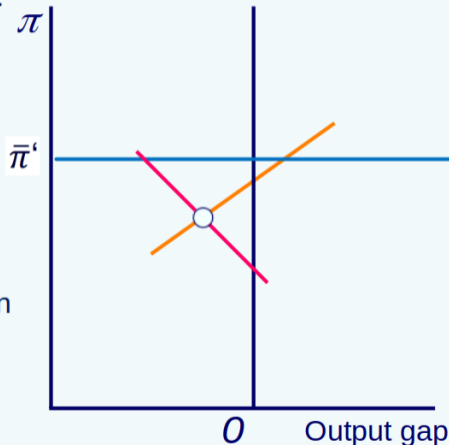
Impulse Propagation in AS-AD Framework (FLEX)

$\pi > \bar{\pi}'$; negative output gap:

Lower output=lower income:
AD curve shifts further left.

Inflation decreases and so
does underlying inflation:
AS curve shifts down (right).

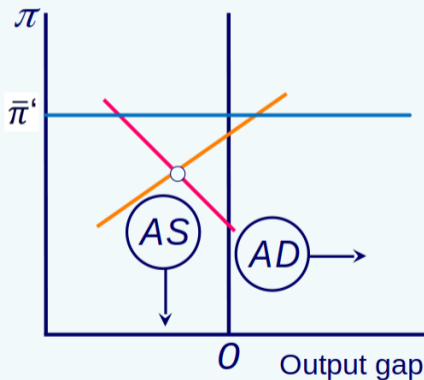
In the new equilibrium inflation
has fallen below the target
inflation rate and the output
gap is still negative.



Impulse Propagation in AS-AD Framework (FLEX)

$\pi < \bar{\pi}'$; negative output gap:

Taylor rule: central bank lowers nominal interest rate; AD curve shifts right.

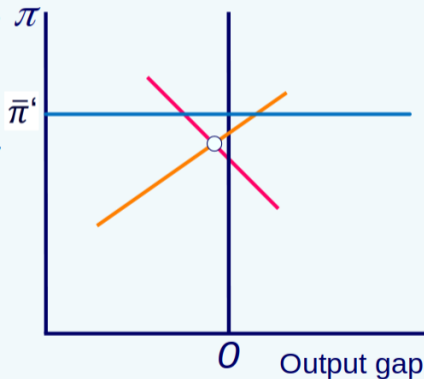


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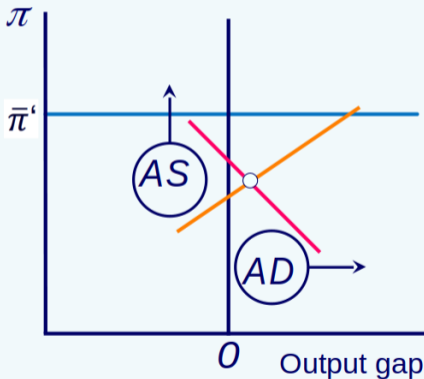
Underlying inflation adapts only slowly to inflation: *AS* curve shifts down (right) again.



Impulse Propagation in AS-AD Framework (FLEX)

$\pi < \bar{\pi}'$; positive output gap:

Lower interest rates stimulate demand; AD curve shifts right.

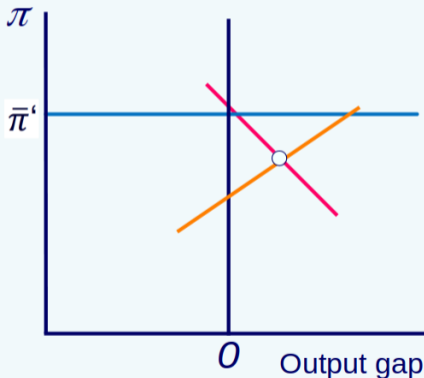


Impulse Propagation in AS-AD Framework (FLEX)

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Lower interest rates stimulate demand; *AD* curve shifts right.

Output responds to increased demand: higher output, higher inflation.



