

Brigham Young University Department of Economics
Economics 381 – Intermediate Macroeconomics
Dr. Phillips (sections 2 & 4) Winter Semester 2005

Midterm Exam 2 key
Mar. 11 - 12, 2005

This exam is closed book and closed notes, though you may use a calculator. Read all questions carefully before answering. Write your answers legibly in the space provided. Keep your answers concise and correct. Points will be deducted for answers which are irrelevant to the question. You may use a testing center calculator to help with the math, if you wish.

Section I (multiple choice, 2 points each) Circle the letter of the correct answer.

1. Consumption smoothing refers to
 - (a) the tendency of all consumers to choose the same amount of current consumption.
 - (b) the tendency of consumers to seek a consumption path over time that is smoother than income.**
 - (c) the tendency of consumers to seek an income path over time that is smoother than consumption.
 - (d) consumer's concerns about going heavily into debt.

2. An increase in first-period income results in
 - (a) an increase in first-period consumption, an increase in second-period consumption, and an increase in saving.**
 - (b) an increase in first-period consumption, a decrease in second-period consumption, and an increase in saving.
 - (c) a decrease in first-period consumption, an increase in second-period consumption, and an increase in saving.
 - (d) an increase in first-period consumption, an increase in second-period consumption, and a decrease in saving.

3. An increase in the real interest rate is an example of a
 - (a) pure substitution effect.
 - (b) substitution effect and a positive income effect.
 - (c) substitution effect and a negative income effect.
 - (d) substitution effect and an income effect whose sign depends on whether the consumer is initially a borrower or a lender.**

4. An increase in lifetime wealth is likely to
 - (a) increase current labor supply and increase current consumption demand.
 - (b) increase current labor supply and decrease current consumption demand.
 - (c) decrease current labor supply and increase current consumption demand.**
 - (d) decrease current labor supply and decrease current consumption demand.

5. When drawn against the current real wage, the labor demand curve is
- (a) upward sloping because the marginal product of labor rises with the quantity of labor employed.
 - (b) upward sloping because the marginal product of labor declines with the quantity of labor employed.
 - (c) downward sloping because the marginal product of labor rises with the quantity of labor employed.
 - (d) downward sloping because the marginal product of labor declines with the quantity of labor employed.**
6. When drawn against the real interest rate, the output demand curve shifts to the right when
- (a) current total factor productivity z increases.**
 - (b) current total factor productivity z decreases.
 - (c) future total factor productivity z' increases.**
 - (d) future total factor productivity z' decreases.
7. The two most common types of money in circulation in the United States today consist of
- (a) private bank notes and commodity-backed paper currency.
 - (b) commodity-backed paper currency and fiat money.
 - (c) fiat money and transaction deposits at banks.**
 - (d) transaction deposits at banks and commodity money.
8. The current demand for money increases when
- (a) current real income decreases.
 - (b) future real income decreases.
 - (c) the nominal rate of interest decreases.**
 - (d) none of the above.
9. If an increase in the level of the money supply results in a proportionate increase in prices with no effect on any real variables, we say that
- (a) the Fisher relationship holds.
 - (b) money is neutral.**
 - (c) money is superneutral.
 - (d) money is the most preferred store of value.
10. In the Friedman-Lucas money surprise model, a surprise increase in the money supply
- (a) has no effect on the price level.
 - (b) increases the price level less than in proportion to the increase in the money supply.**
 - (c) increases the price level in an equal proportion to the increase in the money supply.
 - (d) increases the price level more than in proportion to the increase in the money supply.
11. The basic real business cycle model has some difficulty explaining why
- (a) consumption is procyclical.
 - (b) investment is procyclical.
 - (c) the price level is countercyclical.
 - (d) the money supply is procyclical.**

