ACCOUNTING FOR FOREIGN CURRENCY

FOREIGN EXCHANGE MARKETS

Each country uses its own currency as the unit of value for the purchase and sale of goods and services. The currency used in the United States is the U.S. dollar, the currency used in Japan is the Japanese yen, in Nigeria it is the Naira and so on. If a U.S. citizen travels to Nigeria and wishes to purchase local goods, Nigerian merchants require payment to be made in Nigerian Naira. To make the purchase, a U.S. citizen has to purchase naira using U.S. dollars. The price at which the foreign currency can be acquired is known as the foreign exchange rate. A variety of factors determine the exchange rate between two currencies; unfortunately for those engaged in international business, the exchange rate fluctuates. In some cases, a change in the exchange rate is quite large and unexpected.

Exchange Rate Mechanisms

Exchange rates have not always fluctuated. During the period 1945–1973, countries fixed the par value of their currency in terms of the U.S. dollar and the value of the U.S. dollar was fixed in terms of gold. Countries agreed to maintain the value of their currency within 1 percent of the par value. If the exchange rate for a particular currency began to move outside of this 1 percent range, the country's central bank was required to intervene by buying or selling its currency in the foreign exchange market. Due to the law of supply and demand, the purchase of currency by a central bank would cause the price of the currency to stop falling and the sale of currency would cause the price to stop rising.

The integrity of the system hinged on the ability of the U.S. dollar to maintain its value in terms of gold and the ability of foreign countries to convert their U.S.-dollar holdings into gold at the fixed rate of $35 per ounce. As the United States began to incur balance-of-payment deficits in the 1960s, a glut of U.S. dollars arose worldwide and foreign countries began converting their U.S. dollars into gold. This resulted in a decline in the U.S. government's gold reserve from a high of $24.6 billion in 1949 to a low of $10.2 billion in 1971. In the latter year, the United States suspended the convertibility of the U.S. dollar into gold, signalling the beginning of the end for the fixed exchange rate system. In March 1973, most currencies were allowed to float in value.

Today, several different currency arrangements exist. The following are some of the more important ones and the countries they affect:

1. **Independent float:** The value of the currency is allowed to fluctuate freely according to market forces with little or no intervention from the central bank (Brazil, Canada, Japan, Mexico, Switzerland, and United States).
2. **Pegged to another currency:** The value of the currency is fixed (pegged) in terms of a particular foreign currency, and the central bank intervenes as necessary to maintain the fixed value. For example, several countries peg their currency to the U.S. dollar (including the Bahamas and Ecuador).
3. **European Monetary System (euro):** In 1998, the countries comprising the European Monetary System adopted a common currency called the euro and established the European Central Bank. Until 2002, local currencies such as the German mark and French franc continued to exist but were fixed in value in terms of the euro. On January 1, 2002, local currencies disappeared and the euro became the currency in 12 European countries. The value of the euro floats against other currencies such as the U.S. dollar.

Foreign Exchange Rates

Exchange rates between the Nigerian naira, the U.S. dollar and most foreign currencies are published daily in major newspapers. Current and past exchange rates are readily obtainable from a variety of Web sites, such as OANDA.com and X -rates.com. Interbank rates, or wholesale prices, are rates that banks charge one another when exchanging currencies. Prices charged when selling foreign currency to retail customers such as companies engaged in international business are higher, and prices offered to buy foreign currency from retail customers are lower. The difference between the buying and selling rates is the spread through which banks and other foreign exchange brokers earn a profit on foreign exchange trades. The exchange rates in Table 1 below reflect the Nigerian naira price for one unit of foreign currency. These are known as **direct quotes.** The direct quote for the U.K. pound on April 22, 2016 was ₦283.4436; in other words, one British pound could be purchased for ₦283.4436.

