Economics 302: Macroeconomic Analysis
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Wesleyan University, Spring 2003

Final Examination
May 14, 2003

Please read the following instructions. Do not begin this examination until instructed to do so.

1. The total number of points for this examination is 300. The number of points each problem is worth is noted in parentheses. You have up to 180 minutes to complete this exam.

2. Partial credit may be awarded where merited. Full credit cannot be awarded for a final answer only. Keep explanations concise. Label any diagrams completely.

3. Place all work on the pages of this exam packet. If you need additional space, you may write on the back of a page; please indicate clearly which question you are answering.

4. Write all answers clearly. Credit cannot be given for illegible answers. Erase or cross-out mistakes completely.

5. This is a closed-text and closed-notes exam. You are not permitted to communicate with anyone during the exam, except to ask clarifying questions of the proctor. No electronic devices are permitted in the exam room.

6. By taking this exam, you agree to comply with Wesleyan University's Honor Code. You are obligated to report suspected infractions to this Code. Please sign the pledge below.

Pledge: No aid, no violations.

Signature: ____

Print name: ____

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Part A. Analytical Questions

1. Once upon a time, a man named Bush was President of the United States. Having just won a war with Iraq, his popularity ratings were relatively high, but there was growing concern about the state of the economy. His advisors advocated tax cuts to stimulate the economy. Critics worried about the impact of such policies on the long-term fiscal situation in the U. S. *(30 points)*

   Writing in the *New York Times*, one prominent macroeconomist at the time (in December 1991) proposed an alternative to resolve this dilemma:

   > *A tax cut is needed in the short run while an increase is needed in the long run. But this trade-off can be avoided by a tax on consumption — a national sales tax — that would take effect on a specified date* ***in the future****.* (Emphasis added)

   Briefly explain how this proposal would achieve both stated goals. Under what circumstances might the enactment of this proposal *not* result in one or both of these goals being achieved?

2. Macroeconomic theory suggests that the U. S. current account deficit should have narrowed as the U. S. economy slipped into recession in 2001. However, that did not happen: instead the current account deficit reached record levels. *(60 points)*

   (a) In the short-run, a recession could be caused either by shocks to the goods market or the money market. Which is more likely to be consistent with the above facts? Explain.

   (b) Business cycles tend to be correlated across the industrialized countries, who are major trading partners with each other. Can this fact help to reconcile the information provided at the beginning of this question? Explain.

(c) Some commentators have suggested that the "strong" nominal value of the U. S. dollar versus the currencies of major U. S. trading partners is the primary cause of the large current account deficit over the past decade. Evaluate this claim.

(d) One pundit for the Democratic party has written that the Bush tax cuts have led to the recent increase in the U. S. current account deficit. Evaluate this claim.

3. Determine whether each of the following statements are true, false, or uncertain. **Credit is based solely upon your explanation.** Be concise. *(60 points)*

   (a) The large sacrifice ratio associated with the Volcker disinflation (1979 – 1982) is proof that the Federal Reserve lacked credibility at that time.

   (b) All of the models of consumption that we studied in this course imply that, for a given change in current real disposable income, current consumption must change by less in absolute value.

(*Question #3 continued*)

(c) All else equal, a reduction in the level of technology will cause inflation.

(d) "Measurement error" is not a compelling explanation for how the U. S. growth performance shifted from a "Productivity Slowdown" (1974 to 1995) to a "New Economy" (since 1995).

4. In their most recent (May 6) press release, the Federal Open Market Committee wrote:

> *... the Committee perceives that over the next few quarters the upside and downside risks to the attainment of sustainable growth are roughly equal. In contrast, over the same period, the probability of an unwelcome substantial fall in inflation, though minor, exceeds that of a pickup in inflation from its already low level.*

Based on the models and concepts developed in the course, briefly explain why central bankers tend to view deflation as a more "unwelcome" phenomenon than inflation. (*Hint: Consider the likely effect this announcement would have on inflation expectations, and how that change in π^e would affect the economy and future policy options.*) *(30 points)*

Part B: Multiple Choice Questions

Select the *best* answer for each question below. A correct answer is worth five points, an incorrect answer is worth zero points, and a skipped question (i.e. no answer marked) is worth two points. Ambiguous answers will be marked incorrect. *(120 points)*

1. Which of the following events will *not* result in a reduction of the government debt-to-GDP ratio over time?

   (a) A reduction in the primary deficit.

