For Exam #1

• Coverage: Chapters 1 – 4 and 6.
• Format:
  ➢ 10 multiple choice questions.
  ➢ 1 long question on Production Functions and the Demand for and Supply of Labor or Desired Saving-Desired Investment.
  ➢ 1 long question on the Solow Growth Model.

For Exam #1

• Time:
  ➢ Exam will start as close to 3:40 p.m. as possible.
  ➢ The exam will finish promptly at 5:00 p.m.
• Exam Packet is completely self-contained.
  ➢ No blue books are needed.
• No books, notes, or electronic devices.
  ➢ Foreign language dictionaries MUST be examined by me.

For Exam #1

• You will need a set of colored pens or pencils.
  ➢ Black or pencil.
  ➢ Red
  ➢ Blue
  ➢ Green

Errata

• Problem Set #1, Question #2.
  ➢ The reduction in the effective marginal tax rate on capital reduces the user cost of capital.
  ➢ The reduction in the effective marginal tax rate on capital increases the future marginal product of capital or reduces the tax-adjusted user cost of capital.
Errata

• Slide 7-41 (last line)
  ➢ When $K/N > (K/N)_t$, $\Delta K/K < \Delta N/N$.
  • Not $\Delta YY < \Delta N/N$

• Slides 8-8, 8-15 and 8-23 (last lines)
  ➢ $\Delta K/K > \Delta N/N$ because $K/N$ was increasing.
  • Not $\Delta YY > \Delta K/K$

The Production Function with Labor

• Shifts of the production function:
  ➢ The production function (between output and labor) shifts up because of:
    • An increase in productivity, or
    • An increase in the capital stock.

The Demand for Labor & the Real Wage Rate

• Shifts of the labor demand curve, $N_d$:
  ➢ The labor demand curve shifts right because of:
    • An increase in productivity, or
    • An increase in the capital stock.

The Supply of Labor & the Real Wage Rate

• Shifts of the labor supply curve, $N_s$:
  ➢ The labor supply curve shifts right because of:
    • A decline in wealth,
    • A decline in the expected future real wage,
      – For example, from a permanent adverse productivity shock,
    • An increase in the working-age population, or
    • An increase in the labor force participation rate.
Example: Chinese Snow Storms

• Production Function and Demand for and Supply of Labor Functions
  ➢ Huge snow storms in China.
  ➢ Effects of a stock market decline.

Example: Chinese Snow Storms

Desired Saving & the Real Interest Rate

• Shifts of the **saving curve, \( S^d \):**
  ➢ The saving curve shifts **right** because of:
    • A rise in current output,
    • A fall in expected future output,
      – For example, from an adverse permanent productivity shock,
    • A fall in wealth,
    • A fall in government purchases, or
    • A rise in taxes.
      – Unless Ricardian equivalence holds, in which case tax changes have no effect.

Desired Investment & the Real Interest Rate

• Shifts of the **investment curve, \( I^d \):**
  ➢ The investment curve shifts **right** because of:
    • A rise in expected future marginal product of capital,
      – For example, from a favorable permanent productivity shock, or
    • A fall in the after-tax user cost of capital from:
      – A lower price of capital,
      – A lower depreciation rate, and/or
      – A lower effective corporate tax rate.
Example: Chinese Snow Storms

• Desired Saving and Desired Investment:
  ➢ Huge snow storms in China.
  ➢ Effects of a Personal Tax Increase.
    • With and without Ricardian Equivalence.
  ➢ Effects of a Corporate Tax Increase.

Per-Worker Production Function

• Shifts of the per-worker production function:
  ➢ The per-worker production function shifts up because of:
    • An increase in productivity.

Per-Worker Saving Function

• Shifts of the per-worker saving function:
  ➢ The per-worker saving function shifts up because of:
    • An increase in productivity, or
    • An increase in the saving rate.
Per-Worker Balanced Investment Function

• Shifts of the per-worker balanced investment function:
  ➢ The per-worker balanced investment function rotates up because of:
    • An increase in labor force growth, or
    • An increase in the depreciation rate.

Example: Akinback

• Solow Growth Model:
  ➢ In the country of Akinback, Y/N is rising. Suddenly, a highly contagious disease kills ¼ of young workers while older workers are not affected by the disease. The disease then disappears. Depreciation rates are not affected. In Akinback, job skills and saving rates rise with age.