

Futures contracts as a means of hedging market risks.

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Abstract— This academic article examines derivative instruments, their role in financial markets, and the associated risks. Derivatives, such as options, forward contracts, and futures, have gained increasing popularity due to their potential for hedging, market efficiency, and investment opportunities. The article discusses the reasons behind the growth of derivative usage, including economies of scale and the interdependence between futures, spot, and options markets. Additionally, it emphasizes the importance of derivatives in investment decisions, risk reduction, and speculation for companies and investors. The concept of derivatives is defined, highlighting their dependence on the value of underlying assets. The article further explores different types of risks, including systematic and unsystematic risks, and emphasizes the need for risk management strategies in derivatives trading. It also delves into futures contracts, explaining their historical development and the standardized elements they encompass. The roles of different market participants, such as hedgers, speculators, and arbitrageurs, are examined, along with the crucial function of clearing houses in facilitating derivatives transactions. The article concludes by discussing price calculation methods for futures contracts, considering factors such as storage costs, interest rates, and convenience yields. The research methodology involves a theoretical analysis of derivative instruments, their markets, and risks, supplemented by practical examples. Overall, this article provides valuable insights into the theoretical framework surrounding derivatives, enhancing our understanding of their significance in modern financial systems.

Keywords: futures contracts, hedging, market risks, derivatives markets, financial instruments.

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I. INTRODUCTION

Trade and commercial interactions have always been part of human history. But while this need is remained the same, markets have evolved along with the complexity and development of the society. Modern society is characterised by industrialized nation that heavily relies on well-developed financial markets to sustain its economic growth. It can be said that they are the mechanisms that govern capital allocation and investments of the society. Companies that succeed over time are those that have established and maintained adequate systems of monitoring and supervising their internal operations as well as keeping commitments to investors. Obviously, risks are still a big part of trading, but the new financial instruments can be a good tool through which risk can be reduced and unbundled into manageable forms.

Derivatives markets have become more and more used by companies. They appear to be making a big impact on global financial markets, given their incredible and perhaps unexpected growth across the globe. Their use is mainly connected to find a way to manage risks or because investors and regulators are finding a way to stay competitive in a constantly changing world characterized by widely fluctuating prices and new opportunities.

Commodity was the first and the main underlying asset that developed derivatives or custom-designable Over-the-Counter contracts were linked to. Despite their persistent use by companies, there are still doubts among the public and regulators for two main reasons. The first one is connected to the fact that hedging is a tool that can also reduce the gain if in the spot market the price goes in the opposite direction than expected. For example, from the perspective of the seller who has signed a futures contract, the investor can face losses if the final price is higher than the one agreed. This happens because without contract the asset could have been sold at a higher value and the vendor could have received more money for the same quantity of products. The second one is that this debate has been carried on and enhanced when serious scandals brought severe losses because of the “hedging activity”. It is true that several companies have suffered from heavy damages or even bankruptcy. One of the key roles of the futures market is indeed hedging, which is a perfect risk management tool for businesses to prevent wildly fluctuating commodity prices. Hedging can change the corporations' passivity structure, enabling them to keep production costs under control, secure profits, and provide high-quality development.

This research wants to prove how futures contracts and the hedging activity in the futures markets can be a really useful tool to smooth market risks. In this paper we try to gather enough evidence to convey and support our point of view. The main discrepancy that we found is between theory and practice. The former is supportive of how these instruments can bring benefits, instead the latter is poor of optimistic evidence as the example made above. But even so, it is reported that more than 90% of the Fortune Global 500 companies [1] use financial derivatives to control risks, so we can say that even though hedge activity with derivatives is a risky game, these cases remain an isolated example.

II. THEORETICAL FRAMEWORK

a. *Derivatives instruments*

1. *Derivative markets*

Financial markets are crucial to the efficient running of company's economies, and they are also a big part of many companies' life, whether they are big or small, new, or well known, in primary or third sector. Financial markets is a word used to identify any marketplace where securities' trading take place, including for example the stock market, bond market, forex market, and derivatives market, and some others.

