

Macroeconomic Theory and Policy

Lecture 7

Macroeconomic Equilibrium: IS-LM and AD-AS Analysis

What is macroeconomic equilibrium? Is an Economy always in equilibrium?

Macroeconomic general equilibrium is characterised by

- prices that clear goods markets
- wage rates that clear labour markets
- interest rates that clear the capital markets
- exchange rates that clear the foreign exchange markets
- Disequilibrium may result when these prices are not free to change because of institutional or policy reasons.
- IS-LM model explains how such disequilibrium (Gaps between Demand and supply) may exist and could be mitigated using deliberate policy actions.

Micro-Foundation to Macro:

General Equilibrium with a representative household and firm

Market p and w such that

$$Y = C$$

$$LD = LS$$

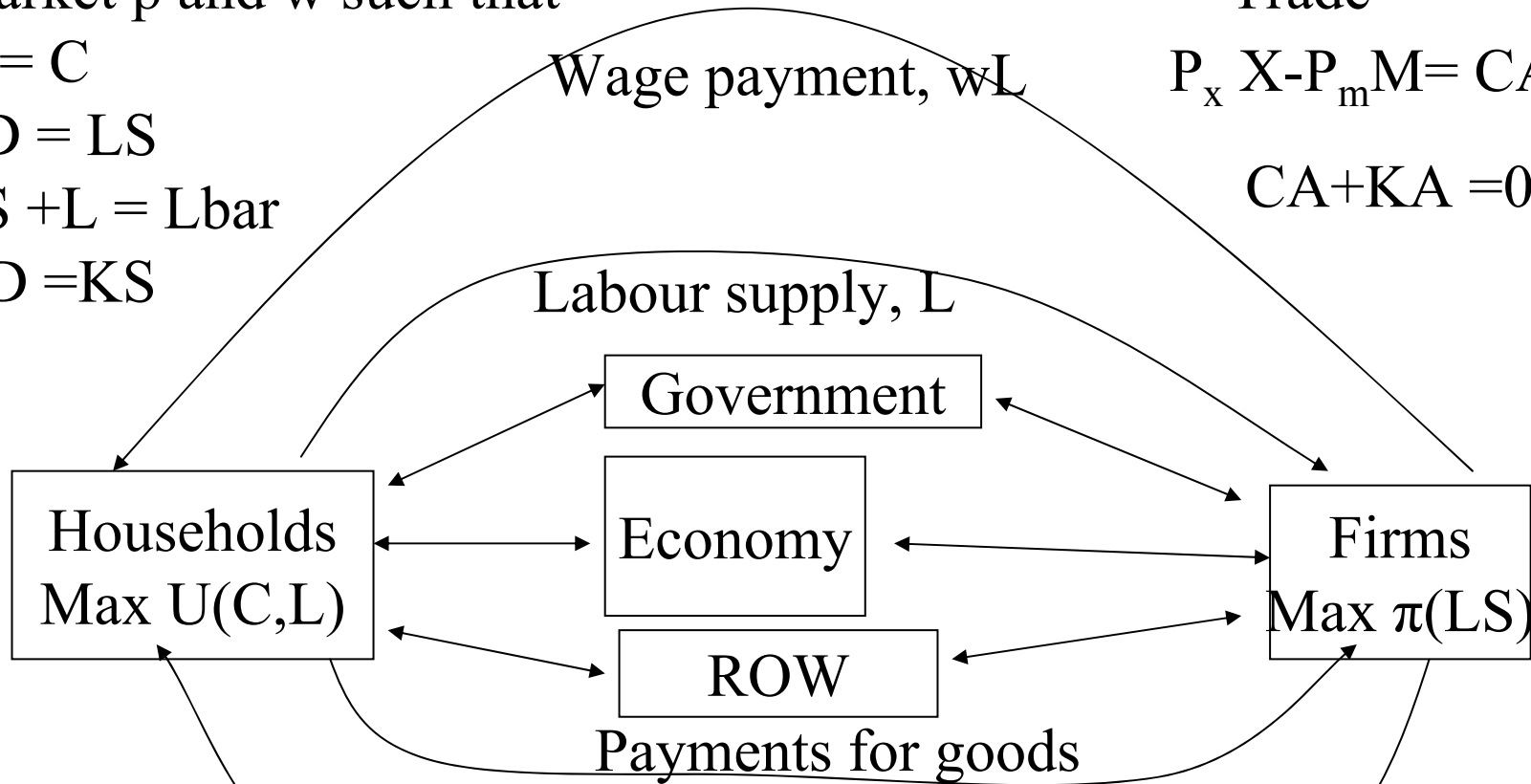
$$LS + L = Lbar$$

$$KD = KS$$

Trade

$$P_x X - P_m M = CA$$

$$CA + KA = 0$$



$$Max \quad U = c^\phi l^{1-\phi}$$

$$l + h^s = 1$$

$$pc = wh^s + \pi$$

