Dr. Stephan Seiter
Universität Hohenheim

# Economics

Syllabus

Preliminary Remarks

- The lecture covers macroeconomics. The following book will be used as a textbook.

  Mankiw, N.G. (2002)
  Macroeconomics
  5th edition
  New York: Worth Publishers
  ISBN 0-7167-5237-9
  Code: MAC

- Another interesting book by the same author is

  Mankiw, N.G. (2000)
  Principles of Economics
  3rd edition
  Fort Worth et al: Harcourt College Publishers
  ISBN 0-03-025951-7
  Code: POE

- These books are also useful for the topics covered in the 5th and 6th semester.

- Reading the relevant chapters is strongly recommended. All figures used during the lecture are included in the textbooks. Transparencies can be found also on http://www.stephan-seiter.de/vwa/macro.html

- All students are expected to write a paper dealing with the topics of one section (2-9) and to present parts of it (length: 8-10 pages). For the presentation, students should work together in teams up to 4 members (not more). The presentation will take place in the last session. Each group will have 15 minutes for the presentation.

- **Papers are due on November 13, 2006**. Please send it as a PDF-file to macro@seiterlectures.com.

- At the end of the class you have to pass a test (45 minutes) that will refer to the lecture and the relevant chapters of the textbook.

- Composition of the grade you will receive: paper 50%
  test 50%

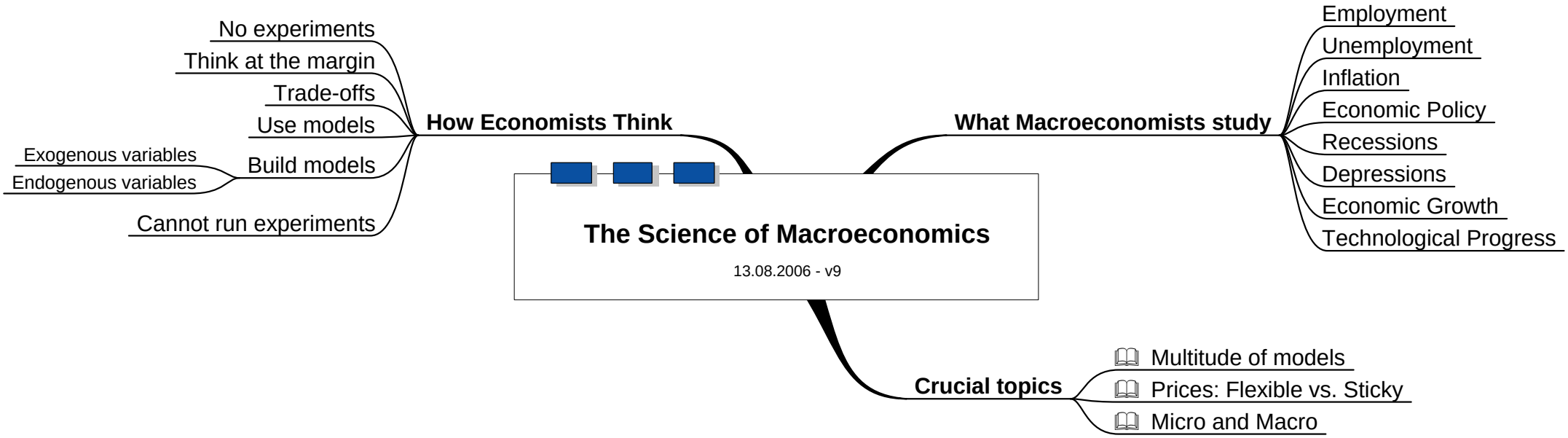
Contact:

- E-Mail: macro@seiterlectures.com.

