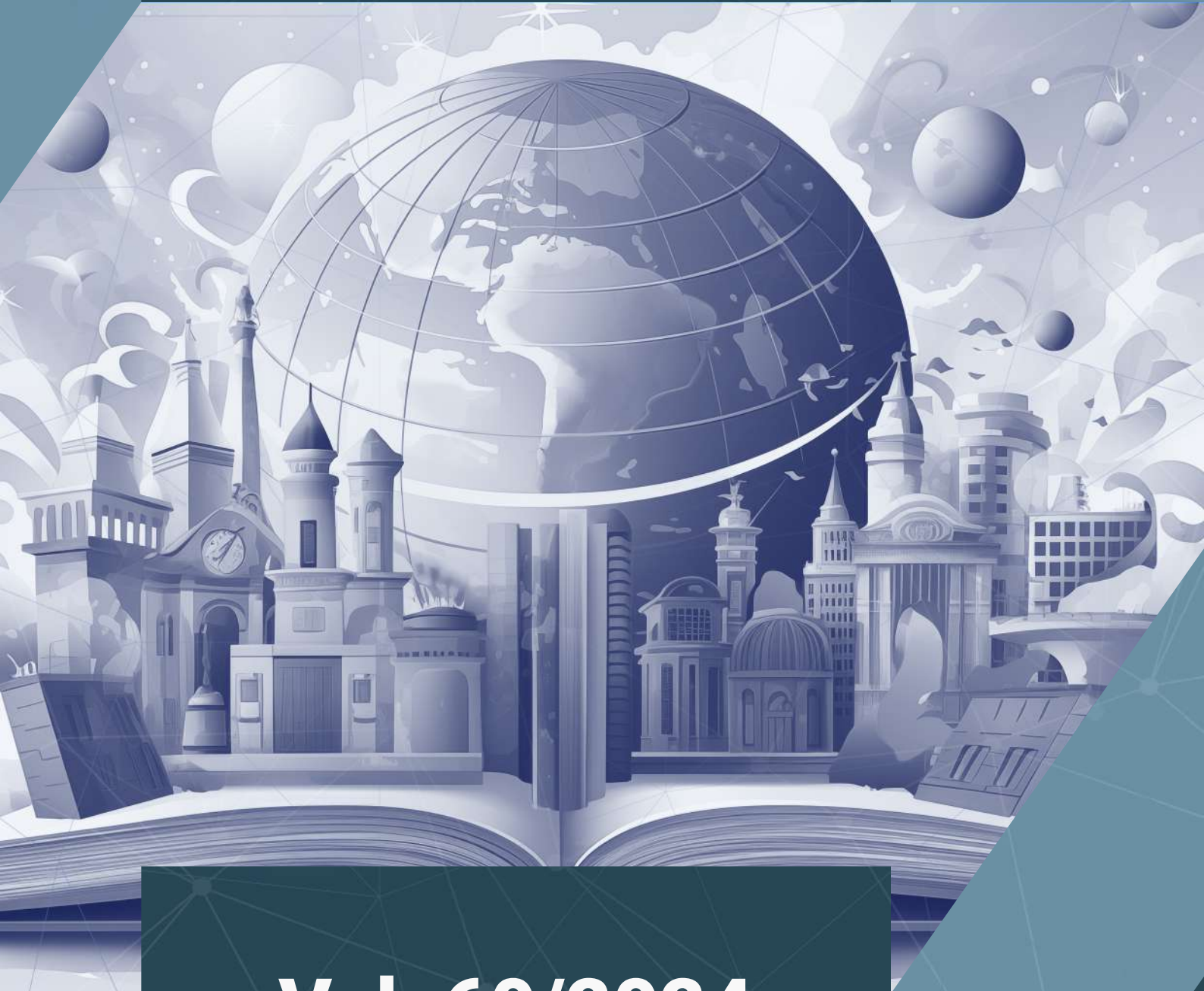




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Future Contracts and Delayed Contracts