Table 1: CBN Exchange Rates

Currency	**Buying(₦)**	**Selling (₦)**	**Currency**	**Buying(₦)**	**Selling (₦)**
22/04/2016			**13/04/2016**		
U.S. Dollar	196	197	U.S. Dollar	196	197
Pounds Sterling	282.0048	283.4436	Pounds Sterling	279.2608	280.6856
Euro	220.794	221.3573	Euro	221.9112	223.0434
Swiss Franc	200.758	201.7822	Swiss Franc	203.6999	204.7391
Yen	1.7691	1.7781	Yen	1.7975	1.8067
CFA Franc	0.3202	0.3402	CFA Franc	0.3214	0.3414
Yuan/Renminbi	30.1669	30.3217	Yuan/Renminbi	30.2717	30.4271
SDR	275.4976	276.9032	SDR	275.772	277.179

Source: www.cenbank.org

Indirect quotes indicate the number of foreign currency units that can be purchased with one Nigerian naira. Indirect quotes are simply the inverse of direct quotes. If one British pound costs ₦283.4436, then ₦1.00 can purchase only 0.003528039 (1/283.4436) British pounds; the indirect quote would be 0.003528039.

Table 1 shows the Naira price for one unit of foreign currency at two dates: April 13, 2016, and nine days later April 22, 2016. The changes reported in Table 1 demonstrate the great variability that exists in exchange rate changes in terms of both magnitude and direction; exchange rates fluctuate constantly. Fluctuating exchange rates introduces considerable uncertainty with respect to the cash flows associated with foreign currency transactions. Assuming that a Nigerian importer placed an order for an equipment with a UK based supplier on April 13, 2016, at a cost of £35,000 with delivery and payment to be made on April 22, 2016. On April 13, 2016, the Naira equivalent cost of the equipment was n ₦9,823,996 (£35,000 x 280.6856). On April 22, 2016 the importer purchases £35,000 in the foreign exchange market at a price of ₦283.4436 per Pounds Sterling. The actual cash flow he would have to pay for the imported equipment is ₦9,920,526, which is 96,530 more than would have been paid on April 13, 2016, when the order was placed. The important point to understand is that, because of fluctuating exchange rates, on April 13, 2016 the Nigerian importer does not know how many Nigerian naira it will have to pay on April 22, 2016 for the imported equipment.

SPOT AND FORWARD RATES

Foreign currency trades can be executed on a spot or forward basis. **The spot rate** is the price at which a foreign currency can be purchased or sold today. In contrast, **the forward rate** is the price today at which foreign currency can be purchased or sold sometime in the future. Because many international

business transactions take some time to be completed, the ability to lock in a price today at which foreign currency can be purchased or sold at some future date has definite advantages. A firm and its bank can tailor forward contracts in other currencies and for other time periods to meet the needs of the firm. There is no up-front cost to enter into a forward contract.

The forward rate can exceed the spot rate on a given date, in which case the foreign currency is said to be selling at a premium in the forward market, or the forward rate can be less than the spot rate, in which case it is selling at a discount. Currencies sell at a premium or a discount because of differences in interest rates between two countries. When the interest rate in the foreign country exceeds the interest rate domestically, the foreign currency sells at a discount in the forward market. Conversely, if the foreign interest rate is less than the domestic rate, the foreign currency sells at a premium. Forward rates are said to be unbiased predictors of the future spot rate. The essence of using forward rates (forward contracts) is to eliminate the risk that a foreign currency might appreciate against the Naira over foreseeable future period.

OPTION CONTRACTS

To provide companies more flexibility than exists with a forward contract, a market for foreign currency options has developed. A foreign currency option gives the holder of the option the right but not the obligation to trade foreign currency in the future.

A **put option** is for the sale of foreign currency by the holder of the option; a **call option** is for the purchase of foreign currency by the holder of the option. The **strike price** is the exchange rate at which the option will be executed if the holder of the option decides to exercise the option. The strike price is similar to a forward rate. There are generally several strike prices to choose from at any particular time. Most foreign currency options are purchased directly from a bank in the so-called over-the-counter market.

Unlike forward contracts, where banks earn their profit through the spread between buying and selling rates, options must actually be purchased by paying an **option premium**. The **option premium** is a function of two components: intrinsic value and time value. The **intrinsic value** of an option is equal to the gain that could be realized by exercising the option immediately. For example, if the spot rate for a foreign currency is ₦1.00, a call option (to purchase foreign currency) with a strike price of ₦0.97 has an intrinsic value of ₦0.03, whereas a put option (to sell foreign currency) with a strike price of $1.00 or less has an intrinsic value of zero. An option with a positive intrinsic value is said to be “in the money.”

