

Macroeconomic Theory and Policy

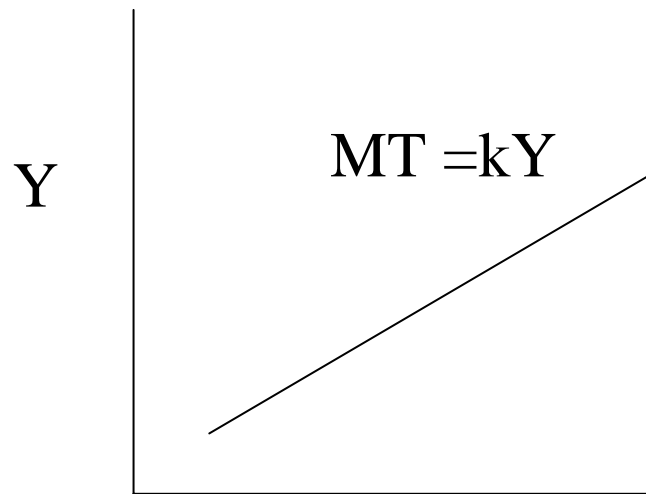
Lecture 4

IS-LM Model for Fiscal and Monetary Policy Analysis

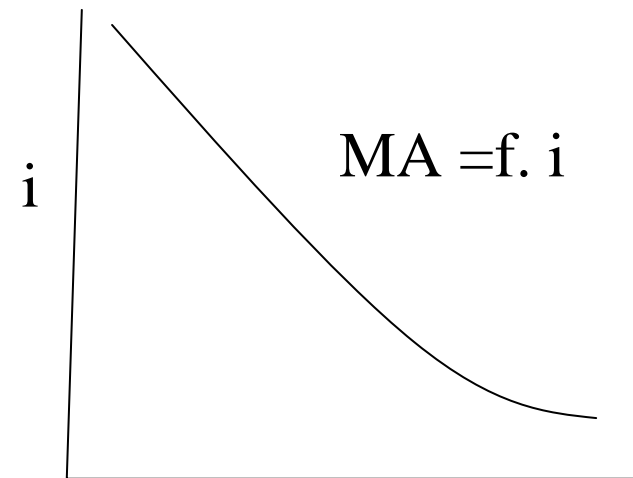
Money Market in the Keynesian Model

- Money and bonds: two financial assets
- Demand for money and bonds
- Supply of money
- Equilibrium in the money market
- Factors that shift the LM curve
- Impact on output and interest rate of
 - an expansionary fiscal policy
 - a contractionary Monetary policy

Why Do People Keep Money?