The volume of international companies and international trading has increased exponentially thanks to the wave of globalization and liberalization that has characterized the world these last two decades. Moreover, scientists assert that the financial innovations created these recent years are more impressive and futuristic than ever. [1].

A study made by Abolhassan Julivand in his paper “Why Firms Use Derivatives: Evidence from Canada” using USA, New Zealand, and Canadas's firms as sample, shows that the use of derivatives for hedging purpose can produce the economies of scale, and it can be a strong motive for companies to use them. [2].

To understand the concept of ‘derivatives’ its definition is presented:

“The term refers to a broad class of financial instruments. These instruments derive their value from the price and other related variables of the underlying asset. They do not have worth of their own and derive their value from the claim they give to their owners to own some other financial assets or security.” [3].

At the beginning Over-the-Counter derivatives markets were a free-rule place of trading, but after the crisis of 2008 the regulation has changed, and new rules and limits have been introduced. Following the failure of Lehman Brothers and its consequential credit crisis, a new wave of regulations changed the operation of derivatives markets. The goal was and still is to increase OTC market transparency, boost market performance, and lower systemic risk. As a result, it might be claimed that this kind of market has been “has been forced to become more like the exchange-traded market”. [4].

2. *Derivative risks*

Risk is one of the main reasons that can clarify this unexpected growth and use of financial instruments. For this reason, risk management is more crucial than ever due to the extremely uncertain environment. Most of the commodity and capital markets are characterised by different kind of risks. These can conduct to a rapid and unexpected changing on the financial assets prices, interest rates, and exchange rates, and

consequently, to expose businesses and investors to a shattering economic crisis. Individuals or companies that do this kind of transactions bear high probability of losses, because there are high chance to lose significantly more than one's initial capital.

In this way, derivatives assets are traded to reduce rather than raises the risks, even though it does not eliminate the risks associated with the portfolio of financial instruments. As Table 1 shows, two main different risk affect the most: systematic and unsystematic risk.

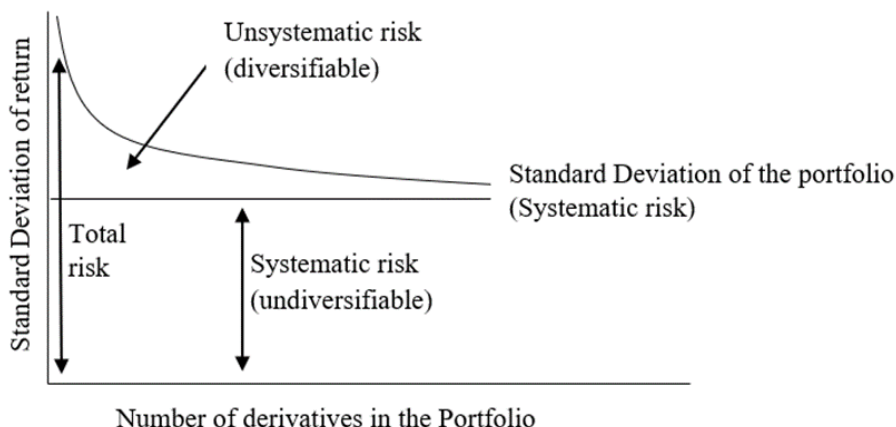


Figure 1: Unsystematic and systematic risk in a Portfolio of derivatives.
Source: Own elaboration based on contributions from [4].

If this risk is less in the derivatives than in the underlying asset, the first tool has lower loss exposure than the one in the spot market. [5].

Nevertheless, “default risk, operational risk, liquidity risk, legal risk, and market risk” [6] are just a few of the different kind of obstacles that a company can face in the derivatives markets.

b. futures contract

A futures contract is a binding agreement between two parties, supplier or short position and consumer/buyer or long position. The agreement is a regulated contract where the seller and the buyer agree to sell and to buy a specific underlying commodity, in a specific day in the future and with pre-agreed payment condition.

Futures trading has a long history because the official futures exchange was created in USA with the Chicago Board of Trade (CBOT) in 1848 [7]. This kind of trade has been formed because the agricultural dealers needed a way to reduce price risks. The fluctuation of the price of corn, wheat and butter made it difficult for business owners to run their operations: sellers wanted to reduce the priced linked to the cost of storing the raw materials, and purchasers wanted to set fixed pricing for these goods before delivery.

