

Credit Risk Transfer Instruments in Central and Eastern European Countries in the Light of the Subprime Crisis

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Abstract

The last twenty five years have seen dramatic changes in the global financial system and another wave of innovation in finance. The most dramatic developments in the global financial system are the enormous growth in instruments for risk transfer and risk management (securitisation and credit derivatives), the growing role played by non-bank financial institutions in capital markets around the world (especially the increased role of hedge funds in bearing risk in derivatives markets and the financial systems in generally), and the much greater integration of national financial systems.

The present paper aims to analyze the possibilities of Credit Risk Transfer instruments use in Central and Eastern European countries, in the light of the US subprime crisis and the latest evolution of credit markets in this area. Particular emphasis is given to the risks implied by these inovative CRT instruments and to the impact of credit derivatives on the credit markets and on the stability of the financial system.

The use of credit derivatives by the Central and Eastern European banks is very low relatively to the developed economy. On the other hand, the Central and Eastern European banks have been somewhat sheltered from the recent financial crisis, as the credit risk management with the help of credit derivatives and securitisation is undeveloped.

Keywords: credit risk; securitisation; credit derivatives; Central and Eastern Europe; financial innovation, risk management.

JEL classifications: G21,G32

Introduction

In the last thirty years, the credit markets have faced important financial innovations in the field of credit risk management, such as: **loan sales** in the 1980s, **securitisation** in the 1990s and **credit derivatives** in the 2000s. Traditional credit risk transfer instruments, such as *financial guarantees* and *credit insurance*, are replaced more and more by the above-mentioned financial innovations.

The asset securitisation relies on the cash flows generated from an indigenous financial asset portfolio to support the issuance of Asset-Backed Securities (ABS). This technique allows the banks to take large mortgage portfolios off their balance sheet (and thereby reduce the inherent liquidity, interest rate and credit risk exposures) and represents an attractive financing opportunity (Andersen, 2006). Different type of receivables can be securitized, such us mortgage loans, automobile loans, credit card debt, etc. From the risk management's perspective, the securitisation means the pooling,

tranching and de-linking of risky assets, transferring risk from originators to investors. Nowadays, securitisation represents a universal risk management, capital management and funding instrument. It gives to the banks the possibility to manage the liquidity risk of traditionally illiquid loans in the balance sheet and to diversify risk away from the banking sector (Trichet, 2007).

For the banks, the main motives for securitizing assets are: risk diversification; access to liquidity; reduction of capital requirements; product range enhancement; investment opportunities.

Credit derivatives are contracts where the payoff depends on the creditworthiness of an agreed *reference entity* (a company or a country). Credit derivatives allow companies to trade risks in almost the same way as they trade market risks, to diversify credit risks, and to transfer credit risks to a third party (Hull, 2006). Most segments of the credit risk transfer markets are global markets with the counterparties often domiciled in different countries. The main market participants are banks, non-financial corporations, insurance companies, reinsurance companies, hedge funds or asset management companies.

The simplest and most used type of credit derivative is the credit default swap (CDS). Under a credit default swap, one party (the *protection buyer*) agrees to pay an amount (the *fixed amount*), either initially or periodically, to the other party (the *protection seller*). As presented in figure 1, the protection seller agrees to pay an amount to, or buy a debt obligation from the protection buyer on the occurrence of specified credit-related contingencies (each a *credit event*). The contract under CDS depends upon the default event and the cash flow transaction is triggered only when the default event occurs and not otherwise. This not only helps market participants to seek protection, but also motivates them to buy and sell positions for reasons of speculation and arbitrage, without having the direct exposure to the underlying security.