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Abstract. The contracts which are used by companies and investors to be careful of the risk or speculation of business are called future contracts & delayed contracts. Future & delayed contracts are considered as a good instance of etymological belongings that extract their values from the underlying belongings. A future contract is a unified legitimate deal to buy or sell something at a predetermined price and at a specific time in the future. The traded belonging is mostly a commodity or financial tool. The price which is pre-determined earlier and at which both parties are agreed upon (i.e. to buy and sell the belonging) is known as the delayed price. The specific time in the future is known as the delivery date which means when delivery and payment occur. The contracts which are negotiated on futures exchanges act as a market between buyers and sellers. The person who buys the contract is known as the holder of a long position and the person who sells the contract is known as the holder of the short position. A futures contract for stocks is a cash-settled future contract on the value of a particular stock market index. Future contracts for stocks are defined as one of the high-risk trading tools in the market. Future contracts for Stock market indicator are also used as indicators to determine market sentiment.

Keywords. risk, speculation, underlying, predetermined, delivery

Research Methodology

First: Problem of the Study

The problem of the research study deals with the analysis of the relationship between future contracts, delayed contracts, and the fluctuation of the price of the basic commodity. The basic fluctuation of the price of the commodity has significant impacts on the market participants, including producers, consumers, and investors. Understanding the impact of future contracts & delayed contracts on the fluctuation of the price of the basic goods is critical to manage the dangers and to make decision about the basic commodity markets. This analysis will use empirical data and statistical techniques to assess the relationship between trading of the delayed contracts and volatility of the commodity price. The results of this research will contribute to a deeper understanding of the dynamics between future contracts and volatility of the basic commodity price and provide insights to market participants and policy makers. The problem can be summarized by the following question:

1. What is the relationship between future contracts and delayed contracts and volatility of the commodity price?

Second: Objectives of the Study

This research aims to achieve a set of objectives, the most important of which are:

1. Studying the impact of future contracts and delayed contracts on the volatility of the commodity price and gain a comprehensive understanding of the underlying dynamics.

2. Volatility of the commodity price has far-reaching implications for the participants of the market, including producers, consumers, and investors. This is done by analyzing the relationship between trading of the delayed contracts and volatility of the basic commodity price.

3. Shedding the light on the factors that contribute in volatility of the price and assess the impact of delayed contracts in mitigating or exacerbating volatility.

4. Through empirical analysis and statistical techniques, this research will provide valuable insights into the dynamics between delayed contracts and volatility of the commodity price, enabling participants of the market and policymakers to make informed decisions.

Third: Significance of the Study

Researches which are belonging to future contracts and delayed contracts are of great importance for several reasons:

1. Delayed contracts provide a mechanism for the participants of the market to manage risks of the price that are associated with commodities, currencies, interest of the rates, and other underlying assets.

2. Understanding the impact of future contracts and delayed contracts on volatility of the price helps participants of the market effectively hedge their positions and reduce potential losses due to price fluctuations.

3. Delayed contracts markets play a crucial role in discovering the price by providing a platform for the participants of the market to express their views on the future price movements.

4. Researches on future contracts and delayed contracts help us in understanding how these markets contribute to the price and information transmission, thereby enhancing market efficiency.

5. Studying the relationship between trading delayed contracts and volatility of the commodity price and how it contributes to our understanding of the efficiency of the market.

6. Efficient markets of the delayed contracts facilitate price stability, enhance liquidity, and enable participants to make informed decisions based on market expectations. Research in this area helps identify factors that may hinder or enhance market efficiency.

7. Investors, traders, and speculators rely on delayed contracts to profit from the price movements. Researches on the future contracts and delayed contracts provide insights into the effectiveness of different investment and trading strategies, helping participants of the market make more informed decisions and improve their profitability.

8. Understanding the impact of future contracts and delayed contracts on volatility of the commodity price helps policymakers and regulators formulate appropriate policies and regulations. Effective regulation enhances market integrity, protects investors, and ensures fair and transparent business practices.

Fourth: Hypothesis

Hypothesis 1: Trading activity of delayed contracts has a significant impact on volatility of basic commodity price.

Null Hypothesis (H0): There is no relationship between trading activity of delayed contracts and volatility of basic commodity price.

Alternative Hypothesis (H1): Trading activity of delayed contracts is associated positively/negatively with volatility of the basic commodity price.

Hypothesis 2: Increasing open interest in delayed contracts leads to higher stability of basic commodity price.

Null Hypothesis (H0): Open interest in delayed contracts has no effect on stability of basic commodity price.