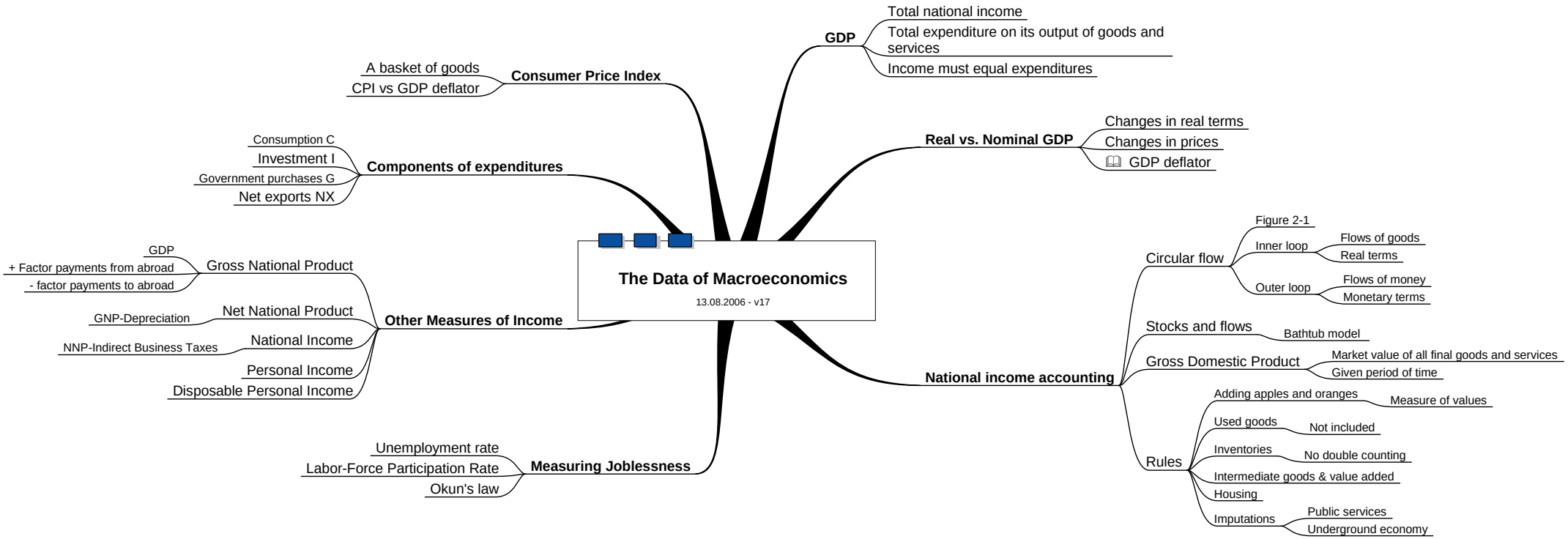
Table of Contents

9 Aggregate Demand II (MAC 11)
- Explaining Fluctuations With the IS-LM Model
- IS-LM as a Theory of Aggregate Demand
- Special Cases

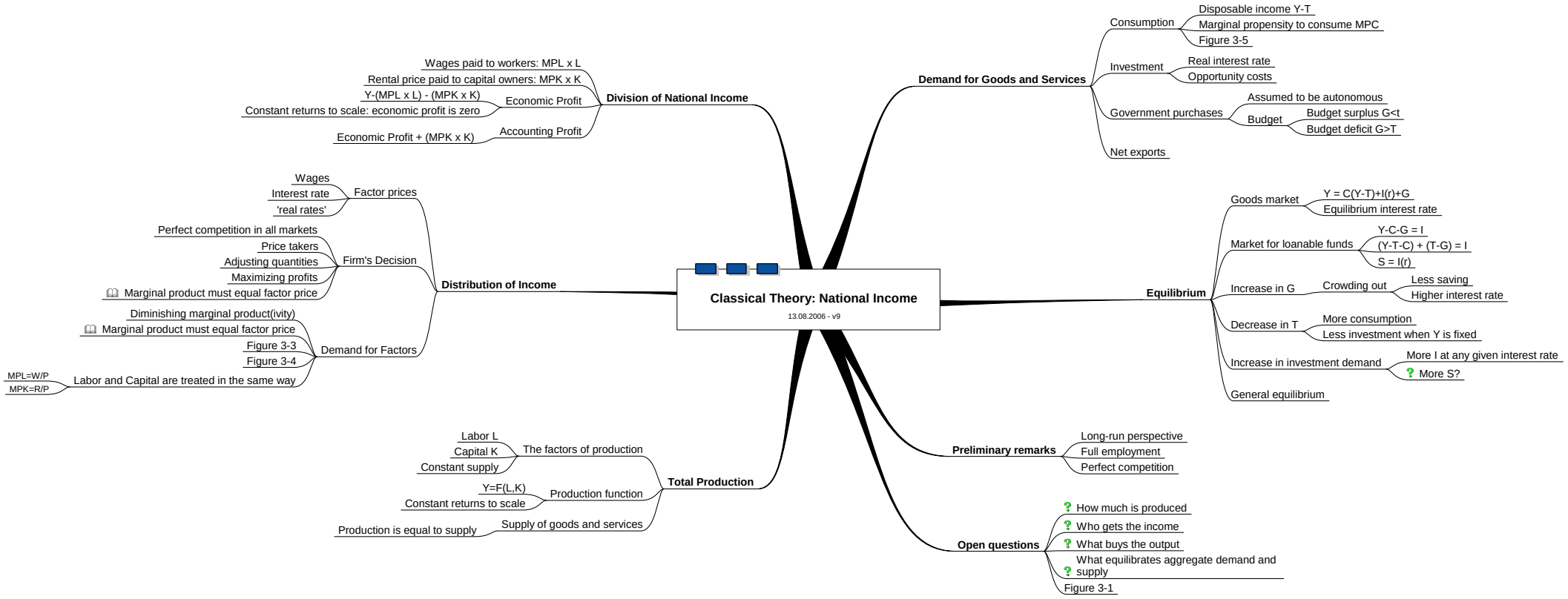
10 The Open Economy (MAC 5)
- The International Flow of Capital and Goods
- Saving and Investment in a Small Open Economy
- Exchange Rates