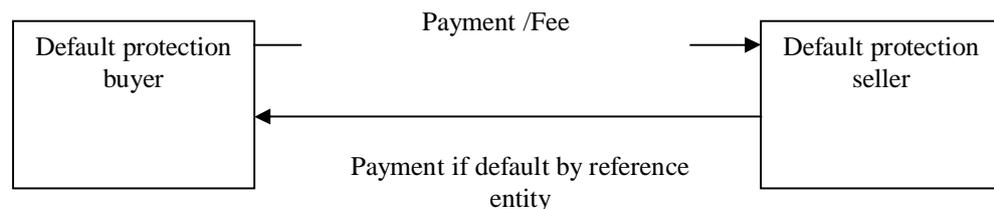


Figure 1: Credit default swap

Definition of the credit event is typically standardized by referring to the master agreements of the International Swaps and Derivatives Association (ISDA). A credit event can be the failure to make a required payment, the restructuring that makes any creditor worse off, the invocation of cross-default clause, and the bankruptcy (Stulz, 2003).

Credit Default Swaps are widely believed to facilitate risk-sharing across financial intermediaries and, hence, to have reduced the probability that difficulties at a single intermediary could affect the entire financial system. The *main advantage of credit derivatives*

is the possibility that the credit risk is spread to investors/institutions outside the banking system.

Recent Developments in the Credit Derivatives Markets

The financial derivatives market has registered in the last years a very fast development and the value of the transactions are significantly increasing, according to the estimations of the Bank for International Settlements. The credit derivatives market segment is one of the most innovative and fastest growing in the last 5 years (see figure 2). In 2001 the total notional principal for outstanding credit derivatives contracts was about \$800 billion. By June 2008 this had grown to over 57.325 billion USD, a 71-fold increase from the level at mid-year 2001, according to Bank for International Settlements (Bank for International Settlements, 2009a).

The usage of credit derivatives is more concentrated among specific industries. For example, financial services companies are the heaviest users of credit derivatives, because much of their inherent business risk is concentrated in those areas.

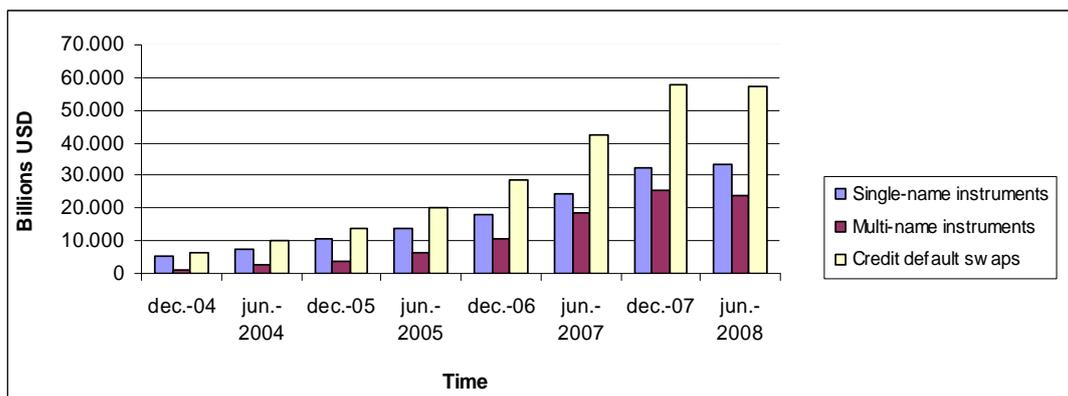


Figure 2: Evolution of credit derivatives markets (notional amount outstanding) in 2004-2008

Source: Bank for International Settlements, 2009, „BIS Quarterly Review“ March 2009, International Banking and Financial Market Developments, Monetary and Economic Department, Basel.

This growth has been accompanied by significant product innovation, notably the development of synthetic Collateralized Debt Obligations (CDOs), which allow the credit risk of a portfolio of underlying exposures to be divided into different segments, each with different risk and return characteristics.

