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Credit Derivatives: Trading Protection

Abstract

The article describes the main forms of credit derivatives, the evolution of their development and conditions of use. Particular attention is paid to the conditions of protection against credit risk. The authors demonstrate the possibility and expediency of using credit derivatives in the financial practice of Ukrainian companies in the context of transformation of the current legislation. It is established that credit notes, as a form of credit derivatives, are a more reliable financial instrument. From an economic point of view, they are considered to be securities with a certain set of risks and benefits for investors, which should be taken into account when developing a financial strategy for all capital market participants. The *subject of the study* is the intricacies of using credit derivatives in financial management, with a special emphasis on their role and conditions in modern Ukrainian financial practice. The research *methodology* includes a critical review of the existing literature combined with an analysis of the current use of credit derivatives in Ukraine. This approach offers a dual perspective that not only summarises the global context but also takes into account the nuances of local implementation. The *purpose of this study* is to investigate the effectiveness of credit derivatives as financial instruments for risk hedging and profitability optimisation. By examining different types of these instruments, the study aims to draw practical conclusions and provide recommendations for integrating these instruments into financial management practices in Ukraine. The research *concludes* that credit derivatives offer significant advantages as reliable financial instruments that contribute to risk management and economic development. The paper highlights their potential to positively impact financial market development, especially under conditions that facilitate risk hedging. The findings of the publication support the creation of a specific legislative and regulatory framework that would facilitate the wider introduction and efficient use of credit derivatives in Ukraine. This includes emphasising the need for specific amendments to existing tax codes and financial regulations to create a favourable environment for these instruments.

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1 Introduction

Economic development involves the introduction of innovative financial instruments, the emergence of which is driven by new challenges and risks and the desire to minimise them while increasing profitability.

One of the instruments in the credit derivatives market, which is part of other credit derivative instruments, is the credit default swap (CDS), which makes it possible to isolate and manage credit risk from other types of risk (interest rate, currency, etc.). A credit default swap (CDS) is an agreement to transfer credit risk. Different types of CDS are widely

used in international practice (Vo, Huynh, Vo, Ha, 2019). In a standard CDS, one party buys credit protection from another party against the possible occurrence of a credit event (e.g., debt restructuring, debt default, debt repudiation, bankruptcy, etc.). It should be recognised that the specifics of a credit event can vary and therefore the terms are determined by the parties when entering into a CDS.

The party that transfers credit risk through a CDS is called the protection buyer and the party that assumes the credit risk is called the protection seller. Economically, buying credit protection is equivalent to taking a short position in credit risk, as the occurrence of a credit event will result in an

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economic gain. Conversely, selling credit protection is equivalent to taking a long position in credit risk, as the occurrence of a credit event will result in losses.

To obtain protection under a credit default swap, the buyer of protection makes regular payments to the seller of protection. These payments constitute the premium and continue until the end of the CDS term or until the credit default occurs. Payments are usually made on a quarterly basis. The premium is determined as a percentage of the market value of the debt asset and is calculated annually.

If a credit event occurs before the end of the term of the CDS, the protection seller is obligated to pay the protection buyer compensation, called the protection leg. The amount of the protection leg is fixed (by agreement) or calculated as the difference between the nominal price of the debt asset and its cheapest to delivery (residual value).

2 Formats of Credit Derivatives

The standard and most common format of credit derivatives is the swap format discussed above. Such formats are also referred to as unfunded, as in this case investors do not make any initial payments and subsequent payments are only premium payments.

Another form of credit derivative is the credit note – a security with an embedded credit default swap that allows the issuer of the note to transfer credit risk to investors and vice versa – to take risk for a potential reward (Fabozzi, Davis, Choudhry, 2007). This form of credit derivative is called funded because the investor must pay the purchase price – the face value of the credit note. In essence, a credit note is a symbiosis of a credit default swap and a bond: investors buy credit notes and receive fixed or floating coupon payments until a credit event occurs. If a credit event does not occur, the issuer repays the face value of the loan note at maturity. However, if a credit event occurs, the issuer redeems the loan notes early at a predetermined redemption rate. As with credit default swaps, the repayment rate upon the occurrence of a credit event may be fixed or equal to the minimum delivery value of the underlying asset.

An investor's return on the purchase of a credit note depends on the coupon rate and the redemption rate in the event of a credit event. The coupon rate of a credit note reflects the market yield of bonds and the maturity adjusted default risk of the reference company. The redemption rate of a credit note in the event of a credit event reflects the nominal value of the bond adjusted for the default risk of the reference entity. In simple terms, the coupon rate of a credit note includes the market yield of the bond and the premium leg of the CDS, while the redemption

rate of the credit note includes the nominal value of the bond adjusted for the protection leg of the CDS. Thus, the credit default swap embedded in the note can work both ways – an investor in a credit note can be both a seller and a buyer of protection in the event of a credit event.

