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CREDIT DERIVATIVES IN BANKING: BENEFITS AND THREATS

Abstract. Financial institutions have faced a variety of threats, the main reasons for which are weak lending standards, ineffective risk evaluation of the loan portfolio, lack of attention to economic and other factors that can affect the creditworthiness of bank counterparties. Thus, among various threats, credit risk, caused by lending, remains the main source of problems for commercial banks. However, globalization and liberalization of the global financial system has led to the appearance of other sources, including trade and investment transactions, which are reflected both on the balance sheet and off-balance sheet. Banks are increasingly faced with credit risk in other financial operations – for example, with derivative financial instruments.

Effective credit risk management is a critically important component of the comprehensive approach to risk management and the long-term success of a banking organization. The use of financial instruments that allows commercial banks to transfer credit risk to a third party for a fee and, thus, avoid the additional costs for forming reserves, has become one of the ways to prevent negative consequences. However, despite the many advantages associated with the risk hedging, credit derivatives, like other financial innovations, pose additional risks directly related to the application of these instruments. For example, these risks have manifested themselves in the global financial crisis of 2008-2009 and minimized the positive effect of the credit derivatives.

This article discusses the advantages and disadvantages of using credit derivatives by commercial banks, shows the need for timely identification of probable risks and the development of effective methods for managing them by both the risk management of the bank and regulators.

Keywords: derivatives, derivative financial instruments, banking system, global financial crisis, hedging, risk mitigation methods

Formulas: 0, fig.: 1, tabl.: 0, bibl.: 37

JEL Classification: E51, F39, G21

Introduction. Banks can use mechanisms such as collateral, insurance, reserves, diversification, each of which helps to reduce the probability of risk. However, these

mechanisms are not flexible enough, and they do not separate the credit risk from the real position, while the use of credit derivatives allows banks to solve the problems they face when trying to mitigate risk.

Nowadays, the world derivative market exceeds the volume of trades in major financial instruments and has a very dynamic pace of development. This trend has not changed, despite their negative "fame" since the onset of the global financial crisis. The reason for the popularity of this market is providing the wide range of opportunities for investors pursuing completely different goals in the financial market.

In the context of the instability of global economic development, market participants are trying to find ways to protect against systemic risks, and credit derivatives, as known, are designed to help distribute credit risks across the entire financial market. However, the impact of these financial instruments is ambiguous. On the one hand, operations with derivative instruments allow minimizing risks and increasing the efficiency of financial and production as well as economic activities of financial market participants. On the other hand, derivative transactions in countries with transition economies are quite risky for all subjects of the market. Taking this fact into account, market participants need to constantly monitor the implementation of transactions with derivatives in order to timely identify possible risks and develop effective methods of managing them.

In international practice, derivatives are an important element in the functioning of financial, monetary and commodity markets. However, due to their complexity and connection with other assets and financial instruments, the use of derivatives is a complex area of financial institutions activity, which requires special forms of regulation and supervision by governments. Despite the widespread use of derivatives, this market segment is still unregulated, which may expose the financial institution to significant risks. Bankruptcies and financial difficulties of the largest operators of the credit derivatives market only confirm this fact. These include investment banks Bear Stearns and Merrill Lynch, JP Morgan Chase and Bank of New York, as well as the bankrupt Lehman Brothers.

The purpose of this article is to analyse the advantages and disadvantages of using credit derivatives by commercial banks, as well as to emphasize the need for timely identification of probable risks and the development of effective methods for managing them by both the risk management of the bank and regulators.

Literature review and the problem statement. The increase in the volume of transactions in the credit derivatives market, accompanied by greater interest in it from organizations in various fields, indicates the high level of involvement of derivatives in the risk management process. In general, the emergence of these instruments was intended to help banks shift risk off their balance sheets by purchasing credit protection from a third party. However, at the moment, their scope is not limited only to banking or the framework of any market. The ability to separate credit risk from the underlying asset and transfer a third party has led to new ways of using derivatives, in which they provide a viable alternative to traditional insurance instruments.

At the same time, the development of credit derivatives has given rise to a number of additional problems. So, among the main reasons for the international financial crisis, many researchers name the development and increase in the volume of transactions with derivatives. Questions about the positive and negative effects of the use of derivative

financial instruments in the modern economy have been widely covered in the scientific literature.