Alternative Hypothesis (H1): Higher open interest in delayed contracts is associated with higher stability of basic commodity price.

Historical Development of Future Markets:

Ehrhardt, (2011) states that the future market of the wheat was one of the first formal derivatives markets. In that market the farmers were mostly worried about the price they would get for the process of selling of their wheat when they are going to sell it in the fall season, and the millers were also worried about the price they would have to pay for that wheat. Each party quickly understand they could reduce their danger if they determine the price earlier in the year. Accordingly, the agents of the mills began to go out to the wheat bundle with contracts that informed the farmers to deliver the grains at a limited price determined in advance, and both parties benefited from the deal, i.e., they reduced their risk. In such situation, the farmers will focus on growing their crops without paying attention to the price of the grains, and this will enable the mills to focus on operations of milling which belong to them. Thus, using hedging with delayed contracts reduce the overall danger within the economy in general. Such early transactions were between two sides arranging the transactions between themselves (Al Abdullah,2023). But sooner the moderators appeared in the vision as trading future contracts and future contracts were established. The Chicago Mercantile Exchange, founded in 1848 and now a member of the Chicago Mercantile Exchange (CME), was an early market which aids the traders of future contracts in creating a market of future contracts. Therefore, the farmers can sell future contracts on the exchange market and buy these contracts from the mills there (Arora,2023). This enhances the efficiency and reduces the cost of protection operations. Sooner, speculators entered the market. Most derivatives including future contracts were highly leveraged which meant when a tiny adjustment in the assessment of the basic resource would result in a great adjustment in the price of the derivative thing. This financial leverage attracted stockjobbers. At first glance people might think that the emergence of stockjobbers would increase the risk in business but actually this is not true. Stockjobbers add players and capital money to the market and this leads to the stability of the market. Naturally speaking, the markets of the derivatives are inconsistent by its nature due to the financial leverage which involved in it and hence the danger to the stockjobbers themselves is high. However, the stockjobbers bear a lot of danger which makes the markets of the derivatives more stable for hedgers. Natural reserves which can be defined as the situations in which the overall danger can be reduced through derivative transactions between the two sides (i.e. counterparties) exist for several goods, foreign pieces of change, the rates of the interest on the bills of the money which have different periods of worth even for popular stocks where investors tend to “hedge their bets” (Brigham, Ehrhardt, 2008). Natural hedging occurs when future contracts are used between the growers of cotton, industry of cotton, mines of the copper, manufacturers of the copper, the rate of the foreign currency exchange importers and manufacturers, electric utilities, coal mines, oil producers, and oil users. In all of these cases, hedging reduces overall risk and thus benefits the economy. The markets of the derivatives have grown faster than any other basic market recently for different causes:

1. Developing of analytical techniques for instance the option of Black-Scholes which is considered as pricing model. It has been developed to help in determining the “fair” prices

and having a good, transparent basis for pricing the hedging and this in turn makes the counterparties more comfortable in dealing with transaction.

2. Using computer machines and electronic communications make the dealing easier for counterparties between each other.

3. Finally, the importance of currency markets has been greatly increased due to globalization and there is a need to reduce the risk of the rate of the exchange which is caused by global trade. Recent trends and developments are certain to continue if not accelerate, so the use of derivatives to manage risk is bound to grow.

Definition of Delayed & Future Contracts:

It is normally that investors are well known with spot markets and general markets where financial tools are purchased for cash money and then delivered these financial tools immediately. The market of stock is a spot market. The investors pay cash money and receive shares (stocks). There are basic commodity markets, for example, the markets of gold and oil where gold bullion or barrels of oil can be bought for cash money. In addition to the markets of spot (cash markets), there are also the markets of derivatives, they are called as such because of the prices are “derived” from the basic resource. The two main types of derivatives are derivatives of goods, whose prices are based on physical goods, and financial derivatives, whose prices are based on the financial resource. The derivatives include future & delayed contracts (Al-Raamadan & Hasan,2022).

Delayed & future contracts could be considered as agreements to sell or buy a basic resource in the future (Przybylinski & Leonberger, 2010). However, delayed contracts can be defined as agreements in which one of the two sides agrees to buy goods at a specified price on a specified future date and the other side agrees to sell. The commodities are actually delivered by using delayed contracts. If the two sides of the people are not financially strong, there will be a risk that one of these two sides will default on the contract, especially if the price of the goods changes significantly after the reaching of the agreement (Brigham, Ehrhardt, 2009).

