**STARK SUPPLY CO. (B)**

Daniel Marks, the chief financial officer of Stark Supply Co. is still concerned about how to manage the foreign exchange risk associated with the company’s large purchase from a supplier of cowbells in Switzerland. The large payable in May creates a short position in Swiss Francs. Marks has already consulted with James Grom, vice president of the International Division of First Mississippi Bank about hedging the short SF exposure. Grom has explained that two alternatives available to reduce foreign exchange risk, a forward contract and a spot transaction, would in fact guarantee that Stark pay a set dollar amount to satisfy its Swiss Franc payable regardless of any change in the value of the Swiss Franc. This would, thus, eliminate all foreign exchange risk. However, given his previous analysis, Marks is concerned that the two hedging alternative would ensure a profit margin well below the approximately 15% profit margin (a profit of approximately $188,900) that he anticipated when he placed the order in December. Marks now wonders if there is some way to at least leave open the possibility of achieving the 15% profit margin without bearing the risk of a loss. Recall that Stark loses money on the cowbell purchase if it pays more, measured in dollars, than a total (includes Jan and May payment) of $1,300,000

Exhibit 1 provides historic data for the Swiss Franc spot rate. The Swiss Franc has appreciated since Marks agreed to purchase the cowbells from the Swiss supplier in December, but Marks is not convinced that the Swiss Franc will continue to appreciate. If the future spot rate is less than the current forward rate, an unhedged position would be better for Stark than the forward hedge. Marks wonders if there are other alternatives and calls on Grom (of First Mississippi Bank) again for advice.

Grom explains that Stark could also use currency options to hedge the foreign exchange risk exposure associated with the payable. Grom explains that there are two types of option contracts, puts and calls. A put gives the holder (also known as the buyer) of the option the right, but not the obligation, to sell foreign currency at a strike price specified in the option and within a time period specified in the option. A call gives the holder the right to buy foreign currency at the specified strike price within the specified time period. In comparison to a forward or futures contract, the holder is not obligated to transact at the strike price specified in the contract; the holder merely has the choice to do so. Alternatively, the holder could transact in the future spot market.

Grom tells Marks that options require an upfront cost to hedge. Comparing options to a forward contract, the initial cost of a forward contract is zero whereas the options require the buyer to pay an upfront premium. One could think of the premium like a premium one pays for insurance. Grom explains that hedging is just a form of insurance. The writer of an option requires a premium upfront to bear risk. The option writer is compensated with the option premium for assuming the foreign exchange risk of the option holder/buyer, Stark Supply Co.

Grom first suggests examining exchange traded options, but after discussion with Marks, reminds Marks that exchange traded options also suffer from the same maturity mismatch problem as futures contracts. With an exchange traded option, because on May 16 the option has not yet reached its maturity date, the option would be traded and Swiss Francs purchased in the spot market on May 16. Even with an American option that could be exercised before the option expiration date, Grom explained that the premium on an American option (and therefore what one would get from trading the option) would be greater than the payoff if the option is exercised early.

Grom explained that Marks would want an option where the premium on the option increases as the spot rate for the Swiss Franc increases; the increase in the option premium (a benefit to the holder) would offset Stark’s higher cost of buying Swiss Francs in the spot market at a higher spot rate. Similarly, Marks would want an option where the option premium decreases as the spot rate for the Swiss Franc decreases; the decrease in the option premium is offset by Stark’s lower cost of buying Swiss Francs in the spot market at the lower spot rate. Even though Marks seemed to understand Grom’s explanation, Grom was still concerned that Hunter Paul might not understand buying an option, later selling the option, and then buying Swiss Francs in the spot market.

Instead of an exchange traded option, Grom suggests an over-the-counter option written by a bank that writes foreign currency options. Since Stark is only interested in hedging, there is no reason for Stark to need to trade the option before maturity. The lack of liquidity of the over-the-counter option is therefore not a concern for Stark. However, the benefit of getting a bank to write an option with the exact terms that Stark would like (e.g. May 16 maturity date) is very helpful. With a May 16 maturity or expiration date, there would be no need to trade the option on May 16. If optimal to exercise, the option would be exercised on May 16.

Marks now believes that currency option contracts might provide some benefit. He wonders if currency option are the best alternative for Stark right now.

In exhibit 2, Grom provides the bank’s ask quotes for Swiss Franc options with May 16 maturity.

The following are the questions that go with the (B) Case:

1. Which would you recommend to Stark Supply Co. to hedge its foreign exchange risk, a put option or a call option? Explain your choice.

(10 points)

2. If Stark Supply Co. uses an exchange traded option to hedge its foreign exchange risk, why is it necessary to buy an option with maturity date no earlier than the date of the payable, May 16? Explain.

(10 points)

3. Consider possible spot rates for the Swiss Franc on May 16. You should consider spot rates at regular intervals. Recall that in February, you do not know the spot rate for the Swiss Franc on May 16. Rather than consider one possible future spot rate, you should consider many. Recall that you have done this for option speculation. Here the objective is hedging, but you can still do the same type of analysis in an excel spreadsheet or with a graph. You need to consider pairs of future spot rates and Total Dollar Cost given hedging with an option. Given an option hedge, calculate the Total Dollar Cost of the cowbell purchase corresponding to each possible future spot rate for the Swiss Franc.

* *You will do these calculations for either all of the call options or all of the put options, depending on how you answered question 1 above. You should do this in an excel spreadsheet.*

(20 points)

4. Recall Marks’ discussion of what he would like to achieve in terms of profit on the cowbell purchase. In response to Marks, Grom recommended that Stark Supply hedge with an option. Which of the options would come closest to allowing the potential for Stark Supply to achieve the desired profit of $188,900 (or Total Dollar Cost of $1,111,100) on the cowbell purchase? Explain

* *Recall that Stark Supply’s objective is hedging, which means in this case reducing the foreign exchange risk. However, Marks still hasn’t given up on the idea of reducing the Total Dollar Cost resulting in a higher profit margin.*
* *Assume that the Swiss Franc will not depreciate to less than $0.98. This roughly corresponds to “low depreciation” defined in the (A) case.*

(10 points)

5. The main objective is still hedging. Which option(s) could result in a profit margin of less than 3.1% (or Total Dollar Cost of at least $1,260,000) on the cowbell purchase? Which option(s) does (do) not adequately reduce risk? Explain

* *Answering this question, you need to recall from the (A) case Stark Supply Co’s track record in terms of its profitability and the competition the company faces*.

(10 points)

6. Which one of the 3 options would you recommend to Marks? Explain

* *Make sure that your answer is consistent with how you answered questions 3, 4 and 5.*

(10 points)

7. Now compare the spot transaction hedge (from the (A) Case), the option hedge that you chose in question 6, and remaining unhedged (from the (A) Case). Consider future spot rates at regular intervals (possible spot rates on May 16). For each possible future spot rate, calculate the Total Dollar cost for 1) the spot transaction hedge, 2) the option hedge, and 3 unhedged.

* You should do this comparison in an excel spreadsheet.

(20 points)

8.. Consider risk, Total Dollar Cost, and how well each of the 3 (spot transaction hedge, option hedge, unhedged) achieves Marks’ and Stark Supply Co’s stated objectives. Which of the 3 do you recommend? Explain.

(10 points)