Among foreign works, the development and functioning of derivatives markets from a theoretical point of view was covered in the articles of the following authors: S. Anbil [Anbil, Saretto, Tookes 2016], F. J. Fabozzi [Fabozzi, Modigliani, Jones 2009], Jan Job de Vries Robbe and Paul U Ali [Jan Job de Vries Robbe, Ali Paul 2008], J. Sinkey [Sinkey 2007], B. Glavan [Glavan 2009], F. J. Jones [Fabozzi, Modigliani, Jones 2009], M. Mejstrik [Mejstrik, Pecena, Teply 2015], F. P. Modigliani [Fabozzi, Modigliani, Jones 2009], M. Pecena [Mejstrik, Pecena, Teply 2015], A. Saretto [Anbil, Saretto, Tookes 2016], B. Sutorova [Sutorova, Teply 2014], P. Teply [Mejstrik, Pecena, Teply 2015], H. Tookes [Anbil, Saretto, Tookes 2016], F. Iacono [Iacono 1997] and others.

The main aspects of derivative markets, raised in these works, relate to the study of its functioning and importance for participants of economic activity. In addition, special attention is paid to substantiating the probability of negative consequences in the result of practical use of derivative financial instruments.

In the Ukrainian scientific literature, the issue of the derivative market is considered in the works of the following authors: S. Moshenskyi [Moshenskyi 2018], O. Novak [Novak, Osadcha, Petruk 2019], T. Osadcha [Novak, Osadcha, Petruk 2019], O. Petruk [Novak, Osadcha, Petruk 2019], A. Petruk [Petruk 2020], L. Prymostka [Prymostka 2001], L. Pylypenko [Pylypenko 2016], A. Shevchenko [Shevchenko 2018], M. Shvayko [Shvanko, Grebeniuk 2020] and others. In these works, attention is focused on the analysis of derivatives' nature, their classification, as well as the main methods of regulating their practical use. In addition, the problems of derivative markets in the global economy are considered in studies of large investment banks, audit companies and government regulators.

Research results. Due to the process of the global economic globalization, derivative financial instruments (DFIs) are increasingly filling the regional and national financial markets of developing countries and countries with transitional economy. However, the role of derivatives in the global financial sector is defined as contradictory – from significant positive impact for economic agents based on risk hedging, to negative – because of speculative mechanisms of using derivative financial instruments and their act as an accelerator of financial instability [Lubben 2007].

Before determining the advantages and disadvantages of using credit derivatives in the banking sector, it is necessary, first of all, to understand what should be understood by these instruments and what are their specific features. Today, there are several approaches to determining the nature of credit derivatives, the most common of which we are going to consider below.

Among Western authors, international financial organizations and national supervisors, the approach to understanding credit derivatives as instruments designed to transfer credit risk from one person to another has become quite widespread. Thus, according to the definition of the German Banking Industry Committee (GBIC), credit derivatives are “instruments ... the purpose of which is to transfer credit risk present in loans, bonds or other risky assets or market positions to a third party acting as a seller of protection” [Kothari 2008].

Identical in content is the approach proposed by the Financial Services Authority (FSA), in which the concept of credit derivatives is used to describe swaps and option contracts designed to transfer credit risk on loans or other assets from one party (buyer

of protection) to the other party (seller of protection) [Kothari 2008]. The seller of protection receives a premium or interest payments in exchange for an obligation to make a payment to the buyer of protection, the performance of which is directly related to the credit position of the underlying asset.

Another approach involves interpreting the concept of "credit derivative" based on the peculiarities of pricing. These views are shared by experts of the largest international audit company PriceWaterhouseCoopers, who call credit derivatives "contracts, the value of which is based on the credit risk of bonds or bank loans" [Finnerty 1998].

A different approach is proposed by Iacono F. in "Derivatives Handbook: Risk Management and Control". Thus, in his opinion, credit derivatives are instruments, "based on changes in the credit characteristics of any asset or group of assets that are sensitive to changes in the level of credit risk" [Iacono, 1997].

According to one of the world's leading investors, Warren Buffett, derivatives are "weapons of mass destruction", "time bombs that threaten the economic system", "central banks and governments have not yet found effective ways to control or at least monitor the risks posed by derivatives markets" [Tally 2010].