Future contracts are unified financial contracts that obligate the buyers to buy resources and obligate the sellers to sell the resources at a prearranged future date and price. The future contracts limit in detail the quality and quantity of the basic resource. The contracts are unified to facilitate trading on future contracts exchange. Certain future contracts may require physical delivery of the resource while others are settled in cash money. Moreover, the delayed price is a term called on the price at which the transaction will take place (Cavaliere,2021). Delivery & payment processes take place on a specified future date known as the delivery date. The contracts which are negotiated on a futures exchange and these future contracts act as a mediator between the two sides of people. The side who agrees on buying the basic resource in the future is called the “buyer” of the contract (long position) and the other side who agrees to sell the resource in the future is called the “seller” of the contract (short position) (Boyle & McDougall, 2019: 11). The future contracts are similar to the delayed contracts but with three main differences: (1) Future contracts are “settled” on a daily basis, and this in turn means gains and losses are recorded and money must be paid to cover the losses. This greatly reduces the risk of default which exists in future contracts. (2) In future contracts, physical delivery of the basic resource never takes place (i.e. the parties simply settle in cash for the difference between the contracted price and the actual price on the maturity date). (3) Future contracts are generally unified tools traded on exchanges whereas delayed contracts are specifically designed and negotiated between the two sides of people and are not traded after they are signed (Brigham, Ehrhardt, 2009: 571).

Opening and Closing Future Centres:

As it is mentioned earlier future contracts are agreement for buying or selling basic resource at a specific price and at a specific time in the future. The contract is usually referred to as the month of the delivery. Thus, an investor can order a broker to buy a contract of the future oil for October month. There is a period of time within the delivery month (usually a full month) during which delivery can be made. Trading in the contract normally stops for some time during the delivery period. The party holding the short position chooses the delivery time. The great majority of future contracts do not materialize in delivery. The reason is that most investors choose to close their positions (centres) before the delivery term stated in the contract. Making delivery according to the conditions of the future contract is often inconvenient and very expensive. A hedge of this kind typically chooses to close the future position (center) and then purchase or sell the asset in the customary manner, even if the hedger wishes to purchase or sell the underlying (basic) asset of the future contract.

In order to close a position, one must make the opposite trade from the one that first created it. For instance, on May 6th, an investor purchasing five July corn future contracts can terminate the position (center) on June 20th by short selling (i.e., selling five of the future contracts for July). If an investor sells five contracts of July on May 6th, they can buy five contracts of July on June 20th, closing the position (center). The difference in the future price between May 6 and June 20 determines the investor's ultimate gain or loss in each scenario. Because deliveries are so uncommon, traders may lose track of how they operate. The future price and the current price are linked by the potential for delivery (Hull, 2017)

Hedging:

Hedging can be broadly classified into two types: (1) long hedging, in which the hedger purchases future contracts, thereby requiring the hedger to purchase the underlying asset, and (2) short hedging, in which the hedger sells future contracts, thereby requiring the hedger to sell the underlying asset, and provides protection against declining prices. Hedging can be broadly classified into two types: (1) long hedging, in which the hedger purchases future contracts, thereby requiring the hedger to purchase the underlying asset, and (2) short hedging, in which the hedger sells future contracts, thereby requiring the hedger to sell the underlying asset, and provides protection against declining prices. Brigham, E. (2014) mentions that In the futures markets, not every player is a hedger. With future contracts being employed in place of commodities due to the inherent leverage in the contract, speculation is placing bets on future price changes. At \$7 a bushel, for instance, a speculator may purchase corn. Speculators stand to gain 10% if corn prices increase to \$7.70. For the purpose of preventing the investor from being debited from daily market trading, the exchange asks the investor to post a margin requirement (Gupta,2022).

But given the magnitude of the deal, the margin is extremely tiny—only \$2,700, compared to the \$35,000 total value of the maize, or \$7 x 5,000. The profit, if the price increases to \$7.70, is \$3,500 = (\$7.70 - \$7.00) times (5,000). On the invested margin, the rate of return is 140%, or \$3,500 / \$2,500.

