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ACCOUNTING FOR CURRENCY AND COMMODITY HEDGES

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ABSTRACT: *Multinational corporations conduct cross-border activities such as foreign direct investment and the sale of goods and services. The international integration of goods, services, technology, and equity or debt capital often leads to financial risks resulting from foreign currency and production materials exposure. Risky exposures can hinder investment and normal business activities, as companies strive to protect their financial position. The fear of increased currency volatility concerns many managers who are obliged to protect and preserve shareholder equity. Hedging is a strategy to help minimize potential losses by taking an offsetting position in a related derivative to hedge the volatility of the "underlying." Hedging is not intended to make extra money on the investment, but rather to protect one's company against uncertainty in the currency or the product market. This paper will address hedge accounting, touching key strategies such as a foreign currency forward exchange contract, designated as a fair value hedge, and a commodity futures contract designated as a cash flow hedge.*

KEYWORDS: Accounting, Currency, Commodity Hedges, Foreign Direct Investment

INTRODUCTION

Hedging

The purpose of a hedge is to avoid undesired volatility in an entity's profit and loss. This volatility is the result of a valuation or timing mismatch between the hedged item and the corresponding hedging instrument. An example of a hedge could be, for example, the purchase of a foreign currency option by an entity that has a liability in a foreign currency and wants to protect itself against the change in the foreign exchange rate.

Hedge Accounting

Hedge accounting seeks to reflect and report the results of hedging activities, in particular hedging using derivatives, by capturing the price effects of the derivative and the risk being hedged in the same period. Hedge accounting allows entities to override the normal accounting treatment for unlinked derivatives or frequent adjustments in the carrying value of assets and liabilities.

Types of Hedge Accounting

The three types of hedges that are qualified for hedge accounting.[1]

- ***Fair Value Hedges*** - The risk being hedged in a fair value hedge is a change in the fair value of an asset or liability. Changes in fair value may arise from changes in interest rates, foreign exchange rates, equity prices or commodity prices.

- ***Cash Flow Hedges*** - The risk addressed in a cash flow hedge is the exposure to variability in the cash flows that are associated with a particular risk that could affect the income statement. Volatility in future cash flows may arise from changes in interest rates, exchange rates, equity prices, business conditions or commodity prices.

- ***Hedging the Net Investment in a Foreign Operation*** – One example of a net investment hedge in foreign operations is a derivative that is used to hedge future changes in the currency exposure of a net investment in a foreign operation.

Mismatch in Income Statement Recognition

Under the accounting standards IAS 39 and IFRS 9[2], all derivatives are recorded at fair value in the income statement. However, these derivatives are often used to hedge recognized assets and liabilities, which are recorded at amortized cost or forecasted transactions that are not yet recognized on the balance sheet. The difference between the fair value measurement of the derivative and the amortized cost for the asset/liability leads to a mismatch in the timing of income statement recognition.

Hedge accounting seeks to correct this mismatch by changing the timing recognition in the income statement. Fair value hedge accounting treatment will accelerate the recognition of gains or losses on the hedged item into the profit and loss statement, whereas cash flow hedge accounting and net investment hedge accounting will defer the gains or losses on the hedging instrument.

The Hedging Relation

Consider for hedge accounting purposes that the hedged item and the hedging instrument are the two components of an identified hedge. A hedged item can be a recognized asset or liability, an unrecognized firm commitment, a highly probable forecasted transaction, or net investment in a foreign operation. A hedged item could be an asset such as bushels of wheat that may expose the company to the risk of changes in fair value or future cash flow. A hedge instrument is a derivative designated as a hedging instrument, whose fair value or related cash flows should offset changes in the fair value or cash flow of a designated hedged item. For example, a hedge instrument can be a call option on an asset (such as bushels of wheat) with a specified future price and delivery within a specified period.

[1] Rambo *et al* (2018) expand this characterization to four types, basing their work on FASB Accounting Standards Codification 815 https://www.iasplus.com/en-us/standards/fasb/broad-transactions/asc815 and Accounting Standards Update 2017-12: Targeted Improvements for Hedging Activities. Our work is a simpler and more graphic approach, oriented towards teaching this material in accounting and finance classes.
[2] https://www.iasplus.com/en/standards/ias/ias39 For the purposes of this paper, the difference is not important.