1. The composition

Thanks to the widely use of future exchange in the current markets, trading in commodities futures is now a tightly controlled industry, contrary to the past. The regulation's goal is to preserve its "fairness" and "competitiveness". [6].

Almost all the details existing in the futures contract are standardized, such as:

- 1) Delivery month or expiring date: it settles the day in which the contract will expire and the way in which the delivery will be made, through cash or physically.
- 2) Contract size: it represents the number of underlying assets that the contract is linked to, and it can vary depending on the underlying asset.
- 3) Quality of the commodity.
- 4) Margins: it represents the sum of money that the company has to pay in advance and keep in order to open a position in a contract. Usually the range is between “3-12% of the contract's value”. [8].
- 5) Delivery location.

Talking about the parties of the contract's trading, an investor can take two types of positions: long, when there is the will to buy, or short, when the asset is sold. Moreover, an investor can use both position at the same time to combine hedging strategies. [9]

Long Positions

Here the investor who wants to buy the asset is hoping for the price to rise because she or he can have profit from it. The typical stock purchased is a long stock asset, since the possible disadvantage is just the paid price, and the benefits are infinitive.

Short Positions

This situation is the exact opposite of the one above. Here the investor is expecting for a downward on the price direction. An example can clarify this position. If an investor borrows n number of shares and then he/she decides to sell them in the spot market, this action can produce a decrease of the stock price. Now the investor has an open position for n number of shares with the broker, from whom the shares have been

bought, which has to be closed in the future. If there is a reduction on prices, she/he can buy back the same number of stock shares, but this time for a cheaper value than before. The excess cash is the profit.

These positions can be used from the tree main categories that can be identified as future traders [10]:

Hedgers

These are organizations or people who use futures contracts to insulate themselves against exposure to unfavourable changes in asset prices.

In this situation, the investor is a buyer, better said is covered a long position, because he/she gains from price growth and loses from price decrease. The investor can go in the futures market as a short position by selling the assets, in order to be protected from a possible decline in the value. A short hedger is a person who fits this description. A long hedger would be an investor who does exact the opposite actions.

Speculators

Speculators are the ones who takes up price risk in order to make profits. They are independent person who can trade with their own funds or on behalf of customers or brokerage businesses. In this situation, both the potential benefits and losses they could face are very significant.

Arbitrageurs

Arbitrageurs are the third most important group, and their activity involves lock-in risk-free profit by concurrently engaging in transactions in two or more marketplaces. This happened when a commodity is bought in a market and simultaneously sold in another one with a difference in prices with the intention of making money. The difference with the other two main participants described above, it is that they trade only in order to make returns from discrepancies in the market.

The arbitrageur holds the duty of make sure that the value of the futures contracts does not go in conflict with the level determined by supply and demand and if pricing anomalies happen, he or she has to quickly correct them.

