Modern Growth Theories
Lecture 2

Dr Wioletta Nowak

Schools of macroeconomic thought

- The orthodox Keynesian and orthodox monetarist schools
- The new classical, real business cycle and new Keynesian schools
- The Austrian and Post Keynesian schools

Classical economics

Source: Snowdon, H.R. Vane, 2005, *Modern Macroeconomics. Its Origins, Development, and Current State*.

- The *laissez-faire* doctrine.
- Government intervention, in the form of activist stabilization policies, would be neither necessary nor desirable.
- A capitalist market economy could deviate from its equilibrium level of output and employment. Disturbances are temporary and very short-lived. The market mechanism would operate relatively quickly and efficiently to restore full employment equilibrium.
- 'Invisible hand' channelling self-interest into some social optimum.

Classical economics

Source: Snowdon, H.R. Vane, 2005, *Modern Macroeconomics. Its Origins, Development, and Current State*.

- Little attention to either the factors which determine aggregate demand or the policies which could be used to stabilize aggregate demand in order to promote full employment.
- Full employment is the normal state of affairs.
- Say's Law - 'supply creates its own demand'
- Neutrality of money – changes in money supply only affect nominal variables and not real variables. Changes in the money supply affect prices but not the output.

Keynes (1936), *The General Theory of Employment, Interest and Money*

- The birth of modern macroeconomics.
- The analysis of the interplay between the goods, labour and money markets.
- Provided a robust explanation of a mass unemployment and offered an attractive political action programme for the resolution of the diagnosed problem.
- The authorities can, and therefore should use discretionary fiscal and monetary policy to stabilize output and employment at their full employment levels.
- Failed to deal adequately with the problem of stagflation in the 1970s.

- **Monetarism** was better able to explain the empirical anomaly of stagflation in a more consistent fashion.
- The collapse of a stable demand for money function in the early 1980s undermined monetarism.
- The early 1970s **- new classical school** cast doubt on whether traditional Keynesian aggregate demand management policies can be used to stabilize the economy.
- Policy ineffectiveness proposition, the Lucas critique and time inconsistency.
- Rational expectations, the role of aggregate supply.

- The 1980s - real business cycle models vs new Keynesian models
- **Real business cycle models** - there is no need for stabilization policy, monetary factors are irrelevant in explaining fluctuations, monetary policy can’t be used to influence output and employment even in the short run. Governments shouldn’t attempt to reduce fluctuations in output and employment, which are Pareto-efficient responses to shocks to the production function.
- **New Keynesians** argue that there is a need for stabilization policy as capitalist economies are subjected to shocks from both the demand and supply side of the economy, which cause inefficient fluctuations in output and employment.