M for Transaction
And Precaution

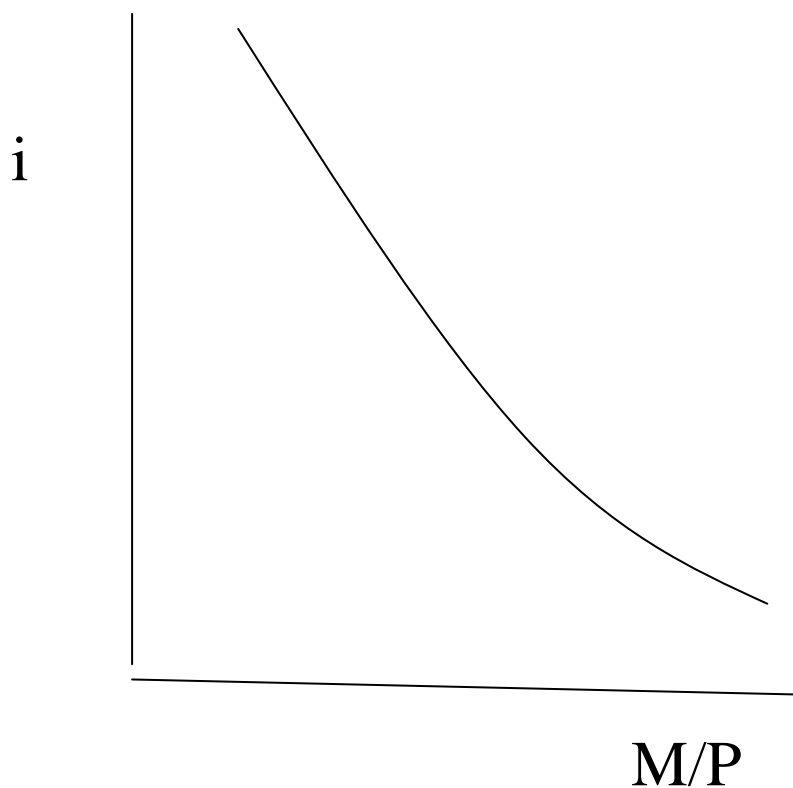


Asset D for Money

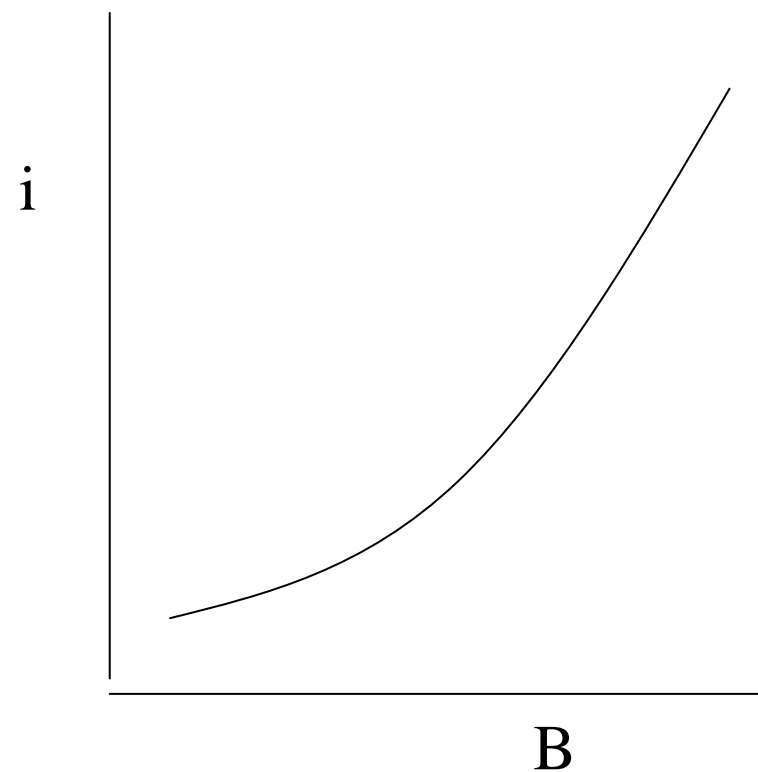
Total Demand for Money and Bonds

$$\text{Financial Assets} = \text{Money} + \text{Bonds}$$

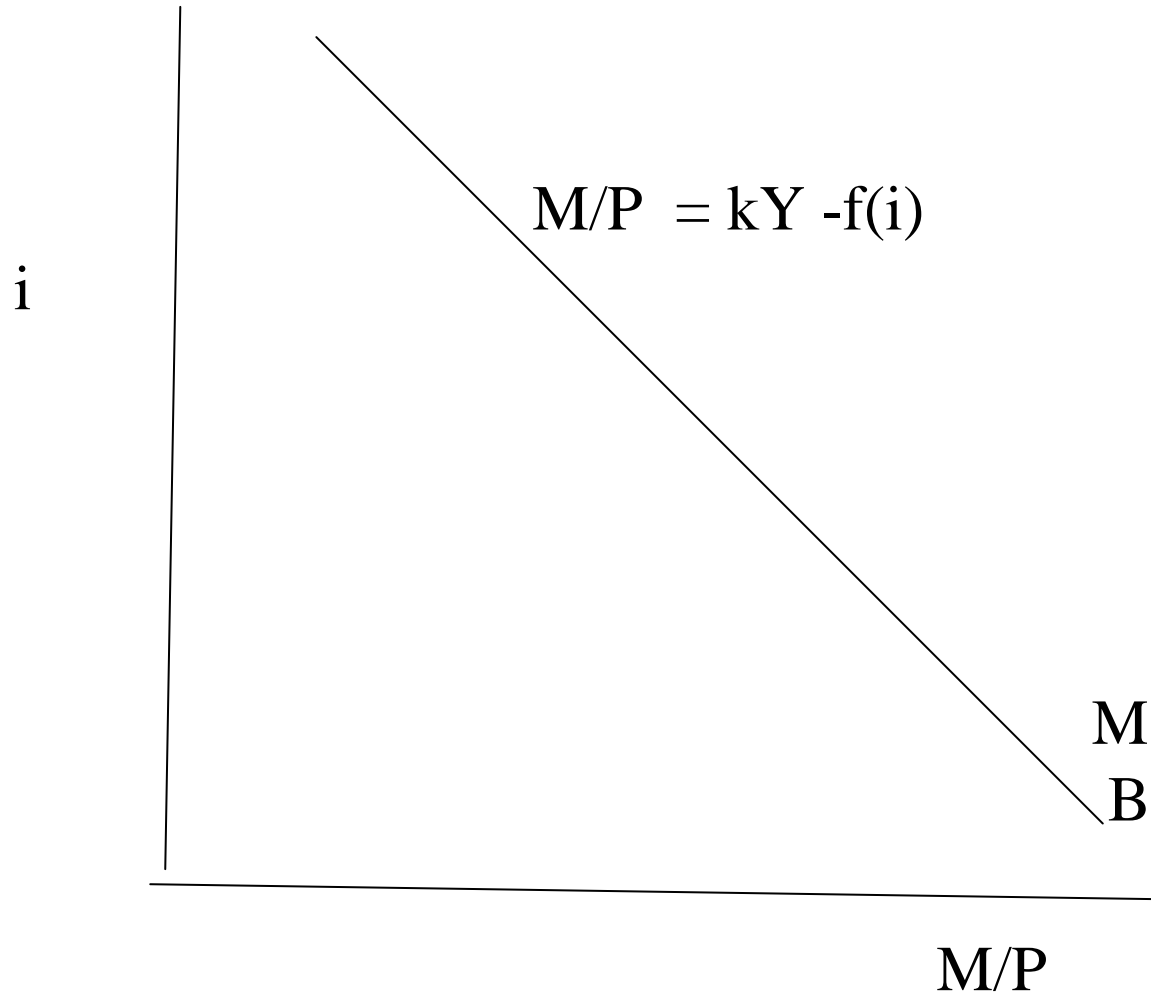
Total Demand for Money



Demand for Bonds