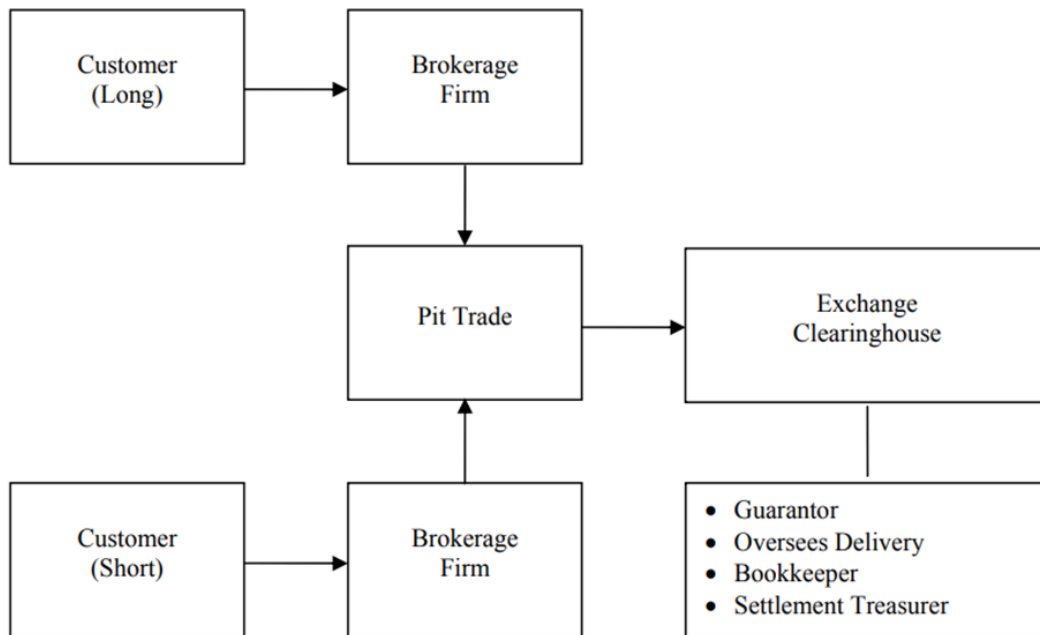


Figure 2: Futures trading mechanism. Source: Own elaboration based on contributions from [10].

Another figure is very important in the trading as Figure 2 shows:

Clearing house

This figure is a financial institution that has been created intentionally to ease the transaction of derivatives. Its main task is to keep track of all the transactions that take place in the futures market because in this way it can calculate the net position of each of its members. The net position is known as ‘the initial margin’, better said a deposit that each traders requires to put before any kind of trade to ensure contract performance. Its role is very important, because it makes sure that there is enough money to cover each trader’s obligations and at the same time it embodies a guarantee because it bears the credit risk connected to the transaction. This clarifies an essential point: is the Clearing House who is the counterpart of each contract, and the two parties never enter in contact with each other. [11].

Price calculation

Figure 2 describe who demand-supply dynamics can be the cause of changes in the prices of agricultural and non-agricultural goods throughout time.

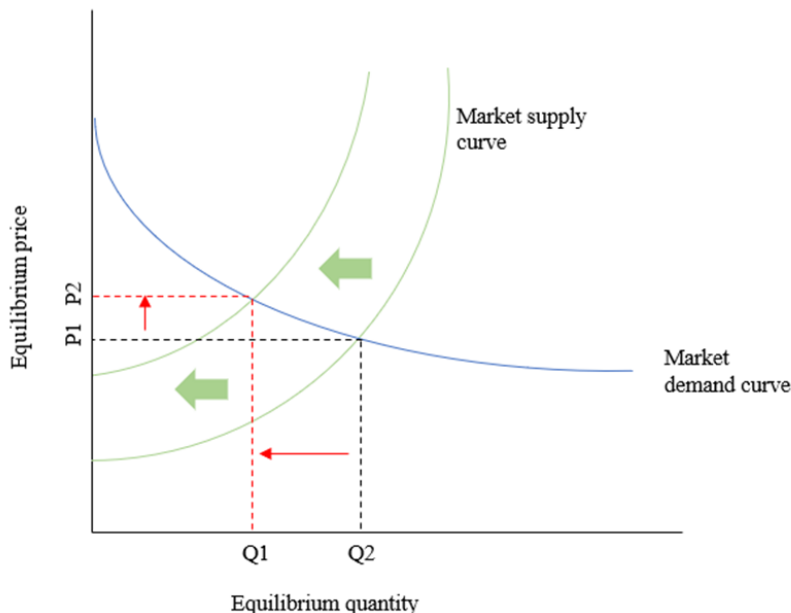


Figure 3: Demand-Supply dynamics in the market.
Source: Own elaboration based on contributions from [11].

The following formula expresses the relationship between several factors influencing a future price:

$$F = S(c - s + r)^t \quad [12]$$

- F = the future price of the commodity
- S = the spot price of the commodity
- r = the risk-free interest rate or Expected Dividend yield
- s = the storage cost, expressed as a percentage of the spot price
- c = the convenience yield, usually 1
- t = time to delivery of the contract [12]

Suppose company Agua buy an index in cash market at 8000. Here the value s is 12% and the free-risk interest rate is 4% per annum. With t of three months (90 days) the result of the equation should be:
 = Spot price (free-risk interest rate + storage cost – convenience yield) ^ (time to expiration/365)
 = 80 (0.12 + 0.04 - 1) ^ (90/365)
 = 81,5326.

