FX SWAPS TO HEDGE FOREIGN CURRENCY TRANSACTION RISK AT SYRACUSE CHEMICAL

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CASE DESCRIPTION

INSTRUCTORS' NOTE

Syracuse Chemical is a regional chemical distributor, headquartered in Syracuse, New York. Don Williams, the president and primary owner, began Syracuse Chemical ten years ago after a successful career in chemical sales and marketing. During a mid-year review, Williams noticed a significant deterioration in the profit margins of many specialty chemical lines. After further investigation, Williams learned that a special sub-contracting agreement with Norcand Chemical had exposed Syracuse Chemical to 30 days of currency exposure. Williams solicited the help of James Thorton, a newly hired assistant in the finance office, in proposing alternatives to manage the exchange rate risk.

The primary subject matter of this case is foreign currency exchange rate risk. Secondary issues examined include assessing transaction exposure and utilizing hedging techniques to effectively manage the transaction exposure. The case requires students to have an introductory knowledge of accounting, statistics, finance and international business, thus the case has a difficulty level of four (senior level) or higher. The case is designed to be taught in one class session of approximately 3 h and is expected to require 4-5 h of preparation time from the students.

TASKS TO BE PERFORMED

1) Calculate the percentage change in the (USD:CAD) # of CAD/$1 exchange rate between the payable month and receivables month for all past transactions provided (Table 1).

Table 1
PERCENTAGE CHANGE IN THE (USD:CAD) # OF CAD/$1

	Payment To Norcand Parent (Thous) CAD	Exchange Rate Used for Payment #of CAD/1USD	Receivables from Norcand Subsidiary (Thous) CDA	Exchange Rate Used for Receivables # of CAD/1USD	Percentage Change in Value of US Dollar
January, 2016					
February, 2016	100	1.40			
March, 2016			100	1.34	-4.29%
April, 2016					
May, 2016	200	1.33			
June, 2016			200	1.30	-2.26%
July, 2016					
August, 2016	500	1.32			

September, 2016			500	1.32	0.00%
October, 2016					
November, 2016	600	1.33			
December, 2016			600	1.35	1.50%
January, 2017					
February, 2017					
March, 2017					
April, 20117	800	1.34			
May, 2017			800	1.36	1.49%
June, 2017					
July, 2017	900	?			
August, 2017			900	?	
September, 2017					

2) Explain the effect of exchange rate movements on profit margins during the 2016-2017 years (Table 2).

For the 100,000 CAD contract with payment made in February, 2016 and receivables in March, 2016, the weakening of the US dollar by 4.29% benefited Syracuse Chemical by about $3,200 given that the CAD payment occurred when the US dollar was stronger than the corresponding receipt of CAD. This was also true for the April CAD contract. Although the US dollar only weakened by 2.26%, the dollar impact was magnified by the larger size of the contract resulting in a benefit of about $3,470. The favourable exchange rate movement will increase corresponding profit margins.

Table 2
EFFECT OF EXCHANGE RATE MOVEMENTS ON PROFIT MARGIN

January, 2016							
February, 2016	100	1.40	$71.43				
March, 2016				100	1.34	$74.63	$3.20
April, 2016							
May, 2016	200	1.33	$150.38				
June, 2016				200	1.30	$153.85	$3.47
July, 2016							
August, 2016	500	1.32	$150.38				
September, 2016				500	1.32	$378.79	$ -
October, 2016							
November, 2016	600	1.33	$378.79				
December, 2016				600	1.35	$444.44	$ (6.68)
January, 2017							
February, 2017							
March, 2017	800	1.34	$597.01				
April, 20117				800	1.36	$588.24	$ (8.78)
May, 2017							
June, 2017							
July, 2017	900	?	?				
August, 2017				900	?	?	
September, 2017							

For the last two orders occurring in October, 2016 and February, 2017, the US dollar had strengthened from the time in which the payables were made relative to the

time in which the corresponding receivables were recorded. The strengthening of the dollar over the time difference resulted in a loss of about $6,680 and $8,780 respectively. The negative impact of the currency movement over these months will lower profit margins.

3) Describe the extent of currency risk faced by SC if they were to leave future Norcand transactions unhedged.

The extent of the risk faced by Syracuse Chemical is a function of the size of the order and expected volatility of the currency over a 30 day period. The larger the size of the order, the greater the US dollar impact on profit margins. This is also true regarding the expected volatility of the USD:CAD exchange rate over the 30 day period. The larger the expected volatility, the greater the US dollar impact on profit margins.

4) Describe how a FX Swap would eliminate the transaction risk faced by SC if they choose to both hedge Canadian dollars outflows to Norcad and Canadian dollar inflows from Norcand's subsidiary.

FX swaps are over the counter derivative contracts with a short term, in which two parties enter into a reciprocal obligation to exchange a certain amount of two currencies on a near date at the prevailing near date rate and to reverse this exchange in the future at the forward rate. The exchange at the beginning of the maturity period is called the "short leg" or near leg. The exchange at the end of the maturity period is called the "long leg" or far leg. On the payment date at the end of July, Syracuse Chemical would need to sell US dollars for Canadian dollars at the short leg spot rate and simultaneously buy US dollars with Canadian dollars at the long leg rate. This would be a considered a sell/buy FX swaps as the US dollar is the base currency in the FX Swap quote. Because the price of the offsetting transaction is known in advance, the exchange rate risk is eliminated at the time the FX Swap is entered. The difference in near leg and far leg exchange rates will be a function of the interest rate differential between the US dollar and Canadian dollar. According to the Bank of International Settlements (*Triennial Central Bank Survey*, Bank for International Settlements, Monetary and Economics Department, December 2016) trading in foreign exchange markets averaged $5.1 trillion per day in 2016. Of this $5.1 trillion, about $2.4 trillion involved FX swaps.

5) Explain the FX Swap quoted by the bank and the corresponding transactions that would result if Syracuse Chemical entered into the Sell/Buy July FX Swap quote given by the bank to hedge the 900,000 CAD July 2017 payables and 900,000 CAD August, 2017 receivables.

Because the first leg of the FX swap is a spot transaction, the first part of the quote: USD:CAD Spot 1.2468,1.2495 would be interpreted as a bid rate of 1.2468 Canadian dollars per 1 US dollar and an ask rate of 1.2495 Canadian dollars per 1 US dollar. Syracuse Chemical needs to sell US dollars for Canadian dollars, so bid rate of 1.2468 CAD per 1 USD would be used to determine the number of US dollars that need to be sold in order to obtain 900,000 Canadian dollars. In this case, $721,848 dollars would need to be sold in July at the current spot rate in order to obtain 900,000 Canadian dollars.

The second part of the quote: 1-month 33___37, would refer to the swap points added to the spot rate to determine the corresponding "far leg" quote. In this example the

"far Leg" bid rate would be 1.2468+0.0033=1.2501 and the "far leg" asks rate would be 1.2495+0.0037=1.2532. Entering into a Sell/Buy Fx Swap, Syracuse Chemical would need to buy US dollars with Canadian dollars at the "far leg" date. The ask price would represent how many US dollars could be purchased with 900,000 Canadian dollars in month. In this case, $718,162 would be the guaranteed in value of the receivables in 1 month. The difference between the bid-ask spread of the Canadian dollar as well as the positive swap rate points determined by the difference in interest rates between the US dollar and Canadian dollar would represent the transaction cost of hedging the 900,000 Canadian dollar transaction.

REFERENCES

Triennial Central Bank Survey. (2016). Bank for international settlements. Monetary and Economics Department, December 2016.