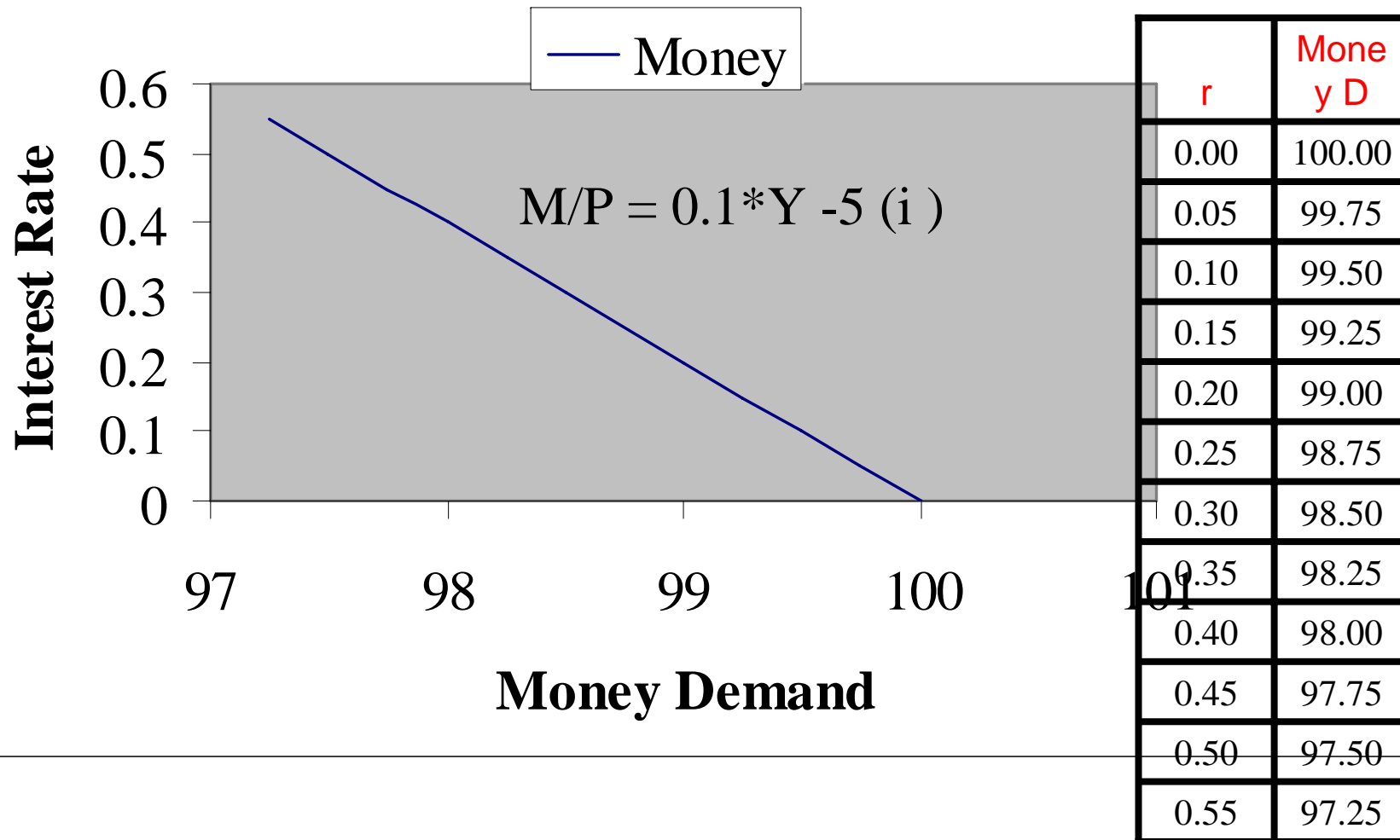


Total Demand for money



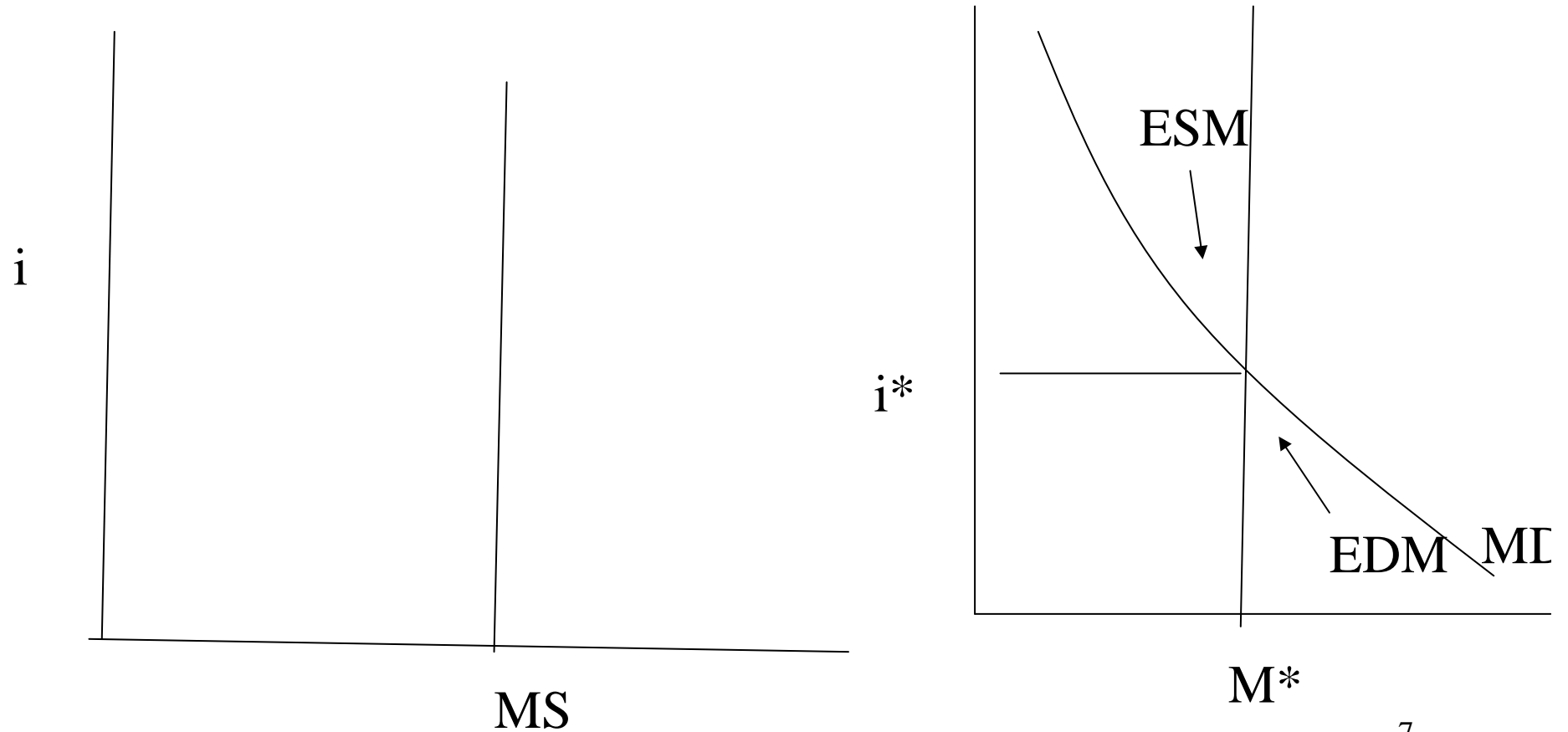
r	Money D	Bonds
0.00	100.00	400.00
0.05	92.50	407.50
0.10	85.00	415.00
0.15	77.50	422.50
0.20	70.00	430.00
0.25	62.50	437.50
0.30	55.00	445.00
0.35	47.50	452.50
0.40	40.00	460.00
0.45	32.50	467.50
0.50	25.00	475.00
0.55	17.50	482.50