The investor in the credit note wants to protect himself against the credit event of the reference company, so he buys protection and takes a short position in credit risk. This means that the coupon rate of the credit note will be reduced by the CDS premium, but in the event of a credit event, the issuer will redeem the credit note at a high maturity rate and the investor will receive the face value of the note and the protection portion of the CDS. Hence, the investor will receive a higher return in the event of a credit event. In exchange for assuming certain risks, the investor receives a higher return than from other debt securities.

The investor in a credit note assesses the risks and wishes to sell protection against a credit event and takes a long credit risk position. In exchange for assuming the risks, the investor receives a higher yield than on other debt securities, i.e., the coupon rate of the credit note is increased by the CDS premium. In the event of a credit event, the issuer redeems the bonds below par, as the redemption rate will be adjusted by the CDS protection.

3 Settlements for Credit Derivatives

After a credit event occurs, there are three ways to calculate the amount of the protection payment (Bomfim, 2015). The choice of method is determined at the conclusion of the CDS or in the prospectus of the credit note.

Fixed payment. The easiest form of payment to understand: in the event of a credit event, the seller of protection pays a predetermined amount.

Physical settlement. The most common form of settlement, which involves the payment of the full face value of the debt asset to the buyer of the protection after the transfer of the reference asset to the seller of the protection. Under such conditions, the buyer of the protection receives full compensation for the losses from holding the debt assets, and the seller of the protection acquires the right to claim the assets.

Cash settlement. This form is more attractive in transactions involving basket default swaps or synthetic collateralised debt obligations, as the large number of different debt assets makes it difficult to deliver each one. In a cash settlement, the seller of the protection pays the buyer the difference between the nominal price of the debt asset and its lowest delivery price. In other words, the protection buyer keeps the debt asset and is compensated for the value lost due to the credit event.

4 Evolution of Credit Derivatives

With the development of financial markets, credit derivatives have evolved and expanded to offer investors and hedgers a wider range of applications (Mengle, 2007). To date, four stages of credit derivatives development can be distinguished:

First Stage. Initially, a credit derivative, namely a CDS, was used to simply insure a party that had exposure to the debt obligations of a reference company, but did not affect the solvency of its debtor. The other party, a hedger who could professionally assess the risk of the liabilities, sold insurance (protection) against default on those liabilities for a fee. For example, Party A owns bonds of Party B and is concerned about the risk of default on those bonds, so it agrees to make periodic payments to Company C, which, in the event of a default by Company B, undertakes to compensate Party A for losses.

Second Stage. The emergence of credit-linked notes (CLNs), securities with an embedded credit default swap that is directly linked to the credit of a reference company. A professional hedger (a bank or financial company) sells the loan notes to investors and lends the proceeds to the reference company. In such cases, there is a direct link between the loan note and the loan of the reference company. Often, the bank or financial company acts as a hedge, i.e., it assesses the risk of the reference entity, sells CLNs with embedded protection (CDS) and then lends to the reference entity.

Third Stage. The emergence of credit notes that are not directly linked to a specific loan, but still imply a link between the investor and the reference company. An investor with economic ties to the reference company seeks to protect itself against a possible default of that company, so it approaches a hedger with a high credit rating and wants to buy credit notes from it.

Fourth Stage. Financial market participants have completely abandoned direct links between the investor, the hedger and the reference company. Suppose an investor has savings in a foreign bank, but fears that the government of that country may default in the coming years, which would have a negative impact on the banking system as a whole and, in particular, on the investor's bank. Thus, the investor finds a hedger from whom he buys protection against the default of a foreign government for the amount of savings in a foreign bank.

5 Basket Credit Derivatives

Since the credit default swap (CDS) is the basis of all credit derivatives, the essence of bundled credit derivatives is explained using the example of CDS, although all the points are applicable to loan notes.

Basket default swaps are based on the redistribution of credit risk associated with a portfolio of assets (Mengle, 2007). The underlying

portfolio can contain between 2 and 200 credit instruments. The mechanism for redistributing credit risk is based on calculating the probability of losses on the credit portfolio for different assets in a particular order. The largest losses are expected from the riskiest assets and the smallest from the safest. The mechanism of the basket CDS exposes the risk that assets included in the credit portfolio may default at the same time, i.e., there is a risk of correlated defaults (default correlation).

In general, a basket CDS is not fundamentally different from a regular CDS, except for the number of credit events (Bomfim, 2015). The number of credit events determines after how many defaults on assets included in the credit portfolio the CDS protection payments start. For example, in a first-to-default (FTD) basket swap, payments to the protection buyer are made after the first default of any asset in the credit portfolio. A second-to-default (STD) basket swap provides for payment of the protection leg only after two defaults of assets in the loan package (portfolio). For a typical package of 4-7 credit assets, the probability of two or more assets defaulting is significantly lower than for any one asset in the package. As a result, the premium for STD is typically low. Institutional investors often consider selling protection on an STD package to be a safer investment than buying a single asset, even one of high credit quality.