$$c \geq 0; l \geq 0; h^s \geq 0$$

Supply of Goods

$$Max \quad \pi = py - wh^d$$

$$y \leq (h^d)^\alpha$$

$$G = T = t*Y + tw*wL + tr + rk$$

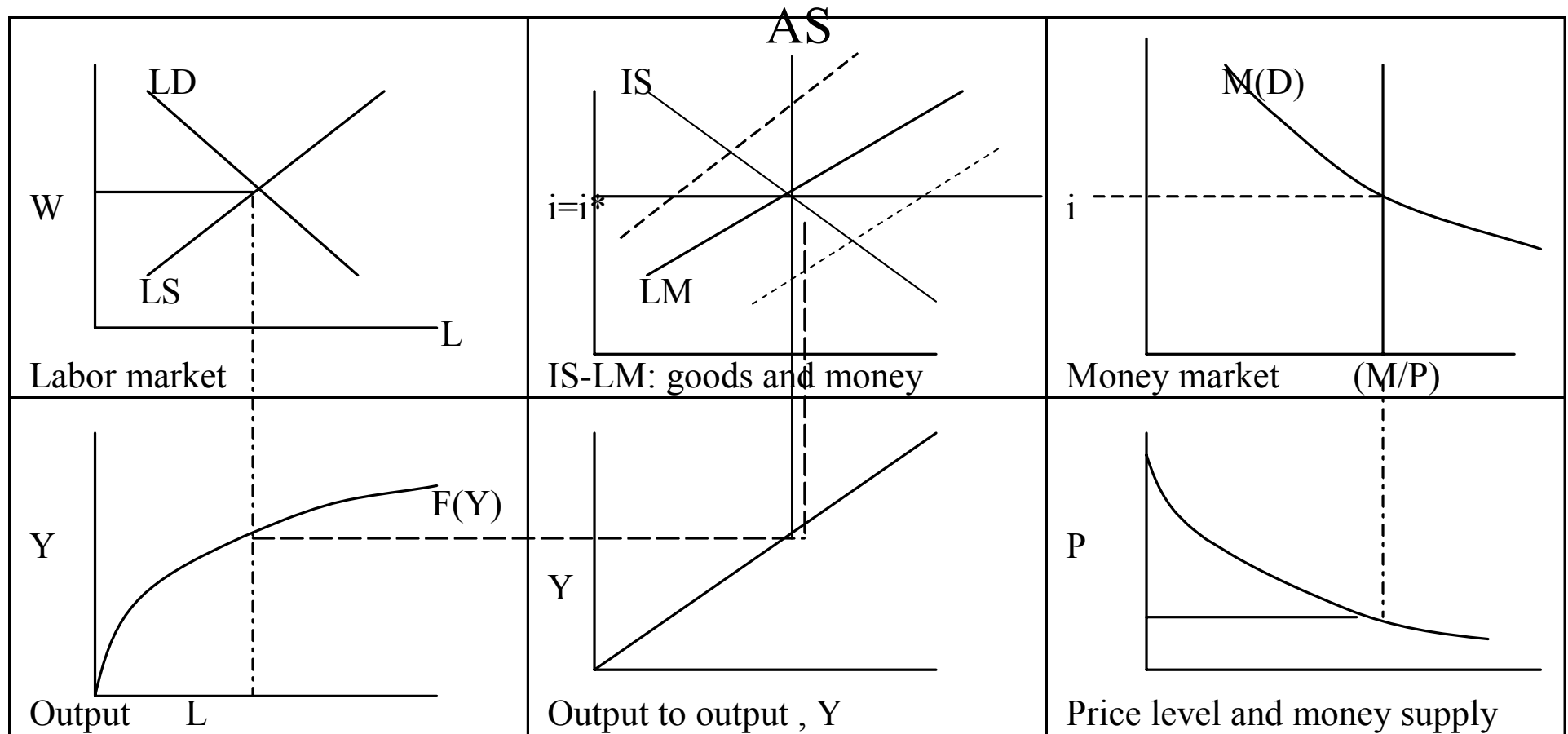
$$y \geq 0; h^d \geq 0$$

Classical view

- Ideas of Adam Smith (1776), Ricardo (1817), J. B. Say, Malthus (182) Mill (1873), Marshall (1925)
- Invisible hand sets prices to equate demand and supply.
- No excess demand or no excess supply can persist. No glut or shortages in goods market.
- No unemployment or labour pressure in the labour market.
- Money is neutral (quantity theory of money).
- Prices proportional to money supply.
- It is long run view.
- Balance budget recommended.
- Laissez faire: minimum government is the best government.
- Downward sloping aggregate demand and vertical supply curve

Classical economy:

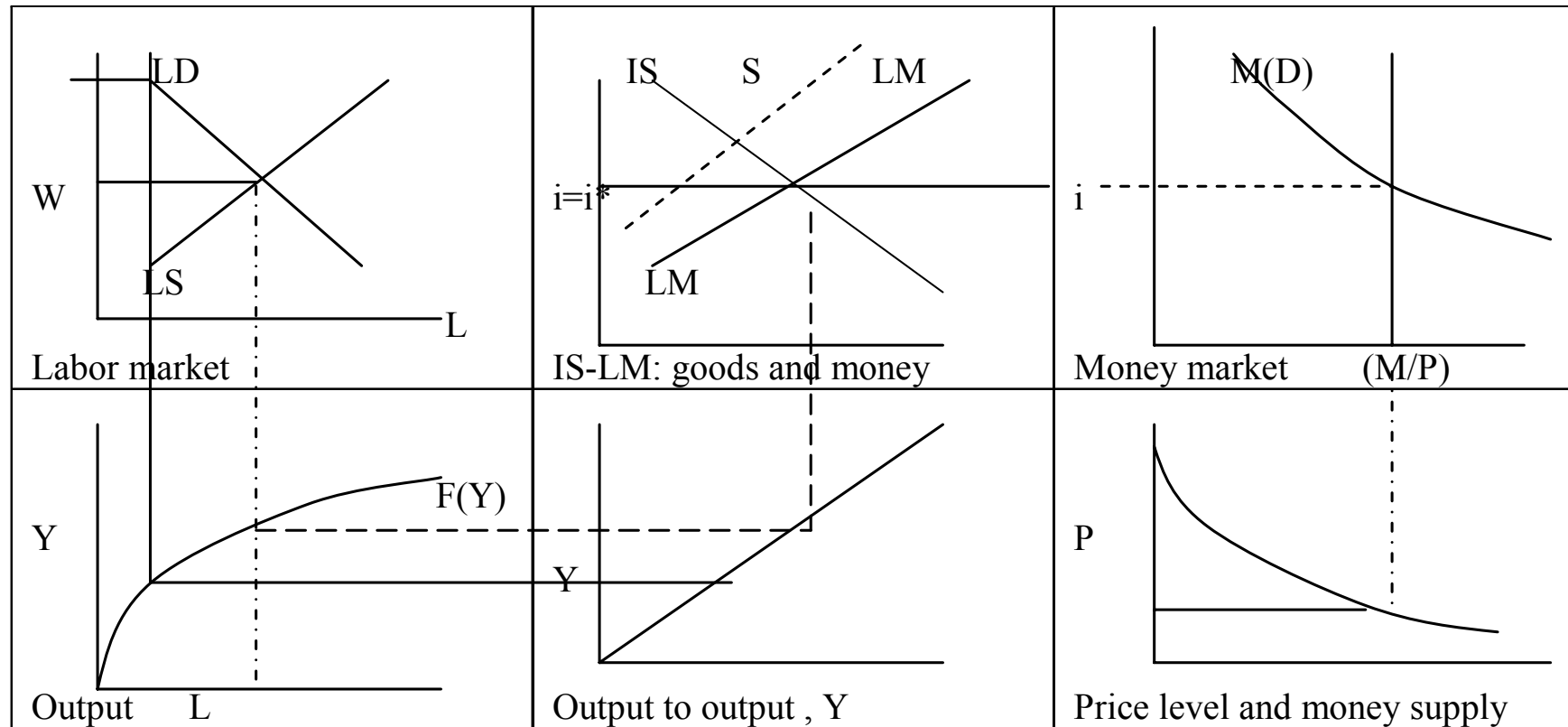
How perfectly flexible prices guarantee macroeconomic equilibrium in IS-LM Framework



Keynesian Revolution (Short run analysis)