Margin Trading in Future Markets:

Boyle and McDougall (2019) demonstrate that margin is the phrase used to describe the borrowed funds used to buy shares. Purchasing assets with leverage is known as "buying on margin." The percentage of the shares' current market value that the client contributes in ownership rights, or equity, is known as the amount of margin. The goal of counterparty and exchange margin requirements is to lower credit risk. Furthermore, Hull (2017) states that Future exchanges determine the margin rates in the future. Some brokerages will lower their

risk exposure to a specific client by adding a premium to the minimum exchange rate. In most cases, the margin is determined based on risk. For contracts based on an asset class, future margin rates will increase with the size of the normal swings in the asset's dollar value. Trades conducted by traders on regulated futures exchanges are guaranteed by a clearing house in order to mitigate counterparty risk.

A clearing house is a distinct organization from brokers or market makers, as well as from the market participants who purchase and sell the assets. Its main purpose is to increase the confidence of market participants about the payment of losing counterparties. For every seller and buyer of the instruments they clear, clearing houses take on the role of counterparty. The goal of a clearing house, which stands in between two members' businesses, is to lower the likelihood that any one of them will miss their trade settlement deadlines. The following are some ways that a clearing house lowers settlement risk: (Boyle & McDougall, 2019)

1. Clearing exchanges involving several counterparties.
2. Requiring deposits as collateral.
3. Offering a neutral evaluation of trades and collateral.
4. Keeping an eye on the clearing entities' creditworthiness.
5. Establishing a collateral fund that can be utilized to pay for losses over the collateral on deposits held by the member firm that is in default.

To protect brokers and exchanges from non-performance brought on by price fluctuations, traders in futures markets must make collateral deposits, or margins. Exchanges already impose minimum margin requirements on all contracts, and brokers are permitted to ask their clients for higher margin amounts. Margin standards have changed quite a little in recent years. The Chicago Board of Trade's (CBT) margin requirements, for instance, change an average of seventy-five times annually between 1971 and 1982. The government has been urged to intervene and impose minimum margin requirements on all future contracts, just as it does on stock market transactions, due to the heightened margin activity and quick expansion of future markets (Fishe & Goldberg, 1986: 261), and when trading on margin, the trader must know the following terms: (Boyle & McDougall, 2019)

- **The Initial Margin for Future Contracts:** It is the sum of money which is needed to start a centre for buying or selling centre in a future contract. It is known as the initial margin for future contracts. The exchange determines the initial margin requirement, which is based on the greatest expected change in the contract's value throughout a daily trading.

- **Maintenance Margin:** For every subsequent contract in the transaction, the client must maintain this minimal amount of margin in his margin account. Consider the following example: Suppose that the margin on an oil futures transaction is \$100 and the maintenance margin is \$70. The first \$1,000 of margin will be required if you buy ten contracts for oil futures. If the price of oil lowers to the point that you lose \$300 or more, you have broken the maintenance level and need to add cash to get it back to the original level.

- **Margin Request:** The broker must request that his client, hedger, or speculator deposit enough money in his account to sustain his trading position, including all necessary maintenance margin, in order to initiate a margin call on future contracts when the account value drops below the maintenance threshold. Brokers close their losing bets on traders if the cash margins kept against future contracts are not sufficient.

Clearing House in an Exchange:

It is a non-profit organization. The individual traders own seats or memberships in the exchange. Important benefits that come with seats include the opportunity to make a career as

brokers, the chance to trade pit¹, cheap trade commissions, and the capacity to take part in the exchange's governance.

As a result, seats are purchased, sold, and rented just like any other asset. The trading floor's profit potential is reflected in seat prices. There are linked clearing houses for future exchanges in the US. There are instances when multiple exchanges use the same clearinghouse (Jarrow, Chatterjea, 2013). In order to match orders, the clearing house functions as a middleman between all transactions. Every contract that is bought and sold is purchased by the clearing house. Future investors are exposed to far fewer counterparty risks than future investors because of these factors.