The **time value** of an option relates to the fact that the spot rate can change over time and cause the option to become in the money. Even though a 90-day call option with a strike price of ₦1.00 has zero intrinsic value when the spot rate is ₦1.00, it will still have a positive time value because there is a chance that the spot rate could increase over the next 90 days and bring the option into the money.

The value of a foreign currency option can be determined by applying an adaptation of the Black-Scholes option pricing formula. This formula is discussed in detail in international finance books. In very general terms, the value of an option is a function of

i. the difference between the current spot rate and strike price,
ii. the difference between domestic and foreign interest rates,
iii. the length of time to expiration, and
iv. the potential volatility of changes in the spot rate.

FOREIGN CURRENCY TRANSACTIONS

Export sales and import purchases are international transactions. When two parties from different countries enter into a transaction, they must decide which of the two countries' currencies to use to settle the transaction. For example, if a U.S. computer manufacturer sells to a customer in Japan, the parties must decide whether the transaction will be denominated (i.e., whether payment will be made) in U.S. dollars or Japanese yen. In some cases, a third country's currency might be used to denominate the transaction.

Assume that a Nigerian exporter (Dangote) sells goods to a British customer with payment to be made in Pounds. In this situation, Dangote has entered into a foreign currency transaction. It must restate the Pounds amount that actually will be received into Nigerian naira to account for this transaction. This is because Dangote keeps its books and prepares financial statements in Nigerian naira. Although the British importer has entered into an international transaction, it does not have a foreign currency transaction (payment will be made in its home currency) and no restatement is necessary. Assume that, as is customary in its industry, Dangote does not require immediate payment and allows its U.K. customer three months to pay for its purchases. By doing this, Dangote runs the risk that from the date the sale is made until the date of payment, the Pounds might decrease in value (depreciate) against the Nigerian naira and the actual number of Nigerian naira generated from the sale will be less than expected. In this situation Dangote is said to have an exposure to foreign exchange risk. Specifically, Dangote has a transaction exposure.

Transaction exposure can be summarized as follows:

1. **Export sale:** A transaction exposure exists when the exporter allows the buyer to pay in a foreign currency and also allows the buyer to pay sometime after the sale has been made. The exporter is exposed to the risk that the foreign currency might decrease in value between the date of sale and the date of payment, thereby decreasing the amount of domestic currency (Nigerian naira) into which the foreign currency can be converted.
2. **Import purchase:** A transaction exposure exists when the importer is required to pay in foreign currency and is allowed to pay sometime after the purchase has been made. The importer is exposed to the risk that the foreign currency might increase in price (appreciate) between the date of purchase and the date of payment, thereby increasing the amount of domestic currency that has to be paid for the imported goods.

Accounting Issue

The major issue in accounting for foreign currency transactions is how to deal with the change in the domestic currency value of the sales revenue and account receivable resulting from the export when the foreign currency changes in value. The corollary issue is how to deal with the change in the domestic currency value of the foreign currency account payable and goods being acquired in an import purchase. Assume that Dangote sells goods to a Japanese customer at a price of 1 million ***yen*** when the spot exchange rate is ₦1.50 per ***yen***. If payment were received at the date of sale, Dangote could have converted ¥1,000,000 into ₦1,500,000 and this amount clearly would be the amount at which the sales revenue would be recognized. Instead, Dangote allows the Japanese customer three months to pay for its purchase. At the end of three months, the ***yen*** has depreciated to ₦1.48 and Dangote is able to convert the ¥1,000,000 received on that date into only ₦1,480,000. How should Dangote account for this ₦20,000 decrease in value?

Accounting Alternatives

Conceptually, the two methods of accounting for changes in the value of a foreign currency transaction are the one-transaction perspective and the two-transaction perspective.

The **one-transaction perspective** assumes that an export sale is not complete until the foreign currency receivable has been collected and converted into Nigerian naira. Any change in the Nigerian naira value of the foreign currency will be accounted for as an adjustment to Accounts Receivable and to Sales. Under this perspective, Dangote would ultimately report Sales at ₦1,480,000 and an increase in the Cash account of the same amount. This approach can be criticized because it hides the fact that the company could have received ₦1,500,000 if the Japanese customer had been required to pay at the date of sale. The company incurs a ₦20,000 loss because of the depreciation in the ***yen***, but that loss is buried in an adjustment to Sales. This approach is not acceptable under International Financial Reporting Standards (IFRS).

