Economics 302
Spring 2010
University of Wisconsin-Madison

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Social Sciences 7418

Midterm 1 Exam

This exam is 70 minutes long, and is worth 70 points. Part I is multiple choice, Part II is a short answer, and Part III is a derivation. The points are allocated in proportion to the time you should spend on each problem. PLACE ALL YOUR ANSWERS IN THE BLUEBOOK.

PART I: Multiple Choice [20 minutes total, 2 points each]. Do NOT explain.

1. Suppose that we modify the IS-LM model in class so that money demand does not depend on the level of income (i.e. k=0). Which of the following is true?
a) The LM curve is horizontal
b) There is no transactions crowding out
c) Compared to the standard IS/LM model, monetary policy is more
effective
d) both (a) and (b)
e) all of (a), (b) and (c)

2. If the GDP deflator is rising by 1% per year, and nominal GDP is rising by 3.5%, then
a) the inflation rate is positive.
b) real GDP growth is negative.
c) real GDP growth is 4.5%.
d) real output is growing by 2.5%
e) (a) and (d) above.

3. A monetary expansion will have a smaller effect on income if:
a) the interest sensitivity of money demand is high relative to the income sensitivity, and the IS is steep.
b) money demand is interest-insensitive, but investment is sensitive to interest rates.
c) the income sensitivity of money demand and the interest sensitivity of investment are both high.
d) the LM curve is steep and the IS curve is flat (holding d constant).
e) none of the above.

4. The balanced budget multiplier (for t=0)
a) for government spending requires that tax receipts rise in line with government spending.
b) is zero.
c) is one.
d) is less than one for government transfers.
e) none of the above.

5. Transactions crowding out of income is greater:
a) the greater the income sensitivity of money demand.
b) the greater the interest sensitivity of money demand.
c) the greater the proportion of wealth people desire to hold as bonds.
d) the greater the interest sensitivity of investment.
e) a and d above.

6. Potential GDP, Y^*,
a) depends upon the budget deficit in the previous period.
b) is the level of output consistent with the natural rate of unemployment in the economy.
c) depends directly upon the price level.
d) depends in part on the labor force.
e) both (b) and (d) above.

7. If money supply were shown to depend positively on the interest rate, then we would expect to see (relative to the situation with the usual money demand function)
a) a steeper IS.
b) a flatter IS curve.
c) a steeper LM curve.
d) a flatter LM curve.
e) no difference in the LM curve.

8. United States Gross Domestic Product
a) measures the total value of goods and services produced by American-owned factors of production (land, labor, capital).
b) is a measure of the wealth of Americans.
c) measures the total value of goods and services produced by factors of production (land, labor, capital) located in within the borders of the United States.
d) is the measure of aggregate American utility.
e) (b) and (d) above.

9. In the standard IS-LM model, an contractionary fiscal policy and a expansionary monetary policy
a) necessarily causes output to increase.
b) usually causes interest rates to rise.
c) usually causes interest rates to fall.
d) both a and c above.
e) none of the above.

10. In the IS-LM model studied in class, what behavioral assumption is necessary to ensure that the IS curve is downward sloping but not completely vertical?
a) The MPC is not 0
b) The marginal tax rate is not 1
c) At least one of net exports or investment depends on the interest rate
d) both (a) and (b)
e) all of (a), (b) and (c)

PART II: Short Answers [25 minutes total]

1. (15 minutes) The CPI is calculated for a fixed market basket. It measures the change in the cost of the market basket from the base year until the current year. An index with the market basket fixed in the first year, like the CPI, is called a Laspeyres index. An alternative index, the Paasche Index, is based on a market basket in the end year. It measures the change in the cost of a market basket fixed in the end year. Suppose that the base is 2008, and further that the market basket contains only two items, wine and cheese, and the quantities consumed in 2008 and 2009 are

	wine	cheese
2008	100 bottles	200 wheels
2009	80 bottles	300 wheels

Suppose that the price of cheese increases from $1.00 per wheel of cheese in 2008 to $1.50 per wheel in 2009 and the price of wine increases from $0.50 per bottle to $2.00 per bottle.

1.1 (5 minutes) Calculate the value of the Laspeyres index for 2009.
1.2 (5 minutes) Calculate the 2009 inflation rate for the Laspeyres index.
1.3 (5 minutes) Express 2009 GDP in units of 2008 Dollars. If you cannot reduce the fractions, leave the answer in fractional form.

2. (10 minutes) Determine whether the following statements are true or false. Explain your answer using either graphs or algebra.

2.1 If the marginal propensity to consume gets bigger, the IS curve becomes steeper.
2.2 If money demand does not depend on the interest rate, then fiscal policy has no effect on output.

PART III: Derivation [25 minutes total]

Suppose the real side of a closed economy was described by the following equations:

$Y = AD$	Equilibrium condition
$AD \equiv C + I + G$	Definition of aggregate demand
$C = a_0 + bY_d - \theta R$	Consumption function
$Y_d \equiv Y - T$	Def'n of disposable income
$T = TA_0 + tY$	Tax function
$I = e_0 - dR$	Investment function
$G = GO_0$	Government purchases spending

Where the standard LM curve is in place, *viz.*, $R = \left(\frac{\mu_0}{h}\right) - \left(\frac{1}{h}\right)\left(\frac{M_0}{P}\right) + \left(\frac{k}{h}\right)Y$

Answer the following questions, showing your work, and "boxing in" your answers.

1. (5 points) Derive the IS curve, with Y as a function of R.

2. (5 points) Solve for equilibrium income.

3. (5 points) What is the lump sum tax multiplier in this economy? Be sure to show your work.

4. (5 points) Is monetary policy more, or less, effective in this model as compared to the model with a standard consumption function where consumption depends only on disposable income. Be sure to *explain* the economics of your answer, using a *diagram*.

5. (5 points) Is fiscal policy more, or less, effective in this as compared to the model with a standard consumption function. Be sure to *explain* the economics of your answer, using *equations.*