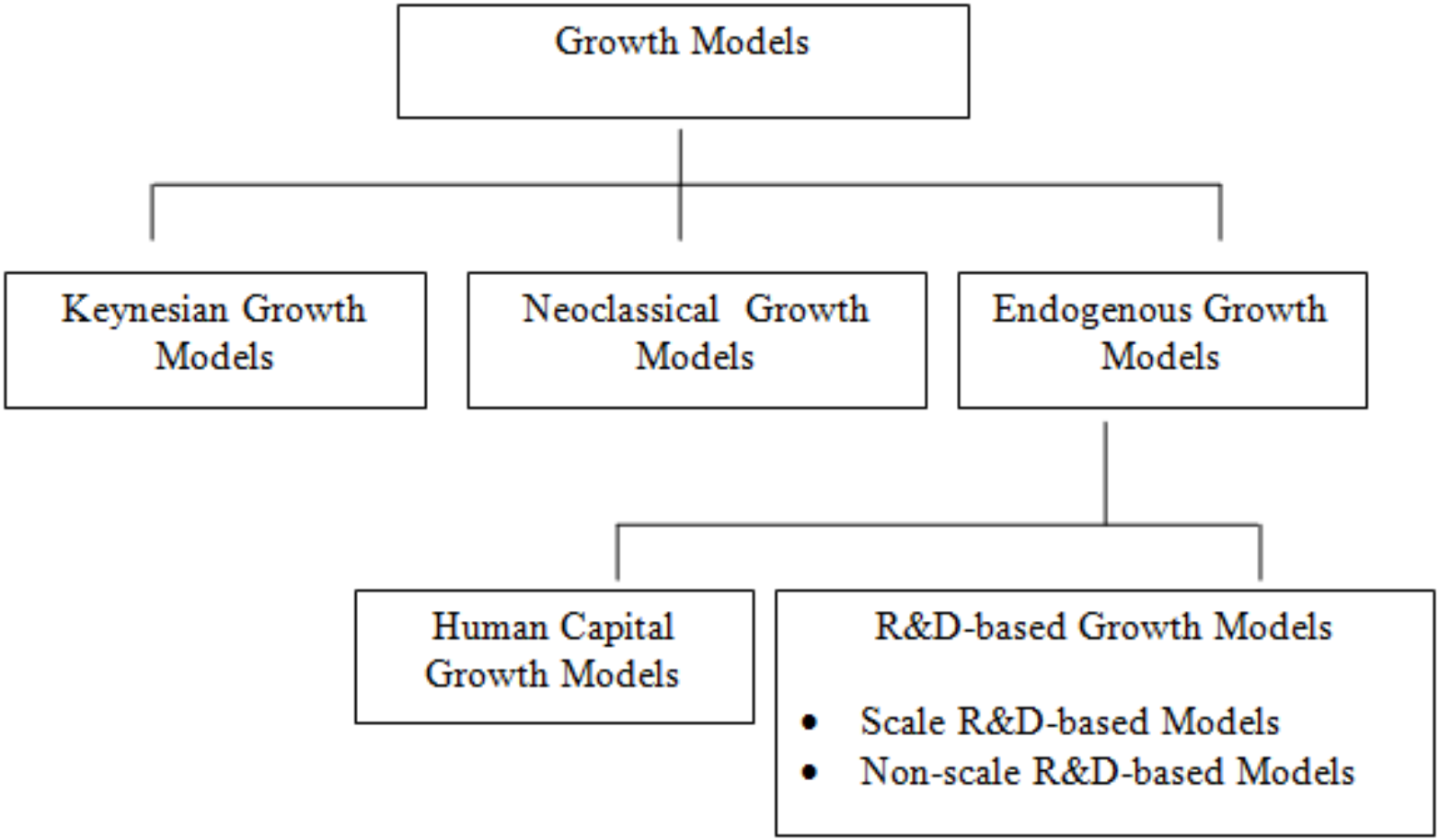
Schools in macroeconomics	*Dominant source of instability*	*Expectations*	*Price/wage adjustment*	*Market adjustment*	*Notion of equilibrium*	*Dominant time frame*
Orthodox Keynesian	Fluctuations in autonomous expenditure	Adaptive	Emphasis on nominal wage rigidity	Weak	State of rest probably below full employment	Short
Orthodox monetarist	Monetary disturbances	Adaptive	Flexible	Strong	Market clearing at natural rate	Short and long
New classical	Monetary disturbances	Rational	Perfectly flexible	Very strong	Market clearing at natural rate	Long = short
Real business cycle	Supply shocks (mainly technological)	Rational	Perfectly flexible	Very strong	Market clearing at moving natural rate	Long = short
New Keynesian	Demand and supply shocks (eclectic)	Rational	Emphasis on price rigidities	Slow	Consistent with involuntary unemployment	Predominantly short
Austrian	Monetary disturbances	Reasonable	Flexible	Strong	Tendency towards	Short and long
Post Keynesian	Fluctuations in autonomous expenditure	Reasonable	Sticky	Very weak	State of rest probably below full employment	Short

B. Snowdon, H.R. Vane, 2005, *Modern Macroeconomics. Its Origins, Development, and Current State*

- During the period 1870–1929 economists' research was heavily influenced by the 'marginalist revolution' and was therefore predominantly micro oriented, being directed towards issues relating to the efficient allocation of given resources.
- For a quarter of a century after 1929–33, issues relating to the Great Depression and Keynes's response to that event dominated discussion as the new science of macroeconomics evolved.

- In the period 1939–56 growth theory was dominated by the neo-Keynesian contributions of Roy Harrod (1939, 1948) and Evsey Domar (1946, 1947, 1948).
- In the period 1956–70 growth theory was dominated by Robert Solow (1956, 1957) and Trevor Swan (1956) who pioneered work on the neoclassical growth model.
- The 1970–85 period - business cycle analysis dominated.