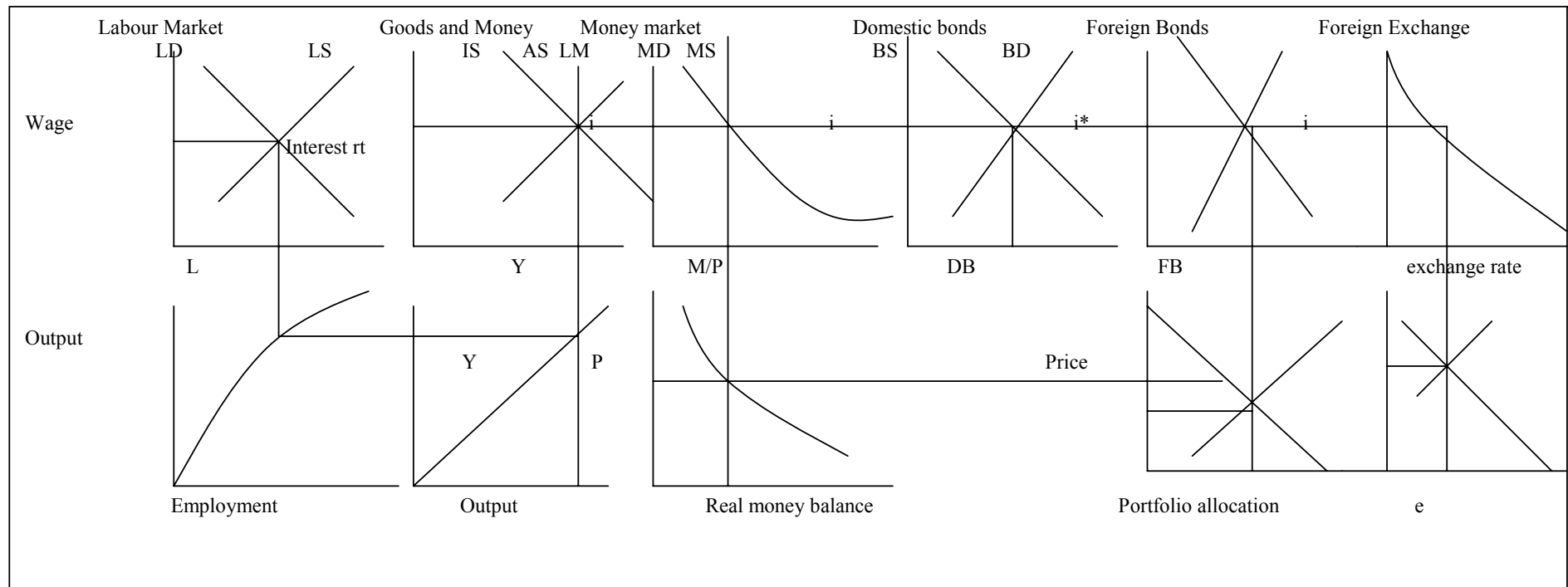
- Gaps between supply and demand may persist for a long time.
- Markets (prices) may not work automatically itself because of deficiency in demand: massive unemployment labour and under utilisation of capital is possible.
- Cost of waiting to return to the natural level; irresponsible to do so.
- Balancing budget is stupid and dangerous policy.
- Active role by government can mitigate deficiency in private demand (consumption and investment).
- Positive role of fiscal policy and monetary policy.
- Multiplier effect of demand on output
- Aggregate supply is horizontal in the short run.
- Animal spirits – importance of expectations.

Keynesian economy: flexed prices and possibility of underemployment equilibrium



Open Economy Model: Equilibrium in Six Different Markets

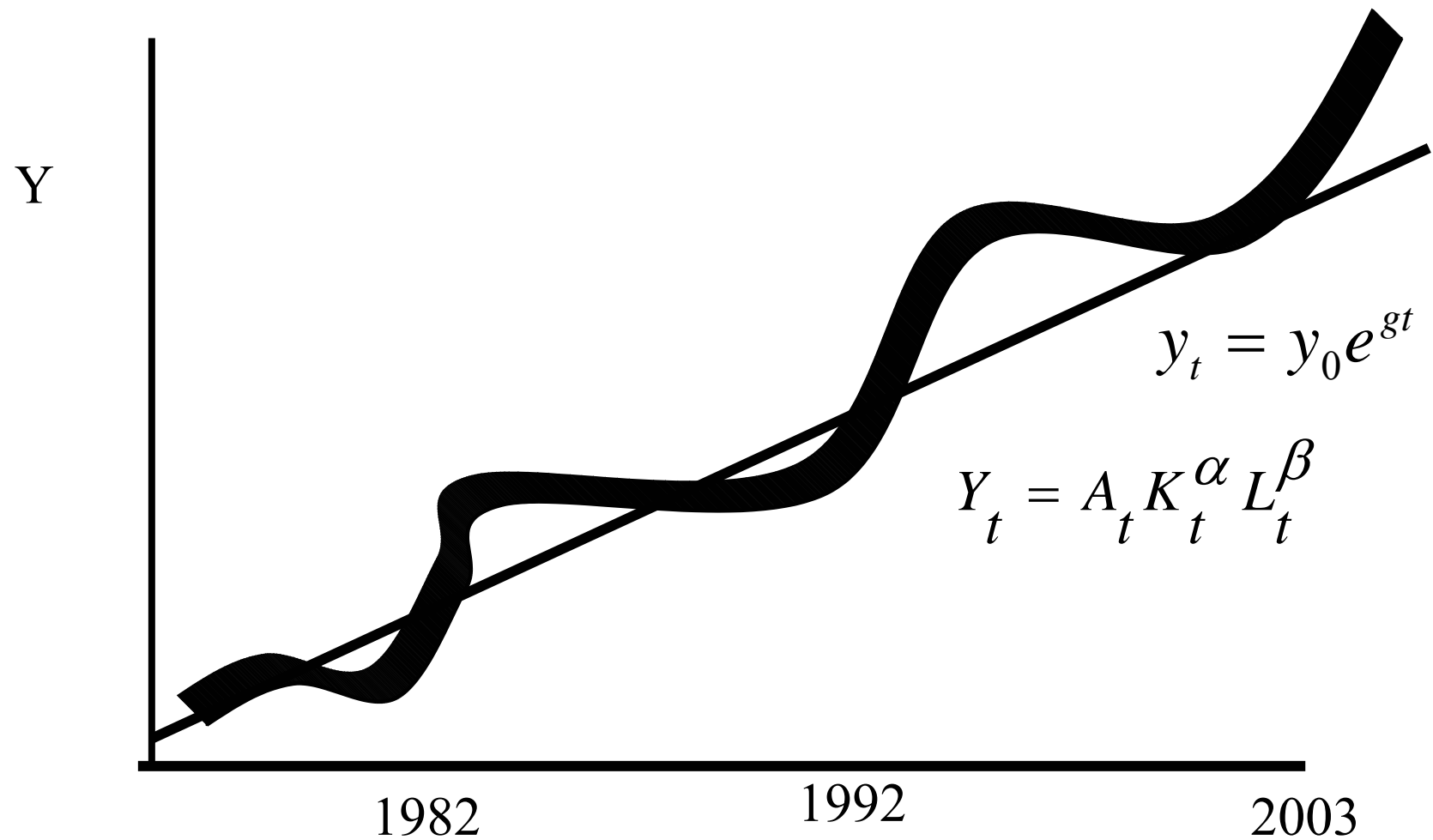
Balance of Payment analysis: Graphical approach

