Name: _____

Brigham Young University Department of Economics

Economics 459 - International Monetary Theory

Dr. Phillips (section 1) Fall Semester 2008

Final Exam key

Economic turmoil still prevails in Zalchistan. The president is in desperate need of economic advice. Once again he is offering a retainer of 500 zotneys for your help. He has submitted 5 questions. Answer each one in the space provided.

1. "I have run across some further difficulty with some economic terminology. Please write me some one-sentence definitions of the following:"

fiat money – **money that circulates "by command" and which is not backed explicitly by a commodity like gold or silver.**

capital account – **the net value of the flow of funds into a country due to trade in financial assets.**

sterilized intervention – **a purchase of sale of foreign currencies by country's monetary authority that has its effect on the domestic money supply neutralized by an appropriate offsetting open market operation.**

speculative attack – **when international investors sell off their holdings denominated in a particular currency based on the expectation that the currency will be devalued in the near future.**

crawling peg – **a fixed exchange regime where the value of the domestic currency is pegged to a foreign currency, but the value of the peg changes over time.**

2. "Currently the zotney floats against all currencies. I am considering advocating a fixed exchange rate against the US dollar. Can you explain some of the pros and cons of adopting a fixed exchange rate vis-à-vis the dollar?"

There are a number of correct answers here. Here are a few, but there may be other correct answers.

PROS – Establishes credibility for a low inflation regime if there has been a history of high inflation. Makes international trade less risky because exchange rates may be more predictable.

CONS – Loss of control over the domestic money supply. If it is mismanaged it can lead to speculative attacks.

Name: _____

3. "I'm still trying to get this current account & capital account stuff straight. I have several examples of transactions below. Could you please explain to me how each of these affect the current account and each of its subaccounts? Also, explain how they affect the capital account. I am only interested in Zalchistani accounts, so use the zotney as the unit of account."

a) The Zalchipour Stake wire transfers the week's tithing receipts of 4,000,000 zotneys to Salt Lake City by transferring the money from an account at the First National Bank of Zalchistan to an account at Zions Bank in Utah. For our purposes, treat the Zalchipour Stake as Zalchistani agent, and LDS headquarters as a US agent.

Current account:
Trade account:
Service account:
Factor income:
Unilateral transfers: **-4,000,000 zotneys**

Capital Account:
Home holdings of foreign assets:
Foreign holdings of home assets: **+4,000,000 zotneys**

b) The president of Zalchistan buys a pony for his daughter's Christmas present from the neighboring country of Beluga and pays with a 50,000 zotney check drawn on an account at the Zalchistan Government Workers Credit Union. (Don't discuss this question with my daughter, please.)

Current account:
Trade account: **-50,000 zotneys**
Service account:
Factor income:
Unilateral transfers:

Capital Account:
Home holdings of foreign assets:
Foreign holdings of home assets: **+50,000 zotneys**

c) The Zalchistan Ministry of Defense sends a group of nuclear scientists to North Korea to provide advice on how to dismantle a nuclear reactor. In exchange for this service contract valued at 500 million zotneys, the government of North Korea ships us several containers of uranium hexafluoride. (Don't discuss this question with International Atomic Energy Agency, please.)

Current account:
Trade account: **-500,000,000 zotneys**
Service account: **+500,000,000 zotneys**
Factor income:
Unilateral transfers:

Capital Account:
Home holdings of foreign assets:
Foreign holdings of home assets:

d) The Zalchistan Ministry of Trade & Finance imports 10 million zotneys worth of economics textbooks from Amazon.com in the US. They pay with a credit card account at Chase-Panguitch Bank (located in Utah).

Current account:
Trade account: **-10,000,000 zotneys**
Service account:
Factor income:
Unilateral transfers:

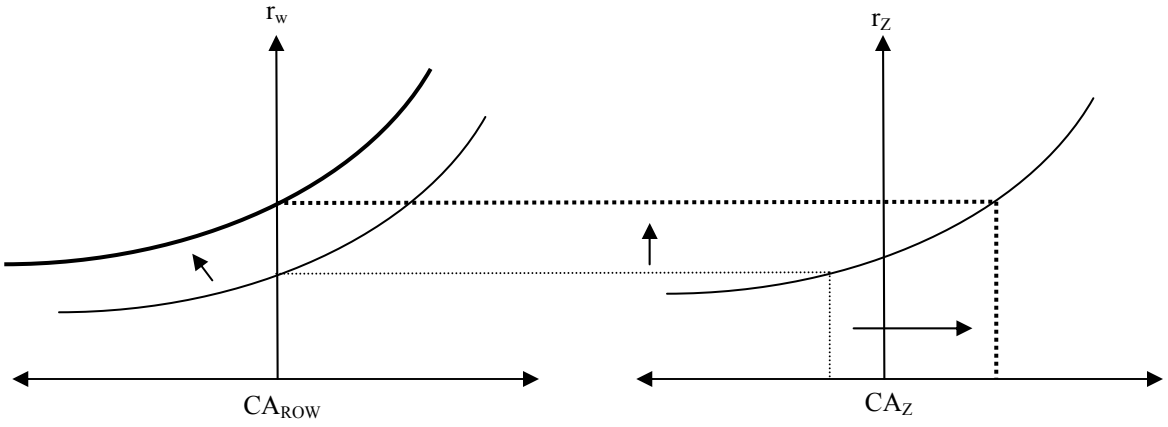
Capital Account:
Home holdings of foreign assets: **+10,000,000 zotneys**
Foreign holdings of home assets:

Name: _____

4. "Zalchistan is just a small country when compared with the rest of the world. As you know, it looks like a world-wide recession has begun. Recessions are short-lived by historical standards, so most people expect current output to fall in most countries world-wide, but not in the long-run. For some reason, things look pretty good here in Zalchistan, we haven't noticed a significant drop in GDP and don't really expect one. Can you give me some sort of prediction of what we should expect from our current account over the next several quarters as this recession runs its course? Use any diagrams you feel are necessary, but avoid complex math as I need to run this past the national assembly and they can't count to twenty unless they take their socks off."

For this case think of the rest of the world (ROW) as a closed economy and Zalchistan (Z) as small open economy. Use a two-period model with the first period being "the next several quarters" and the 2nd period being the long-run.

The drop in current output only for ROW shifts its CA curve to the left, and since it is a closed economy the world interest rate rises. Since Z has no change in current or future output, its CA curve does not move. However, as a small open economy it faces the new higher world interest rate and this causes its current account to improve.



Name: _____

5. "As an engineer, I enjoy tinkering with quantitative models. I was looking through the notes you sent me on trade-over-time and I am pretty sure I can rewrite the problem to model trade under uncertainty. Here is my setup for the consumer's problem. I realize this problem may be unfamiliar, but I understand you have the tools to solve it."

"There are two possible realizations of uncertainty, state 1 & state 2. Consumers maximize expected utility. The probability that state one occurs is π."

$$E\{U\} = \pi u(C_1) + (1-\pi)u(C_2);\ u(C) = \frac{C^{1-\sigma} - 1}{1-\sigma}$$

The following is the budget constraint:

$$W \equiv q_1 X_1 + q_2 X_2 \geq q_1 C_1 + q_2 C_2$$

Endowments are denoted with X's, Consumptions with C's, and the prices today of contracts to deliver 1 unit of goods in given states after uncertainty is resolved are denoted with q's.

"Solve for the optimal amount of consumption in both sates of nature as functions of endowments, the prices, and the parameters, σ & π."

First, write down the Lagrangian:

$$\boldsymbol{\mathcal{L} = \pi \frac{C_1^{1-\sigma} - 1}{1-\sigma} + (1-\pi)\frac{C_2^{1-\sigma} - 1}{1-\sigma} + \lambda\{W - q_1 C_1 - q_2 C_2\}}$$

Second, find the first-order conditions:

$$\boldsymbol{\pi C_1^{-\sigma} - \lambda q_1 = 0}$$
$$\boldsymbol{(1-\pi) C_2^{-\sigma} - \lambda q_2 = 0}$$

Finally, solve these for the two C's:

$$\boldsymbol{C_1 = \frac{W}{q_1 + q_2\left[\frac{(1-\pi)q_1}{\pi q_2}\right]^{1/\sigma}}}$$

$$\boldsymbol{C_2 = \frac{\left[\frac{(1-\pi)q_1}{\pi q_2}\right]^{1/\sigma} W}{q_1 + q_2\left[\frac{(1-\pi)q_1}{\pi q_2}\right]^{1/\sigma}}}$$

If prices are proportional to the probability of a state, will households consume more in state 1 or state 2?

This would mean that $q_1 = k\pi$ and $q_2 = k(1-\pi)$. Substituting this into the above gives $C_1 = C_2 = \frac{W}{k}$, which means that households consume the same amount in both states of nature (i.e. there is no uncertainty about consumption).