

Group Assignment II

Problem 1 (Rationale for Hedging Currency Risk):

Gidget International is domiciled in the Land of Make Believe. The local currency is called the Goodwill (abbreviated G). Gidget will own assets worth either G6,000 or G16,000 this year (with equal probability), depending on the value of the local currency on world currency markets. Gidget has a promised payment to debt of G10,000 due in one year. Although there are no taxes in the Land of Make Believe, there are lawyers (this isn't a perfect world, after all). If Gidget cannot meet its debt obligations, legal fees will impose direct bankruptcy costs of G2,000 as the firm is divided amongst its creditors.

- How much will debt and equity owners receive at asset values of G16,000 and of G6,000? Calculate the expected value of equity, debt, and the firm.
- How can hedging increase the value of Gidget International in the presence of direct costs? Who wins – debt, equity, or both?

Problem 2 (Transactional Currency Risk):

You work for an Argentinean wine exporter and expect to receive USD 1 million in one year from a U.S. client. You can trade at the following prices:

Spot rate, Argentinean pesos per dollar	ARS 3.02 / USD
One-year forward rate	ARS 3.09 / USD
One-year Argentinean interest rate	5.050%
One-year dollar interest rate	4.050%

- Form a forward market hedge. Identify which currency you are buying and which you are selling forward. When will currency change hands? Today? Or in one year?
- Replicate the payoff on the forward contract with a money market hedge by using the spot currency and interest rate markets. Identify each contract in the hedge.
- Are quoted prices in these currency and interest rate markets in equilibrium? If not, explain briefly how you would arbitrage this disequilibrium (you do not need to make any calculations related to the possible arbitrage opportunity).

Problem 3 (Hedging using Options)

Bernd lives in Berlin and uses the euro as his currency of denomination. Bernd has an accounts payable balance of \$10 million due in three months. The spot exchange rate is $\text{S€}/\$ = \text{€}1.20/\$$. How can a currency option hedge reduce Bernd's exposure to currency risk. Assume a striking price of $\text{€}1.20/\$$ and an option premium of $\text{€}0.20/\$$. Draw a graph of $\text{V€}/\$$ versus $\text{S€}/\$$ showing the risk exposures of the underlying position, the currency option hedge, and the net position.