   (b) A reduction in r.

   (c) A reduction in g.

   (d) All of the above

   (e) None of the above

2. Suppose policy makers underestimate the natural rate of unemployment. One possible consequence would be:

   (a) a higher unemployment rate than otherwise would occur.

   (b) a higher inflation rate than otherwise would occur.

   (c) a greater risk of deflation.

   (d) a greater risk of stagflation.

   (e) None of the above

3. Which of the following would be a *violation* of the rational expectations assumption?

   (a) "Over the past two decades, people have never once accurately predicted the inflation rate for the following year."

   (b) "The Fed's announcement that it might ease interest rates caused an immediate drop in short-term rates, even before the Fed took any action."

   (c) "Over the past two decades, people have consistently over-predicted the inflation rate for the following year."

   (d) All of the above

   (e) None of the above

4. An economist regresses the GDP growth rate on a time trend, a dummy variable that equals one for observations during the second half of her sample, and a variable that multiplies the trend and the dummy variable. If the t-statistic on the dummy variable (not the interaction term) is very low, then she:

   (a) can reject the null hypothesis that there is no break in the trend rate of growth.

   (b) cannot reject the null hypothesis that there is no break in the trend rate of growth.

   (c) can reject the null hypothesis that the rate of growth is faster in the second half of her sample.

   (d) cannot reject the null hypothesis that the rate of growth is faster in the second half of her sample.

   (e) cannot make any meaningful statistical inference.

5. The velocity of money is defined as:
   (a) the ratio of money to nominal income.
   (b) the ratio of money to real GDP.
   (c) the ration of money to high-powered money.
   (d) the ratio of money to government bonds.
   (e) None of the above

6. If investment spending is very sensitive to the interest rate, then:
   (a) the IS curve should be relatively flat.
   (b) the IS curve should be relatively steep.
   (c) the LM curve should be relatively flat.
   (d) the LM curve should be relatively steep.
   (e) neither the IS nor the LM curve will be affected.

7. The existence of a J-curve indicates that which of the following will occur after a depreciation?
   (a) The real exchange rate will rise temporarily before it falls.
   (b) The real exchange rate will fall temporarily before it rises.
   (c) The trade deficit will worsen temporarily before it improves.
   (d) The trade deficit will improve temporarily before it worsens.
   (e) None of the above.

8. Consider an infinitely-lived asset that pays a constant \$20 per year, starting immediately (i.e. today, at time $t = 0$). Let r be the constant annual real rate of interest. The present discounted value of this payment stream is equal to:
   (a) $\$20 \times \frac{1}{r}$
   (b) $\$20 \times \frac{1}{1+r}$
   (c) $\$20 \times \frac{r}{1+r}$
   (d) $\$20 \times \frac{1+r}{r}$
   (e) None of the above

9. In an efficiency wage model,
   (a) workers may be paid above their marginal product.
   (b) some workers in the labor force are not employed.
   (c) firms find is costly to monitor the effort of workers.
   (d) All of the above
   (e) None of the above

10. Suppose a single firm in an otherwise economically viable industry goes bankrupt and closes. The workers who formerly were employed at this firm would then be experiencing:

   (a) frictional unemployment.
   (b) structural unemployment.
   (c) cyclical unemployment.
   (d) hysteresis.
   (e) None of the above

11. Under "Classical" assumptions, an increase in government spending will cause the real interest rate to:

   (a) fall, since inflation will rise when the government prints more money.
   (b) not change, as fiscal policy has no effect on interest rates: $r = MPK - \delta$.
   (c) rise, as the demand for money will increase but banks will have the same supply.
   (d) rise or fall, as the effect on private investment is ambiguous.
   (e) None of the above

12. The organization responsible for dating business cycles in the United States is the:

   (a) Bureau of Economic Analysis.
   (b) Council of Economic Advisors.
   (c) Federal Reserve Board of Governors.
   (d) National Bureau of Economic Research.
   (e) National Association of Business Economists.

