

SIMON FRASER UNIVERSITY  
Department of Economics

Econ 305  
Intermediate Macroeconomic Theory

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FINAL EXAM - December 14  
(Solutions)

Answer the following questions True, False, or Uncertain. Briefly explain your answers. No credit without explanation. (8 points each).

1. According to the Taylor Rule, central banks should increase interest rates when output rises.  
TRUE. *Higher output creates inflationary pressures, which should be offset by raising the interest rate.*
2. According to the Mundell-Fleming model, output is more stable with fixed exchange rates.  
UNCERTAIN. *It depends on which kinds of shocks are more important. If most shocks are in the financial markets (LM shocks), then fixed exchange rates lead to more output stability. However, if most shocks are in the goods markets (IS shocks), then flexible exchange rates produce more stability.*
3. Increased government spending causes current account deficits.  
UNCERTAIN. *It depends on whether it's temporary or permanent. A temporary increase will cause private spending to decline by less than the increase in government spending (due to consumption smoothing). Therefore, national savings declines, which causes a current account deficit. However, a permanent increase will crowd out private spending one-for-one, so there is no net increase in total demand, and so no change in the current account. (Some people may note that there will be a wealth effect in labor supply, which shifts the  $Y^s$  curve, but they do not need to mention that for full credit).*
4. According to the Friedman Rule, central banks should set the nominal interest rate to zero.  
TRUE. *Friedman argued that since it is virtually costless to produce money (per unit), it should be costless to hold. This occurs when the rate of return on money and bonds is the same, i.e., when the nominal interest rate is zero.*
5. Inflation causes output to fall.  
UNCERTAIN. *It depends on whether it's permanent/anticipated or temporary/unanticipated. A permanent inflation that is anticipated will cause people to substitute toward leisure and away from market goods. This causes both  $Y^d$  and  $Y^s$  to shift left and output to decline. (See p. 577 in the text). However, a surprise inflation can cause output to increase, since workers and firms might mistake the price increases as an increase in relative prices (i.e., the 'Lucas supply curve').*

The following questions are short answer. Briefly explain your answer. Clarity will be rewarded.

6. (30 points). The goal of business cycle theory is to develop models that replicate as many observed empirical facts as possible. That way we can have confidence that the experiments we run with our models will predict what actually happens in the economy.

- (a) Briefly summarize the key business cycle facts, both in terms of relative volatilities and comovements. The variables you should mention are: output, employment, productivity, consumption, investment, wages, interest rates, and the price level.

*This is straight from the book (Chpt 3, p. 83, Tables 3.1 and 3.2) or lecture slides ("Lecture 14 extras", p. 1). They do not have to put down all the facts, but for full credit they should get most of them.*

- (b) Use graphs to illustrate how the market-clearing model responds to persistent fluctuations in productivity. Are these responses consistent with the empirical facts from part (a)? Can you think of any caveats?

*Again, this is straight from the book (Chpt. 13, p. 442, Figure 13.2) or lecture slides ("Lecture 14 extras", p. 2). The caveat I was looking for concerned potential measurement error in using Solow residuals as proxies for productivity shocks, due to procyclical factor utilization rates. (See pgs. 447-48 in the text).*

- (c) Use graphs to illustrate how the market-clearing model responds to "animal spirits" (ie, exogenous shifts in investment demand). Are these responses consistent with the data? Briefly describe how the idea of "coordination failures" might make this theory more consistent with the data.

*Random, exogenous, shifts in investment demand can certainly produce fluctuations in output and employment. In fact, this seems to be Keynes's main explanation of business cycles! (See Chpt. 11, p. 379, Figure 11.24, for a picture). However, the problem with this "theory" is that it predicts wages and productivity should be countercyclical, which is not what we see in the data. The 'coordination failures' model gets around this problem by assuming there are increasing returns, which causes the labor demand and output demand curves to be upward sloping, giving rise to potential multiple equilibria. In this case, increased investment demand could actually increase wages and productivity. (See Chpt. 13, p. 454, Figure 13.9 for a picture).*

7. (30 points). Use the Mundell-Fleming model and graphs to answer this question.

- (a) Suppose Canada and the USA are both in a recession. The USA could use either monetary or fiscal expansion to escape the recession. Explain which policy Canada would prefer.

*This is straight from the notes. (See "Lecture 18 (Extended Version)" pgs. 21-22). The basic idea is that with flexible exchange rates, monetary policy is transmitted negatively between countries. Expansionary US monetary policy will cause the US dollar to depreciate, which reduces Canadian net exports. The main caveat here is that higher incomes in the US will tend to offset the decline in Canadian exports. However, they don't need to mention this for full credit. They just need to show the graphs. Bottom-Line - Canada would prefer that the USA uses expansionary fiscal policy, since this causes the US dollar to appreciate, which increases demand for Canadian goods.*

- (b) Assuming China is also in a recession, which policy would China prefer?

*Again, straight from the notes. ("Lecture 18 (Extended Version)" pgs. 23-24). Since China has a fixed exchange rate, it would prefer that the USA use expansionary monetary policy, since this leads to lower Chinese interest rates as well. US fiscal policy would instead produce higher interest rates in China. Again, they should provide the graphs for full credit.*