As can be seen from the above approaches to understanding the nature of credit derivatives, views on this concept differ and are imperfect. However, it is currently controversial not only the interpretation of the concept of "credit derivatives", but also their classification - what tools should be attributed to them. However, despite all these problems, at the beginning of the XXI century, credit derivatives have become one of the most attractive financial instruments for commercial banks, which later were known as the impetus for a protracted financial crisis [Poledna et. al. 2015; Simkovic 2008]. Therefore, the following question arises - what are the benefits of credit derivatives that have forced commercial banks to "turn a blind eye" to the threats posed by the same financial instruments (Fig.1).

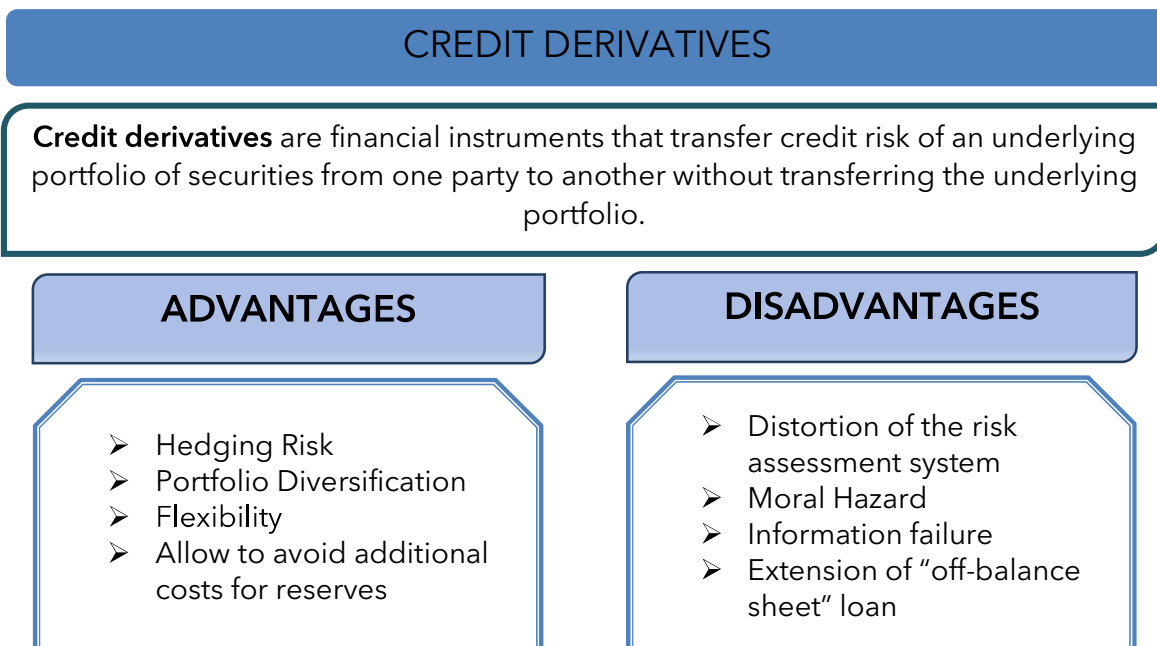


Figure 1 - Advantages and disadvantages of using credit derivatives in banking

Source: developed by the authors

The rapid growth of the credit derivatives market is explained by the fact that their use has a number of advantages for commercial banks:

1. A borrower does not participate in the conclusion of a contract. A bank and a party, purchasing the risk, are not obliged to notify a borrower about agreement. Credit derivatives are in high demand by commercial banks due to the fact that they allow to transfer credit risk without actually selling the loan asset and, accordingly, without writing it off the balance sheet. The important point is that in this case there is no need to notify the borrower of the agreement, which allows to maintain its confidentiality. Thus, credit derivatives allow commercial banks, on the one hand, to effectively manage credit risks, and on the other - not to break relations with their clients [Choudhry 2010; Shamsheer, Taufiq 2008].

2. Derivatives are instruments that insure risks throughout the existence of the underlying asset (unlike, for example, a fixed-term insurance contract), and in the case of a credit or risk event, the seller of protection makes an immediate payment to the buyer of protection in the amount specified when concluding the contract [Minton et al. 2009].

