

SIMON FRASER UNIVERSITY  
Department of Economics

Econ 345  
International Finance

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PROBLEM SET 1  
(Solutions)

1. (25 points). Suppose the 12-month forward price of the US dollar in terms of the Indian rupee is 82 rupees per dollar. Suppose the spot price of the dollar in terms of rupees is 80. Next, suppose that currently the annual interest rate on dollar deposits is 4%, while the interest rate on a comparable rupee deposit is 5%. There are no transactions costs. Is there an arbitrage opportunity here? If so, explain exactly how you would take advantage of this situation to make riskless profits.

*Covered Interest Parity implies*

$$\frac{F}{E}(1 + R^*) = 1 + R$$

*The right-hand side is the rupee return on a rupee investment, while the left-hand side is the (covered) rupee return on a dollar investment. Substituting in the given information, we get*

$$\frac{F}{E}(1 + R^*) = \frac{82}{80}1.04 = 1.066 > 1 + R = 1.05$$

*Hence, even though the rupee interest rate is higher, the covered rate of return from investing in the dollar is higher than the return from investing in rupees. You can make arbitrage profits by borrowing rupee, then buying dollars spot, investing in dollars, and then simultaneously selling the (known) amount of future dollars forward. You will have more than enough rupee to pay back your rupee loan. Your profits are only limited by how many rupee you can borrow! In practice, this would be implemented with a swap contract.*

2. (25 points). Read the article entitled “Birth Pains”, from *The Economist*, which is posted on the class webpage. According to this article, why is there a tension between borrowers and lenders, and how has the international financial system resolved this tension in the past? According to this article, what was the connection between rapid growth in China and India and the 2008-09 Global Financial Crisis? According to this article, what might the future of the international financial system look like? Why?

*Loan contracts are usually set in nominal terms, i.e., the borrower agrees to pay back a certain amount of currency in the future. This exposes both parties to inflation risk. If inflation turns out to be higher than expected (as reflected in the original nominal*

interest rate), then the borrower benefits, since the money he pays back is not worth as much as the money he got. Conversely, if inflation turns out to be lower, then the lender benefits, since he gets more than enough interest to compensate for the intervening inflation. So all throughout history there has been constant tension between borrowers and lenders concerning monetary policy. Borrowers want an 'easy money' policy that will inflate away their debts. Lenders want a 'hard money' policy that will preserve the purchasing power of their financial assets. For this reason, farmers and other debtors hated the gold standard, since it made it difficult for countries to pursue inflationary monetary policies. (Incidentally, the Wizard of Oz was an allegory about the gold standard. Guess who the wicked witch of the east represented? Guess what Oz stands for?). Most people now believe that adherence to the gold standard made the Great Depression worse. (For example, countries that left the gold standard earlier recovered faster and more strongly). Countries that stuck with the gold standard experienced more severe 'debt deflations', in which debtors found themselves with larger (real) debts than expected (exactly like a homeowner who takes out a mortgage, only to see the price of his house plummet). Partly for this reason, the balance of power between lenders and borrowers shifted toward borrowers after the Great Depression (or more precisely, after World War II, since global financial systems tend to fall apart during world wars!). Although the Bretton Woods system did try to maintain some of the anti-inflationary discipline of the gold standard (by supposedly keeping the US dollar linked to gold), in practice it permitted much more activist and inflationary monetary policies (which many countries abused during the 1970s). This loss of monetary discipline was accentuated following the collapse of the Bretton Woods System in the early 1970s, and the subsequent movement toward flexible exchange rates. One 'benefit' from having a flexible exchange rate is that you can have as high an inflation rate as you want, without fearing a currency crisis. This can be beneficial if you want to bail out domestic borrowers by inflating away their debts. The fact that European countries can't do this anymore is a big part of their recent problems. It can also be beneficial if you borrow from foreigners in your own currency, since you can then inflate away your foreign debt, which is something China is very worried about these days!

According to the article, rapid growth in China and India put downward pressure on world prices, and allowed western central bankers to engage in 'easier' monetary policies than otherwise, without fearing inflation. This supposedly helped stoke the housing bubble in the years leading up to the crisis.

A common view is that China's domestic capital markets will need to become more 'westernized' (e.g., less regulated) if China's currency is ever to become a world currency. The article notes that this is not the only way convergence can take place. Recent financial turmoil has made some people wonder whether unregulated financial markets are such a great idea. Maybe China has the right idea! Maybe western financial markets will start to be more regulated.