(Przybylinski & Leonberger, 2010). The clearing house forms the basis of a future exchange. The clearing house performs several useful functions: It records trading statistics, ensures contract performance for all traders, and collects margin from members. Although the clearing house does not face market risk due to its daily matching books, it does face counterparty risk. It provides multiple levels of financial protection to lessen this counterparty risk. Apart from margins, the member is required to maintain collateral funds at the clearing house. If a member defaults, the clearing house pays all members from its margin, the member's collateral fund, the surplus clearing fee money, and the collateral fund in that order, based on a predefined formula (Jarrow, Chatterjea, 2013).

Evaluation of Future & Delayed Contracts: (Hull, 2015: 599)

The delayed or future price of an investment asset that does not provide any income is determined by the following equation:

$$F_0 = S \dots\dots\dots(1)$$

Where: S_0 is the asset's spot price as of right now, T is the contract's delayed or future maturity date, and r is the risk-free maturity rate that is continually compounded. When the asset generates income with a present value (I) during the duration of the contract, the cost is:

$$F_0 = (S_0 - \dots\dots\dots(2)$$

When it yields a return at a certain pace, q , it turns into

$$F_0 = S_0 e^{qt} \dots\dots\dots(3)$$

One way to think of a foreign currency as an investment asset is one that yields a return equivalent to the risk-free rate, meaning that the foreign currency's future or delayed price could be:

$$F_0 = S_0 e^{(r-t)t} \dots\dots\dots(4)$$

Where S_0 is the spot exchange rate and r_f is the risk-free foreign exchange rate (constantly compounded). The amount of the forward contract, in which the owner is entitled to purchase the asset at a price K in every circumstance,

$$(F_0 - K)e^{rt} \dots\dots\dots(5)$$

In the aforementioned calculations, F_0 represents the delayed price. Comparably, the contract value for a future transaction in which the asset's owner has the option to sell it for K

$$(K - F_0) \dots\dots\dots(6)$$

Short Selling:

Some arbitrage strategies involve short selling. Selling an asset that is not owned is known as short selling. Certain investment assets may be eligible, but not all. We'll use the example of short selling stocks to illustrate how this mechanism operates.

(Hull, 2017), According to the short selling process, an investor seeking to sell a stock short must first locate a lender. The exchange procedures usually require the short seller to deliver the stock to the buyer on the third day following the sale ($t + 3$) and post the initial margin required with his brokerage business (company) after locating the lender and selling the stock short (Sharma, 2017), Assume a broker is instructed by an investor to sell 500 shares of Company X. The shares will be borrowed from an owner by the broker, who will then sell them in the market according to the standard procedure.

The investor will eventually close the position by purchasing 500 shares of Company X on the open market. The short position is subsequently closed by using these shares to replace the borrowed shares. If the stock price drops, the investor benefits; if it rises, they lose money.

The investor is compelled to close the position even if they are not ready to do so if the broker is required at any point during the contract opening to return the borrowed shares and there are no more shares to borrow. Lending stocks or other securities to the person conducting the short sale may occasionally result in a fee.

Income from dividends or interest on shares sold through short selling must be paid to the broker by the investor holding the short center. The broker deposits these interest or dividends into the client's account from whom the stocks were borrowed (Hull, 2017).

Short Selling Example //

Imagine the scenario of an investor who sells 500 shares at \$120 a share in April and closes the position by purchasing the shares back in July at \$100 a share. Assume that in May, a \$1 dividend per share is distributed. When the investor starts the short position in April, they receive $500 \times 120 = \$60,000$. The investor receives \$500 in May from the dividend (500×1). When the trade closes in July, the investor additionally pays \$50,000 (500×100) for the shares. Therefore, the net gain is $\$60,000 - 500 - 50,000 = \$9,500$ (Hull, 2017).

Conclusions

Futures and forward contracts are an effective way to protect investors from fluctuations in asset prices. Investors can use these contracts to secure their positions against potential risks and fluctuations in the markets. Futures and forward contracts allow investors to trade large amounts of assets with a limited amount of capital. This is known as financial leverage. Investors can take advantage of leverage to achieve higher profits compared to direct investment in assets. Futures and forward contracts expand the market and increase liquidity in financial markets. These contracts attract different participants such as investors, speculators, companies and institutions, which increases trading activity and trading in the markets. Futures and forward contracts can be used to determine the future prices of assets. Investors can use these tools to predict prices and plan future investments based on these forecasts.

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