3. Opportunity for commercial banks with the help of credit derivatives to avoid additional costs for the formation of reserves. Practically in every country, the mandatory requirement of banking regulators is the formation of reserves for credit operations of banks [Petruk 2020]. One way to solve this problem was to use credit derivatives, which allowed commercial banks for a fee to transfer credit risk to a third party and, thus, not incur the cost of forming reserves. The advantage of credit derivatives was that the amount of the fee depended only on the level of credit risk of the borrower, which was determined by his credit rating: the lower the risk level, the higher the credit rating and, accordingly, the lower the fee. As a result, banks sought to purchase protection in the form of credit derivatives on the obligations of first-class borrowers due to the fact that the cost of its acquisition was lower than the cost of forming reserves.

4. The possibility of using credit derivatives as an effective way to diversify the portfolio and increase its profitability. A significant advantage of credit derivatives over traditional methods of diversification, such as the purchase of shares, bonds or other types of securities, is that diversification through credit derivatives with the same benefits does not require the investor to make initial investments related to the acquisition of any assets [Sinkey 2007].

5. The relative flexibility of credit derivatives, which allows these instruments to easily fit into various securitization schemes for bank assets [Choudhry 2010].

However, despite the many advantages, credit derivatives, together with the positive impact, pose many threats for banks and the whole financial system.

1. Information failure. The most common problem in the use of derivatives by banks is "information asymmetry". Information asymmetry is an informational situation of interaction between two subjects, in which one subject has more knowledge about the object of interaction than the other [Bergh et al. 2018]. This problem lies in the conflict between a bank and a seller of credit protection - a bank may be less interested in preventing losses that it passes on to a seller of credit protection. The threat of "information asymmetry" leads to the problem of using dishonest methods when the insurance premium is too high and the quality of the insurance provided is too low

[Gibson 2007]. Payments under credit derivative contracts can be subject to legal frameworks that are difficult to apply.

2. Moral Hazard. Banks can create "moral hazard" by using credit derivatives to transfer their share of risk. Credit derivatives allow banks to manage their illiquid credit accumulation, as well as limit their credit position. This type of derivative encourages banks to take unnecessary risks and lend to less reliable borrowers in larger quantities than they would borrow in the absence of credit derivatives [Shah 2010]. Thus, this weakens the control function of banks and reduces the quality of credit services [Umlauft 2015].

At the same time, banks that enter into such agreements violate their own interests. This primarily affects the cost of credit protection. The riskier the loan – the higher the cost of insurance, so a bank should weigh the risk it wants to hedge. Loans are divided into tranches through targeted mechanisms; they are controlled by a trustee and distributed among credit protection sellers according to the level of risk, however, a bank issuing a letter of credit retains the riskiest tranche and is the first to suffer losses. Thus, it becomes unwise for banks to lend large sums of money to less reliable borrowers, and this forces financial institutions to monitor clients, even if they have insured the loan.

3. Distortion of the risk assessment system. The apparent security that encourages banks to take greater risks than they can bear can be more dangerous than the problem of moral hazard. The division of credit risk should make the economic system safer, but at the same time the uncontrolled expansion of credit leads to panic and market collapse. Thus, credit derivatives distort the risk assessment system: instead of assessing and accepting credit risks wisely, the bank is tempted to buy insurance coverage and simply remove the problem. Ultimately, the use of such a mechanism leads to an increase in the total amount of credit risk in the economy [Grima, Thalassinou 2020].

4. Problems with off-balance sheet derivative transactions. Another threat to global financial stability may be derivative transactions themselves, the liabilities of which are considered in the accounting of commercial banks on off-balance sheet accounts. Formally, the number of open derivative positions can be increased without any restrictions, as it is not associated with direct investments. However, in reality, such transactions inevitably require a certain reservation of funds, firstly, in case of default under a separate derivative contract by one of the bank's clients, and secondly, in case of temporary imbalance of the bank's derivatives portfolio for payments to its counterparties and proceeds from them [Abor et al. 2019].

The total amount of such off-balance sheet transactions depends on the total amount of capital that financial institutions allocate for their operations in the derivatives market. The problem is that this capital competes with other possible areas of its investment, which largely depend on current market interest rates, including risk-free interest rates. Thus, lowering market interest rates reduces the cost of credit, and therefore allows to invest more and more funds in intermediary activities in the global DFI market at higher incomes. Increasing this kind of "off-balance sheet credit" makes participants extremely sensitive to many changes in market conditions, and above all – to possible fluctuations in market interest rates. Excessive expansion of "off-balance sheet credit" in relation to the real capital derivatives involved in its market increases the credit risks, and, therefore, is a potential source of instability or severe shocks in the global financial market as a whole [Abor et al. 2019].