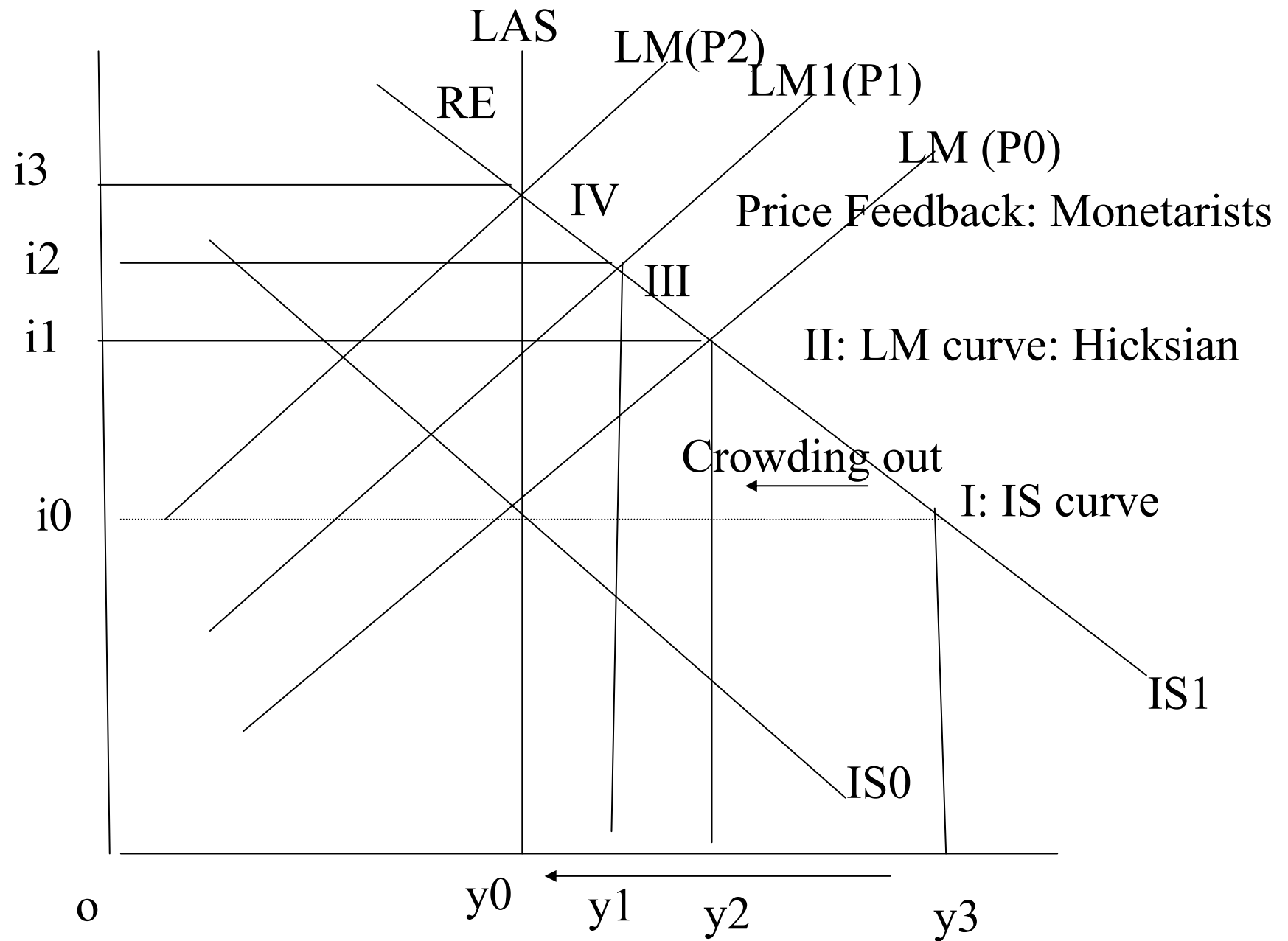


Keynesian Economist's view on Economic Policy

- Automatic equilibrium is not guaranteed. Animal spirits not the rational choices dominate the economy.
- Unemployment may persist for a long period if the deficiency in demand continues.
- Active policy can play a very positive role, because of rigidity in the markets, particularly in the labour market (minimum wage laws, unions, and efficiency wages).
- Also because of the monopolistic powers of the firms.
- Active policy can fine tune the economy and correct the market failure.