Hedge Accounting Criteria

Hedge accounting is distinct from the usual accounting principles in that, a hedging relationship for hedge accounting must meet the following conditions:

- There should be formal documentation of the hedge relationship at the time of designation;
- A cash flow hedge of a forecasted transaction must be probable and must offer specifically the exposure to what price will affect reporting income.
- At the inception of the hedge, the hedge relationship must be highly effective. In other words, show that the hedging match is working.
- The effectiveness of the hedge relationship must be tested periodically. Bounded effectiveness is allowed, provided that the hedge relationship achieves an effectiveness ratio between 80% and 125%. In each period an entity must recognize ineffectiveness in profit or loss accounting.

Hedge Effectiveness

Hedge effectiveness is the extent to which a hedge transaction results in offsetting changes in fair value or cash flow that the transaction was intended to provide, as identified by the hedging company. IAS 39/IFRS 9 requires two types of effectiveness tests:

- A prospective effectiveness test requires a forward-looking test to see whether a hedging relationship is expected to be highly effective in future periods.
- A retrospective effectiveness test is a backward-looking test of whether a hedging relationship has been highly effective in past periods.

Both tests need to be highly effective at the start of the hedge. A prospective test is highly effective if, at the inception of the hedge relation and during the period for which the hedge is designated the results of the retrospective effectiveness tests are within the range 80%-125%.

Hypothetical Example

We present scenarios of a hypothetical corporate entity, situated in Liberia, that purchases its raw materials from an American supplier. The Liberian company decided on two alternatives in the commodity market that endeavor to protect shareholders' equity.

SCENARIO ONE – FAIR VALUE HEDGE

Premier Milling Corporation (PMC), a flour manufacturer in Liberia is worried that the value of one of its raw materials (wheat) will change due to fluctuation in the market. With this uncertainty, PMC decides to commit to purchasing its wheat in advance with a value of $30,000 from its supplier in the United States on September 1, 2016. The supplier will make delivery on February 1, 2017, at which time, as the terms of the agreement require PMC to make payment for the wheat. Anticipating the situation on February 1, 2017, PMC has hedged the

US dollar-denominated payable as fair value hedge because the designated risk hedged is the risk of changes in the fair value due to changes in the foreign currency exchange rate.

Table 1: The Spreadsheet below Summarizes the Movement of Information on the Transaction and the Alternative Considered in Each Situation.

Date	Spot Rate	US$ Value	Change	Forward Rate	US$ Value	Fair Value of Contract	Change
09/01/2016	$1.00	$30,000.00	$0.00	$1.05	$31,500.00	$0.00	$0.00
12/31/2016	$1.06	$31,800.00	$1,800.00	$1.11	$33,300.00	($1,791.05)	($1,791.05)
02/01/2017	$1.13	$33,900.00	$2,100.00	$1.13	$33,900.00	($2,400.00)	($608.95)

Table 2: Fair Value Hedge Accounting Entries for a Forward Contract on Foreign Currency Rate

Date	Description	Debit	Credit	Explanation
09/01/2016	Inventory Accounts Payable	$30,000.00	 $30,000.00	To record purchase and A/P of Raw Materials
12/31/2016	Foreign Exchange Loss Accounts Payable	$1,800.00	 $1,800.00	To adjust value for spot rate of $1.06
	Forward Contract Gain on Forward cont	$1,791.05	 $1,791.05	To record forward contract at fair value
02/01/2017	Foreign Exchange Loss Accounts Payable	$2,100.00	 $2,100.00	To adjust value for Spot rate of $1.13
	Forward Contract Gain on Forward cont	$608.95	 $608.95	To adjust the forward contract to it Fair Value
	Foreign Currency Forward Contract Cash	$33,900.00	 $ 2,400.00 $31,500.00	To record the settlement of the forward contract
	Accounts Payable Foreign Currency	$33,900.00	 $33,900.00	To record the payment of the Accounts Payable

SCENARIO TWO – CASH FLOW HEDGE

Premier Milling Corporation (PMC) believes that prices of wheat may increase over the next few months. To protect itself against the unforeseen risk, PMC decides to enter the options market and purchase call options on wheat futures to hedge their forecasted inventory purchases. On September 1, 2016, Premier Milling Corporation opens a margin account and pays a premium of $1,250 as means to purchase a February 1, 2017 call on 1,000 bushels of wheat at $32.20 per bushel. Premier Milling Corporation designates the transaction as a cash flow hedge.