Money Demand Function

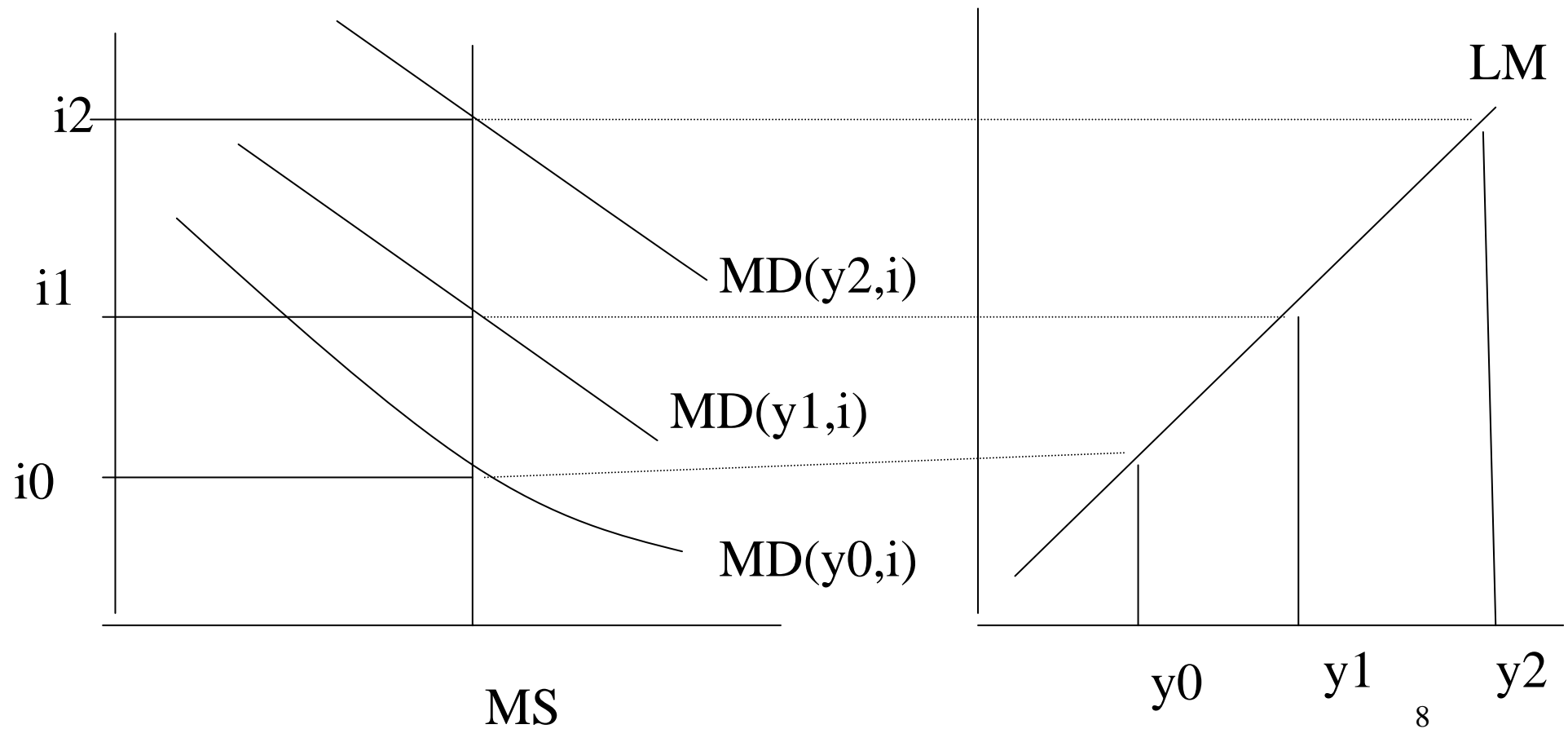


Money Market (DM = SM ?)