6 Comparison of Credit Default Swaps and Credit Notes

As already mentioned, a credit default swap is the basis for any credit derivative, while a credit note is a more complex form of it.

As a derivative contract, a credit default swap does not require additional registration, payment of initial margin or the purchase of collateral. This makes CDS easy to use, but increases the risk of default by the parties to the contract, most often the protection seller. The default of the protection seller on the credit risk led to the credit crisis of 2008, now known as the Great Recession. Large investment banks such as Lehman Brothers sold protection against default on mortgage loans that were securitised into mortgage-backed securities (MBS) – mortgages bundled into packages sold as securities (Wiggins, Metrick, 2014). CDS insured against mortgage defaults, so investors in MBS felt fully protected. As the US real estate market grew rapidly, banks issued mortgages on a massive scale without thoroughly checking the borrowers. But when property prices fell, mortgages stopped being paid and the collateral (mortgages) stopped covering losses – banks were unable to fulfil their obligations as sellers of protection in CDS. These events prompted changes and improvements in the mechanisms for using and regulating credit derivatives.

Bonds are a more protected instrument because they are a security, i.e., they require registration by the state regulator, which includes a thorough examination of the issuer and related persons (NSSMC, 2023). In the case of a public placement, the issuer publishes the results of an independent audit and a rating agency assigns an appropriate rating to the bond prospectus. The issuance of credit notes requires time for review and registration, as well as issuance costs; however, due to their greater protection, credit notes are more attractive instruments to institutional investors.

In countries with developed capital markets, it is common to combine the use of credit default swaps and CLNs as part of a single financing strategy. Suppose that financial Company X has sold to Investor A credit protection on the bonds of a reference company by entering into a three-year credit default swap; in the event of a credit event, the parties agree to settle in cash. At the same time, financial Company X issues and sells credit notes to Investor B for the same amount and for the same term as specified in the credit default swap entered into with Investor A. The credit event for the CLN is the default of the same reference company, and the prepayment amount is determined by the residual value of the reference asset. The coupon payments on the CLN are financed by financial Company X from the premium income of the CDS. If the credit event does not occur, Company X redeems the bonds at par and returns the initial investment to Investor B. In the event of a credit event, Company X pays Investor A (the buyer of the protective CDS) the difference between the nominal price of the asset and its liquidation value, and Investor B (the buyer of the CLN) receives the liquidation value of the underlying asset as repayment of the loan notes. In the above mechanism, financial Company X takes no risk: it uses the CLN issue to pay for the protection part of the CDS, and the income from the premium part of the CDS to pay the CLN coupon.

7 The Use of Credit Derivatives in Ukraine

At present, the use of credit default swaps creates legal uncertainty, as the Law of Ukraine "On Securities and Stock Market" (Law of Ukraine "On Securities and Stock Market", 2006) legitimises the use of CDS, but the current edition of the Tax Code does not, which makes the use of credit default swaps impossible at the moment. However, since credit notes are securities, their use is not prohibited by the Tax Code.

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As of April 2024, only one case of the use of credit notes was recorded in Ukraine. On 31.05.2023, LLC "Market Consult Plus" issued 334 thousand promissory notes with a nominal value of 1 thousand UAH – for the total amount of 334 million UAH (Forbes Ukraine, 2023). These notes have a maturity of 5 years and a coupon of 5% per annum. In the event of a credit event (default of a third party), the issuer will redeem the notes early at a redemption price of 130%. The credit notes of LLC "Market Consult Plus" are an example of the third stage in the development of credit derivatives – unsecured credit notes that are not tied to a specific loan. The interest rate on the coupon is reduced by the CDS premium, so as long as the credit event does not occur, the buyer of the credit notes will incur losses and the issuer will be using "cheap" money. However, in the event of a credit event, the investor receives a reward in the form of the protection leg of the CDS – 30%.

8 Conclusions

Credit derivatives are an efficient and effective tool for managing credit risks, which has long been successfully used in international practice. This is due to their advantages over other instruments:

- They allow banks to hedge their exposure to borrowing clients. Purchasing default swaps allows banks to transfer credit risk to swap sellers, which in turn leads to the unfreezing of bank reserves in the event of a borrower's default;
- for the buyer of credit protection, they generate an opportunity to generate additional income (the investor sells the protection at a higher price);
- for banks (sellers of credit default swaps), there is an opportunity to diversify their loan portfolio. The use of this instrument can replace direct lending or the purchase of corporate bonds. Selling a credit default swap allows a bank with a high funding rate to take on client risks without raising additional funding and increasing its cost.

However, as noted above, credit derivatives require qualified use and regulation. With the support of international partners, Ukraine needs to ensure the functioning of rating agencies capable of adequately assessing credit risk and promoting the active use of credit derivatives. The issue of regulating certain articles of the Tax Code in line with the provisions of the Law of Ukraine "On Securities and Stock Market" (Law of Ukraine "On Securities and Stock Market", 2006) also remains relevant for the functioning of the credit derivatives market in Ukraine.

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