12. The coordination failure model is based on the possibility of increasing returns to scale
- (a) both at the aggregate level and at the level of the individual firm.
 - (b) at the aggregate level, but not at the level of the individual firm.**
 - (c) at the level of the individual firm, but not at the aggregate level.
 - (d) in future periods, but not in the current period.
13. In the Keynesian sticky wage model, the aggregate supply curve is upward sloping because, at the fixed nominal wage, an increase in the price level
- (a) increases the real wage and increases labor supply.
 - (b) increases the real wage and increases labor demand.
 - (c) decreases the real wage and increases labor supply.
 - (d) decreases the real wage and increases labor demand.**
14. The LM curve represents
- (a) output–price level combinations at which money supply and money demand are equal.
 - (b) output–real interest rate combinations at which money supply and money demand are equal.**
 - (c) real interest rate–price level combinations at which money supply and money demand are equal.
 - (d) none of the above.
15. In the Keynesian sticky wage model, the aggregate demand curve represents combinations of
- (a) the price level and the level of output at which the goods market and the labor market are in equilibrium.
 - (b) the price level and the level of output at which the goods market and the money market are in equilibrium.**
 - (c) the real interest rate and the level of output at which the goods market and the labor market are in equilibrium.
 - (d) the real interest rate and the level of output at which the goods market and the money market are in equilibrium.

Section II (short answer, 5 points each) Where appropriate show your work as this may help in assigning partial credit if you get the answer wrong.

16. Briefly explain the notion of Ricardian equivalence. What does it imply about government deficits?

Ricardian equivalence says that the method of government finance has no real effects. While the level of government spending may have real effects, the way the government obtains the funds necessary to purchase goods and services; be it taxes, money creation, or borrowing, is irrelevant for real variables.

This means that government deficits will have no effects on the level of economic activity.

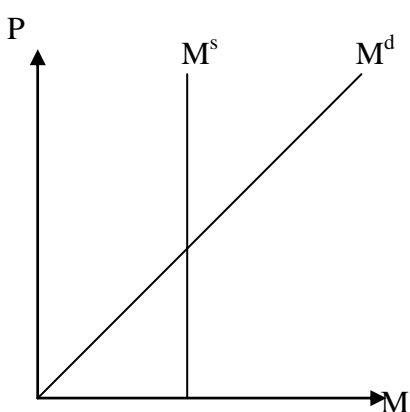
17. Explain how one goes about deriving an output supply curve (Y^s) plotting interest rates against levels of output.

The output supply curve is derived from equilibrium in the labor market. Starting with an arbitrarily chosen real interest rate, one finds equilibrium in the labor market which generates a level of real output (via the aggregate production function). If a higher interest rate is chosen, household will choose to consume more in later periods and less today, which includes less leisure time. As a consequence the labor supply curve shifts to the right and more labor is hired. This gives higher output. Hence, the Y^s curve slopes upward (has a positive slope).

18. Explain how one goes about deriving an output demand curve (Y^d) plotting interest rates against levels of output.

The output demand curve is derived from the expenditure approach to GDP, which can be written as $Y=C+I+G$ in the closed economy case. C is a function of Y , while I and G are not. Starting with an arbitrarily chosen real interest rate, one finds equilibrium demand for output as the value of Y that solves $Y=C(Y)+I+G$. I and C are both functions of the interest rate. If a higher interest rate is chosen, household will choose to consume more in later periods and less today. In addition, firms will chose a smaller capital stock and investment will be smaller. Both of these effects lead to lower demand for output goods. Hence the Y^d curve slopes downward (has a negative slope).

19. Using the monetary equilibrium from chapter 10, explain what things can cause an increase in the price level.



An increase in money supply shifts the M^s curve to the right and the price level rises.

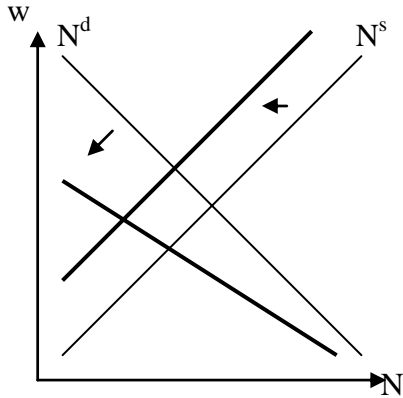
A decrease in real money demand (L), rotates the M^d curve counterclockwise and the price level also rises. This could be caused by a drop in GDP or by an increase in the real interest rate.

20. (10 points) For each of the following models of business cycles, list the assumed primary source of shocks. Is the model an equilibrium or disequilibrium one? What school of thought is it associated with? Also comment on how well the models fit the U.S. data on business cycles.