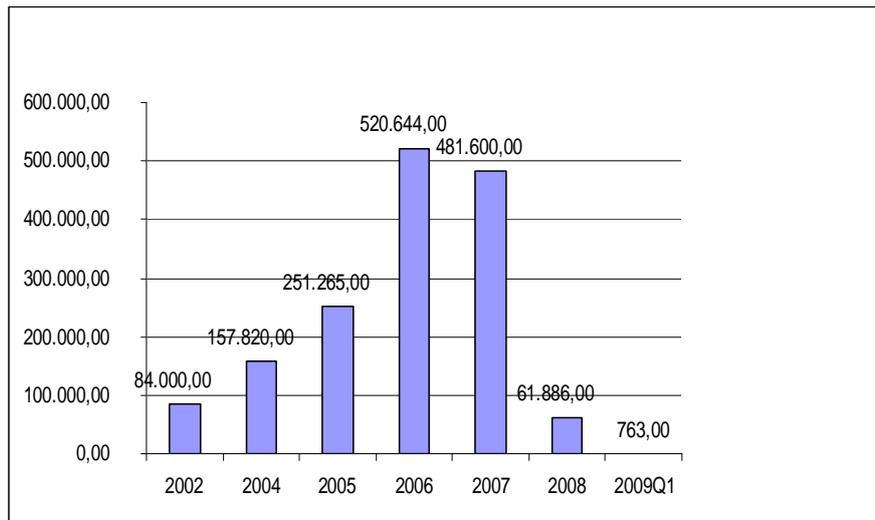


Figure 3: Evolution of CDOs Issuance in 2002-2009Q1 (billions USD)

Source: Securities Industry and Financial Markets Association, 2009, www.sifma.org

According to the Securities Industry and Financial Markets Association, the issuance of collateralized debt obligations has increased three times (almost tripled) between 2004 and 2007, amounting to \$481 billion in December 2007. In 2008 and March 2009, as a result of the US subprime crisis, the values of CDO issuance fall sharply at 61.886, respectively 763 billions USD in 2009 Q1 (see figure 3). This exponential development of credit derivatives market represents an important feature of today's global finance.

One of the most important reasons for the large growth in recent years is that the market has become increasingly standardized (Nyberg, 2007). The most used underlying assets are the corporate bonds (80% of the total), traditional bank loans and different forms of sovereign debt.

According to the Bank for International Settlements, the main factors that determined the rapid growth of securitisation and credit derivatives in the last years are:

- greater focus by banks and other financial institutions on risk management;
- a more rigorous approach to risk/return judgments by lenders and investors and an increasing tendency on the part of banks to look at their credit risk exposures on a portfolio-wide basis;
- efforts by market intermediaries to generate fee income;
- a generally low interest rate environment, which has encouraged firms to search for yield pickup through broadening the range of instruments they are prepared to hold;
- arbitrage opportunities arising from different regulatory capital requirements applied to different kinds of financial firm;
- introduction of Basel II in 2008.

Credit Risk Transfer Instruments in Central and Eastern Europe

The financial systems form Central and Eastern Europe are stable, but there are some increasing risks. According to the National Bank of Romania, the most important risk exposures for CEE Romanian financial systems are the following:

a) the rapid credit growth in the last years; many of the Central and Eastern European (CEE) countries have recently experienced a rapid expansion of bank credit to the private sector. For example, in 2007, the credit made by the Romanian banks increased by 60.4%, reaching 148.2 billion RON (41 billion EUR). Foreign currency-denominated lending has increased with 84% in 2007 and represents 54.3% of the total loans. As a consequence, banks' potential exposure to indirect foreign exchange risks may also have increased. In the same time the loans are more and more financed with liabilities other than deposits as banks expand credit by increasing external borrowing. In response, the National Bank of Romania has progressively introduced specific initiatives (i.e. interest rate hikes, higher/differentiated capital requirements, and increase in reserve requirements) to slow the rapid credit expansion. In the last years, the ratio of private sector credit to Gross Domestic Product has also increased significantly in Central and Eastern European countries;

b) the rapid credit growth has contributed to a growth in imports and a widening of the current account deficits in most CEE countries. In 2007, Romania's current account deficit reached 13.9 percent of the gross domestic product (GDP);

c) the non-financial companies are facing an increasing foreign exchange risk.