- Neo-Keynesian growth models were replaced by neoclassical models as the dominant framework for analysis.
- Neoclassical theories have in turn been challenged by endogenous growth theory since the mid-1980s.
- Renaissance of economic growth research.


Growth Models
Keynesian Growth Models
Neoclassical Growth Models
Endogenous Growth Models
Human Capital Growth Models
R&D-based Growth Models
Scale R&D-based Models
Non-scale R&D-based Models

The renaissance of economic growth research

Source: B. Snowdon, H.R. Vane, 2005, *Modern Macroeconomics. Its Origins, Development, and Current State, pp. 587-588*

- New theoretical insights inspired by the research of Paul Romer (1986) and Robert Lucas (1988); new theoretical tools.
- The availability of a rich array of new data for a large number of countries (Summers and Heston, 1991; Maddison, 2001). Economists have data for most countries which extend back to 1960. Recent empirical research has also focused on patterns of cross country growth.

The renaissance of economic growth research

Source: B. Snowdon, H.R. Vane, 2005, *Modern Macroeconomics. Its Origins, Development, and Current State, pp. 587-588*

- A growing realization that a large number of developing countries, particularly in sub-Saharan Africa, were not ‘catching up’ and converging with the levels of income per capita of the rich OECD economies.
- The sudden and unexpected collapse of the Soviet Union and other ‘Eastern Bloc’ economies at the end of the 1980s focused attention on the relationship between social, political and economic structures and an economy’s capacity to sustain economic growth.

The renaissance of economic growth research

Source: B. Snowdon, H.R. Vane, 2005, *Modern Macroeconomics. Its Origins, Development, and Current State, pp. 587-588*

- Increasing concern during the 1980s that the economic position of the USA relative to other major OECD economies, especially Japan and Germany, was being eroded.
- Concern relating to the causes of the productivity growth slowdown, beginning in the late 1960s/early 1970s, but not clearly recognized until the early 1980s.

The renaissance of economic growth research

Source: B. Snowdon, H.R. Vane, 2005, *Modern Macroeconomics. Its Origins, Development, and Current State, pp. 587-588*

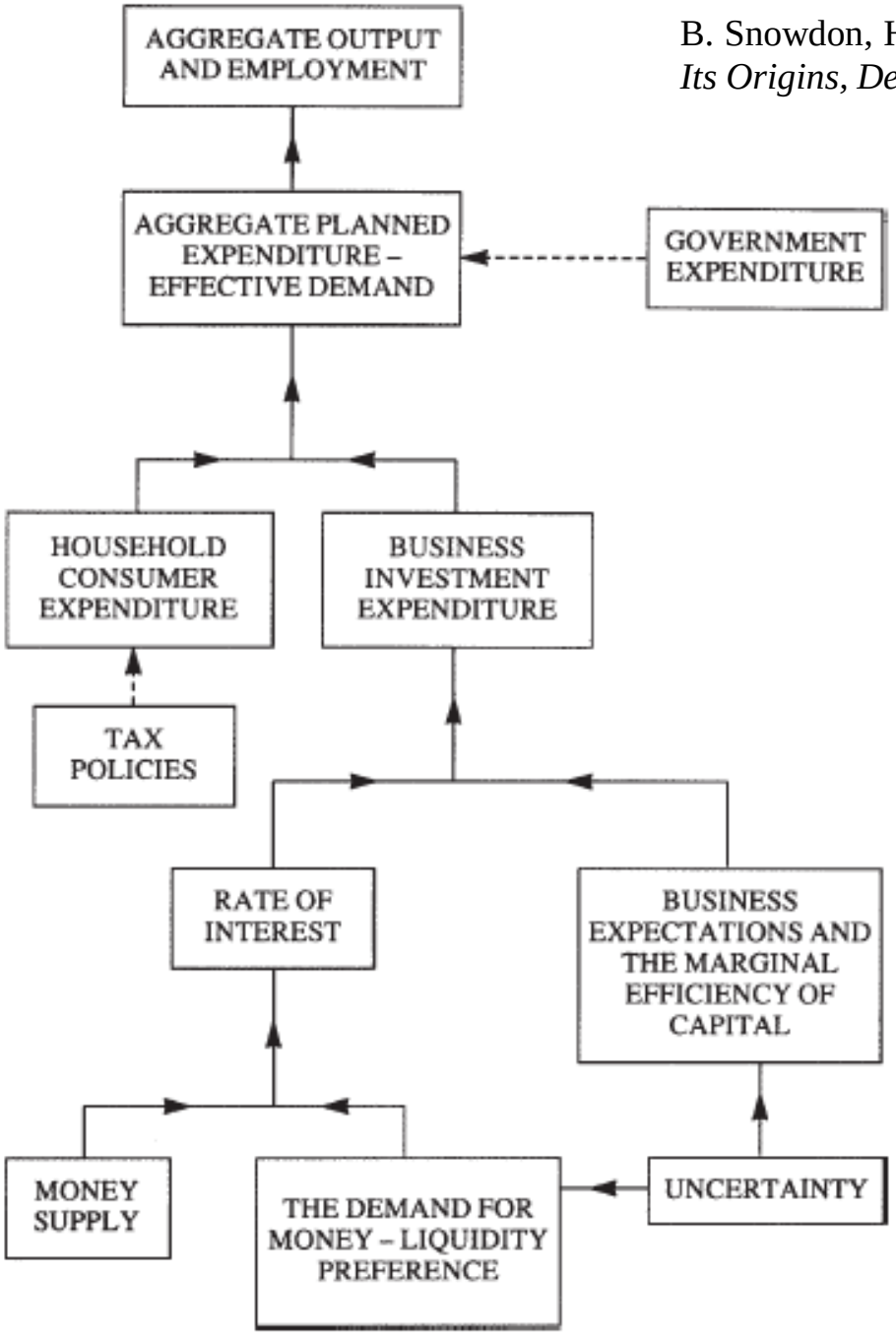
- The rise of information technology and with it the ‘knowledge’ (or ‘weightless’) economy. New national income accounting techniques were needed.
- Increasing awareness of problems relating to the measurement of economic growth and that the true rate of progress is likely to be ‘substantially underestimated’ using conventional estimation techniques.