If the price of the index future is higher than 81,5326€, an index stock can be bought in the spot market and consequently sold in the future market in order to take advantages of the discrepancies in prices.

In the case of a currency future, so a future written on currencies, the theoretical formula is:

$$F = S [(1-r)] ^t \quad [12]$$

- r = represents the risk-free foreign rate
- S = the spot exchange rate.

III. METHODOLOGY

In order to support the initial theory, this research is divided in 3 sections: two mainly theoretical and the last one practical.

The theoretical framework gives a theoretical but deep understanding of how derivative instruments work. In the first part, great attention is given to the risks that a company can face in the financial markets and which derivative tools can alleviate. The second part focuses on futures contract: its composition, the main actors, and the calculation of the price.

Mainly theoretical research is a research approach that emphasizes the development of new theories, concepts, or models rather than collecting and analyzing data. This type of research is often used in economics and finance to develop new models that can be used to predict future market trends. The methodology for mainly theoretical research involves a comprehensive review of the literature, identification of gaps in the current knowledge, and development of new theories or models to fill those gaps. The primary goal of mainly theoretical research is to contribute to the advancement of knowledge in a particular field of study.

The analysis and interpretation talks about the advantages of futures contracts, and they are compared with others financial instruments. Finally, some knowledges are given about how hedging works and a study is used to support the initial theory.

Hedging is a risk management strategy used to offset potential losses from adverse price movements in the future markets. Hedging can be done using various financial instruments such as futures contracts, options contracts, and forward contracts. Mainly theoretical research in this field may involve developing new models or theories to predict the movements of future markets and identify the best hedging strategies to minimize risks.

The methodology in this research involves a comprehensive review of the existing literature on futures and options trading. This review is used to identify gaps in the current knowledge and develop new hypotheses or theories to fill those gaps. Theoretical research in this field may also involve developing new mathematical or statistical models to predict market movements and identify the best hedging strategies.

Using real data from a finance site, we made a model that describes the different scenarios that a company can face if it hedges. In this part we analysed the side of the buyer, as the seller's perspective is exactly the opposite. This provides empirical support to the theoretical parts and, at the same time, confirm how and why hedging futures contract can be profitable, always bearing in mind that it is a risky activity.

This methodology enables us to give a general knowledge of the futures contract as the main topic, to ease the comprehension of their use in the examples. Then the paper of Wang, N., & Zhou, Q. [13] show graphically and numerically what the theoretical part try to transmit and support empirically my initial hypothesis of the advantages of derivative instruments.

The level of investigation can be categorized as a theoretical research study. The paper focuses on providing a theoretical understanding of derivative instruments, specifically futures contracts, and their role in managing risks in financial markets. It discusses the evolution of markets, the use of derivatives by companies, the risks associated with derivatives, and the composition of futures contracts. This paper also mentions the discrepancy between theory and practice and aims to gather evidence to support the authors' viewpoint.

The paradigm employed in this article is a positivist paradigm. The researchers aim to gather evidence and support their point of view through a comprehensive review of the literature, identification of gaps in current knowledge, and the development of new theories or models to fill those gaps. This article relies on existing research and knowledge in the field of finance and economics to build a theoretical framework and provide insights into the advantages of futures contracts and hedging strategies.

Finally, the following variables can be identified to give structure to the results obtained:

Derivative Instruments:

- Use of complex derivative instruments (options, forward contracts, futures)
- Reasons for the growth in derivative instrument usage (economies of scale, interdependence between markets, investment decisions, risk reduction, speculation)

Derivative Risks:

- Systematic risk
- Unsystematic risk
- Default risk
- Operational risk
- Liquidity risk
- Legal risk
- Market risk

Portfolio Analysis:

- Technique used for determining the ideal level of hedging to implement
- Balancing risk and return

Futures Contract:

- Definition and characteristics of futures contracts
- History and purpose of futures trading
- Standardization of futures contracts
- Parties involved in futures trading (long position, short position)
- Long positions and benefits
- Short positions and benefits
- Types of market participants (hedgers, speculators, arbitrageurs)
- Clearing house and its role in futures trading
- Price calculation for commodities and currencies in futures contracts

These variables provide a theoretical framework for this paper understanding the concepts of derivative instruments, derivative risks, portfolio analysis, and futures contracts.