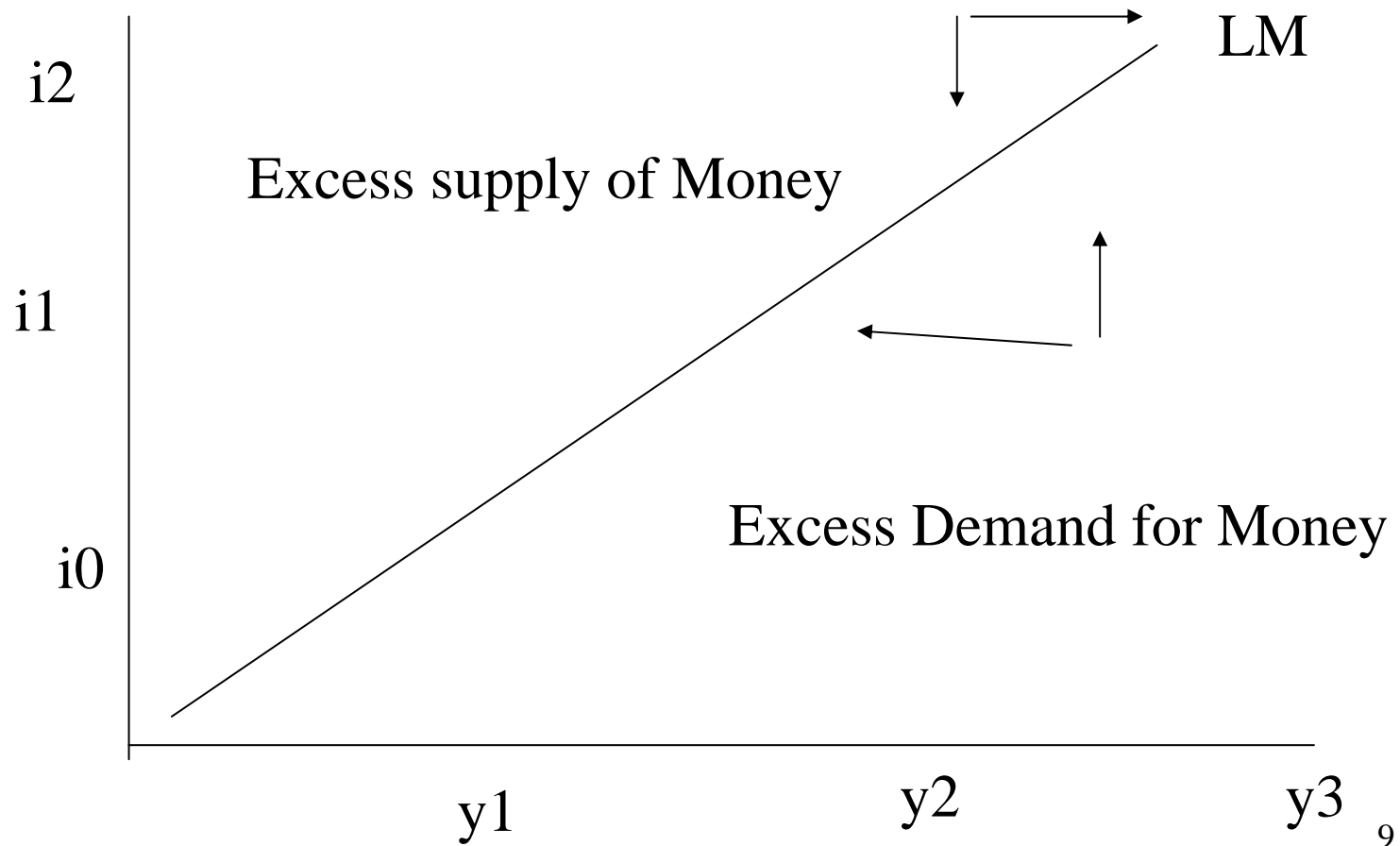
Interest rate and Quantity of Money in Equilibrium