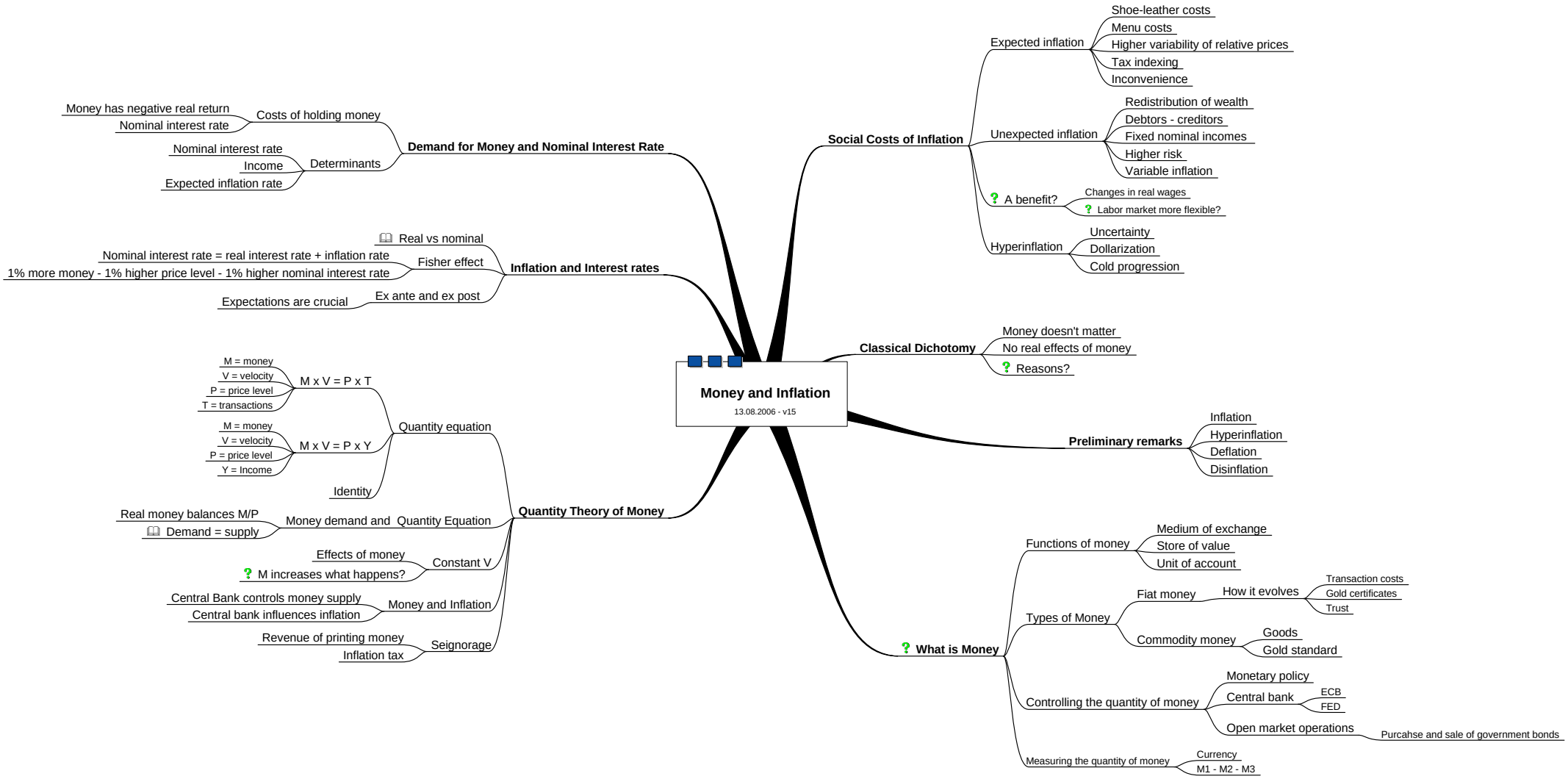

The Science of Macroeconomics.mmp - 13.08.2006 - Stephan Seiter -



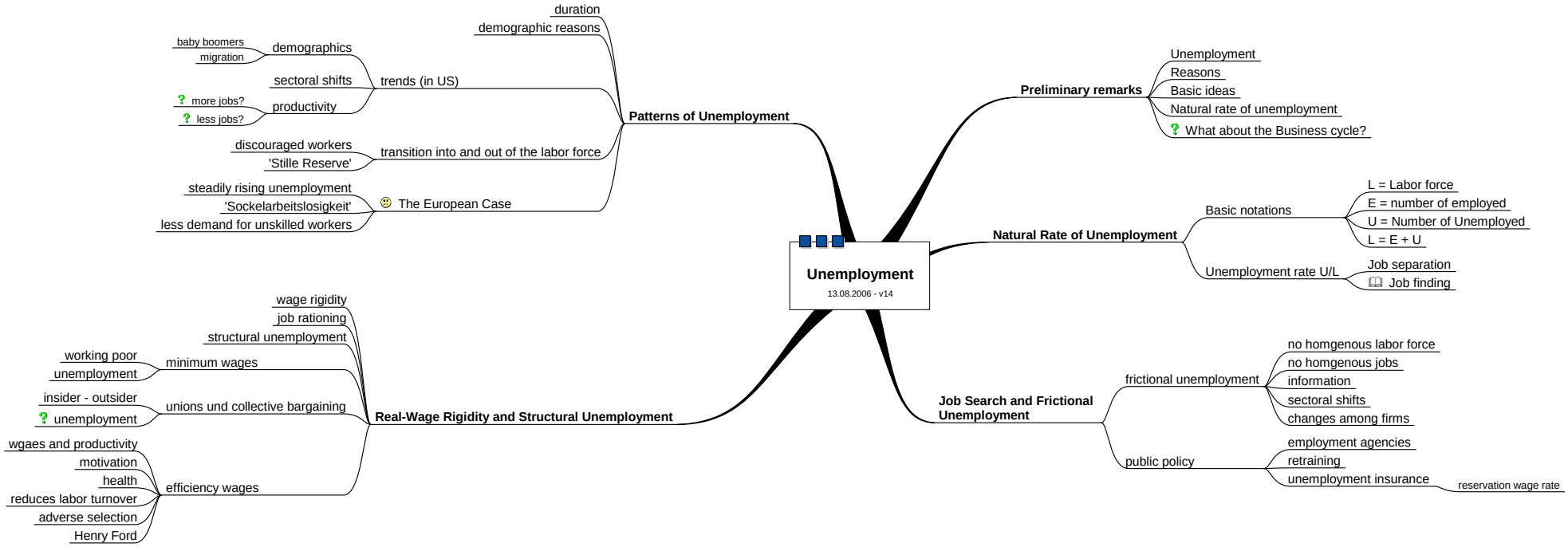

The Data of Macroeconomics.mmp - 13.08.2006 - Stephan Seiter -



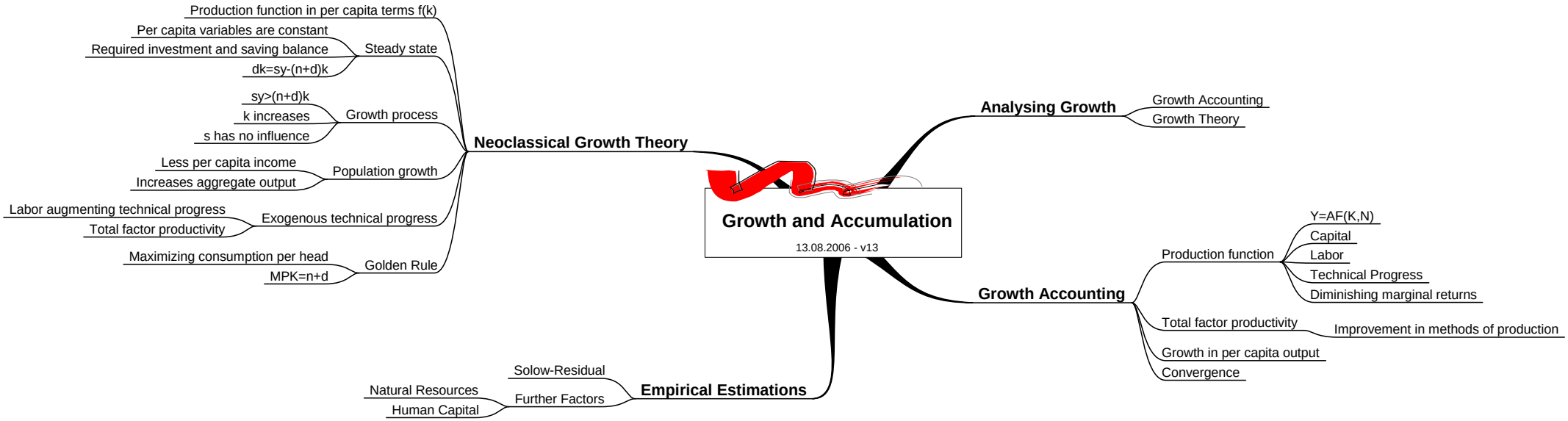

Classical Theory National Income.mmp - 13.08.2006 - Stephan Seiter -



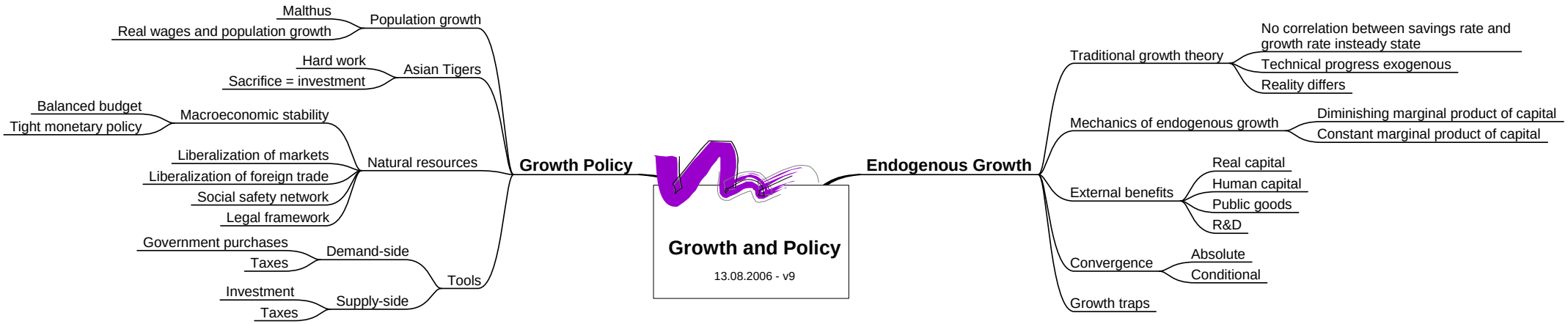

Money and Inflation.mmp - 13.08.2006 - Stephan Seiter -




Unemployment.mmp - 13.08.2006 - Dr. Stephan Seiter -




Growth and Accumulation.mmp - 13.08.2006 - Dr. Stephan Seiter -




Growth and Policy.mmp - 13.08.2006 - Dr. Stephan Seiter

# The IS-LM-Model: Basics



# Goods Market

- Preliminary remarks: Time
  - Short run