IV. RESULTS, ANALYSIS AND EXAMPLES

a. *The convenience of futures*

1. *Contract and the hedge activity*

As we have said before, derivative instruments represent a wide range of tools. Even though there are different types in the market, the most common ones are futures, forwards, and options. This chapter will give some hints on why futures contracts and the activity of hedging them can be profitable. The first section will briefly explain the main differences between the three main derivatives tools and also between futures contracts and stocks. The second part gives some trustworthy and professional studies that support the main idea of the benefit of hedging futures contracts.

2. *The advantages of futures*

2.1. *Futures and Forwards*

Futures and forwards are both contracts which include the physical exchange of an underlying asset on a fixed date in the future and at a fixed price stipulated in a previous contract. But they have dissimilarities and the main are [4]:

- Forwards are popularly known as OTC contracts; better said these contracts are typically executed over the phone and not traded. Meanwhile futures are traded on the exchange.
- Futures are relatively safer and more secure compared to forwards. This thanks to the regulation that lately is getting applied to this kind of financial transaction and mainly thanks to the guarantee of the Clearing House. So, if one of the party defaults then it would be the Clearing House itself that will honour the trade and then initiate recovery from the other party.
- Futures are standardized and hence liquidity creation become a lot easier. First of all, if we are talking about futures contracts on index, the delivery is done only with cash. Secondly, every contract details are previously settled like the place where to trade the underlying asset, the price or the expiration date. Thirdly, in the stock exchange there are considerable number of buyers and sellers, and the price discovery also happens through a very transparent market mechanism. Lastly, they are also standardized in terms of the underlying. The underlying has to either be an index or a specific stock.

The liquidity of futures is one of the main advantages compared to forwards where the liquidity is a major challenge. That's because if you get into a forward contract and want to exit midway then the only hope is to find someone with similar requirement otherwise you are stuck in the contract until the maturity.

2.2. *Futures and Options*

An investor can purchase an asset at a certain price and date by using both option and future. But despite the fact that both instruments can be used to provide an investor the chance to make profit and hedge, the way in which they work and the level of risky change.

Below are explained the main advantages of futures over options [14]:

- Futures have an initial fixed trading cost, called a margin [15]. This is a requirement for major commodity and currency futures that have not been changed for years so investors know in advance the amount of the initial margin.
- On the contrary, the option premium can differ greatly because it is connected to the vast market and the underlying asset's volatility. The initial premium increases if the price of the underlying assets or the markets itself are unstable
- Options are "wasting assets" [16], which means that as time passes, their value decreases, a condition known as "time decay". The expiring time is one aspect that affect the "time decay" [17]. This factor is essential to take into consideration otherwise it has the potential to drastically reduce an option position's profitability and make the investor lose. This characteristic is not part of a future contract.
- Futures pricing is quite straightforward, because using the cost-of-carry model the price of the futures contract is the same as the underlying asset in the spot market adding the cost of storing. If the two prices are out of alignment, arbitrage activity would occur and rectify the imbalance. Instead, the value of an option includes more elements, like the current stock price, the intrinsic value, time to expiration or the time value, volatility, interest rates, and cash dividends paid.

2.3. *Futures and Stocks*

Until now future contracts have been compared with other derivative instruments, but they have several advantages over trading stocks. [18].

- Futures are highly leveraged investments: in order to trade in futures market an investor has to pay the "initial margin". This is a fraction of the value of the underlying asset that it is used as guarantee. The amount of money is a guarantee that the investor has to maintain through the whole position, or it can be exchanged if the price fluctuation is negative for the investor. The loss that investors can face could be much more than the margin amount. But at the same time the profits can multiply if the prices move as expected. Thus, an investor can trade a larger quantity of underlying assets even though he/she does not have the whole sum.