Table 3: The Spreadsheet Summarizes the Transaction Relating to the Purchase of 1,000 Bushels of Wheat.

Date	Spot Rate	US$ Value	Change	Future Rate	US$ Value	Fair Value of Contract	Change
09/01/2016	$31.40	$31,400.00	$0.00	$32.20	$32,200.00	$0.00	$0.00
12/31/2016	$35.80	$35,800.00	$4,400.00	$35.30	$35,300.00	($3,100.00)	($3,100.00)
02/01/2017	$34.50	$34,500.00	$1,300.00	$34.50	$34,500.00	$800.00	($2,300.00)

Tale 4: Cash Flow Hedge Accounting Entries for a Future Contract on Commodity Price

Date	Description	Debit	Credit	Explanation
09/01/2016	Futures Contract Cash	$1,250.00	 $1,250.00	To record purchase of the call option (margin)
12/31/2016	Futures Contract OCI	$3,100.00	 $3,100.00	To record the increase in intrinsic value of the call option
02/01/2017	OCI Futures Contract	$800.00	 $800.00	To record the change in time value of the call option
	Cash Futures Contract	$2,300.00	 $2,300.00	To record the settlement of the call option
	Inventory Cash	$34,500.00	 $34,500.00	To record the purchase of wheat

ANALYSIS

International Accounting Standards IAS 32[3] and 39 aid in the direction for the proper accounting of derivative financial instruments. IAS 32 describes a financial instrument as a contract that is a financial asset of one entity and a financial liability of another entity. Therefore, as illustrated above using the both forward contract and futures option contract in the two above examples, a financial asset is created for the supplier and a financial liability is created for Premier Milling Corporation. PMC is liable to pay on the contract, while the supplier receiving the contract payment holds an asset.

The analysis of the transactions indicates how in February 2017 the payable is consummated at **$31,500** ($30,000 x $1.05), equal to the forward rate ($1.05) of exchange that was specified in September 2016. Note that the exchange rate increased in both years, which led to an increase in the value of the forward contract. On December 31, 2016, the US$ nominal value is **$33,300.00** ($30,000.00 x $1.11) and the fair value of the contract can be derived as: $30,000 x ($1.11 - $1.05) x 1/1.005 = **$1,791.05** (discounted at an annual rate of 6% for one month until payment Feb. 1, 2017). In the fair value hedge report, adjustments are made directly to the assets, thus hedging the fair value risk of assets and liabilities reported on the balance sheet.

[3] https://www.iasplus.com/en/standards/ias/ias32

The second exercise (the call option on the futures contract) is considered a cash flow hedge, a hedge that is designed to eliminate the risk associated with cash transactions that can affect the amounts recorded in net income. A change in the future price of the call option, however, changes the value of the contract. In year one there was an increase of **$3,100** [1,000 x ($35.30 - $32.20)] in the intrinsic value of the call option, due to the increase in price, and a decrease in year two of $800 [1,000 x ($34.50 - $35.30)] resulting a net of **$2,300** ($3,100 - $800). The call option expired in year two on February 1, 2017, at which time PMC purchased the 1,000 bushels of wheat for **$32,200** ($34,500 - $2,300) equal to the future price ($32.20) established on September 1, 2016. The adjustments made to the *other comprehensive income (OCI) holding account,* reflects in net income the gain and loss on the position.

SUMMARY

Hedge accounting arises in corporate strategies that seek to reduce a company's risk exposure; it reflects and tracks the results of hedging activities initiated through derivative instruments. In the examples above, Premier Milling Corporation was a prudent hedger, as seen in the hedge accounting identifications of two designated transactions- a fair value hedge and a cash flow hedge. The company's positions in the product market and in the derivatives market avoided the volatility that could have arisen from a valuation or timing mismatch between the hedged item and the hedging instrument.

REFERENCES

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