Model	shocks	type	school	fit
Monetary Surprises –	Unexpected changes in money supply	equilibrium	Monetarist	Poor fit for: prices, avg. labor prod.
Real Business Cycles –	Productivity	equilibrium	Neoclassical or Real Business Cycle	Excellent fit, cannot explain money movements
Coordination Failure –	Consumer confidence	equilibrium	Keynesian	Excellent fit, cannot explain money movements
Sticky Prices –	Consumer confidence	disequilibrium	Keynesian	Poor fit for: prices, avg. labor prod.
Sticky Wages –	Consumer confidence	disequilibrium	Keynesian	Poor fit for: prices, avg. labor prod.

Section III (longer analysis, 20 points each)

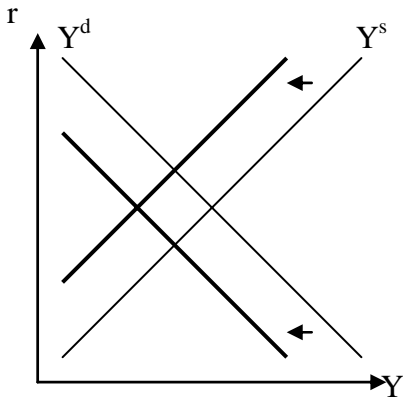
21. Using the real business cycle set-up and appropriate graphs, show the response of real wages, employment, real interest rates, output & prices to a permanent increase in the price of oil.



N^d shifts downward as the marginal product of labor falls.

Both N^s and Y^d shift due to changes in lifetime wealth which lead to decreases in current consumption of goods and leisure. In addition, the drop in tomorrow's marginal product of capital causes investment to fall, which reinforces the shift in Y^d .

The change in labor market equilibrium causes a shift in the Y^s curve.

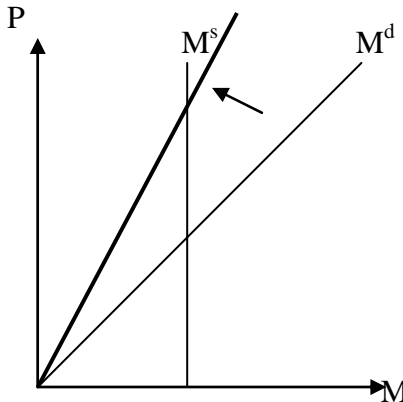


Equilibrium is characterized by an ambiguous change in interest rates (r), and a lower level of output (Y)

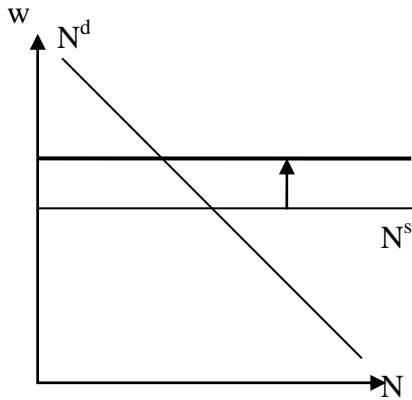
This leads to lower demand for real money which causes a rotation of the M^d curve in a counter clockwise direction and gives higher prices (P).

To find the change in wages & employment we note that interest rates have not changed substantially. Hence, there is little or no secondary effect that shifts N^s as a movement along the Y^s curve, and the diagram is approximately correct as it is drawn.

Hence, wages (w) have an ambiguous movement, and employment (N) falls.



22. Using the sticky wage setup and appropriate graphs, show the response of real wages, employment, real interest rates, output & prices to a drop in consumer confidence.



A drop in consumer confidence will shift the IS curve to the left, since it lowers demand for consumption goods today even if the interest rate does not change. There is also an increase in long-run labor supply, but this is irrelevant, since sticky wage contracts have fixed labor supply in the short-run.

The shift in the IS curve causes the AD curve to shift to the left. This gives a decrease in prices (P) and output (Y).

The drop in prices causes the LM curve to shift outward and the labor supply curve to shift upward.

Hence, interest rates (r) unambiguously fall, real wages (w) rise, and employment (N) falls.