New Classical View of Fluctuation and Growth an Dconomy



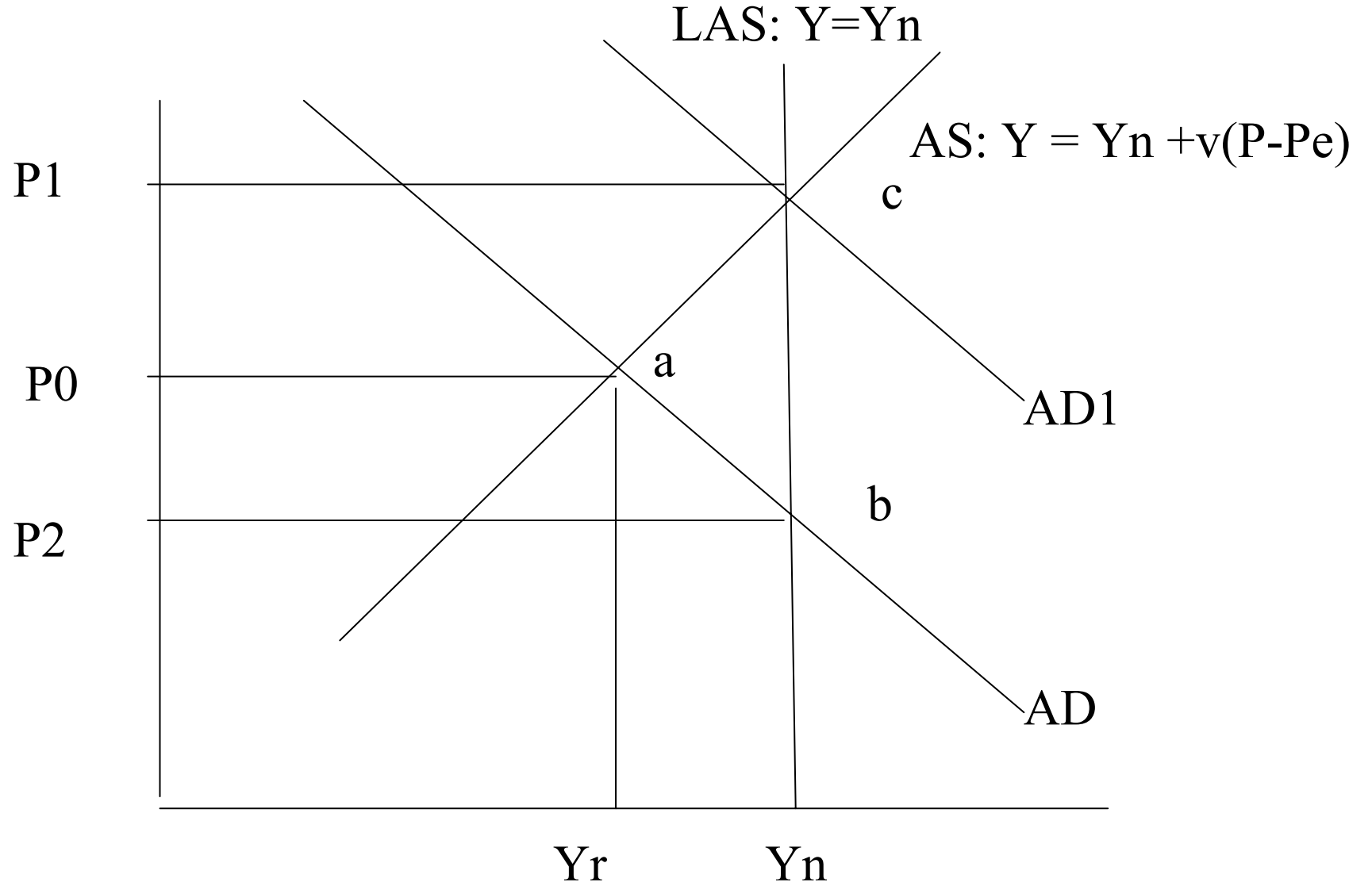


A Simple Overview of Keynesian, Monetarist and New Classical and New Keynesian Approaches to Analysis of short run fluctuations

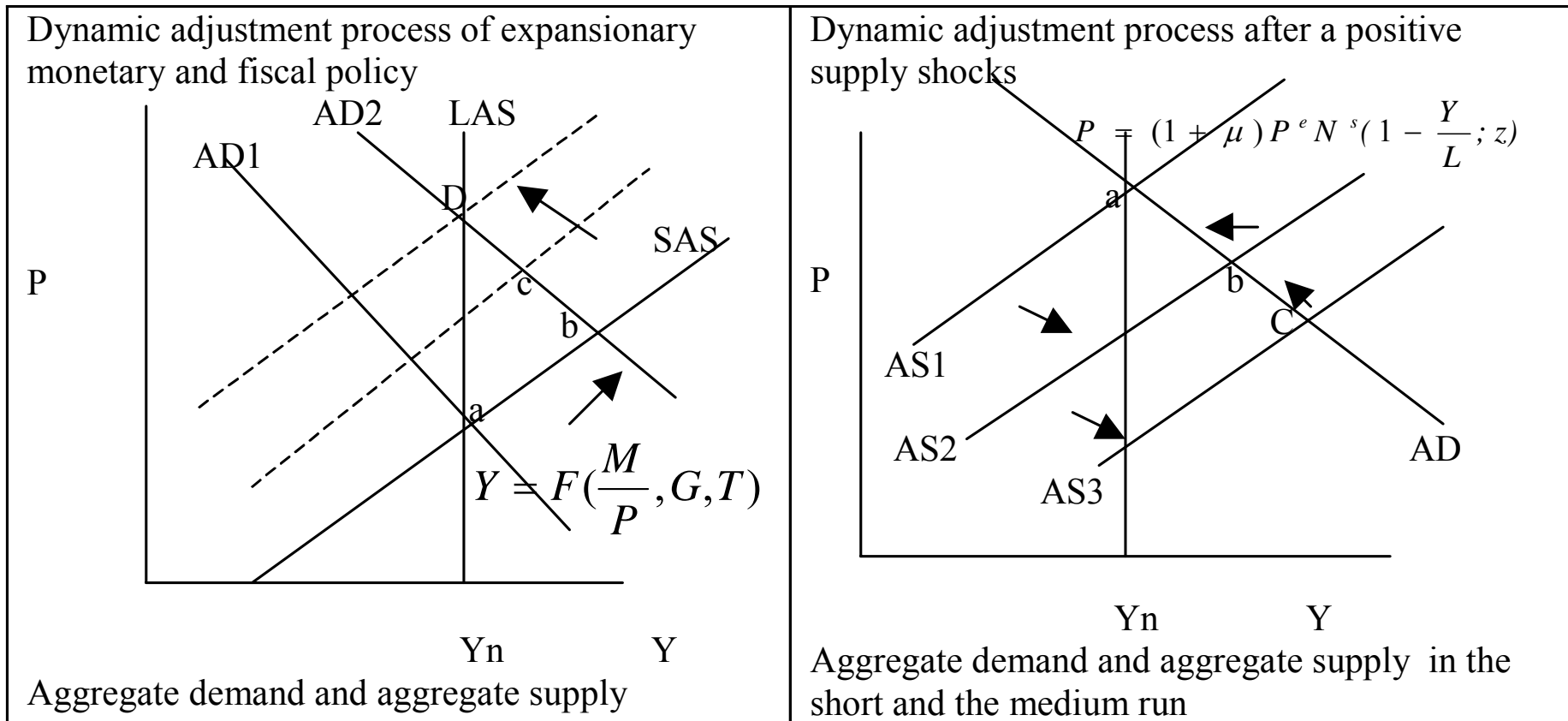
Summary of Four Macro Models in the above Figure

- Government expenditure rises IS1 shifts to IS2. Impact on output and interest rates differ across macroeconomic models.
- Models I and II are Keynesian and new Keynesian models.
- Model IIIA is monetarists includes a price feedback. AD drops as real balances decline.
- Model IV monetarist proposition in the long run and New Classical model with rational expectation.

Expansionary Policy to Fight Recession: AS-AD Analysis

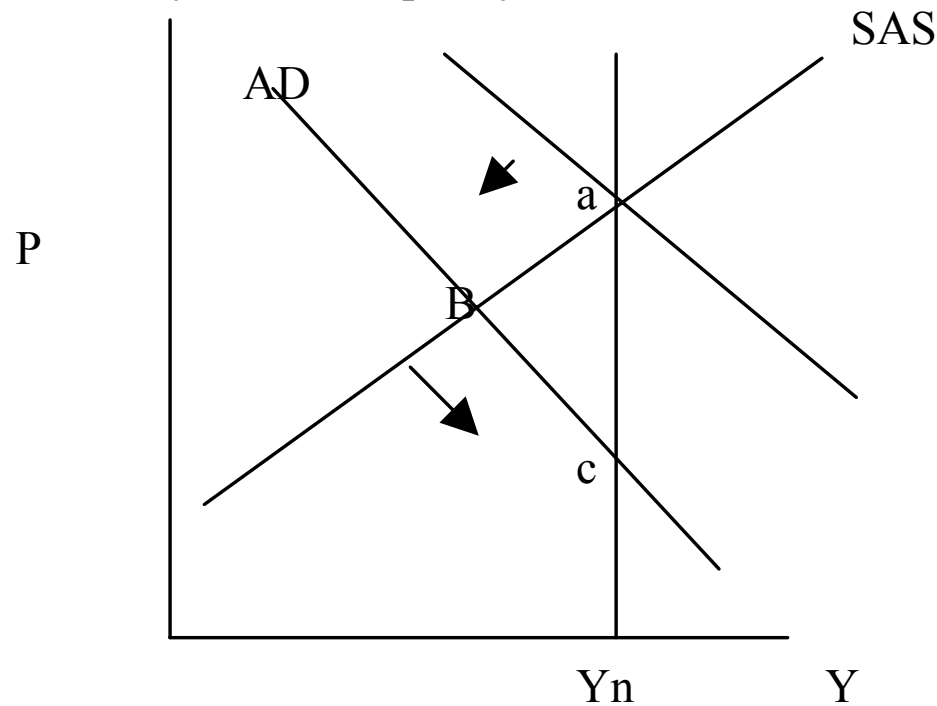


How does output responds to positive demand and supply shocks in the long run?