    - Demand determines output
    - Productive capacity is constant
    - Prices are constant
  - Medium run
    - Supply side is relevant
    - Productive capacity is constant, but fully used.
    - Prices are variable.

# Goods Market

- Preliminary remarks: Time
  - Long run
    - Productive capacity is variable
    - Technological progress
    - Prices are flexible



# Goods Market

- Demand
  - Consumption C
  - Investment I
  - Government purchases G
  - Net exports X-IM

$\Rightarrow \quad E \equiv C+I+G+X-IM$

# Goods Market

- Aggregate demand
  - Assumption:
    - One good
    - Price level is constant
    - Closed economy: E ≡ C+I+G



# Goods Market

- Consumption function

$$C = C(Y_D) \quad \text{mit} \quad Y_D = Y - T + Tr$$

  - Consumption depends on the current income

# Goods Market

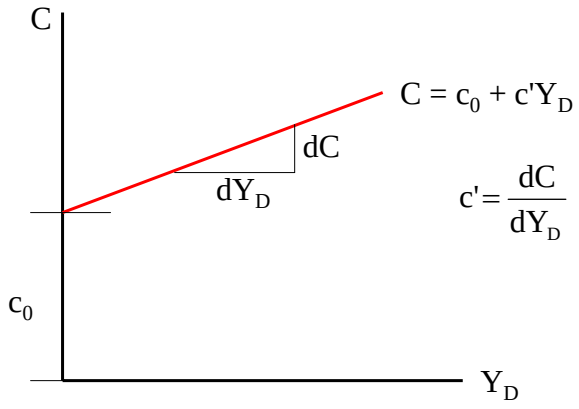
- Consumption function $C = c_0 + c'Y_D$
  - Autonomous consumption $c_0$
    - Independent of income
  - Marginal propensity to consume MPC
    - How does consumption change, when income is changed by 1 unit.

$$c' = \frac{dC}{dY_D}$$



# Goods Market

- Consumption function $C = c_0 + c'Y_D$



# Goods Market

- Investment
  - Investment is exogenously given.
  - Investment is autonomous

$$I = \bar{I}$$



# Goods Market

- Government purchases G
  - Exogenous
  - Different scenarios: G = T, G > T, G < T
  - Fiscal policy