The acceleration of credit growth rates and the increasing weight of foreign currency-denominated loans on total loans have determined increased risks for the banking system. Effective credit risk management attracts today more attention in Central and Eastern European banks than ever before. A commercial bank, for example, can manage the risk associated with its loan portfolio by using credit derivatives. Investment banks are using credit derivatives in order to manage the risks associated with its securities. Other financial institutions, such as insurance companies, asset managers or hedge funds can use credit derivatives as an investment instrument or as an opportunity to diversify the risk of their portfolio. Large institutional investors, such as hedge funds, insurance companies, mutual funds companies, want to have a particular amount of credit risk in their portfolios in order to diversify their total risk. The main reason consists in the fact that the prices of the credits do not have such large co-variation with other prices, for instance, the prices of shares and real estate.

Emerging market credit derivatives represents a developing sector. Some countries from Central and Eastern Europe have already faced an intense securitisation activity in the last years (i.e., Russia), others have only a few transactions (Poland, Czech Republic), and others have no transactions (Romania, Bulgaria). According to the Bank for International Settlements, the current financial crisis has revealed important **gaps in statistics** on credit risk transfer,

especially in emerging economies (Bank for International Settlements, 2009b).

Empirical evidence suggests that in Poland, the use of complex financial instruments and securitisation remains limited, and credit derivatives are absent.

The Russian derivatives markets have faced a major boom in the period 2001-2007. After the onset of current financial crisis, the volume in some products declined sharply. Hedge funds and private speculators, that normally traded credit derivatives, have switched to FX and interest rate contracts (FOW, 2009). The main challenges for the Russian credit derivatives market are the following: lack of liquidity of on-shore OTC market, limitation on range of counterparties, uncertainties regarding the use of collateralization and insufficient developed legal framework.

The Turkish sovereign bonds represent one of the most used assets for Credit Default Swap at international level, but credit derivatives are not very popular instrument for Turkish companies and financial institutions. In the domestic credit derivatives market, Turkish banks are usually risk buyers. The foreign investors (usually financial institutions) that adopted long position on Turkish sovereign bonds, deals CDS as hedging tools with Turkish banks.

Even if Romania has already an established special securitisation framework, there was no securitisation transaction in the last years. The securitisation package, which came into force in April 2006, is comprising three laws, respectively Law No. 32/2006 regarding mortgage bonds ("Mortgage Bonds Law"), Law No. 33/2006 regarding mortgage banks ("Mortgage Banks Law"), Law No. 31/2006 regarding securitisation of receivables ("Securitisation Law"), and amendments to the primary market mortgage law - Law No. 190/1999 regarding mortgage lending for real estate investment projects ("Mortgage Loan Law").

The "Securitisation Law" allows local law true sale securitisations and regulates the bankruptcy remoteness of the Special Purpose Vehicle (SPV). The Romanian law allows securitisation of any type of transferable receivables (present or future) - mortgage loans, car loans and credit cards, consumer loans and leasing receivables. There are also some legal uncertainties and formalities with the Law no. 31, including:

- high minimum capital requirements for the SPV (the Romanian lei equivalent of €125,000)
- licensing of the SPV's administrator,
- uncertainty with respect to the incorporation of local SPVs established pursuant to the "Securitisation Law" into cross-border securitisation transactions,
- the notification requirement of the originating bank's creditors, and
- the lack of tax relief for the SPV found in other jurisdictions in the region.

The Special Purpose Vehicle (or the Special Purpose Entity) can be established either as a securitisation company, issuing asset-backed bonds, or a securitisation fund, issuing asset-backed units. Any Special Purpose Vehicle must be authorized by the National Securities

Commission (NSC), and its exclusive business has to be the issuing of security instruments based on a receivables pool.