Instead, International Accounting Standard (IAS) 21, ***The Effects of Changes in Foreign Exchange Rates***, require companies to use **a two-transaction perspective** in accounting for foreign currency transactions. This perspective treats the export sale and the subsequent collection of cash as two separate transactions. Because management has made two decisions

i. to make the export sale, and
ii. to extend credit in foreign currency to the customer

The income effect from each of these decisions should be reported separately.

Under the two-transaction perspective, Dangote records the naira value of the sale at the date the sale occurs. At that point the sale has been completed; there are no subsequent adjustments to the Sales account. Any difference between the number of naira that could have been received at the date of sale and the number of naira actually received at the date of payment due to fluctuations in the exchange rate is a result of the decision to extend foreign currency credit to the customer. This difference is treated as a Foreign Exchange Gain or Loss that is reported separately from Sales in the income statement. Using the two-transaction perspective to account for its export sale to Japan, Dangote would make the following journal entries:

Date	**Narration**	**DR**	**CR**
Date of Sales:	Accounts Receivable	1,500,000	
	Sales		1,500,000
	Being Sale & yen receivable at spot rate of N1.50		
Date of Payment:	Cash	1,480,000	
	Accounts Receivable		1,480,000
	Being receipt of 1 million yen converted at spot rate of N1.48		

Sales are reported in income at the amount that would have been received if the customer had not been given three months to pay the Y1,000,000, that is, N1,500,000. A separate Foreign Exchange Loss of N20,000 is reported in income to indicate that because of the decision to extend foreign currency credit to the Japanese customer and because the ***yen*** decreased in value, fewer naira are actually received.

It is important to note that Companies engaged in international trade need to keep separate payable and receivable accounts in each of the currencies in which they have transactions. Each foreign currency receivable and payable should have a separate account number in the company's chart of accounts.

The summary of the relationship between fluctuations in exchange rates and foreign exchange gains and losses is as follows:

		Foreign Currency	
Transaction	**Type of Exposure**	**Appreciates**	**Depreciates**
Export Sale	Asset	Gain	Loss
Import Purchase	Liability	Loss	Gain

A foreign currency receivable arising from an export sale creates an ***asset exposure*** to foreign exchange risk. If the foreign currency appreciates, the foreign currency asset increases in terms of domestic currency value and a foreign exchange gain arises; depreciation of the foreign currency causes a foreign exchange loss. A foreign currency payable arising from an import purchase creates a ***liability exposure*** to foreign exchange risk. If the foreign currency appreciates, the foreign currency liability increases in domestic currency value and a foreign exchange loss results; depreciation of the currency results in a foreign exchange gain.

Statement of Financial Position Date before Date of Payment

The question arises as to what accounting should be done if a Statement of Financial Position date falls between the date of sale and the date of payment. For example, assume that Dangote shipped goods to its Japanese customer on December 10, 2014, with payment to be received on March 1, 2015. Assume that at December 10 the spot rate for ***yen*** is ₦1.50, but by December 31 the ***yen*** has appreciated to ₦1.51. Is any adjustment needed at December 31, 2014, when the books are closed to account for the fact that the foreign currency receivable has changed in naira value since December 10?

The general consensus worldwide is that a foreign currency receivable or foreign currency payable should be revalued at the Statement of Financial Position date to account for the change in exchange rates. Under the two-transaction perspective, this means that a foreign exchange gain or loss arises at the Statement of Financial Position date. The next question then is what should be done with these foreign exchange gains and losses that have not yet been realized in cash. Should they be included in net income?

The two approaches to accounting for unrealized foreign exchange gains and losses are

i. the deferral approach, and
ii. the accrual approach.

Under the ***deferral approach***, unrealized foreign exchange gains and losses are deferred on the Statement of Financial Position until cash is actually paid or received. When cash is paid or received, a realized foreign exchange gain or loss would be included in income. This approach is not acceptable under IFRS.

