

SIMON FRASER UNIVERSITY
Department of Economics

Econ 305
Intermediate Macroeconomic Theory
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Prof. Kasa
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FINAL EXAM
(Solutions)

The first four questions are True, False, or Uncertain. Briefly explain your answers. No credit without explanation. (10 points each).

1. Monetary policy is more effective with a fixed exchange rate than with a flexible exchange rate.

FALSE. *A fixed exchange rate forces the central bank to set its interest rate equal to the country it is pegging to (assuming open capital markets). Or equivalently, it loses control of the money supply. Of course, from the perspective of the flexible price/neoclassical model, monetary policy would be equally effective in stabilizing output regardless of the exchange rate regime (ie, ineffective!). However, they do not need to mention the neoclassical qualification in order to get full credit.*

2. Government budget deficits cause current account deficits.

UNCERTAIN/TRUE. *If Ricardian Equivalence holds, and taxes are lump sum, then a deficit financed tax cut would not produce a current account deficit. It would be offset by an increase in household saving. However, if Ricardian Equivalence doesn't hold, or if the deficit is produced by a temporary increase in government spending, then it would be true that government budget deficits cause current account deficits.*

3. The neoclassical/market-clearing model cannot explain why the money supply is procyclical.

FALSE. *The neoclassical model can explain a procyclical money supply in two ways: (1) Part of the broad money supply is endogenous. The 'money multiplier' tends to be procyclical. (2) Even narrow measures of the money supply (eg, the monetary base) can be procyclical if the central bank's policy is to stabilize the price level. For example, a strong economy increases money demand, which puts downward pressure on the price level unless the Central Bank increases the money supply.*

4. According to the Mundell-Fleming model, if Canada and the USA are both in a recession, then it would be better for Canada if the USA engages in fiscal expansion (eg, higher G or lower T) than monetary expansion (eg, higher M or lower R).

TRUE. *A US fiscal expansion causes the US dollar to appreciate, which increases Canadian net exports. This is good for Canada if Canada is also in a recession. In contrast, a US monetary expansion causes the US dollar to depreciate, which then decreases Canadian net exports.*

5. (20 points). Compare and contrast the neoclassical/market-clearing model of the business cycle with the Keynesian model. How do their assumptions differ? Briefly describe the strengths and weaknesses of each approach. How do their empirical predictions differ? Explain how we could use data on the correlation between output and the price level to potentially distinguish between these two models.

You could write a whole book on this one. (Many people have). Use your judgement and discretion, but please be generous with partial credit. I emphasized two things in class: (1) The Keynesian model is based on some sort of market failure, typically wage or price rigidity. Instead of prices/wages always adjusting to clear markets, quantities adjust instead. In contrast, the neoclassical model is based on the assumption of flexible prices, so markets always clear. (2) As a result, Keynesian models typically assume demand-side fluctuations drive the cycle, whereas neoclassical models are based on supply-side shocks (eg, productivity shocks).

If demand-side fluctuations drive the cycle, then we should observe a positive correlation between output and the price level (ie, the notorious ‘Phillips Curve’, although they don’t need to mention the Phillips Curve, since we didn’t talk about it. Also, if they say something about the Lucas supply curve potentially accounting for a positive correlation, even when all prices are flexible, then give them a gold star and a little extra credit). On the other hand, if productivity shocks drive the cycle, then we should observe a negative correlation between output and the price level. Of course, in the data, there is no clear cut correlation. During some periods the correlation is negative (eg, late 1990s), while at other times it is positive (early 1980s).

6. (20 points). Use the Open-Economy Trilemma to discuss the evolution of the international financial system, starting with the Gold Standard in the 1800s, then the Bretton Woods system from WWII to the 1970s, then finally the current system of managed floating exchange rates. Explain how each system involves a different choice among the three major goals of open-economy macroeconomics. Use the trilemma to explain how currently the USA, China, and Europe have each resolved the trade-off in different ways. Finally, use the trilemma to explain potential difficulties associated with adopting a global digital currency, such as bitcoin. (Hint: See the posted articles by Mankiw and Krugman).

For full credit, they should briefly explain what the Trilemma is, ie, given the following 3 policy goals (open capital markets, independent monetary policy, and exchange rate stability), only two can be guaranteed. One must be sacrificed. The Gold Standard sacrificed independent monetary policy. Central Banks could not adjust interest rates to stabilize the economy or serve as a lender-of-last-resort. They simply maintained convertibility between gold and their currency at the stated exchange rate. The Bretton Woods system sacrificed open capital markets. Capital was not free to move between countries during the first few decades following WWII. Finally, the current regime has sacrificed exchange rate stability. Most of the major currencies float against each other.

Of course, not all currencies currently float. China still maintains a Bretton Woods-style arrangement, which features capital controls. Individual European countries have the ultimate fixed exchange rate (ie a common currency), while they also allow free capital mobility. This means they have to forfeit their own monetary policy. In this way, Europe today resembles the classical Gold Standard.

Because it controls the money supply, Bitcoin resembles the gold standard. (If you read

Nakamoto's 2009 paper, 'he' makes this connection explicit). The downside of bitcoin is the same as the downside of the gold standard, ie, it limits the ability of the central bank to maintain price level stability and to serve as a lender-of-last-resort. There was a reason countries abandoned the gold standard in the 1930s!

7. (20 points). The covid pandemic has had major economic repercussions, as well as being a major source of increased health risks. Let's try to use our neoclassical/market-clearing model to understand some of the economic effects. In particular, let's compare two alternative ways of modelling this shock. First, suppose we think of the pandemic as producing a sudden increase in the demand for 'leisure', as people move away from market activity. Describe the effects in the labor, goods, and money markets. What are the predicted effects on output, employment, consumption, investment, wages, interest rates, and the price level.

Now suppose instead we think of the shock as a (temporary) negative productivity shock, which reduces the demand for labor. Again, describe the predicted effects on output, employment, consumption, investment, wages, interest rates, and the price level. Briefly discuss how we could use market data to discriminate between these two interpretations.

Again, this could be a hard question to grade. If someone gives a reasonable, internally consistent, answer that differs from mine, go ahead and give them full credit. It's your call.

Here's what I had in mind. The key difference between a 'leisure shock' and a productivity shock is to be found in the labor market. The leisure shock shifts the labor supply curve up, whereas the productivity shock causes the labor demand curve to shift down. In both cases, employment falls, which then causes the Y^s curve in the goods market to shift up. As a result, equilibrium output falls and the interest rate rises. (Note, because the shock is temporary, there is no direct effect on investment and the Y^d curve). A higher interest rate produces an increase in labor supply, which offsets the original decline in employment, but this effect is likely to be rather weak, and would not offset the original effects.

Because output falls and the interest rate rises, money demand declines. Absent a Central Bank response (which is NOT consistent with reality!) the price level would rise, and we would witness an uptick in inflation.

Bottom-line: both stories predict a decline in output, employment, consumption and investment. However, the leisure story predicts a rise in the real wage, whereas the productivity story predicts falling real wages.