- Future markets are very liquid, because this kind of derivatives instruments are traded in huge amount every day. Moreover, orders may be done rapidly on these markets since there are always buyers and sellers there.
- Speculators can receive fast money with futures because they are traded with more exposure than with stocks. However, as the profits can come quicker and at a great amount, with futures there are high chances of loss because of the great volatility within them. In general, the fluctuation of prices is higher in the futures market than in the stock market.
- The two side of the coin are: futures bring elevated risk but at the same time futures are seen as chances to gain with short-term price fluctuations [19].
- Futures are crucial tools for hedging or diversification in order to manage risks. They are used by businesses engaged in international trade to manage three types of risk: foreign exchange risk, interest rate risk, and price risk. Moreover, they can improve the efficiency of the spot market thanks to their ability to reduce unexpected costs expenses associated with outright asset purchases.
- Futures contracts are an easy way for investors to raise finance against stocks of commodities. This because of the standardisation of contracts: traders have a guarantee of quality of the asset, quick liquidity and there is a protection against risk of depreciation.

3. Hedging with futures contracts

As it is explained above, one of the main reasons futures contract and hedging are getting so popular is because they are a good way to avoid or at least smooth price fluctuation.

The use of commodity derivatives as a risk management technique is commonly accepted. But one of the most controversial debated between theories and also in practice is whether derivative instruments can lessen a company's exposure to price risk.

Indeed, the idea of company hedging began when theories about risk management were developed. The known professors Smith and Stulz [20] proposed that firms hedge because it can avoid possible distress and bankruptcy cost; therefore, hedging can increase firm value.

According to them, the firm value can rise with hedging because of a combination of linear relationship between shareholder value and low risk. Therefore, risk mitigation is unquestionably a key goal of commodities hedging.

Financial futures can be used by firms as a hedging tool to safeguard their assets against unexpected mutation in the underlying. Both the possibility of loss and gain are decreased by hedging, because it fixes the price even though in the spot market it increases or decreases.

This is an example. A firm has a stock portfolio and decides to hedge its value by selling stock index futures contracts. In the situation where prices drop, both the portfolio's value and futures contract's price decrease. Here the company can buy back the contract at a cheaper price because it is in the short position. In the end, the profit from the hedging has partially offset the loss on the portfolio. [21].

Another good reason to hedge is that these financial instruments can boost the portfolio achievement. This because the two main risks explained above, can be reduced using futures contracts. Playing with long and short positions in futures contracts in the right way can reduce the transaction costs and it can be more profitable than trading big amount of securities.

A study made by Walid S. Abanomey and Ike Mathur [22] shows the potential gains of commodities futures contracts in the risk/return trade-offs of a portfolio of international stocks and bonds. This kind of practice is used because the former's constant convenience yields have the potential to generate positive returns with no relation to the latter's returns, which promotes diversification. Moreover, reliable hedge against the risk associated with investing in stocks and bonds is provided by the fact that commodity spot returns are inflation and interest rate related, as well as inversely correlated with stock and bond returns.

Unfortunately, real empirical cases offer controversial answers. Some well-known finance and economics professors recognized all over the world provide positive findings, while some others offer negative evidence. [23].

The difficulty is to analyse real and truthful information. For example, if the study focuses on commodity derivatives, different obstacles can be found. Firms usually trade these kinds of derivatives frequently within a short period so there are none or few positions left on the balance sheet. Or companies are keen to use various types of commodity derivatives at the same time including futures, forwards, swaps, options, so it is challenging to develop an acceptable proxy to assess the price risk management impact of a combination of several derivatives with different complexity and structure.

All of these problems made it really difficult to find empirical evidence that could back up my theory with truthful information and data to build on.

For the purpose of strengthen the initial hypothesis of the dissertation empirical research has been analysed. Ningli Wang and Qichong Zhou [13] have released a paper where they prove that under some conditions hedging can positively impact on companies' performances. They have collected data on NYSE and NASDAQ markets from 2010 to 2019 from the SEC website. As table 3 shows, the total sample is composed of 32876 firms.