13. One normative implication of the Taylor Rule is that monetary policy is most likely to have a destabilizing effect on the economy if it:

   (a) does not raise nominal interest rates sufficiently in response to higher inflation.
   (b) does not lower nominal interest rates sufficiently in response to the output gap.
   (c) does not actively smooth nominal interest rate changes over time.
   (d) engages in discretionary policy actions.
   (e) None of the above

14. Based on historical evidence for the 20th century, which event listed below *most often* preceeds recessions in the United States?

   (a) Price shocks, such as sudden oil price increases
   (b) A deteriorating trade balance
   (c) Monetary tightening by the Federal Reserve
   (d) Dips in productivity growth
   (e) Increases in the marginal income tax rate

15. The only costs associated with volatile (and thus unexpected) inflation that are not also associated with a high level of inflation are:
    (a) menu costs.
    (b) shoe-leather costs.
    (c) non-indexed tax liabilities.
    (d) risks from writing long-term contracts.
    (e) None of the above

16. Which of the following will cause an increase in the money multiplier?
    (a) An increase in the amount of money individuals hold as bank deposits.
    (b) An increase in the bank reserve ratio.
    (c) An increase in the monetary base.
    (d) An increase in the discount rate.
    (e) None of the above

17. In an IS-LM model of a small open economy, an increase in foreign income (Y^*) will unambiguously lead to a short-run increase in all of the following:
    (a) consumption.
    (b) investment.
    (c) consumption and net exports.
    (d) investment and net exports.
    (e) consumption, investment, and net exports.

18. For an economy initially at the Golden Rule in an Augmented Solow Growth model, a reduction in the saving rate will lead to:
    (a) a reduction in the long-run growth rate of consumption per worker.
    (b) an increase in the long-run growth rate of consumption per worker.
    (c) an ambiguous effect on the long-run growth rate of consumption per worker.
    (d) no change in the long-run growth rate of consumption per worker.
    (e) Impossible to answer, as the Augmented Solow Growth Model only has implications for the growth rate of consumption per *effective* worker.

19. The yield curve represents:
    (a) the yield to maturity on a particular bond over time.
    (b) the relation between yield to maturity and maturity.
    (c) the risk premium on a particular bond over time.
    (d) the relation between the price of a bond and the interest rate on that bond.
    (e) None of the above

20. The Quantity Theory of Money states that a one percentage point increase in the long-run growth rate of real output must correspond with:
    (a) a one percentage point increase in both the growth rate of money and the inflation rate.
    (b) a money growth rate that increases one percentage point more than the inflation rate.
    (c) an inflation rate that increases one percentage more than the money growth rate.
    (d) a one percentage point increase in the growth rate of velocity.
    (e) None of the above

21. In the presence of a downward-sloping, expectations-augmented Phillips Curve, a positive unemployment gap ($u > u^n$) implies:
    (a) the ex-ante real interest rate exceeds the ex-post real interest rate.
    (b) the ex-post real interest rate exceeds the ex-ante real interest rate.
    (c) the ex-post and ex-ante real interest rates are equal.
    (d) nothing about real interest rates.
    (e) None of the above

22. Suppose that in a given year, the Solow residual (A) grew 3% while labor (N) fell 3%, and capital (K) did not grow. According to the growth accounting framework, output (Y) should have:
    (a) fallen by more than 3%.
    (b) fallen by less than 3%.
    (c) remained unchanged.
    (d) grown less than 3%.
    (e) grown at least 3%.

23. In Blanchard's model of the labor market, a reduction in the markup charged by firms leads to:
    (a) a decrease in both the real wage and the natural rate of unemployment.
    (b) a decrease in the real wage and no change in the natural rate of unemployment.
    (c) an increase in both the real wage and the natural rate of unemployment.
    (d) an increase in the real wage and no change in the natural rate of unemployment.
    (e) None of the above

24. Most economists recommend that a central bank should focus on maintaining price stability as its primary goal because:
    (a) the evidence suggests monetary policy cannot permanently increase output or employment.
    (b) inflation is more costly to an economy than unemployment or lost output.
    (c) inflation is the only aggregate that can be directly controlled by a central bank.
    (d) they think this approach will guarantee central bank independence.
    (e) economics is the tool of the capitalist exploiters.