In addition, it can be argued that the consequences of the use of credit derivatives by commercial banks, in terms of risk and instability in the global financial market, are ambiguous. Given the above facts, the mechanisms of regulating the credit activities of commercial banks are especially important [Radova, Garkyscha 2018; Lanets 2016; Lentner et al. 2019]. These mechanisms usually include certain restrictions and requirements regarding [Petruk 2020]:

- minimum amounts of equity;
- disclosure of information;
- methods of calculation and recommended quantitative values of market risk levels;
- forms and procedure for concluding the most frequently used types of derivative contracts.

Currently, the main documents of international banking regulation, which specify the above requirements and restrictions, include "Banking Standards", developed by the Basel Committee on Banking Supervision (Committee on Banking Supervision of the Bank for International Settlements), are known as the "Basel Recommendations" ("Basel I", "Basel II", "Basel II.5" and "Basel III"). Today, the application of the rules of "Basel III" is relevant. Central banks in more than 100 countries apply these standards to regulate banking activities [Kuznetsova, Pohorelenko 2020; Petruk 2020].

Technically, the implementation deadline for Basel III was 2019, but the crisis events in the banking market necessitated the regulator to develop even stricter rules, which are called "Basel IV". This standard is expected to follow (Basel III) and imply new capital requirements and greater financial disclosures.

Basel IV will include [Neisen, Roth 2018]:

1. Higher requirements for the leverage ratio;
2. Assumes simpler or standardized models for calculating capital requirements of a bank, uniform for all, and not internal banking models (the Basel Committee has made proposals to develop simpler models as part of Basel III completion);
3. More detailed disclosure of information about formation of the capital reserves and other financial statistics.

The Basel Committee has set itself an ambitious goal: in the future, banks should be required to assess the risks of their operations and calculate capital requirements using standardized models [Jurkowska 2018; Zabolotsky et al. 2018]. This should make it easier to compare risks and capitalization levels of different banks, quickly identifying the volatility. However, achieving it is difficult, and there is a high probability that the reality will differ significantly from the desired results. The chosen vector may have negative consequences, as the tightening of regulatory requirements to ensure financial stability will, among other factors, restrain the business activity of financial institutions, increase transaction costs and limit profitability, as well as the ability to increase equity. In order to recover losses, banks will have to increase interest rates on loans and limit risks with the help of tough credit conditions for potential borrowers. As a result, the inflow of financial resources for the real sector of the economy will decrease. This, in turn, will negatively affect the indicators of economic activity [Petruk 2020].

Conclusions. Despite the threats posed by derivative financial instruments to the stability of the financial system, today it is impossible to imagine the activities of commercial banks without derivative transactions. In a stable economic situation, credit derivatives allow financial institutions to redistribute risks among other market

participants and, thus, to increase their profits. However, in the period of a crisis, the mechanism of the derivatives market may fail – the use of similar strategies by most market participants and the demand for payments on liabilities may lead to its collapse.

The main advantages and disadvantages of credit derivatives during their use by banks are identified. The benefits that banks receive from the derivatives include the following items: derivatives allow to transfer credit risk without actually selling the loan asset; insure risks throughout the whole period of validity of the underlying asset; can be used as an effective way to diversify the portfolio and increase its profitability; make it possible to avoid additional costs for the formation of required reserves. However, the low level of the bank's risk management, as well as the desire to release capital with help of derivatives and make more profits can cause a number of negative consequences among which are the emergence of moral hazard; information asymmetry; distortion of the risk assessment system; the possibility of excessive expansion of “off-balance sheet” credit.

Derivative financial instruments were designed to redistribute credit risk from banks' balance sheets to end investors (companies), at the same time ensuring the stability of the banking system. Instead, when the crisis erupted in mid-2008, practically all the credit risk hidden in derivatives was concentrated in the largest international banks. However, the main problems then and today lay not in the essence of derivative financial instruments, but are caused by the absence of accurate classification, effective methods of regulation banking operations with derivatives, as well as the lack of methods for assessing hidden risks in each type of instrument. Therefore, further research should be focused on finding ways to solve these problems.

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