Table 3: The hedge of commodity and the speculation activity analysed by industries.

| Industry | Number of firms | Percentage of hedging | Percentage of trading | Both activity |
|------------------------|-----------------|-----------------------|-----------------------|---------------|
| Utilities | 981 | 66,56 | 66,16 | 57,7 |
| Energy | 2471 | 55,44 | 68,51 | 51,36 |
| Materials | 2015 | 50,32 | 40,1 | 30,47 |
| Consumer staples | 1544 | 41 | 36,4 | 26,81 |
| Industrials | 5257 | 23,4 | 21,19 | 13,16 |
| Consumer discretionary | 1389 | 16,34 | 14,42 | 6,93 |
| Real estate | 1880 | 14,89 | 10,9 | 7,02 |
| Health care | 6111 | 6,48 | 8,49 | 3,14 |
| Information technology | 6540 | 6,21 | 8,43 | 3,64 |
| Communication | 1688 | 5,04 | 6,81 | 2,37 |

Source: Wang, N., & Zhou, Q. (2022). Does commodity hedging with derivatives reduce stock price volatility? *Finance Research Letters*, 50, 103321.

In the Table above the companies' sample are grouped in 10 main industries. The result of the study is shown in Annex 1 where it is proven that the hedge of commodity in these industries can diminish the volatility of stock price in 7 of them.

Following there is a list of how much each industry experiences a decrease in stock price volatility thanks to commodity hedging:

- Hedging has reduced volatility by 45.7%, 32.1%, and 23.5% for independent power and renewable electricity providers, electric utilities, and gas utilities
- Utilities show a 20.3% drop in the volatility of stock price, and it is notable statistically (99% confidence level) and economically speaking.
- Consumer sectors experience an average of 7,45% decrease
- Healthcare also decrease an 11.6%
- Communication service has a decreased of 8.9%
- Information technology experiences a 3.5% decrease
- Materials sector a 3.1%

These results verify how in 8 different industries the volatility of the stock price is reduced thanks to the hedge and these outcomes are statistically significant in 5 of them.

Thanks to this research, the key initial theory of this dissertation is supported by the previous results. It can be said that the hedge activity of commodity futures is a successful tool of risk management (even though the results are opposite for speculation). Hedging has a different impact on industries, where for example the utilities have a lot of benefit from it, and it also has been proven that small companies and company with better profitability can take more advantages from the hedge of commodity.

V. CONCLUSIONS

In conclusion, the article highlights the potential of futures contract markets and their effectiveness in managing risks. However, despite the theoretical acceptance of these concepts, their practical implementation has proven to be challenging. This raises the question of why financial markets do not fully reflect the reality of futures trading. To shed light on this question, Professor Emeritus Roger W. Grey, expresses uncertainty about the success or failure of futures trading and remarks on the limited understanding of futures markets among economists [24].

This statement suggest that futures contract markets have not been fully comprehended yet. Some markets, particularly those involving certain commodities, remain relatively unknown, lacking comprehensive literature or economic studies to explain their dynamics fully. Risks associated with futures trading are not well categorized, as they vary in quantity and intensity across different markets and time periods. It is not uncommon for firms to experience losses despite their hedging efforts.

The recent past serves as a reminder that attempts to reduce risk through hedging are inherently complex, given the potential hurdles and uncertainties involved. Even well-established and financially stable organizations like Morgan Stanley have faced costly losses due to hedging activities. The example of Morgan Stanley's subprime hedge, which resulted in a \$9 billion loss [25], illustrates the challenges of predicting the future and the high potential for losses.

Derivatives contracts, including hedging strategies, are associated with a significant probability of losses, often close to 50%. This indicates that the damages caused by derivatives do not depend on the quality of the hedge itself or the corporation's choice to hedge, as the unpredictable nature of the future and the inherent risk contribute to potential high losses. While there have been historical failures with derivative instruments, they represent a small proportion of overall hedging activities.

Ultimately, the paper underscores the theoretical potential for high profits through hedging. However, given the high risks involved, companies must implement robust monitoring and control methods to minimize losses. By doing so, they can mitigate damage and capitalize on the significant opportunities offered by futures markets and hedging strategies.

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