# Goods Market

- Equilibrium in the Goods Market
  - Demand

$$E = c_0 + c'(Y - T + Tr) + \bar{I} + G$$

  - Supply Y
    - Income is equal to production



# Goods Market

- Equilibrium
  - Demand = Supply

$$Y = E$$

$$Y = c_0 + c'(Y - T + Tr) + \bar{I} + G$$

# Goods Market

- Equilibrium
  - Algebra

$$Y = c_0 + c'(Y - T + Tr) + \bar{I} + G$$

$$Y = c_0 + c'Y - c'T + c'Tr + \bar{I} + G$$

$$(1 - c')Y = c_0 - c'T + c'Tr + \bar{I} + G$$



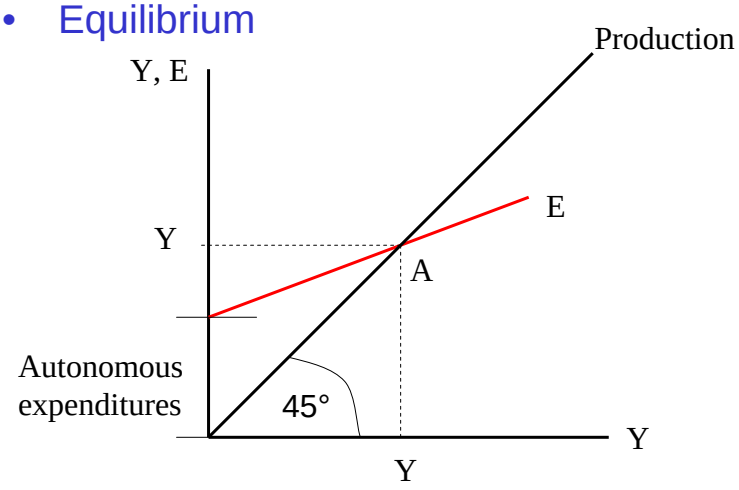
# Goods Market

- Equilibrium
  - Algebra

$$Y = \frac{1}{1 - c'}(c_0 - c'T + c'Tr + \bar{I} + G)$$

# Goods Market

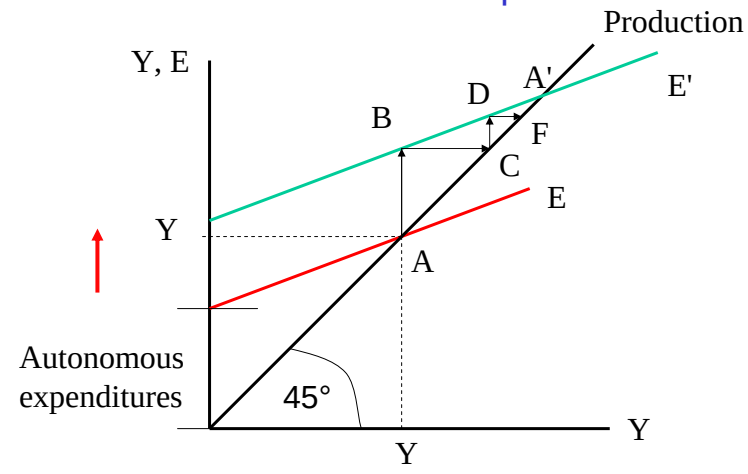
- Equilibrium






# Goods Market

- Increase in autonomous expenditures



# Goods Market

- Multiplier
  - Increase in autonomous expenditures
  - Shift of demand curve E $\Rightarrow$ E'
  - Firms will adjust production.
  - Income rises, so does consumption.
  - This leads to more demand.
  - Process ends in A'



# Goods Market

Multiplier

$$\frac{1}{1-c'}$$

# Goods Market

- IS Curve
  - Starting point: 45°-Keynesianism
  - We assumed autonomous investment
  - What are consequences of investment that depends on the interest rate (r)?
  - Demand depends on the interest rate.
  - Changes in the interest rate will change demand.
  - Demand curve shifts.



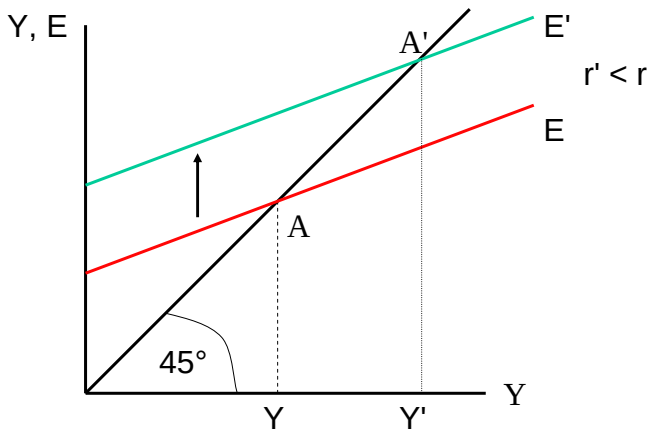
# Goods Market

- IS Curve
  - Demand function:

$$E = c_0 + c'(Y - T + Tr) + I(r) + G \quad mit \quad \frac{dI}{dr} < 0$$

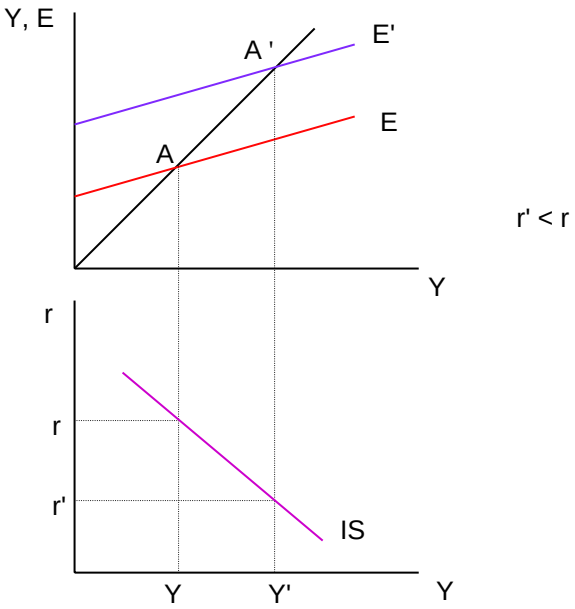
  - Increase in the interest rate lowers investment and aggregate demand.
  - A new equilibrium in the goods market exists.

