

Keynesian Models (IS/LM) (4/19/2011)

Econ 310-008

Definitions

- **animal spirits** – emotional waves of optimism and pessimism that influence investment spending, causing wild fluctuations
- **broken window fallacy** – fallacy of taking into account easy to see positive effects of a policy, but not taking into account negative hidden effects of a policy
- **liquidity trap** – demand for money is infinitely elastic (LM curve horizontal), causing monetary policy to be completely ineffective

Equations

- $C = c_0 + c(Y - T)$
- $Y = C + I + G + NX$
- $Y = [1/(1-c)](c_0 - cT + I + G + NX)$
- $Y = C(Y-T, i-\pi^e) + I(i-\pi^e, Y_{-1}) + G + X(\rho, Y, Y^*)$
- $M/P = L(i, Y)$
- $BoP = X(\rho, Y, Y^*) + \sigma(i-i^*) + k$

Variables

- $C \equiv$ consumption
- $T \equiv$ taxes
- $I \equiv$ investment
- $G \equiv$ government spending
- $NX \equiv$ net exports
- $Y \equiv$ nominal income
- $c_0 \equiv$ autonomous consumption
- $c \equiv$ marginal propensity to consume
- $IS \equiv$ goods market in equilibrium
- $LM \equiv$ money market in equilibrium
- $BoP \equiv$ balance of payments in equilibrium
- $KA \uparrow \equiv$ capital inflow
- $KA \downarrow \equiv$ capital outflow

Multipliers

- $\Delta Y/\Delta I = 1/(1-c)$
- $\Delta Y/\Delta G = 1/(1-c)$
- $\Delta Y/\Delta NX = 1/(1-c)$
- $\Delta Y/\Delta c_0 = 1/(1-c)$
- $\Delta Y/\Delta T = -c/(1-c)$

Shifts

- $C \uparrow \rightarrow IS$ shifts right $\rightarrow i \uparrow, y \uparrow$
- $I \uparrow \rightarrow IS$ shifts right $\rightarrow i \uparrow, y \uparrow$
- $G \uparrow \rightarrow IS$ shifts right $\rightarrow i \uparrow, y \uparrow$
- $T \uparrow \rightarrow IS$ shifts left $\rightarrow i \downarrow, y \downarrow$
- $NX \uparrow \rightarrow IS$ shifts right $\rightarrow i \uparrow, y \uparrow$
- $M^S \uparrow \rightarrow LM$ shifts right $\rightarrow i \downarrow, y \uparrow$
- $M^D \uparrow \rightarrow LM$ shifts left $\rightarrow i \uparrow, y \downarrow$

John Maynard Keynes

- father of modern macroeconomics
- student of Alfred Marshall
- wrote *The General Theory of Employment, Interest, and Money*
- helped setup Bretton Woods
- favored fiscal policy over monetary
- opposed classical economists
- theories
 - “in the long run, we’re all dead”
 - animal spirits
 - liquidity preference
 - paradox of thrift
 - liquidity trap

Interpretations

- hydraulic – ISLM model
- fundamentalist – post-Keynesian
- secular stagnation – no business cycle
- dynamic disequilibrium – Leijonhufvud

Principles

- Classical economists believed the price level would adjust whenever aggregate demand shifted, so government interventions could have no effect on aggregate output.
 - In classical theory the price level was perfectly flexible, which means AS was vertical.
- Keynes believed classical economics held in the long run, but not in the short run.
 - In orthodox Keynesianism the price level was rigid downward, which means AS was horizontal.
- Increases in consumption, investment, government spending, net exports, and autonomous consumption are positively related to an increase in output.
- An increase in taxes is negatively related to an increase in output.
- Investment is the purchase of new physical assets (e.g., new machines or new houses).
- The tax multiplier is less than the other multipliers.
 - Keynesians believe increases in government spending are more effective than tax cuts.
- Comparing spending to tax multipliers doesn't take into account the growth incentives of low taxes.
- Aggregation obscures that some spending is less useful than other. (e.g., broken window fallacy)
- The IS/LM model is hydraulic Keynesianism, a general equilibrium framework for Keynesian ideas popularized by John Hicks and Paul Samuelson.
- The orientation of the LM curve determines policy effectiveness.
 - LM curve vertical
 - fiscal policy fails
 - monetary policy works
 - This is also known as complete crowding out: $G \uparrow \rightarrow I \downarrow, NX \downarrow \rightarrow y$ constant
 - LM curve horizontal
 - fiscal policy works
 - monetary policy fails
 - This is also known as a liquidity trap. Keynes preferred fiscal policy for this reason.
- In the long run the IS and LM curves should intersect at the natural rate of unemployment.
 - If right of y_n : $P \uparrow \rightarrow (M/P) \downarrow \rightarrow$ LM shift left (until IS & LM intersect at y_n)
- The Mundell-Fleming model extends IS/LM to an open economy by adding a balance of payments line.
 - When there is perfect capital mobility, the BoP line is horizontal.
 - above BoP line: capital inflow
 - below BoP line: capital outflow
 - When there is no capital mobility, the BoP line is vertical.
 - left of BoP line: current account surplus
 - right of BoP line: current account deficit
 - When there is some capital mobility, the BoP line is upward sloping.
 - above BoP line: capital inflow
 - below BoP line: capital outflow
- Manipulating the Mundell-Fleming model takes mastering a handful of rules.
 - float secondary effects: IS + BoP curves move
 - fixed secondary effect: LM curve moves
 - perfect/some capital mobility mechanism: interest rates
 - no capital mobility mechanism: goods trade
- If two countries trade a lot, one country's policies can effect the other country.
 - Fiscal policy helps the other country.
 - Monetary policy hurts the other country.