CLASSICAL AND ALTERNATIVE HEDGING STRATEGIES OF AGRICULTURE MANUFACTURERS

Abstract. Agricultural producers regularly face price and production risks. Increased global free trade and changes in domestic agricultural policy increase the likelihood of adverse events causing risks to commodity producers.

One way to reduce risks is to use commodity futures and other derivatives. The purpose of the article is to scientifically substantiate the provisions and develop practical recommendations for the use of risk hedging strategies by stock instruments. The subject of research in the article is a set of theoretical approaches to price risk management.

The article systematizes the classic approaches to risk management through the use of futures and alternative strategies using options.

Key words: risk, risk management, uncertainty, hedge, options, futures, derivatives, hedging strategies, commodities, producers.

Introduction. 2020 showed that risk management of agricultural producers is one of the key places in enterprise management. Market volatility can shatter any hopes for a positive end to the marketing year in agriculture. This was confirmed by the situation in almost two thirds of developing countries, which rely heavily on the production and export of agricultural products. Such unforeseen events can put their economy at the discretion of world commodity markets, which can cause significant damage not only to the agricultural sector but also to the economy as a whole. The most recent example is the impact of the COVID-19 pandemic. Because such shocks are temporary, countries that export goods can reduce their impact on the local economy through proper risk management. If agricultural producers do not take

immediate action, the world risks at some point being on the brink of a global food catastrophe that could have long-term consequences for hundreds of millions of children and adults.

Research methodology. The application of risk management practices, especially through exchange-traded instruments, is actively practiced in developed countries. Methodological and theoretical foundations of risk management of exchange instruments are reflected in the scientific works of J. M. Tomset, J. Hull, N. Taleb. Ukrainian scientists M. Solodky, O. Sokhatska and others have also made a significant contribution to solving the problems of using exchange instruments for risk management.

The article uses methods of induction and deduction to collect and systematize information on the conceptual apparatus of hedging strategies. Comparison and modeling methods are used to analyze different hedging strategies.

However, despite significant scientific advances in risk management and hedging, a large number of issues remain that need ongoing research.

The article explores alternative approaches to price risk management through the use of options and option strategies that improve the effectiveness of risk management in the enterprise.

The main material. Under modern conditions, risks have long been an integral part of a market economy. Globalization processes in the world commodity and financial markets have only increased the impact of risks on all spheres of economic activity of economic relations.

One way to reduce these risks is to use commodity futures and other derivatives. Similar to car insurance – hedging potential costs as a result of a car accident, farmers can use commodity futures markets to hedge potential costs associated with commodity price volatility. Just as if the profit from a car insurance claim cannot exceed the value of the total amount of insurance premiums, the

hedging profit may not cover the hedging costs. The main tools for hedging in modern conditions are commodity futures, options and option spreads (Hull, p. 89-91).

The main purpose of hedging is not to make money, but to minimize price volatility. This article provides an overview of commodity asset hedging to help farmers assess hedging opportunities.

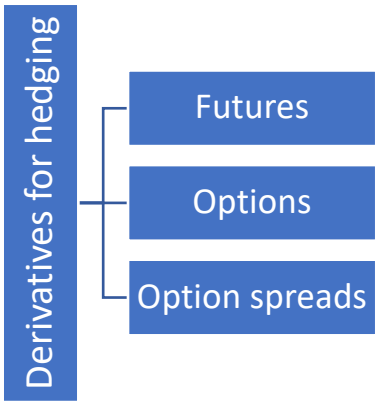

Fig.1 Derivatives, that mostly used for commodities hedging

One of the main exchange instruments for risk hedging is a futures contract. Recall that futures or Futures Contract is an agreement under which one party acquires an obligation to sell (or buy) on the day of execution, and the other party – to buy (or sell) a standard amount of the underlying asset at a predetermined price. Thus, futures hedging allows the investor to fix the current price of the underlying asset for the transaction at this price in the future (Webber, p. 10-12).

A futures contract is an exchange-traded instrument, which means that the futures market is more liquid and freer from credit risk. The counterparty of all investors on the exchange is the clearing house of the exchange. Thanks to the margin trading system, the investor can enter into both short and long agreements with the clearing house. Margin is a cash deposit made by an investor into a transaction. Simply put, the margin allows you to not pay the transaction in full, but only 1/10 or

1/20 part, while the investor bears all the risks and profitability of the whole transaction (Solodkiy, p. 56).

