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Abstract

Derivative markets have, over time, become increasingly important in the world of finance and banking. The two main products that are traded in the derivatives market are options and futures. Since they are derivatives, they do not have value on their own; their value comes from an underlying asset. It is therefore possible to see that options are far better when it comes to managing risk associated with price movements. This is due to the fact that they are more accessible, flexible as well as capital efficient. Furthermore, they provide unique opportunities and can be used for both hedging and speculating due to the fact that they allow for advanced strategies.

Keywords: *Options, Futures, Market Risk Management & Financial Entrepreneurs*

Introduction

Derivative markets have, over time, become increasingly important in the world of finance and banking. The two main products that are traded in the derivatives market are options and futures. Since they are derivatives, they do not have value on their own; their value comes from an underlying asset (Van der Auwera, Schoutens, Giudici, & Alessi, 2020). A futures contract entails the right and obligation to buy or sell an underlying stock or other assets at a predetermined price at a predetermined time in the future. An option contract, on the other hand, entails the right but not the obligation to buy or sell an underlying asset at a specific price within a specified duration of time. These contracts can be exercised at any time before the expiry of the specified option

period in the US, while in Europe, options can only be exercised on their expiration date (Van der Auwera et al., 2020). One of the biggest challenges when it comes to trading is deciding whether to use future contracts or future options; this decision is even a problem for experienced traders, and as such, they tend to go back and forth in regards to which is the superior method.

Futures Contracts

A futures contract is the agreement to sell or buy an asset at a specified time in the future at a certain price. The trader who agrees to buy is termed as the long futures position, while the one who decides to sell is termed as a short futures position. The agreed price, on the other hand, is referred to as the futures price. This price is usually different from the immediate price. Since the 70s future contracts were very successful; however, following a number of financial crises and the bankruptcy of various future trading businesses, a lack of trust developed, which led to decreasing volumes of futures trading (Hammoudeh & McAleer,2013). Regardless, however, futures are still considered to be a fundamental risk management tool. These contracts are used to manage and limit price risk in that the current holdings of a particular asset are secured against unfavorable price changes.

Futures are exchange- related derivatives, and regulated exchanges act as intermediaries between the contract parties. Futures exchange in Europe and the US differ in terms of arrangements of clearing and settling contracts even though they trade similar contracts. Clearinghouses such as CME and NYMEX play the role of guarantors and ensure the fulfillment of the contract even when one party defaults. The necessity of this function became clear in 2011 following MF Global defaulting on debts of approximately $1.6 Billion, in 2012 Peregrine Financial group did the same; these events sparked debates about regulation in the derivatives market since it became clear that a global financial crisis was likely to occur if these markets were left regulated. More so, these scandals highlighted that defaults on contracts has the likelihood of causing significant damage by bringing about large price movements in the financial markets (Van der Auwera et al., 2020). However, despite more regulation by the Securities Exchange Commission (SEC), the Commodities Futures Trading Commission (CFTC), and the National Futures Commission, trading volumes in futures has declined since risk managers are rethinking their hedging strategies and no longer consider futures an effective method.

Futures contracts are highly standardized; they, however, vary depending on the delivery period as well as the nature of the underlying assets. Since these contracts cover a variety of underlying assets, the traders come from different backgrounds; the CFTC categorizes their clients as either commercial, non-commercial, and non-reportable. Commercial clients cover those who hold futures contracts for hedging purposes while still owning the underlying assets. Non-commercial traders, on the other hand, only hold positions in the futures contract and hence have no ownership

of the underlying asset. The non-reportable traders, on the other hand, are small traders who do not meet the reporting standards specified by the CFTC (Kalyan & Bala, 2020).

Assuming that a trader is unable to meet the contractual obligations stipulated under the futures contract, the costs of futures trading activities include commission charges to a broker as well as the possibility of adverse price movements while holding the contract. Due to the likelihood of adverse price movements, buyers are required to make margin deposits, which are usually a percentage of the total value of the contracts. This deposit is meant to protect against the possibility of defaulting. Margin calls occur with adverse price movements, which leads to a decline in price for the purchaser and an increase in price for the seller (Kalyan & Bala, 2020). If the trader holds a long position, a price increase is favorable, and the margin is increased; conversely, a price decrease is unfavorable, and the margin is decreased. Given the occurrence of an unfavorable price change, the trader is asked to provide additional funds since the margin goes below the maintenance level.

Options

Options are derivatives, and as such, they do not represent actual ownership of the underlying asset until the deal is finalized. Buyers are required to pay a premium, which represents 100 shares of the underlying asset. The option premium is often the strike price or rate for buying and selling until the expiration date (ALIRAVCI, 2013).