IAS 21 requires companies to use the ***accrual approach*** to account for unrealized foreign exchange gains and losses. Under this approach, a firm reports unrealized foreign exchange gains and losses in net income in the period in which the exchange rate changes. This approach is consistent with accrual accounting; it results in reporting the effect of a rate change that will have cash flow effects when the event causing the effect takes place. Thus, any change in the exchange rate from the date of sale to the Statement of Financial Position date would result in a foreign exchange gain or loss to be reported in income in that period. Any change in the exchange rate from the Statement of Financial Position date to the date of payment would result in a second foreign exchange gain or loss that would be reported in

the second accounting period. The journal entries Dangote would make under the accrual approach would be as follows:

Date	Narration	DR	CR
10/12/2014	Accounts Receivable	1,500,000	
	Sales		1,500,000
	Being Sale & yen receivable at spot rate of N1.50		
31/12/2014	Accounts Receivable	10,000	
	Foreign Exchange Gain		10,000
	Being adjustment to reflect forex gain since 10/12/14		
1/3/2015	Cash	1,480,000	
	Accounts Receivable		1,480,000
	Being receipt of Y1,000,000 converted at N1.48		
	Foreign Exchange Loss	30,000	
	Accounts Receivable		30,000
	Being adjustment to reflect forex loss since 31/12/14		

The net impact on income in 2014 includes Sales of N1,500,000 and a Foreign Exchange Gain of N10,000; in 2015, a Foreign Exchange Loss of N30,000 is recorded.

One criticism of the accrual approach is that it leads to a violation of ***conservatism*** when an unrealized foreign exchange gain arises at the Statement of Financial Position date. In fact, this is one of only two situations where it is acceptable to recognize an unrealized gain in income.

All foreign currency assets and liabilities carried on a company's books must be restated at the Statement of Financial Position date. In addition to foreign currency payables and receivables arising from import and export transactions, companies also might have dividends receivable from foreign subsidiaries, loans payable to foreign lenders, lease payments receivable from foreign customers, and so on that are denominated in a foreign currency and therefore must be restated at the Statement of Financial Position date. Each of these foreign-currency-denominated assets and liabilities is exposed to foreign exchange risk; therefore, fluctuations in the exchange rate will result in foreign exchange gains and losses.

ACCOUNTING FOR DERIVATIVES

For many companies, the uncertainty of not knowing exactly how much domestic currency will be received on its export sale is of great concern. To avoid this uncertainty, companies often use ***foreign currency derivatives*** to hedge against the effect of unfavourable changes in the value of foreign currencies. The two most common **derivatives** used to hedge foreign exchange risk are ***foreign currency forward contracts*** and ***foreign currency options***. IAS 39 provides the following general principles with respect to the accounting for derivatives:

1. All derivatives should be reported on the Statement of Financial Position at fair value (off-balance-sheet treatment is not acceptable).
2. "Hedge accounting" is acceptable for those derivatives used for hedging purposes provided the hedging relationship is clearly defined, measurable, and actually effective.

IAS 39 provides guidance for hedges of the following **sources** of foreign exchange risk:

1. Recognized foreign-currency-denominated assets and liabilities.
2. Unrecognized foreign currency firm commitments.
3. Forecast foreign-currency-denominated transactions.
4. Net investments in foreign operations.

Different accounting applies to each of these different types of foreign currency hedge.

Fundamental Requirement of Derivatives Accounting: In accounting for derivative financial instruments, the fundamental requirement is that all derivatives must be carried on the Statement of Financial Position at their fair value. Derivatives are reported on the Statement of Financial Position as assets when they have a positive fair value and as liabilities when they have a negative fair value. The first issue in accounting for derivatives is the determination of ***fair value***.

The ***fair value*** of derivatives can change over time, causing adjustments to be made to the carrying values of the assets and liabilities. The second issue in accounting for derivatives is the treatment of the unrealized gains and losses that arise from these adjustments.

Determining the Fair Value of Derivatives

The ***fair value of a foreign currency forward contract*** is determined by reference to changes in the forward rate over the life of the contract, discounted to the present value. Three pieces of information are needed to determine the fair value of a forward contract at any time:

i. The forward rate when the forward contract was entered into.
ii. The current forward rate for a contract that matures on the same date as the forward contract entered into.
iii. A discount rate—typically, the company's incremental borrowing rate.

The manner in which the ***fair value of a foreign currency option*** is determined depends on whether the option is traded on an exchange or has been acquired in the over-the-counter market. The fair value of an exchange-traded foreign currency option is its current market price quoted on the exchange. For over-the-counter options, fair value can be determined by obtaining a price quote from an option dealer (such as a bank). If dealer price quotes are unavailable, the company can estimate the value of an option using the modified Black-Scholes option pricing model. Regardless of who does the calculation, principles similar to those in the Black-Scholes pricing model will be used in determining the fair value of the option.

