The IS - LM Model

• The Relation of A(p) to the Interest Rate
  – Rate of Return and Interest Rates
    » Figure 4-1
    • Business fixed investment
    • Residential investment
    • Consumer durable goods
  – Business and Consumer Optimism
    » Figure 4-2

The IS - LM Model

• Interest Rates and Rates of Return
  – Assumption: Only 1 interest rate
  – Functions of Interest Rates
    • Interest rates help allocate saving
      – Return for investors
    – Cost for borrowers
      – Compare borrowing costs, investment returns
  • Central to the role of monetary policy
• Types of Interest Rates
  • Short-term versus long-term

The IS - LM Model

• The Relation of A(p) to the Interest Rate
  – The Demand of A(p)
    • Combining G, -cT, and NX
      – which do not depend on r
    • and I(p) and a
      – which do depend on r
    » Figure 4-3
  – “Autonomous” A(p), i.e., when r = 0
• Shifts in the A(p) Demand Schedule
  • Changes in G, T, NX, business or consumer confidence
The IS - LM Model

- The IS Curve (continued)
  - How to Derive the IS Curve
    - Start with A(p) demand curve
      - Pick an initial interest rate and find the associated A(p)
    - Find Y(e) via induced saving
      - Y(e) = A(p) / s or A(p) * multiplier
    - Establishes a Y(e), r point
    - Repeat
      » Figure 4-4
    - IS curve plots the values of Y(e) and r
      - IS curve = A(p) demand curve * multiplier

- The IS Curve (continued)
  - What the IS Curve Shows
    - Combinations of Y, r at which the economy’s market for goods and services is in equilibrium.
      - Where Y(e) = E(p)
    - Disequilibrium adjustment
  - What Changes the IS Curve?
    - Changes in A(p) shift the IS curve
      » Figure 4-5
    - Changes in k and/or the interest sensitivity of A(p) rotate the IS curve

The IS - LM Model

- The IS Curve
  - Introduction
    - Y depends on A(p)
    - A(p) depends on r
    - Therefore Y depends on r
  - This relationship is known as the IS curve
    - Exogenous variables
      » G, T, and NX
      » Business and consumer confidence
      » c and s

Figure 4-3: Relation of the Various Components of Autonomous Planned Spending to the Interest Rate

Figure 4-4: Relation of the IS Curve to the Demand for Autonomous Spending and the Amount of Induced Saving

Figure 4-5: Effect on the IS Curve of a Rightward Shift in the Demand for Autonomous Planned Spending
The IS - LM Model

- Why People Use Money
  - The Introduction of Money
    - Definition
    - Functions
      - A Medium of Exchange
      - A Store of Value
      - A Unit of Account

- Income, r, and the Demand for Money (L)
  - Income and the Demand for Money
    - The Interest Rate and the Demand for Money
      - The Interest Rate and the Demand for Money
        - The Demand for Money, the Interest Rate, and Real Income
          » Figure 4-6
  - M(d)/P = dY
  - M(d)/P = dY - f * r
  - Change in the M(d)/P Curve
    - Changes in r move along L
    - Changes in Y shift L
      » Figure 4-7

The IS - LM Model

- The LM Curve
  - Introduction
    - M(s) is exogenous
    - M(d)/P = f(Y, r)
    - Equilibrium in the money markets requires
      - M(s)/P = M(d)/P = f(Y, r) where f(1) > 0, f(2) < 0
        » Figure 4-8 (left panel)

- The IS - LM Model

- The IS - LM Model

- The IS - LM Model
The IS - LM Model

- The LM Curve (continued)
  - How to Derive the LM Curve
    - Select a level for Y
    - Find the M(d)/P curve associated with this level of Y
    - Plot Y, r in a separate graph
    - Repeat with a new level for Y
    - Connect all of the Y, r pairs into the LM curve

- The LM Curve (continued)
  - What the LM Curve Shows
    - All combinations of Y and r where the money market is in equilibrium
    - Disequilibrium adjustment
      - Change in P
      - Change in r
      - Change in Y
      - Change in Y and r

The IS - LM Model

- The IS Curve Meets the LM Curve
  - General equilibrium requires both
    - Equilibrium in the commodity market
    - Equilibrium in the money market
    - Disequilibrium dynamics
    - Endogenous variables
      - Y, r
    - Exogenous variables
      - Business & consumer confidence, M(s), G, T & NX

Figure 4-9     The Effect on the LM Curve of an Increase in the Real Money Supply from $1000 Billion to $1500 Billion

Figure 4-10     The IS and LM Schedules Cross at Last
The IS - LM Model

• Monetary Policy in Action
  – Expansionary Monetary Policy
    » Figure 4-11
    • Transmission effects
      – Liquidity effect
      – Income effect
    • Results
      – Higher Y
      – Higher r
  – Contractionary Monetary Policy

The IS - LM Model

• Fiscal Policy in Action
  – Expansionary Fiscal Policy
    » Figure 4-12
    • Effect on the multiplier
      – and “crowding out”
    • The crowding out effect
      – Changes the composition of spending
    • Can crowding out be avoided?
      – Expansionary monetary policy
      – Other possibilities
  – Contractionary Fiscal Policy