There are two types of options, a call option, and a put option. A call option gives the holder the right to buy an underlying asset at a specific price within a specified period of time. A put option, on the other hand, gives the holder the right to sell an underlying asset at a specific price within a specified duration. The put option benefits from a decline in the underlying futures price, while the call option holder benefits from a price increase in the underlying futures price. Hence as futures price and cash price move in the same direction, using a long put option to hedge a long cash position limits the downside risk, but the upside position remains unlimited. Similarly, a short cash position hedged by a long call position limits the risk of price rise but not the downward option (ALIRAVCI, 2013). In this case, therefore, the maximum an investor can lose is the option premium, which is equal to the price one pays during the time of the purchase. This, therefore, leads to the implication that if price risk is the only uncertainty, a decision-maker faces hedging in the future market produces less volatile profits compared to no hedging at all

The option purchaser, who is referred to as the option holder, is said to be long on the option and pays the option writer, who is said to be a short option, a market determined price that is called the option premium. The agreed price is referred to as the strike price. The seller of the call or put option is required to deposit an initial future margins requirement and maintain it since the option sold could be exercised at any point (Williams, 2019). A call option gives the owner the right to buy the underlying futures contract at the strike price, while the put option gives the owner the

right to sell at the strike price. The option holder exercises the contract only when it is profitable. As such, a call option is exercised when the strike price is below the market price of the underlying futures, while a put option is exercised when the strike price goes above the market price of the underlying futures. When an option is exercised, the writer incurs a loss that is either partially or completely offset by the premium collected from the buyer. The holder of the option can, in some instances, allow the option to expire when it is unprofitable; in this case, the writer of the premium benefits from the entire premium. The option can, therefore, end through closing the transaction, exercising the option, or allowing the option to expire. The holder of a position can close a transaction by making an equal but opposite transaction prior to the expiration date if the value of the option increases (Williams, 2019). The writer, on the other hand, will close the transaction if the value of the option decreases.

When a call option is exercised, the buyer is assigned a long futures positions at the options strike price while the option is assigned the short position. When a put is exercised, the option buyer is assigned the short position while the long futures position is assigned to the option writer.

Key Attractions towards Options

The main attraction towards options is the fact that it is impossible for an investor to lose more than their investment. Furthermore, the risk of running a negative balance can be further reduced if an investor if one only risks a small portion of one's account on each trade. Trading options is inherently the more conservative approach, especially if one employs option spread strategies. These strategies include (Dismukes, Bird Jr & Linse, 2014):

1. Bull call spread- this strategy entails having one long call with a lower strike price and a short call with a higher strike price. Both calls have the same underlying asset and the same expiration date. Profit is limited if the stock price rises above the strike price of the short call, while the potential loss is limited if the stock price falls below the price of the long call.
2. Bear put spread- a bear put spread consists of a long put strategy with a higher strike price and a short put with a lower strike price. A long put strategy is used where an investor expects the stock price of the underlying asset to decrease, while a short put strategy is employed in instances where the investor expects the stock price of the underlying asset to increase. Profit is therefore limited if the stock price falls below the strike price of the short put, while the potential loss is limited if the stock price rises above the strike price of the long put (Dismukes, Bird Jr & Linse, 2014).

Similarities between Futures and Options

- Both options and futures are linked to the value of the underlying asset.
- Prices of options and futures contracts are related to short term interest and the income of the underlying asset.
- Both options and futures have a limited life.
- Both options and futures contracts have to be established by an exchange and guaranteed by a clearinghouse (Hull et al., 2013).

Differences between Futures and Options

- The initial cash outflow is greater when buying options; this amount represents the maximum loss possible on the position. This is because investors have to pay a price to take a long position, which is not present in the futures market where a margin payment is made, which is security money paid by future investors and not the price paid to take a position in the future markets. This security deposit that is required usually represents a percentage of the total value of the contract.
- Gains and losses are realized on a daily basis in the futures market, while in options, contract gains and losses are not realized until the positions are exercised.
- While futures have a linear return function, options are a non-linear return function. This leads to different volatility behavior in the options market compared to the futures market (Hull et al., 2013).

The Advantages of Options over Futures

One of the biggest advantages of options over futures stems from their very definition. Through an option contract, a buyer has the right but not the obligation to purchase an asset on or before a predetermined date. The maximum risk attached to the options contract is, therefore, only the option premium. One criticism of futures contracts is the fact that they are not attractive to all commodity chain participants and are hence only popular among large corporations. This is due to the fact that some participants are unable to cover margin calls due to limited finances, while some have limited production capacity and can hence not be able to fulfill futures contract requirements. Options are hence preferred due to the fact that they have established price floors that offer benefits from favorable price changes while having fewer barriers to entry (Dismukes, Bird Jr & Linse, 2014).

More so, in sectors where both price and quantity risk exists, holding options is better than holding futures since the holder of options has the right but not the obligation to exercise the option contract. This advantage, however, comes with the cost of an option premium, which in some cases could be rather expensive.

Options contracts are able to give traders a risk management tool that allows them to take advantage of the correct view of the price prospects for the underlying futures while still adjusting risk to a level below what it would be if only the underlying futures were held. Options hence provide risk features that are not available in future contracts that can be used to manage risks (Chance & Brooks, 2015). Options can effectively convert long or short futures positions into synthetic long and short calls or puts. Long puts can, for instance, hedge against possible loss in a long futures position while still ensuring the possibility of unlimited gains. Similarly, a long call combined with a short position in futures limits the risk associated with the increase in prices since the call option can be exercised.

