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Overview

Over-the-Counter Derivatives

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Over-the-counter (OTC) derivatives are financial products often maligned for being too complicated, opaque and risky. However, at their simplest form, OTC derivatives are quite straightforward and can be divided into three categories: forwards, options and swaps.

Forwards

A forward is a contract in which parties agree on the trade date, for the physical delivery of an agreed upon quantity of an underlying asset, for a specific price, at a future date. There are differing views as to when exactly forwards contracts first started being used, but it is accepted that forward contracts have been around for thousands of years. Throughout the years, forward contracts have allowed parties to protect themselves against the volatility of markets. For example, a manufacturer that requires sugar for the production of its goods may enter into a forward contract with a sugar supplier in which the manufacturer will agree that in three months the sugar supplier will provide the manufacturer with a specific quantity of sugar (X) in exchange for a specific amount of money (Y), all of which is negotiated today. Many factors can affect the price of sugar either positively or negatively – global supply, global demand, government subsidies etc., however, whether the price of sugar increases or decreases, the manufacturer knows that, unless its counterparty defaults, in three months it will be able to purchase X amount of sugar for $Y.

Options

An option is a contract sold by one party, which is referred to as the option writer or option seller, to another party, the option holder or option buyer. The contract provides the option holder/buyer the right, but not the obligation, to buy or to sell an underlying asset at an agreed-upon price, referred to as the strike price or the exercise price, during a certain period of time or on a specific date.

Options similarly have a long history. In Aristotle's *Politics* written in 350 B.C.E., Aristotle recounts the story of Thales the Milesian who, predicting a great olive harvest, "optioned" the rights to all olive presses in Chios and Miletus. When his prediction bore fruit, he exercised his option and leased out the olive presses at significant profit. Options, like forwards, lock in a price for a specific quantity of product, but unlike forwards, their exercise is optional and will depend on market movements.

There are two basic types of options, call options and put options. A put option is a contract that allows the option buyer, on an exercise date, to require the option seller to purchase the agreed upon quantity of the underlying asset. A call option is a contract that allows the option buyer, on an exercise date, to require the option seller to sell the agreed upon quantity of the underlying asset. A put option will generally only be exercised if the exercise price is greater than the market price and a call option will generally only be exercised if the exercise price is lower than the market price.

If our manufacturer had decided to enter into an option rather than a forward, it would have paid the option seller a price or "premium" for a call option. The call option would have provided for a specific price $Y (the "strike price") at which a quantity X of sugar could be purchased on the exercise date three months in the future. If on the exercise date, the price of sugar is equal to or more than $Y, the manufacturer (the option buyer) will purchase X quantity of sugar for $Y. If on the exercise date the price of sugar is less than $Y, then the option will expire unexercised and the option buyer will simply lose its premium.

Swaps

A swap is a contract under which parties agree to exchange payments on one or multiple periodic future dates, where each payment leg is calculated on a different basis. Swaps seem to be a more recent phenomenon, dating back only a few decades. Industry lore tells us that the first swap was a currency swap between IBM and the World Bank, structured by Salomon Brothers. The transaction solved each party's need to obtain currencies it was having difficulty accessing. A swap allows parties to trade economic exposures. For instance, if our manufacturer decides that it will obtain sugar on the market, but it still wants to hedge against the risk of the price of sugar rising, it may enter into a fixed for floating swap. The manufacturer would agree that at periodic intervals the parties would compare the contract price (still Y) to the market price of sugar (Z). If Y is greater than Z, then the manufacturer would pay its counterparty the difference between the two prices, but if Z is greater than Y, then the counterparty would be required to pay the manufacturer the difference. In all scenarios, the manufacturer would pay $Y for its sugar once the swap is taken into account.

Underlying Assets

Broadly speaking there are five general categories in which market participants enter into either forwards, swaps and options. These categories are: credit, interest rate, commodity, foreign exchange, and equity and debt and they refer to the underlying asset in either a forward, swap or option.

Credit refers to the potential default by a corporate or sovereign entity for instance, to pay principal or interest when due under a bond or loan or an index of bonds or an aggregated group of loans or debts=. The most recognized type of credit transaction is a credit default swap.

Interest rate refers to rates to be exchanged based on a notional amount. The rates could both be fixed, both be floating or fixed to floating (i.e., one leg could be fixed and the other floating).

Commodities include energy, metals, agriculture, environmental and freight. These categories can be broken down further. Energy commodities include oil, natural gas, coal, and electricity; metals include precious metals and non-precious metals; agriculture includes grain oil seeds, dairy, wheat, rice, livestock, forestry and the "softs": cocoa, cotton, coffee and sugar; environmental includes weather and emission.

Foreign Exchange refers to fluctuations in different currencies. Foreign exchange transactions can be entered into in any currency, however there are certain currency transactions that, due to regulations, must be settled in a hard currency.

Equity refers to transactions where the underlier are corporate securities and debt refers to transactions where the underlier are bonds and loans.

Market Participants

There is a wide range of market participants in the OTC derivatives industry. Some, such as hedge funds, are speculators like Thales the Milesian. They believe there is an opportunity for gain which they can exploit by entering into a derivative contract. Other market participants are transacting in order to hedge a real commercial risk. Most market participants are in this category at some point or another, but some of the most firmly entrenched in that category include corporations, municipalities, pension plans and private equity funds. Lastly, there are the intermediaries that provide liquidity in the market by taking on both sides of a trade. These entities are indifferent as to the performance of the trade. They enter into a trade with a corporation hedging its foreign exchange risk and into an equal but opposite trade with a hedge fund speculating on foreign exchange markets. These intermediaries are referred to in the industry as the "sell-side" and the entities that they transact with - the hedgers and the speculators are the "buy-side".

Given the differences in outlooks, goals and mission of OTC market participants, how do they manage to speak a common language and communicate efficiently? The answer for OTC derivatives is often the International Swaps and Derivatives Association Inc. (ISDA) Master Agreement; however some products can be documented using other industry standard documents, such as the NAESB Contract for the Sale and Purchase of Natural Gas, the EEI Master Power Purchase and Sale Agreement or the Master Securities Forward Transaction Agreement.