

SIMON FRASER UNIVERSITY
Department of Economics

Econ 345
International Finance

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MIDTERM EXAM
(Solutions)

Questions 1-4. Answer True, False, or Uncertain. Briefly explain your answer. No credit without explanation.

1. According to Uncovered Interest Rate Parity, if a country has relatively high interest rates then investors must be expecting its currency to appreciate.

FALSE. According to UIP, a relatively high (nominal) interest rate is a signal that investors must be expecting the currency to depreciate. If a currency is expected to lose value relative to some other currency, then the only way you can get investors to hold that currency is if it offers a higher rate of return.

2. The Balassa-Samuelson model does not apply to China, since it has a fixed exchange rate.

FALSE. The Balassa-Samuelson model is a theory of the real exchange rate. The real exchange rate, q , is defined as follows, $q = E \left(\frac{P^*}{P} \right)$, where E is the nominal exchange rate (defined as the price of foreign currency), P^* is the foreign price level, and P is the domestic price level. Due to rapid productivity growth in its tradeable goods industries, there is pressure for China's real exchange rate to appreciate (ie, for q to fall). If E is fixed by the Central Bank, then the way this occurs is for China's inflation rate to be higher than the US inflation rate (ie, for P , the Chinese price level, to rise faster than P^* , the USA price level).

3. According to the DD-AA model, a domestic monetary expansion increases net exports.

TRUE/UNCERTAIN. A domestic monetary expansion lowers the real interest rate, and depreciates the domestic currency (assuming the price level is fixed in the short-run). The (real) depreciation raises the relative price of imports, and lowers the relative price of exports, which causes an expansion of net exports as long as the Marshall-Lerner condition is satisfied. (For full credit they must mention the Marshall-Lerner condition).

4. According to Purchasing Power Parity, if a country has a relatively high inflation rate then its currency should be depreciating.

TRUE. If a country has a relatively high inflation rate, this means that its prices of goods and services are rising more rapidly than in the foreign country. If the exchange rate didn't change, nobody would want to buy goods in the domestic country. Foreign goods would be cheaper. To guarantee that relative prices are the same in both countries, the domestic currency must depreciate by an amount equal to the difference in the inflation rates. By raising the price of foreign currency, foreign prices (when expressed in domestic currency units) remain the same as domestic prices.

The following questions are short answer. 30 points each.

5. Please read the attached article, “Bernanke declares war on the Canadian economy”, and answer the following questions

- (a) Why does the author think that US monetary expansion is bad for Canada? First, use the DD-AA model to illustrate the effects of a US monetary expansion on the US economy. Now use the DD-AA model to illustrate the effects of the US monetary expansion on the Canadian economy. Is it necessarily the case that a US monetary expansion is bad for Canada?

A US monetary expansion shifts up its AA curve. This causes the US dollar to depreciate, which then increases its net exports and output. (Note: Alert students might mention something about the ‘liquidity trap’ and ‘quantitative easing’, since short term nominal rates in the US are virtually zero right now. This doesn’t really change the nature of the question, however, since quantitative easing amounts to buying long-term assets, and driving down long-term interest rates. The effects on the dollar and net exports are the same. They do not need to mention this for full credit.)

Now, since Canada allows its currency to float against the dollar, a lower US interest rate causes Canada’s AA curve to shift down. Effectively, from Canada’s perspective, R^ has gone down, and we discussed in class why this causes its AA curve to shift down. (They do not need to show why the AA curve shifts down for full credit). Canada’s currency appreciates, and its net exports and output decline. Presumably, this is why the author thinks that Bernanke has declare war on Canada. However, this is not the end of the story. Canadian exports to the US also depend on US income. If Bernanke’s policy is effective (from the US perspective), and US incomes rise, then the income effect could easily outweigh the exchange rate effect, so that on net Canadian exports and GDP actually increase. In terms of the DD-AA model, this would be illustrated by having Canada’s DD curve shifting down and to the right.*

- (b) Analyze the following statement: “Well, we could play the game: Mark Carney (the head of the Bank of Canada) could drop our interest rates to zero, and print money like it’s going out of style. The government could launch a larger Economic Action Plan II and rack up deficits. Both would lower the Canadian dollar.” Do you agree with this statement? Use the DD-AA model to illustrate the effects of a larger Economic Action Plan. (Hint: A larger action plan can be interpreted as a fiscal stimulus).

Although monetary expansion would presumably lower the Canadian dollar (by lowering Canadian interest rates), a (temporary) fiscal expansion would have the opposite effect. It would strengthen the C\$. A fiscal expansion puts upward pressure on interest rates, and this strengthens the currency. (Note: Alert students might mention the possibility that current fiscal deficits might lead to future inflation, if the government resorts to the inflation tax to finance them. This is what often happens in developing countries. However, this is not an especially likely scenario in Canada. Moreover, this scenario basically equates fiscal expansions with monetary expansions, operating through the government budget constraint. They do not need to mention this caveat for full credit).

6. Suppose a Central Bank wants to achieve a steady inflation rate. Suppose it starts to see nominal interest rates rise in financial markets. How should it respond to this increase? Should it increase or decrease money growth? Describe how it could use information from the foreign exchange market to help it decide. (Hint: Be sure to mention the Fisher equation and Purchasing Power Parity in your answer).

According to the Fisher equation, $R = r + \pi^e$, where R is the nominal interest rate, r is the real interest rate, and π^e is the expected inflation rate. If R is observed to be rising, this could be happening either because r is rising, or because π^e is rising. The problem is that appropriate monetary reaction depends on which it is. If r is rising, this indicates that real money demand is increasing, perhaps due to

expanding economic activity. In this case, the Central bank would want to accommodate the increased demand for money by increasing the supply. Otherwise, there would pressure for the price level to fall (or for the inflation rate to come in below target). On the other hand, if R is rising merely because people are expecting inflation to be higher in the future, then the Central bank would most certainly not want to accommodate this by monetary expansion, and therefore generate the higher inflation rate that people were expecting! If anything, they would want to tighten. Now, the point of the question is that the foreign exchange market can be used as an extra signal to help it decide which is the relevant case. We know from PPP that if inflation is going to be higher, then the domestic currency should depreciate. So if at the same time that R is rising, the Central Bank sees that E is rising (ie, the currency is depreciating), this would suggest that the underlying source of the rise in nominal interest rates is an increase in expected inflation, which should not be accommodated. Conversely, if instead the currency is appreciating (ie, E is falling), then this would indicate that R is rising because r is rising, and so therefore the Central Bank can safely accommodate this by increasing the money supply.