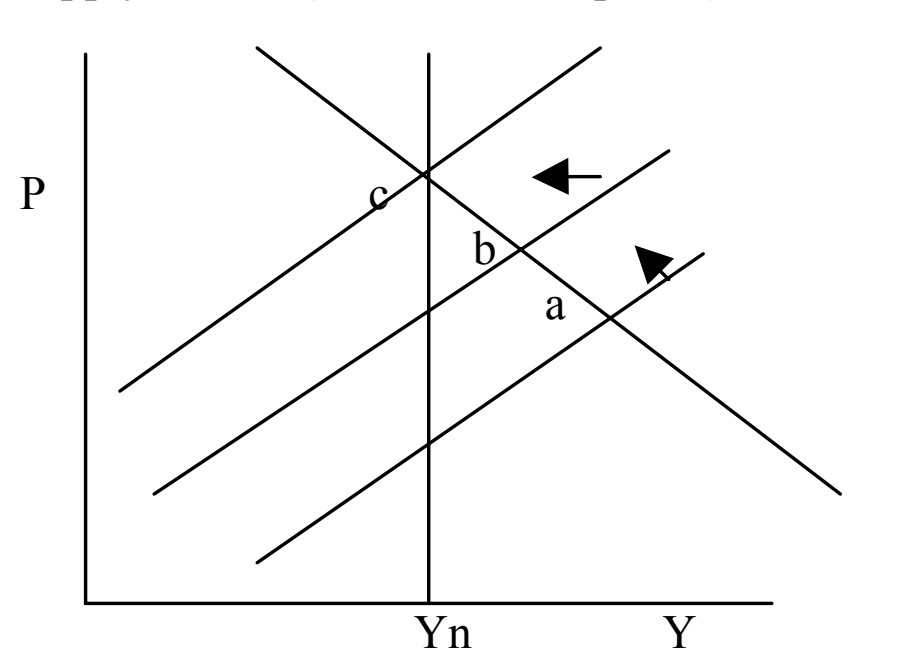
How does output and prices respond to a negative demand and supply shocks in the long run?

Dynamic adjustment process of contractionary monetary and fiscal policy



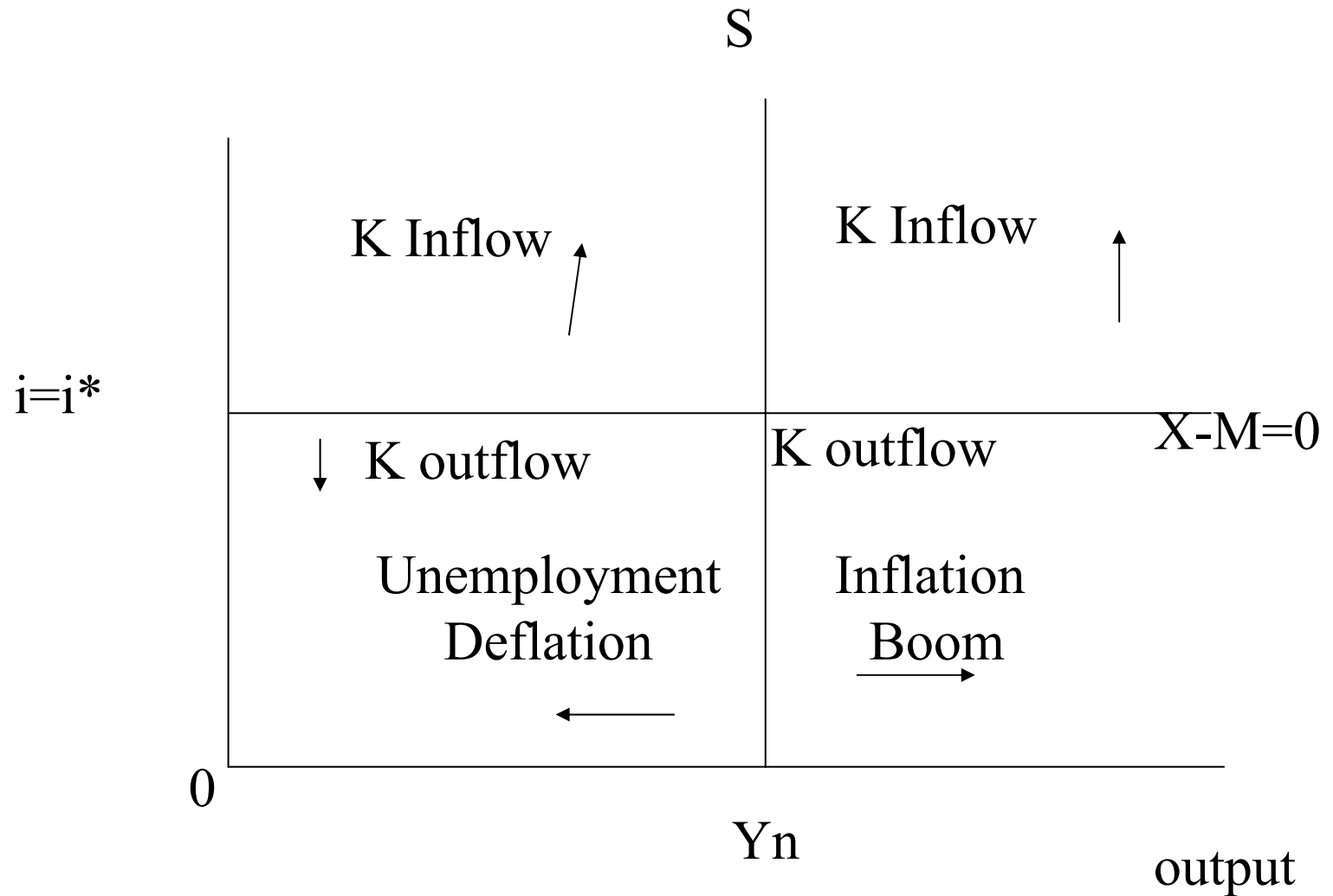
Aggregate demand and aggregate supply

Dynamic adjustment process after a negative supply shocks (increase in oil prices)