Money Market Equilibrium: LM Curve



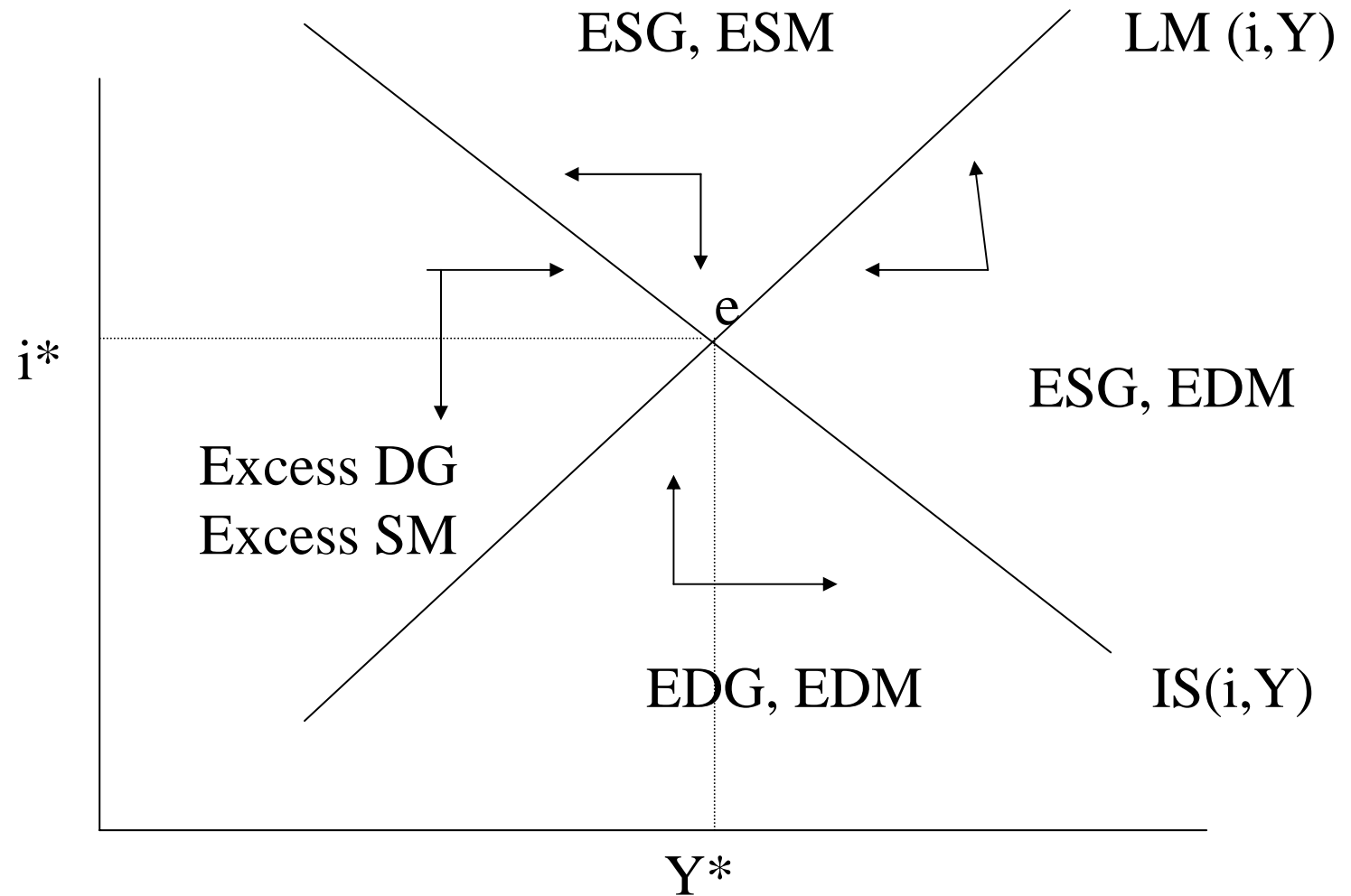
Why and How Does the LM Curve Show the Money Market Equilibrium?



A Simple Model of the Money Market

Money Market	Equilibrium interest rate
Demand for money	
$\frac{M}{P} = kY - nr$	$400 = 0.5Y - 1000r$
Supply of money: M	$r = \frac{0.5 * 900 - 400}{1000} = 5\%$
Numerical Example:	What happens to the
$\frac{M}{P} = 0.5Y - 1000r$	interest rate if M = 300 or
M = 400	M = 440?
	How will that affect I and
	Y?

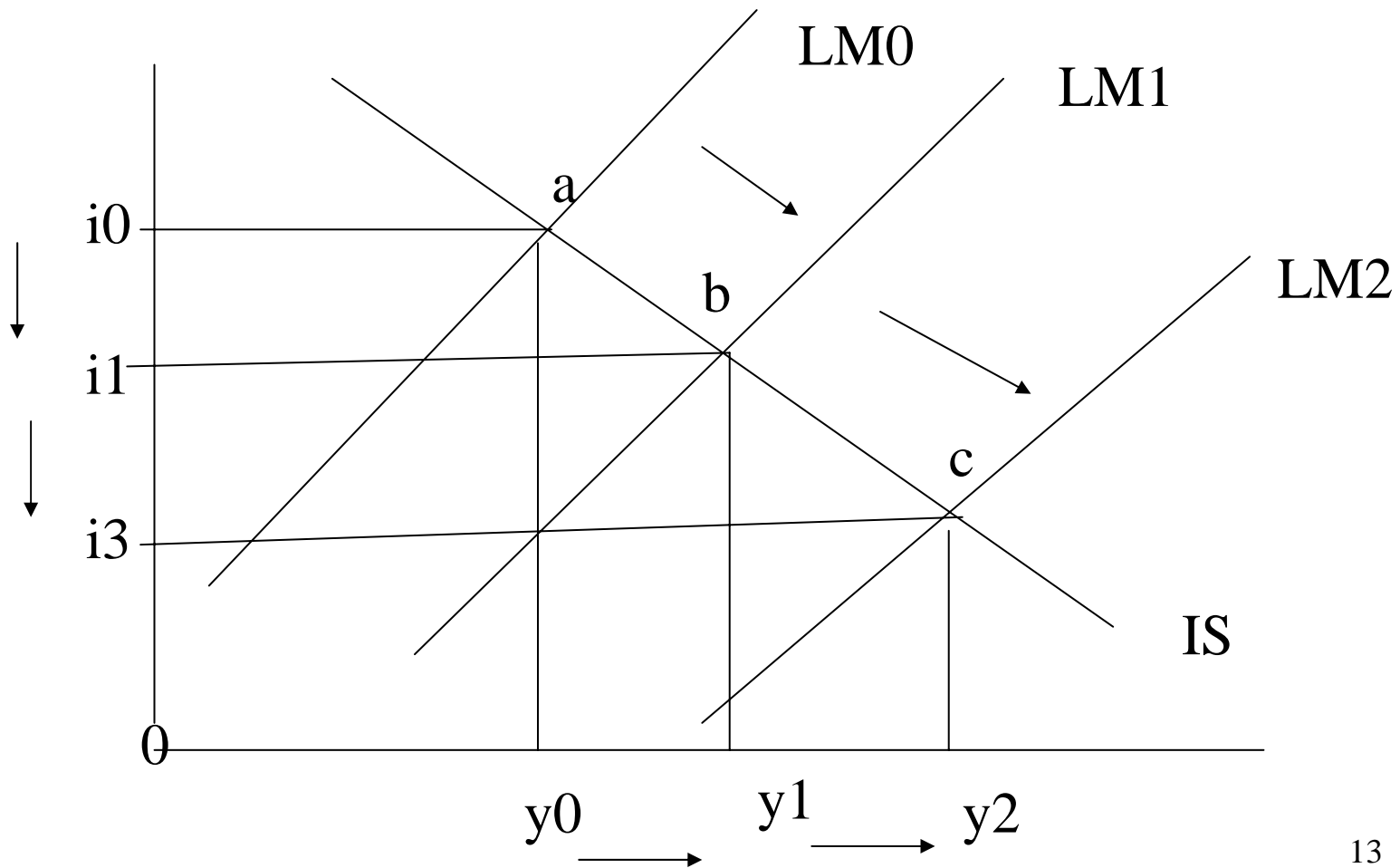
Economy Wide Equilibrium in a IS-LM Model



