SIMON FRASER UNIVERSITY
Department of Economics

Econ 305 | Prof. Kasa
Intermediate Macroeconomic Theory | Fall 2021

PROBLEM SET 3
(Solutions)

1. (25 points). Read the article by Paul Krugman entitled "Golden Cyberfetters", which is posted on the class webpage. According to Krugman, would it be a good idea to switch to Bitcoin-style monetary system? How would such a system resemble the 19th century Gold Standard? What would be the costs and benefits of a monetary system based on a digital currency? Can you think of way to improve the functioning of such a system? (Hint: Be sure to discuss the trade-off between price level stability and money supply stability).

   As discussed in class, a Central Bank can either control the quantity of money or the value of money (ie, the price level). It cannot simultaneously control both (because the money demand curve is beyond its direct control). The current monetary system is based on stabilizing the price level, and letting the money supply respond endogenously. Bitcoin is the opposite. It limits the supply, and so its value fluctuates. Krugman points out that this is exactly how the classical Gold Standard operated. During the Gold Standard, money demand often outpaced money supply. These were periods of deflation, which tended to redistribute wealth from debtors to creditors, which then tended to exacerbate wealth inequality. There were good reasons that countries abandoned the Gold Standard. Hence, Krugman argues against a monetary system based on a Bitcoin-style digital currency. That doesn't mean digital currencies are necessarily bad. It just means that some mechanism must allow for the supply to respond to demand. Interestingly, China's recent introduction of its digital currency is a step in this direction. Of course, their system has the drawback of not being anonymous, and in fact, gives the government even greater control over the flow of funds.

2. (25 points). Although most people think that the Covid virus originated in China, and then spread elsewhere, China got the virus under control relatively quickly. So for the purposes of this question, let's think about Covid as representing a large negative demand shock in the USA, which then gets transmitted back to China. Use the Keynesian open-economy IS-LM framework to describe how this negative demand shock would affect China. What actions would the central bank in China need to take? Use graphs to illustrate your answer. (Hint: Assume China has a fixed exchange rate against the US dollar, and that capital flows freely between the two countries). Would the adverse Covid shock in the USA necessarily be bad for China?

   This is straight from the notes. See Lecture 18 (extended version), page 24. The negative spending shock in the USA is a leftward shift in its IS curve, which puts downward pressure on its interest rate. If China pegs to the dollar, it must match this interest rate decrease by buying foreign assets and expanding the money supply. This shifts out its LM curve and stimulates its economy! Of course, this doesn't mean China is necessarily better off, because the decline in US output means that americans will have less money to spend on Chinese goods. But the induced monetary stimulates represents an automatic stabilizing response to this adverse foreign shock.