Accounting for Changes in the Fair Value of Derivatives

Changes in the fair value of derivatives must be included in comprehensive income. ***Comprehensive income*** is defined as all changes in equity from non-owner sources and consists of two components: net income and other comprehensive income. ***Other comprehensive income*** consists of unrealized income items that accounting standards require to be deferred in stockholders' equity such as gains and losses on available-for-sale marketable securities. Other comprehensive income is accumulated and reported as a separate line in the stockholders' equity section of the Statement of Financial Position.

Gains and losses arising from changes in the fair value of derivatives are recognized initially either

i. on the income statement as a part of net income; or
ii. on the Statement of Financial Position as a component of other comprehensive income.

Recognition treatment partly depends on whether the derivative is used for hedging purposes or for speculation. For speculative derivatives, the change in the fair value of the derivative (the unrealized

gain or loss) is recognized immediately in net income. The accounting for changes in the fair value of derivatives used for hedging depends on the nature of the foreign exchange risk being hedged, and whether the derivative qualifies for hedge accounting

HEDGE ACCOUNTING

Companies enter into hedging relationships to minimize the adverse effect that changes in exchange rates have on cash flows and net income. As such, companies would like to account for hedges in such a way that the gain or loss from the hedge is recognized in net income in the same period as the loss or gain on the risk being hedged. This approach is known as ***hedge accounting***.

Hedge accounting for foreign currency derivatives may be used only if three conditions are satisfied:

1. The derivative is used to hedge either a fair value exposure or cash flow exposure to foreign exchange risk.
2. The derivative is highly effective in offsetting changes in the fair value or cash flows related to the hedged item.
3. The derivative is properly documented as a hedge.

Each of these conditions is discussed in turn.

Nature of the Hedged Risk

A ***fair value exposure*** exists if changes in exchange rates can affect the fair value of an asset or liability reported on the Statement of Financial Position. To qualify for hedge accounting the fair value risk must have the potential to affect net income if it is not hedged. For example, there is a fair value risk associated with a foreign currency account receivable. If the foreign currency depreciates, the receivable must be written down with an offsetting loss recognized in net income. A fair value exposure also exists for foreign currency firm commitments.

A ***cash flow exposure*** exists if changes in exchange rates can affect the amount of cash flow to be realized from a transaction with changes in cash flow reflected in net income. A cash flow exposure exists for

1. recognized foreign currency assets and liabilities,
2. foreign currency firm commitments, and
3. forecasted foreign currency transactions.

Derivatives for which companies wish to use hedge accounting must be designated as either a ***fair value hedge*** or a ***cash flow hedge***.

For hedges of recognized foreign currency assets and liabilities and hedges of foreign currency firm commitments, companies must choose between the two types of designation. Hedges of forecasted foreign currency transactions can qualify only as cash flow hedges. Accounting procedures differ for the two types of hedge. In general, gains and losses on fair value hedges are recognized immediately in net income, whereas gains and losses on cash flow hedges are included in other comprehensive income.

Hedge Effectiveness

For hedge accounting to be used initially, the hedge must be expected to be highly effective in generating gains and losses that offset losses and gains on the item being hedged. The hedge actually must be effective in generating offsetting gains and losses for hedge accounting to continue to be applied.

At inception, a foreign currency derivative can be considered an effective hedge if the critical terms of the hedging instrument match those of the hedged item. Critical terms include the currency type, currency amount, and settlement date. For example, a forward contract to purchase 1 million Japanese yen in 30 days would be an effective hedge of a liability of 1 million Japanese yen that is payable in 30 days. Assessing hedge effectiveness on an ongoing basis can be accomplished using a cumulative naira offset method.

Hedge Documentation

For hedge accounting to be applied, the hedging relationship must be formally documented at the inception of the hedge, that is, on the date a foreign currency forward contract is entered into or a foreign currency option is acquired. The hedging company must prepare a document that identifies the hedged item, the hedging instrument, the nature of the risk being hedged, how the hedging instrument's effectiveness will be assessed, and the risk management objective and strategy for undertaking the hedge.