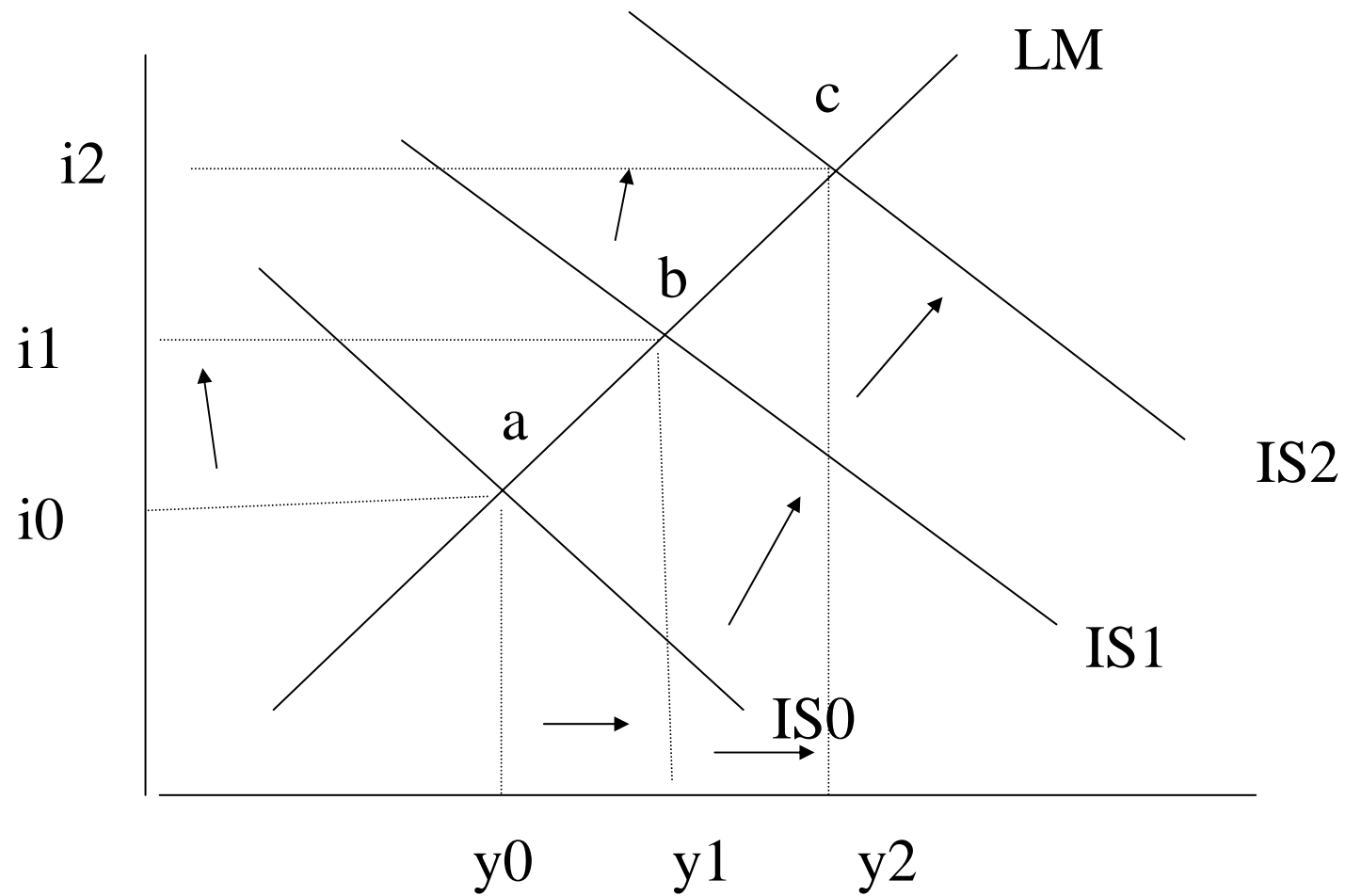
Review: Derivation of aggregate demand

- Goods market equilibrium
 - derivation of IS curve
- Money market equilibrium
 - Money demand and money supply (LM curve)
- Economy wide equilibrium
- Real money balance, Shift in LM and derivation of AD
- Role of slopes of IS-LM curves