When opening a position on the futures market, the bidder must make a guarantee deposit (cash or securities) to the brokerage account – this is the initial margin. In addition, there is also a support and variation margin. The maintained margin is the minimum balance on the account of an investor who has an open position. Variation margin – take into account the change in the quotation of the forward contract of the amount of winnings or losses on the futures position, reflecting the revaluation as each business day by the clearing house following the trading session according to the specified formulas. If the loss is more than the initial margin, the account holder is sent a message (margin call) about the need to add funds. Otherwise, the clearing house will forcibly close the position. The investor may also close the position at any time by means of an offset agreement, ie the opposite. Delivery of the underlying asset does not occur, only the differential income is paid – the difference between the contract price and the spot (current market) when concluding an offset agreement.

There are two strategies for hedging a futures contract: its purchase and sale.

Table 1

Strategy of “long” hedging

“Long” hedge		
If in the physical market	then in the futures market	Result
..the “short” position, so the trader wants to buy a physical	the trader should take a "long" position, so buy a futures contract.	Because the positions are opposite, they protect the buyer of the physical product from the risk of price increases in the physical market. The price increase is

product,		offset by the income from the futures position.

Source: Created by author

Purchase hedging ("buyer's hedge" or "long hedge") means the purchase of futures to insure against financial losses due to future price increases.

Table 2

Strategy of “short” hedging

“Short” hedge		
If in the physical market	then in the futures market	Result
..the “long” position, so the trader owns the physical goods,	the trader should take a "short" position, so sell a futures contract.	Because the positions are opposite, they protect the owner of the physical product from the risk of falling prices in the physical market. The price decrease is offset by the income from the futures position.

Source: Created by author

Hedging by selling ("seller's hedge" or "short hedge") is the opposite strategy used by an investor who wants to sell a product in the future, but according to his forecasts, the price of this asset may fall. Therefore, he sells futures to sell the asset in the future at a contract price.

An option is an agreement that entitles its buyer to buy (sell) and its seller the obligation to sell (buy) the underlying asset in the future at a predetermined price. For this, the buyer of the right to buy (sell) the asset pays the premium (value) of the option (Elman, p. 25-27).

Two types of options are available:

Call options – they give the owner the right, but not the obligation, to purchase the asset. Hedgers buy a call option if they think the market price will rise from the current level, and a call option sells if you think the price will go down.

Put option – they give the owner the right, but not the obligation to sell the asset. A hedge buys a put option if it believes that the market price will fall from the current level, and a put option sells if it believes that the price of the underlying asset will rise.

It is important to remember that your risk is always limited when you buy call or put options, but potentially unlimited when selling options.

Usually, an option contract is based on a futures contract for a commodity, not a physical asset. Because options can be paid for in cash instead of physical delivery, they are a popular means of hedging against commodity risk.

Commodity companies often hedge options because it allows them to fix the price and protect their products from adverse movements. For example, if a farmer wants to protect himself from a wheat crop that is losing its value, he can use hedging through an option for his produce at the current market price.

Here is an example of a simple, but quite clear and effective hedging strategy using options – Collar strategies. The Collar strategy can be used in several ways and in different market conditions. It is traditionally used to protect a "long" position.

Table 2

Three Components of Standard Collar

1. 1. Purchase of an underlying asset (eg futures on a commodity asset)
2. Sale of a call option out-of-the-money (OTM)
3. Purchase a put out of money OTM Put

Source: Created by author

The risk / return profile of Collar's strategy clearly defines the security line of the asset. Your risk and return are specified in advance. Earnings at the upper level are limited by the exercise price of the call OTM option, and the risk is limited by the strike of the OTM bond.

The premium received as a result of the sale of a call option must in most cases pay for a protective bond with additional time gain.

In conclusion, it is worth recalling that risk management is one of the key places in the business planning of producers, as events such as trade wars, global pandemics, military conflicts, sanctions are beginning to affect more and more market participants due to the spread of globalization. As a result, manufacturers need to not only use but also upgrade their hedge strategies, such as using options and option spreads. Further research on this topic should be devoted to the analysis of debit and credit option spreads, which allow you to hedge positions with less use of funds and receive additional income, which can partially offset the cost of hedging.

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