IS Curve: Graphs




Fall 2006 Dr. Stephan Seiter - IBA - Macroeconomics 21

IS Curve: Graphs




Fall 2006 Dr. Stephan Seiter - IBA - Macroeconomics 22

# Goods Market

- IS Curve
  - Position:
    - Changes in autonomous demand shift IS-Curve.
    - E.g. more government purchases
  - Slope
    - Marginal propensity to save s'
    - Slope of investment function i'



# Money Market

- Demand for Money
  - Transaction $L_T$
  - Speculation $L_S$
  - Caution $L_V$

$$\Rightarrow \qquad L = L_T + L_S + L_V$$

  - Determinants
    - Income
    - Interest rate

# Money Market

- Equilibrium
  - Money supply = Money demand

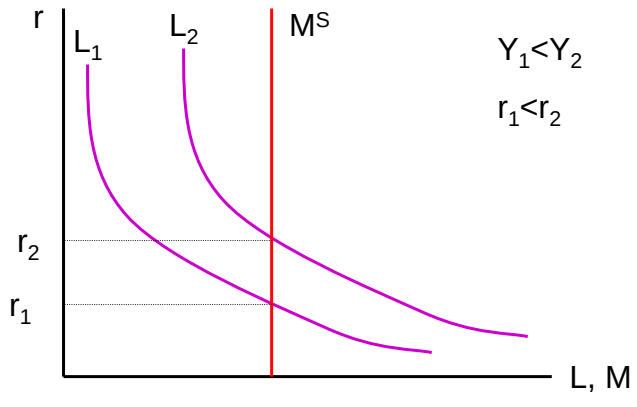
$$\Rightarrow \qquad M^S = M^D = L_T + L_S$$

  - Equilibrium is characterized by income and interest rate.



# Money Market

- Equilibrium



# Money Market

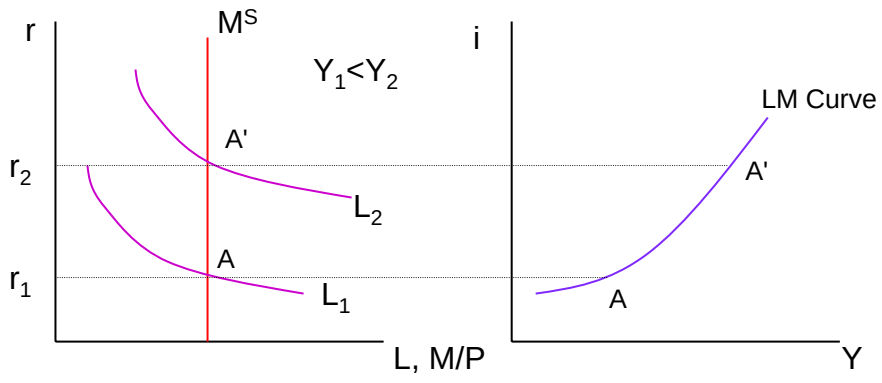
- LM Curve
  - Starting point: Equilibrium in the money market
  - Real Money Balances  M/P are relevant.
  - Condition:

$$\frac{M}{P} = L_T(Y) + L_S(r)$$



# Money Market

- LM Curve

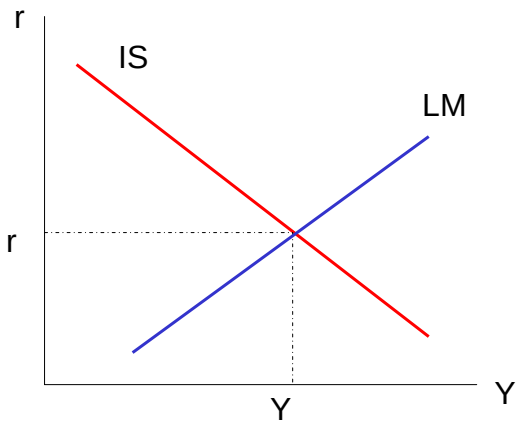


# Money Market

- LM Curve
  - Position
    - Changes in real money balances shifts LM curve
    - Changes in nominal money supply M
    - Changes in the price level P
  - Slope
    - Cash coefficient k
    - Liquidity preference l'



# IS-LM-Model



# IS-LM-Model

1. Fiscal Policy
2. Monetary Policy
3. Shocks
4. Aggregate Demand



# Fiscal policy and the IS Curve

- Starting points:
  - Government expenditures
  - Taxes
- Question:
  - How does this change the equilibrium income?

# Fiscal policy and the IS Curve

- Increase in G:
  - Assumption: Interest rate is constant
    $G\Uparrow \rightarrow E \Uparrow \rightarrow$Production $\Uparrow \rightarrow Y \Uparrow \rightarrow C \Uparrow \rightarrow ...$
  - Multiplier sets in:

$$dY = \frac{1}{1-c'} dG$$



# Fiscal policy and the IS Curve

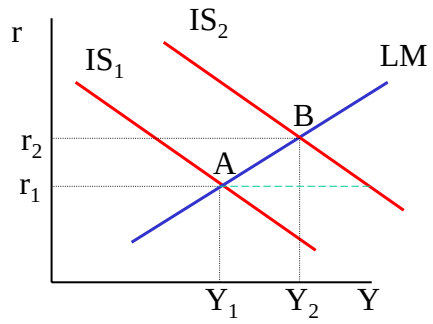
- Increase in G:
  - Interest rate is not constant, since M is constant.
  - Changes in the money market, when Y $\Uparrow$:

    $L_T\Uparrow \rightarrow$ Bonds-D $\Uparrow \rightarrow$BP$\Downarrow \rightarrow$r $\Uparrow \rightarrow L_S \Downarrow$
  - Increasing interest rates lead to less investment.