Basic options strategies, including buying calls, buying puts, writing calls, and writing puts. Advanced strategies rely extensively on these four basic strategies. Advanced strategies include:

- Synthetic long futures = long call + short put
- Synthetic short futures= long put + short call
- Synthetic long call=long put + long futures
- Synthetic short call= short puts + short futures

In some cases, these strategies serve the role of insurance for the risk of holding futures contracts, while in others, they perform the role of a leverage enhancement tool. These advanced strategies can be used for both hedging and speculating, depending on the goal of the trader. If the goal is risk reduction, the trader is thought to use option contracts for hedging purposes, and if the goal is to profit, the trader is considered to be speculating. However, most of the time, options are used as a risk reducing mechanism. The only drawback of this strategy is the fact a hedger seeking to limit risk might be locking the possibility of a windfall gain by contracting to sell or purchase at a fixed price (Sailakshmi & Chandravat, 2019).

Options also provide unique opportunities that are unavailable with futures since, with options, traders can be able to alter the distribution of returns by sealing potential upward returns while protecting against downward losses. Furthermore, option hedging allows for more flexibility when it comes to the management of quantity risk.

Due to all these factors, the volume of options sold has continued to grow due to market volatility as well as investor interest in using more complex strategies. These strategies range from simple hedging to include premium harvesting and multi-legged trades across expirations designed to

mitigate risk between production risks and time horizons. Structural shifts have also contributed to this state of affairs since there has been greater electrification of the trading environment as well as a corresponding increase in liquidity, which has contributed to increased use of option strategies (Chance & Brooks, 2015). The introduction of technology into the markets has led to greater support and connectivity that has increased access to the market. Technology has also enhanced option instruments by providing improved execution capabilities and more powerful analytics that have greatly aided strategy development and back testing. Traders can therefore be able to design more complex strategies stretching across multiple legs, multiple expirations, and possibly multiple asset types. This has, therefore, expanded market opportunities for participants in the market seeking to manage risk at different time horizons and price points (Sailakshmi & Chandravat, 2019).

Options are also capital efficient tools; as such, they can be used as hedging instruments relative to the cost of the underlying futures contract. They can also be used as part of spread strategies that benefit from margin offsets for the defined and limited risk of the trade. Furthermore, the regulatory reserve requirements for options tend to be lower than future contacts for the most part. These instruments also allow for more efficient exposure to asset class than other competing products that may have less correlation and greater costs associated with getting the necessary exposure (Chance & Brooks, 2015). They also assist asset managers in bridging liquidity gaps by efficiently capturing or hedging relationships between different asset classes where the underlying assets might be less liquid; for instance, an investor with a large of high yield bonds in a particular industry might use options to hedge against risk exposure to these companies.

Futures, Options and Risk Management

Volatility is a tool used to determine the rate at which price changes occur; this is especially important in the securities market since the price of securities is at the center-stage for all participants in the stock market. The fluctuations in price are in most cases more important than the price itself, and as such, the future prices become more important than past prices; more so, by understanding past prices, it is easier to estimate future prices (Chance & Brooks, 2015).

Investing in the spot market is mostly preferred by investors; derivative markets, however, offer another avenue to invest in the same securities at a lower price. Informed investors, therefore, tend to invest in the derivatives market. The main objective of investing in the derivatives market is to hedge, as such options are usually preferred to futures due to the fact that options serve the purpose of hedging much better. This is probably due to the fact that options are designed to protect against extreme downward risk and hence perform better in reducing downward risk. Options have the ability to protect against significant fluctuations in price as well as offer greater flexibility since the holders could choose to abandon the options in the event of favorable price movements as well as exercise the contract in the event of unfavorable movements (Chance & Brooks, 2015). They

can also limit losses up to the option premium while at the same time not limiting the upside gain. This flexibility, however, comes at the cost of an option premium.

In the context of foreign change, agents may need to protect themselves against the currency risk associated with fluctuations in the exchange rates. For agents buying foreign with local currencies, the appreciation of a foreign currency would have a negative impact on them. This is because higher amounts of local currencies are needed to afford the same amounts of local currencies. In order to hedge against currency appreciation, this agent may opt to buy a call option to lock the exchange rate that will be applied when an agent has to buy foreign currencies in the future. Conversely, currency deprecation tends to affect agents who sell currencies negatively since they receive less local currencies for the same amount of foreign currencies (Chance & Brooks, 2015). As such, they may opt to buy a put option to lock the rate at which sell foreign exchange in the future and hence effectively hedge against foreign currency depreciation in the future.

Conclusion

Based on the above discussion it is therefore possible to see that options are far better when it comes to managing risk associated with price movements. This is due to the fact that they are more accessible, flexible as well as capital efficient. Furthermore, they provide unique opportunities and can be used for both hedging and speculating due to the fact that they allow for advanced strategies.

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