The renaissance of economic growth research

Source: B. Snowdon, H.R. Vane, 2005, *Modern Macroeconomics. Its Origins, Development, and Current State, pp. 587-588*

- Increasing recognition of the spectacular growth performance displayed by the 'East Asian Tiger' economies as well as the 'growth disasters' and disappointments experienced in many developing economies (sub-Saharan Africa, Latin America and Southern Asia).
- The increasing influence, during the 1980s, of the real business cycle approach to the study of economic fluctuations where the Solow neoclassical growth model is used as the benchmark for studying both fluctuations and growth (Kydland and Prescott, 1982).

B. Snowdon, H.R. Vane, 2005, *Modern Macroeconomics. Its Origins, Development, and Current State, p. 64*



Keynesian economics

- John Maynard Keynes (1883-1946)
- 1936 – the *General Theory of Employment, Interest and Money*
- Actual output level is determined on the extent of the aggregate demand.
- Aggregate demand is a sum of four demand sources (consumption, investment, government spending, and net exports)

$$AD = C + I + G + (E - X)$$

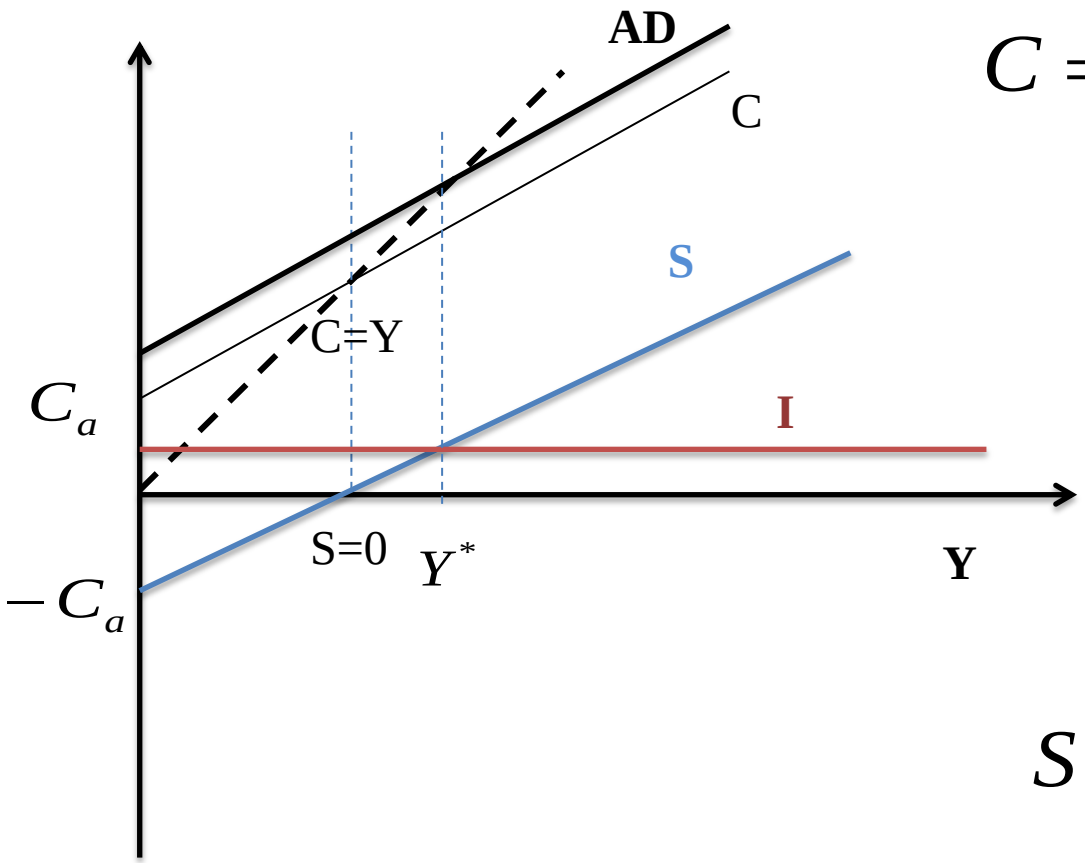
Keynesian economics

- Consumption function – functional relationship between total consumption and disposable income.

$$C = C_a + MPC \cdot Y$$

- Autonomous consumption is the minimum level of consumption that must take place even if a consumer has no disposable income (spending for basic necessities).
- MPC – marginal propensity to consume $MPC = \frac{dC}{dY}$

Keynesian economics $AD = C + I$



$$C = C_a + MPC \cdot Y$$

$$I = I_a$$

$$Y = C + S$$

$$S = -C_a + MPS \cdot Y$$

$$AD = C + I = C_a + I_a + MPC \cdot Y$$

$$MPC + MPS = 1$$

Marginal propensity to save (*MPS*)

- *MPS* – is the fraction of an increase in income that is saved. For each additional one unit of income, the savings increase by *MPS*

$$MPS = \frac{\Delta S}{\Delta Y}$$

$$S = -C_a + MPS \cdot Y$$

S	Y
200	1000
300	1600

$$MPS = \frac{dS}{dY}$$

$$MPS = \frac{300 - 200}{1600 - 1000} = \frac{1}{6}$$

$$\Delta S = MPS \cdot \Delta Y$$

Average propensity to save (APS)

- *APS* – **saving rate**, the proportion of income which is saved.