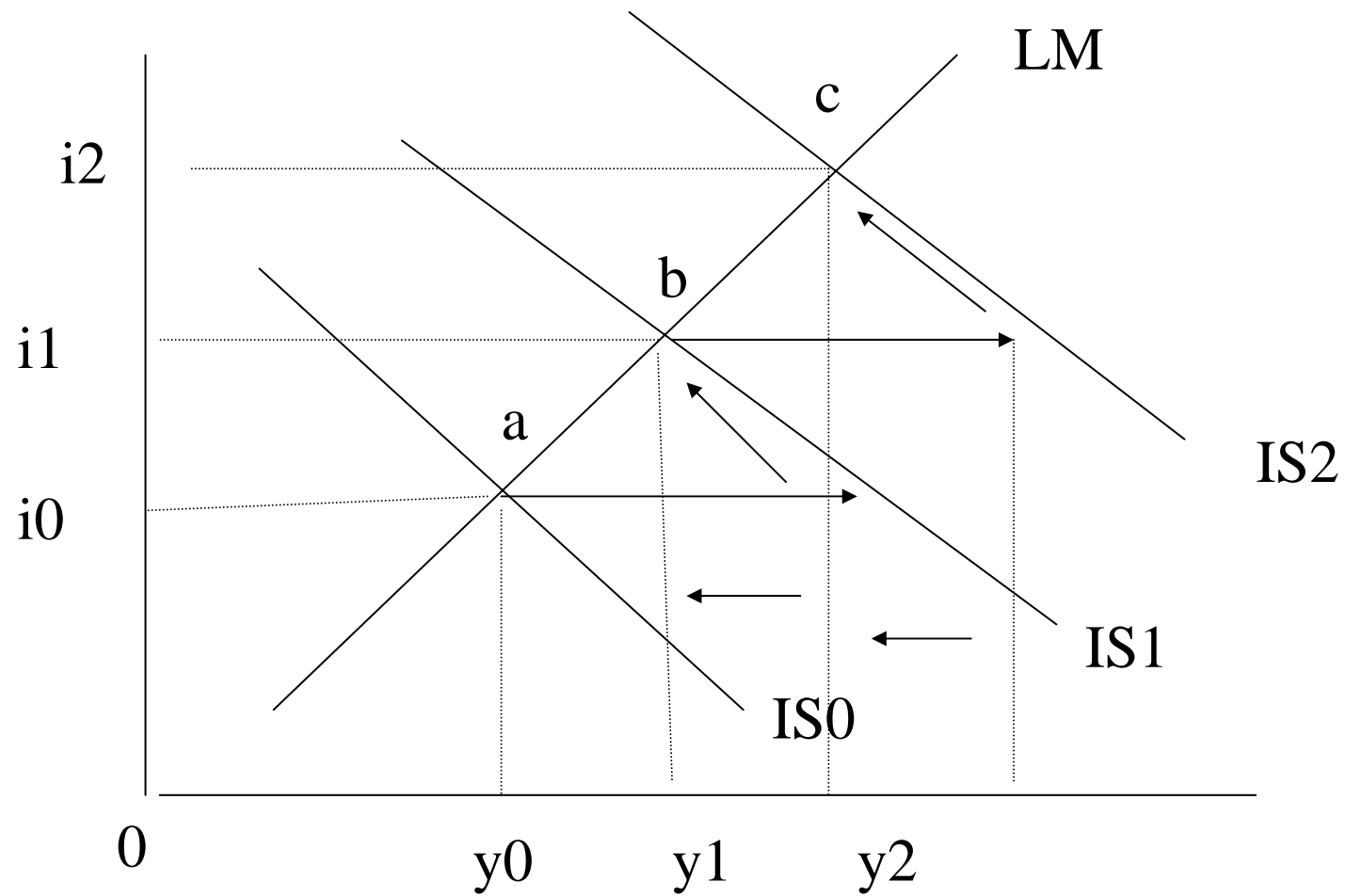
Impact of expansionary monetary policy in the interest rate and output



Impact of expansionary fiscal policy in the interest rate and output



Crowding Out Effect of an Expansionary Fiscal Policy



**Numerical Examples of goods market
equilibrium (IS-LM Model):**

Closed economy case

Supply-demand: $Y=C+I+G$ (1)

Total supply: $Y=5000$ (2)

Consumption: $C=250+0.75(Y-T)$ (3)

Investment: $I=1000-50r$ (4)

Fiscal variables, $G=1000$ $T=1000$ (5)

Impact of Government Spending on the Interest Rate

a. Suppose that the government pursues an expansionary policy $G = 1250$

This reduces national savings to 500

$$S = 5000 - 3250 - 1250 = 500$$

creates a deficit of -250 ;

$$T - G = 1000 - 1250 = -250 \quad (10)$$

with increase in government expenditure the interest rate will increase.

$$1000 - 50r = 500 \Rightarrow r = 10\%. \quad (11)$$

References

- B&W 10,11,MS 4, BL 5,5 MK 11
- Bank of England (www.bankofengland.co.uk)
The Transmission Mechanism of Monetary Policy.
- Goodhart C.E.A. (1994) What should central banks do? What should be their macroeconomic objective and operations?, Economic Journal, 104, November, 1424-1436.