Lags

Recognition lag

Lags

Recognition lag

Decision lag

Lags

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Implementation lag

Lags

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Implementation lag

Effectiveness lag

Lags

Recognition lag

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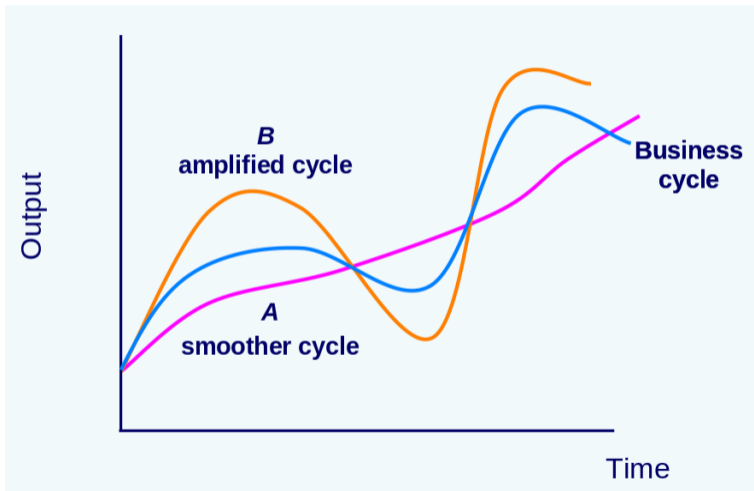
Implementation lag

Effectiveness lag

Friedman critique

- ▶ bad timing may worsen the cycle

Lags



Example of a Dynamic AS-AD Model

Dynamic AD curve $y_t = ay_{t-1} + b(\bar{\pi} - \pi_t) + d_t$

- ▶ y_t is the output gap, d_t is a random demand shock
- ▶ note: behind the AD curve there is a dynamic IS-TR model + Phillips curve

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AS curve $\pi_t = \tilde{\pi}_t + cy_t + s_t$

- ▶ s_t is a random supply shock

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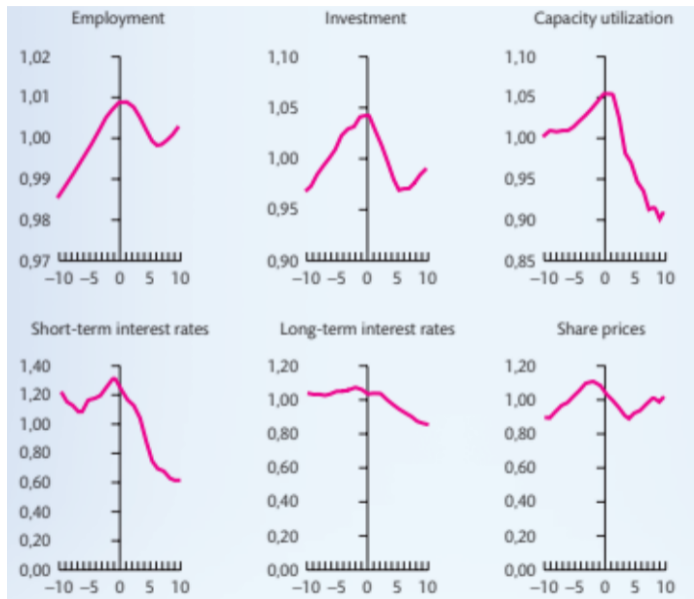
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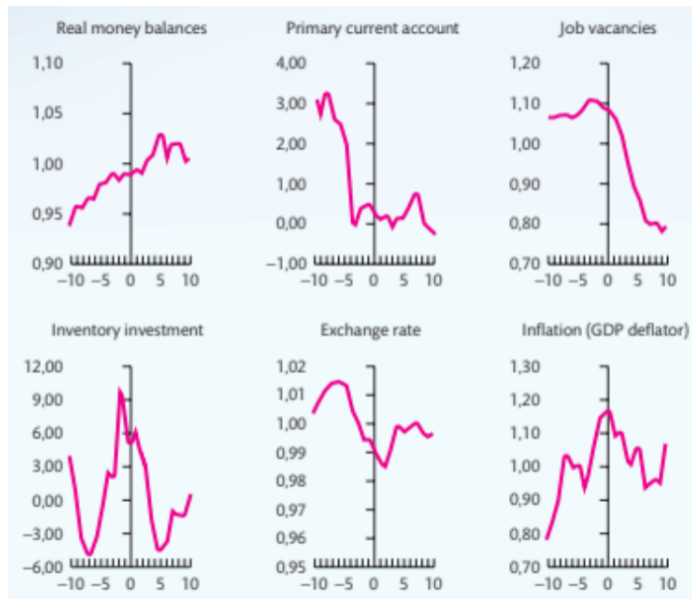
- ▶ s_t is a random supply shock