"crowding-out"

# Fiscal policy and the IS Curve

- Increase in G






# Fiscal policy and the IS Curve

- Changes in T
  - Shift also IS Curve
  - Multiplier is smaller.
- Thus:
  - Money market can reduce the effects of fiscal policy.

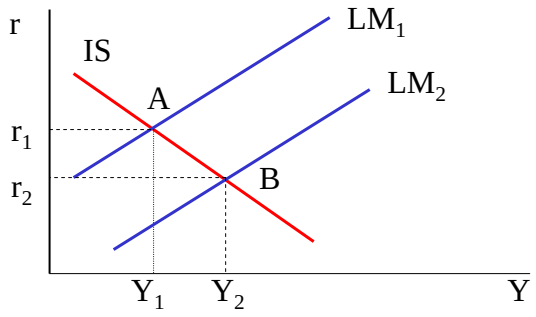
# Monetary Policy and the LM Curve

- Change in the money supply
- Increase in M (Assumption: Y constant):
  $M \Uparrow \rightarrow M > L_T + L_S \rightarrow$ Bonds-D $\Uparrow \rightarrow BP \Uparrow \rightarrow r \Downarrow \rightarrow L_S \Uparrow$
- Falling interest rate leads to more investment, and Y increases, too.
- There will be a feedback on the money market.



# Monetary Policy and the LM Curve

- Increase in M:

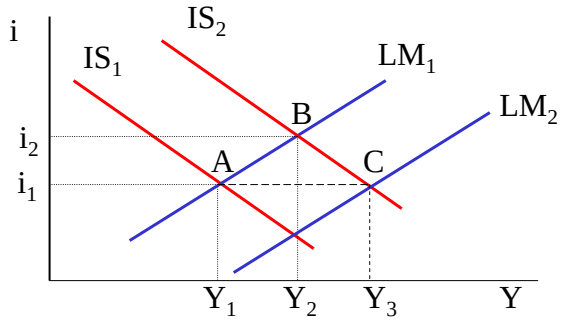


# Fiscal policy and Monetary policy

- Conclusions:
  - Money and Goods Market are closely related.
  - Economic policy has an influence on both markets.
  - spillover- and feedback-effects are relevant.



# Policy-Mix



# IS-LM-Model: Shocks

- IS Curve
  - Animal spirits
  - Consumers‘ confidence
  - Shifts of the IS Curve
- LM Curve
  - Exogenous increase in the demand for money
  - Shifts of the LM Curve



# Aggregate Demand

- IS-LM-Model
  - Assumption: Price level P is constant.
  - Real money supply does only change when M changes
  - What are the consequences of a falling/increasing price level?

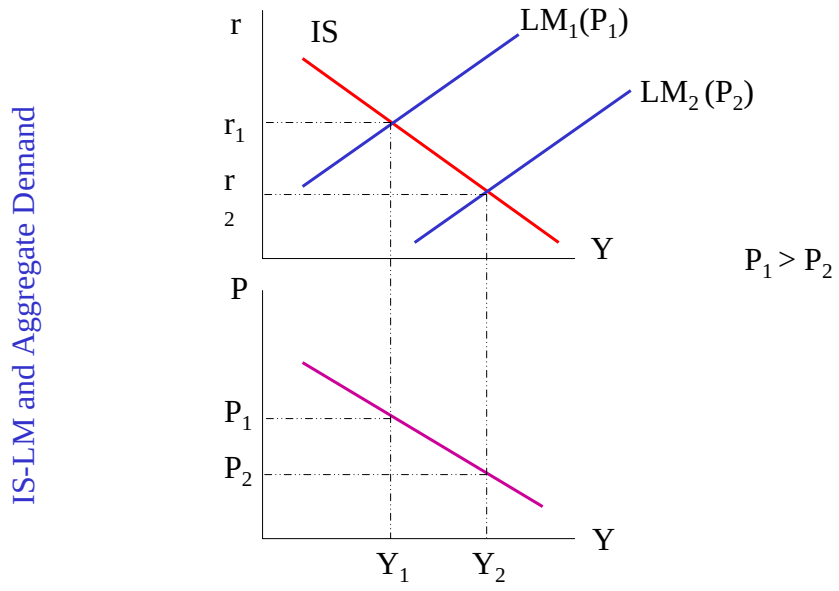
# Aggregate Demand

- Price level flexible:

$$P \Downarrow \rightarrow \frac{M}{P} \Uparrow$$

  – As P falls, real money supply increases.
  – LM Curve moves along the IS Curve.





# Aggregate Demand

- Aggregate Demand shows all combinations of price level und income, that lead to a simultaneous equilibrium in the money and the goods market.