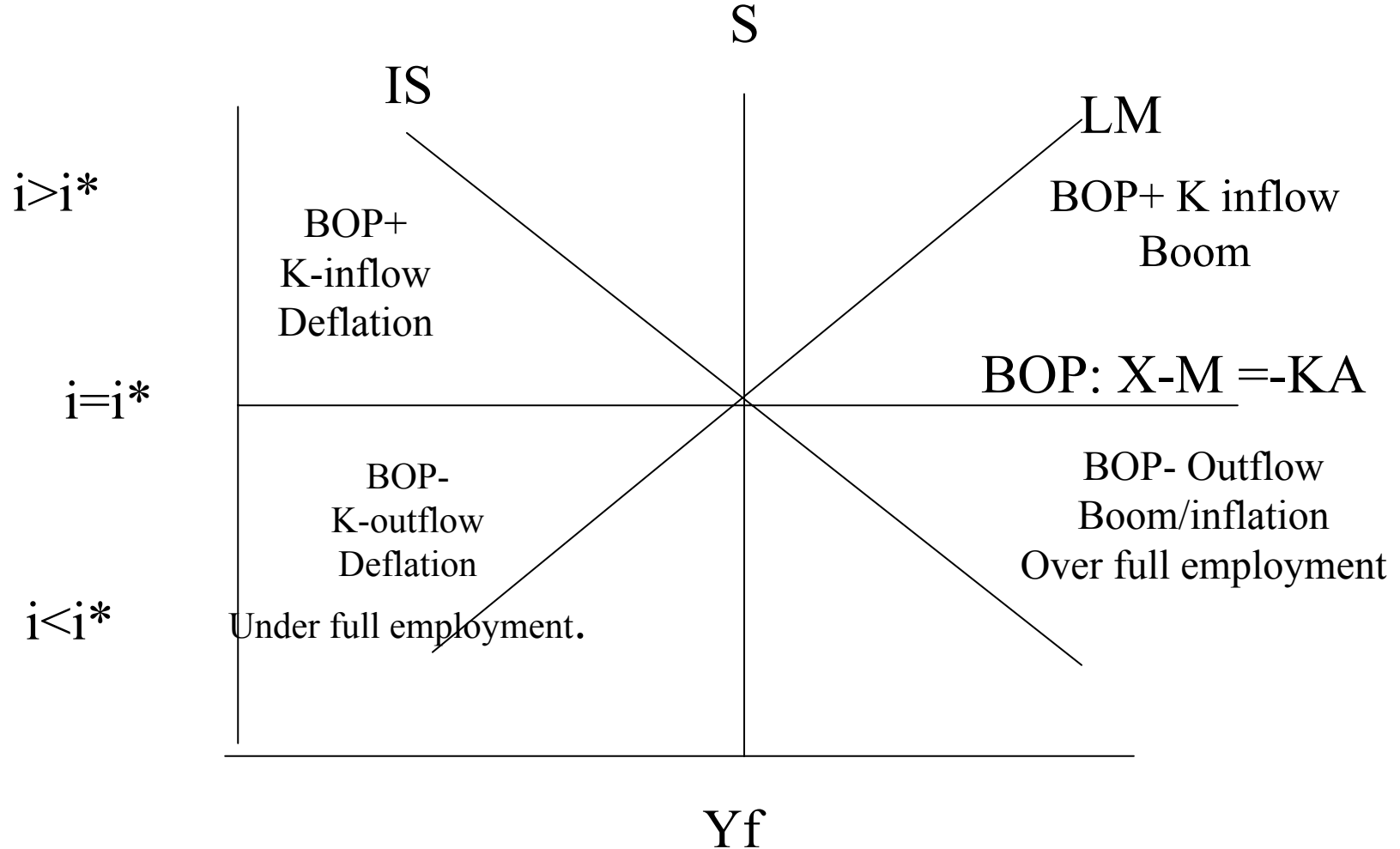


Aggregate demand and aggregate supply in the short and the medium run

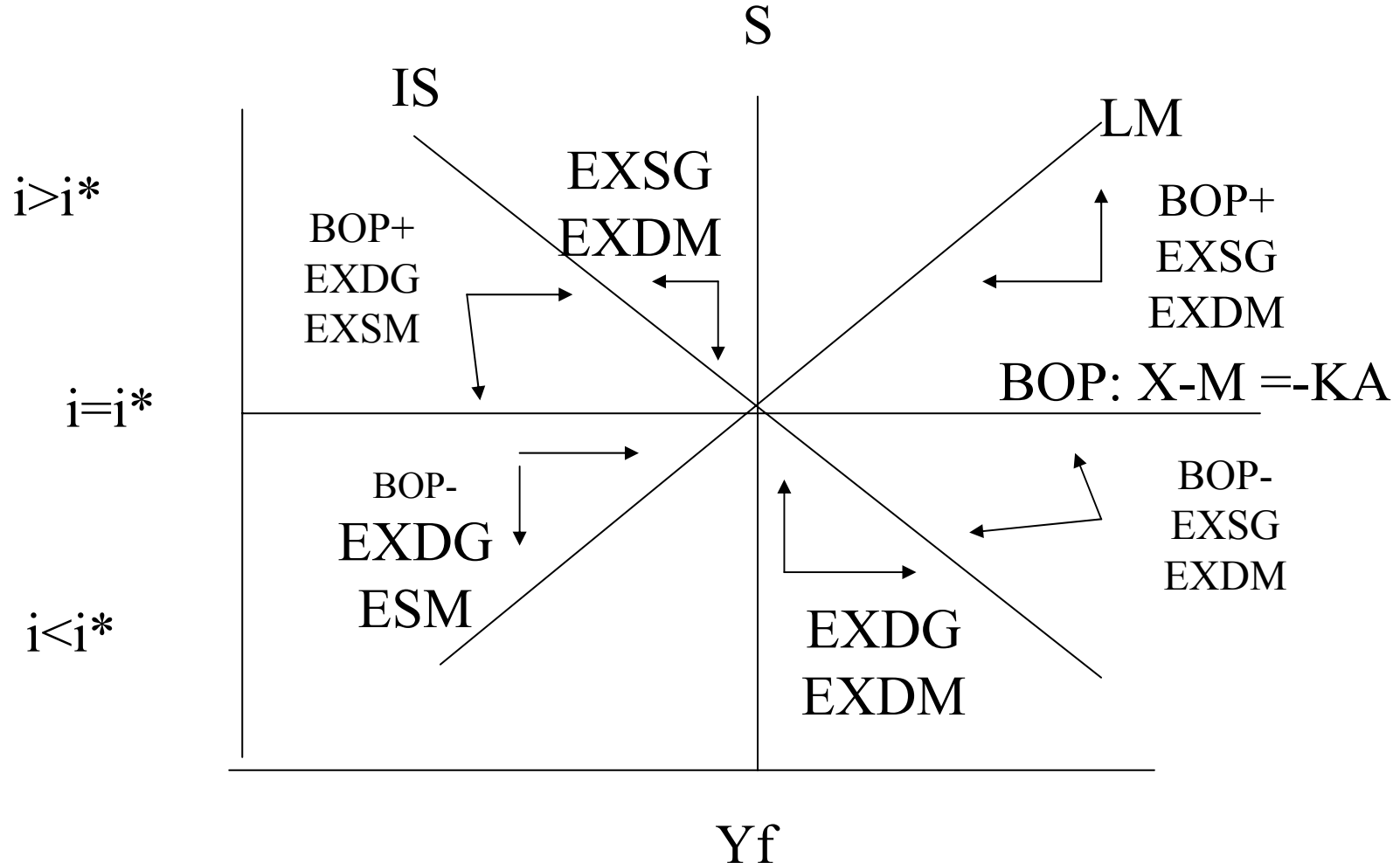
Internal and External Stability in an Open Economy