S	Y
200	1000
320	1600

$$APS = \frac{S}{Y}$$

$$S = APS \cdot Y$$

$$APS = \frac{200}{1000} = 0.2$$

$$APS = \frac{320}{1600} = 0.2$$

$$MPS = \frac{120}{600} = 0.2 = APS$$

Numerical example

$$C = 10 + 0.8 \cdot Y$$

$$I = 10$$

$$MPC = 0.8$$

$$Y = C + S$$

$$S = -10 + 0.2 \cdot Y$$

$$MPS = 0.2$$

$$AD = C + I = 20 + 0.8 \cdot Y$$

$$AD = Y = 20 + 0.8 \cdot Y$$

$$Y^* = 100$$

$$C = 10 + 0.8 \cdot Y$$

$$I = 10$$

$$Y = C + S$$

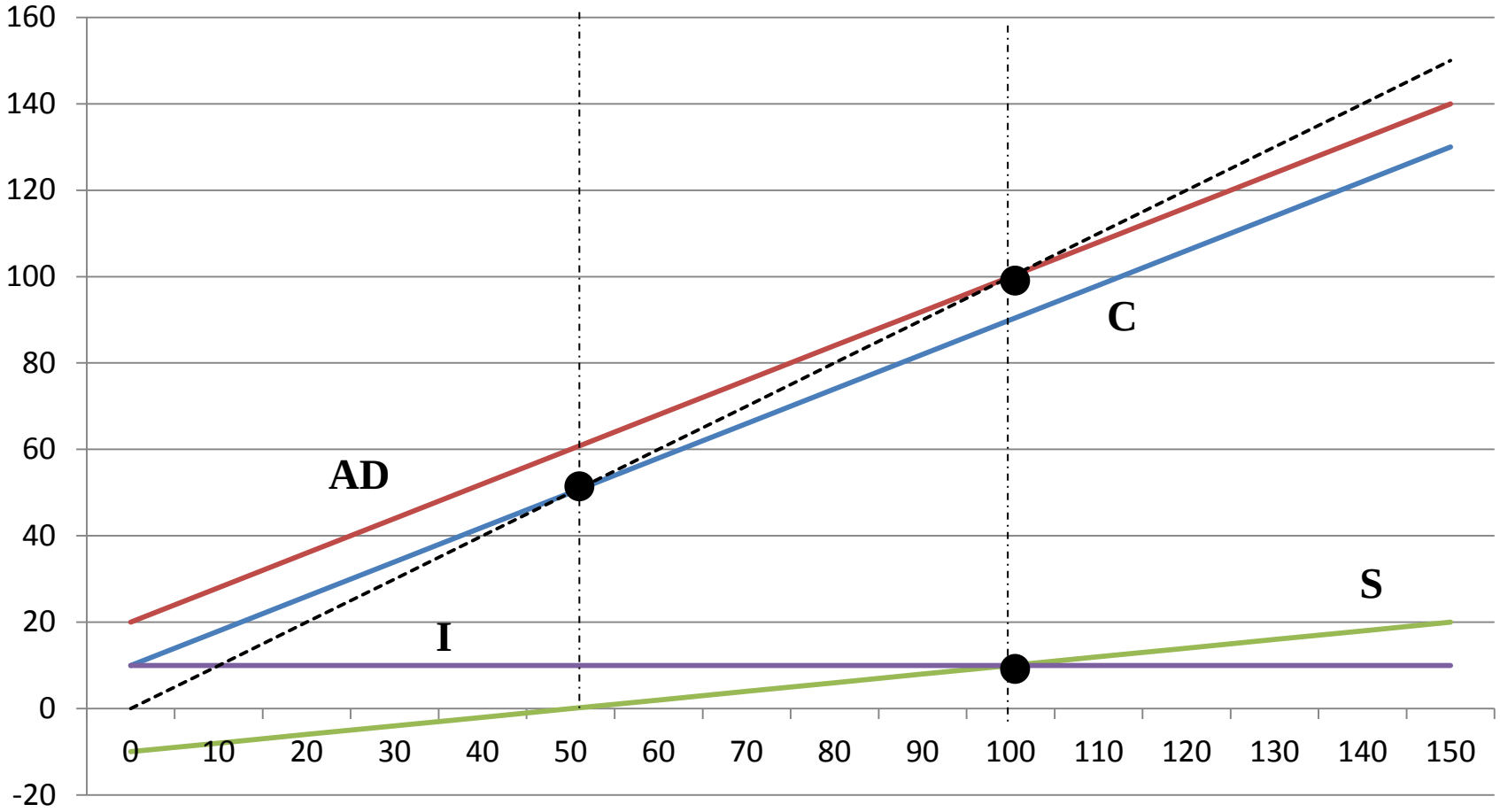
$$AD = C + I = Y$$

$$S = I$$

$$S = -10 + 0.2 \cdot Y$$

$$-10 + 0.2 \cdot Y = 10$$

$$Y^* = 100$$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AD
C
S
I

Multiplier

$$Y = C_a + I_a + MPC \cdot Y$$

$$Y = \frac{1}{1 - MPC}\left(C_a + I_a\right) = \frac{1}{MPS}\left(C_a + I_a\right)$$

$$\frac{dY}{dI_a} = \frac{1}{1 - MPC} > 1$$

Keynesian economics

$$AD = C + I + G + (E - X)$$

$$C = C_a + MPC \cdot Y_d \qquad Y_d = Y - T \qquad Y_d = T_a + t \cdot Y$$

$$I = I_a \qquad G = G_a \qquad E - X = EX_a - MPI_m \cdot Y$$

$$Y = \frac{1}{1 - MPC \cdot (1 - t) + MPI_m} \left(C_a + I_a + G_a + EX_a - MPC \cdot T_a \right)$$