Adjustment of underlying inflation $\tilde{\pi}_t = \lambda\pi_t + (1 - \lambda)\pi_{t-1}$

Leading and Lagging Indicators



Leading and Lagging Indicators



Neoclassical Synthesis Revisited

Prices are sticky

There are time lags

Consumption and investment decisions have microeconomic foundations

Microfounded approach: Dynamic Stochastic General Equilibrium (DSGE) models

Policy Innovations in the ZLB Era

Forward guidance

- ▶ CBs commit to low interest rates and signal the commitment

Quantitative easing

- ▶ purchases of government bonds (and other financial assets) to inject money

Policy Innovations in the ZLB Era

Forward guidance

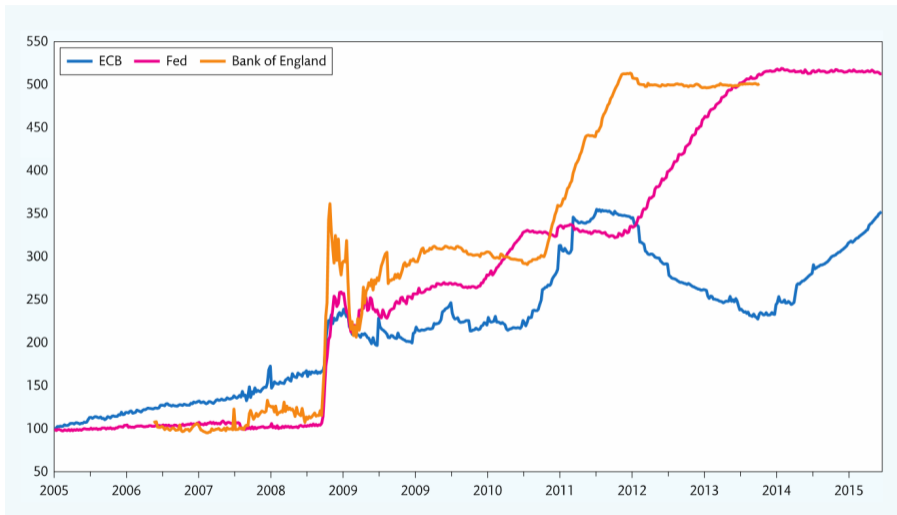
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Negative interest rates on deposits

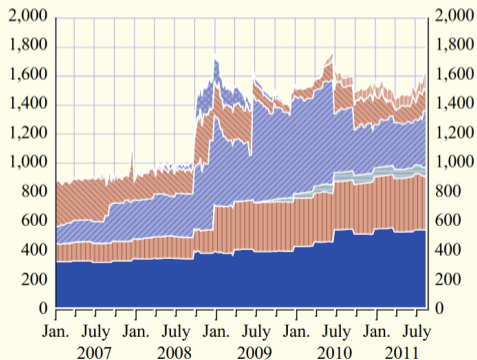
Central Bank Balance Sheets



ECB/Eurosystem Balance Sheet

Assets

- net foreign assets
- domestic assets
- covered bond purchase programme
- longer-term refinancing operations
- main refinancing operations
- marginal lending facility + fine-tuning operations
- USD repo and swaps
- Securities Markets Programme



Liabilities

- banknotes
- government deposits
- other autonomous factors
- current accounts
- deposit facility
- Federal Reserve claims
- Swiss National Bank claims
- liquidity-absorbing fine-tuning operations