Macroeconomic Equilibrium in a Small Open Economy with Perfect Capital Mobility

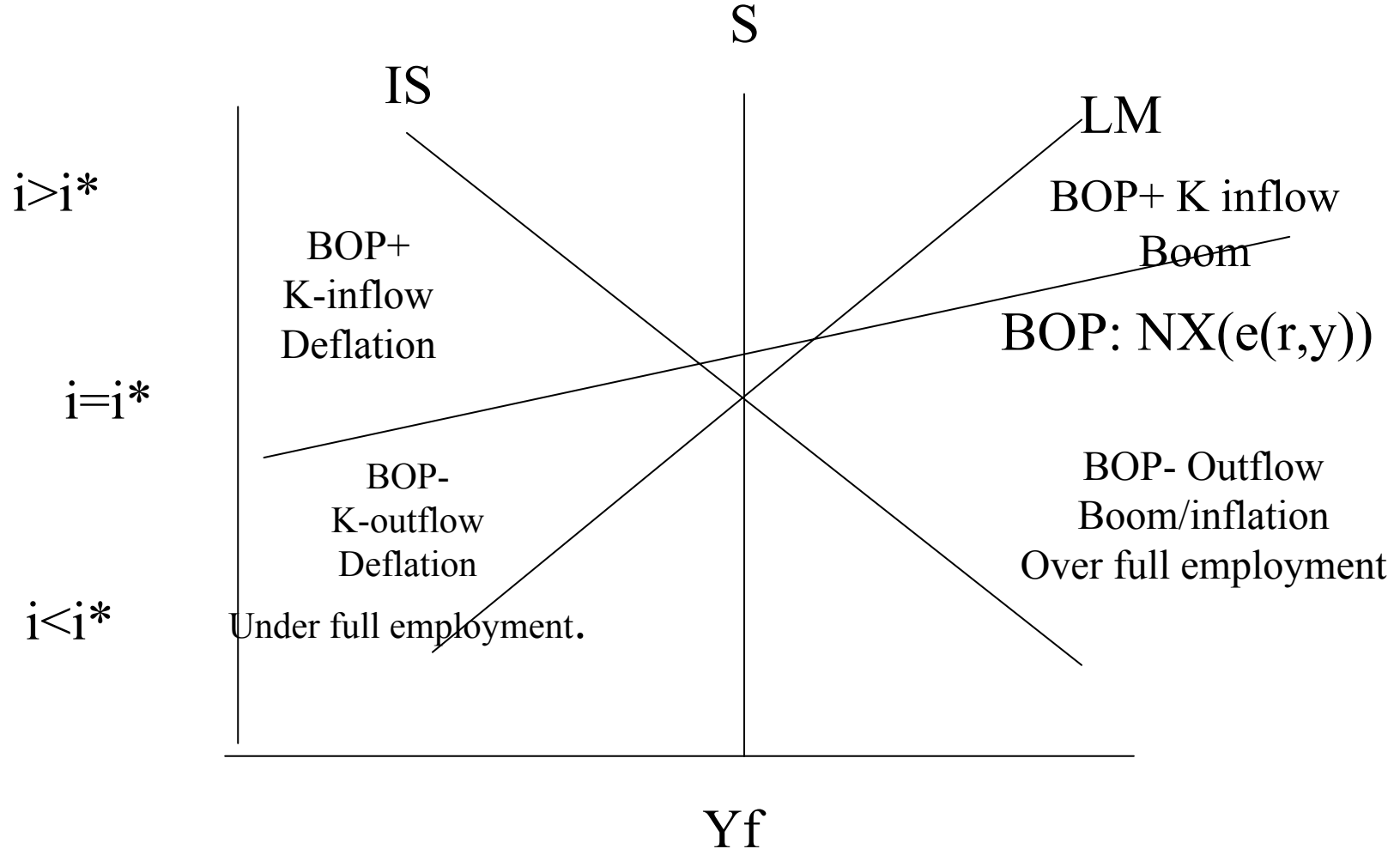


A Small Open Economy with Perfect Capital Mobility: Convergence towards A Macroeconomic Equilibrium



Notes: YF full employment output, BOP = Balance of Payment,
K= capital, ESG =Excess supply of goods, EDG =Excess demand for goods,
ESM =excess supply of money, EDM=excess demand for money

Macroeconomic Equilibrium in a Small Open Economy with Imperfect Capital Mobility



Numerical Exercises

- Fixed Price Model IS-LM model
- Flexible Price IS-LM Model
- Multiplier Analysis in Keynesian Model
- Open Economy Macro Economic Model
 - With perfect capital mobility
 - Imperfect capital mobility

References

- Bhattarai (2002) Interest Rate Determination in the UK: Test of the Taylor Rule University of Hull.
- Fleming J. Marcus (1962) Domestic financial policies under fixed and under floating exchange rates, IMF staff paper 9, November , 369-379.
- Friedman, M. (1968), "The Role of Monetary Policy," American Economic Review, No.1 vol. LVIII March
- Hicks, J. R.(1937): Mr. Keynes and the "Classics"; A Suggested Interpretation, Econometrica 5: pp 147-159.
- Krugman P. and L. Taylor (1978) "Contractionary Effects of Devaluation" Journal of International Economics, 445-56.
- Lucas, Robert Jr. and Sargent, After Keynesian Macroeconomics, Spring 1979, Federal Reserve Bank of Monneapolis Quarterly Review.
- Mankiw N.G. (1989) Real Business cycle: A New Keynesian Perspective, Journal of Economic Perspectives, vol. 3, no. 3 pp. 79-90.
- Miller, Marcus; Salmon, Mark When Does Coordination Pay? Journal of Economic Dynamics and Control, July-Oct. 1990, v. 14, iss. 3-4, pp. 553-69
- Mundell R. A (1962) Capital mobility and stabilisation policy under fixed and flexible exchange rates, Canadian Journal of Economic and Political Science, 29, 475-85.
- Nordhaus WD (1994) Policy Games: Co-ordination and Independence in Monetary and Fiscal Policies, Brookings Papers in Economic Activities, pp. 139-216.
- Phillips A W. (1958) The relation between unemployment and the rate of change of money wage rates in the United Kingdom, 1861-1957.
- Phelps E. S. (1968) Money wage dynamics and labour market equilibrium, Journal of Political Economy, 76 , 678-711.
- Sebastian E (1986) Are Devaluations Contractionary? Review of Economics and Statistics, vol. 68, 3, 501-508.
- G.K.Shaw, M. J. McCrostie and D. Greenaway (2001) Macroeconomics: Theory and Policy in the UK, Blackwell.
- Shaw, McCrostie and Greenaway (2001) Macroeconomics Theory and Policy in the UK, Blackwell.
- Taylor Mark (1995) The Economics of Exchange Rates, Journal of Economic Literature, March, vol 33, No. 1, pp. 13-47.