Due to outstanding growth of consumer lending during the last few years and to the legal foundation, it is possible that the Romanian financial market will count its first securitisation in 2009 or 2010. There are also some additional factors in this regard:

- BASEL II has already effectively started 1 January 2008;
- accession to the European Union and implementation of legislation related to securitisation, e.g. Prospectuses Directive, Financial Collateral Directive etc.,
- relatively favourable legal and tax environment, and
- the banks' aim to refinance with foreign capital markets.

There are many banks or leasing companies that have built significant portfolios of mortgage credit contracts, consumer or leasing credits who could use securitisation or credit derivatives in order to shed the credit risk.

Implications of Credit Derivatives and Securitisation on the Credit Markets and Financial Stability

The exponential development of credit derivatives market in the last years raises questions regarding the impact of credit derivatives on monetary policy, on the credit markets and on the stability of the financial system. Some authors found evidence that *greater use of credit derivatives is associated with greater supply of bank credit for large term loans—newly negotiated loan extensions to large corporate borrowers—though not for (previously negotiated) commitment lending* (Hirtle, 2007).

The credit risk transfer through the use of credit derivatives within the banking system and also between banks and non-bank financial institutions is often cited as a *stabilizing factor in the financial system* (Geithner, 2006). It reduces the exposures concentrations at individual banks and allows the spreading of credit risk more widely to those institutions willing to hold it.

A key feature of credit derivatives is that they *separate the origination of credit, the funding of credit, and the holding and management of credit risk*. Under the impact of credit derivatives, the banks are changing their business model. Hereby, the traditional „buy-and-hold“ model is replaced by some important banks with the „originate-and-distribution“ model (Trichet, 2007). The traditional „buy-and-hold“ (or „originate-and-hold“) model implies all aspects of the credit process (originating the loan, funding it, and holding and managing the associated credit risk). The „originate-and-distribution“ (or „underwrite-and-distribute“) model suppose the separation between origination and funding of credit, on one hand, and holding and management of credit risk, on the other hand. Nowadays, the banks distribute portfolios of credit risks and assets to other market players (hedge funds, insurance companies), acting as risk managers in addition to pure credit providers. In our opinion, the business model „originate-and-distribute“ will survive to the current financial crisis, but the banks should improve their risk management models.

In the same time, the use of credit derivatives implies numerous risks: credit risk, counterparty risk, model risk, rating agency risk, and settlement risk (Gibson, 2007).

Banks generally report the *market risk* of their positions - the risk associated with possible changes in financial prices and rates. For instance, J.P. Morgan Chase reported a value-at-risk of \$281 million on the last day of 2003, which meant there was a 1 percent chance that it would make a one-day loss on its trading portfolio in excess of \$281 million.

The *credit risk* is defined as the risk that a loss will be experienced because of the default by the counterparty in a derivatives transaction. Risk transfer through derivatives is possible only if parties (derivatives dealers, hedge funds and other nonbank financial entities) to whom risk is transferred can perform their contractual obligations. The credit risk in a derivatives transaction has two components: current exposure and potential future exposure. The current exposure is represented by the fair value of a bank's derivatives contracts that have a positive value. The exposure represents the cost of replacing the contract if the current counterparty is unable to perform. Potential futures exposure represents an estimate of the replacement cost that a contract could have during his remaining life, which is often difficult to estimate with much reliability.

The *operational risk* has caused the largest derivatives losses to date. It can be defined as the risk related specifically to operations such as clearing and settlement, possibly taking in technology risk, as well as myriad other possibilities—with legal and reputational risk thrown in for good measure. Others defined operational risk as anything that isn't already categorized as market or credit risk.

The risk of the *concentration of derivatives activities*, notably over-the-counter markets, has arisen some concerns in the last two years. In the USA, 5 banks (JP Morgan Chase, Bank of America, Goldman Sachs, Citigroup, and Morgan Stanley) hold together 80% of the country's derivatives risk, and 96% of the exposure to credit derivatives. The main concerns are that the failure of a leading dealer could result in counterparty credit losses for market participants and a leading dealer's exit may bring market illiquidity.

Innovations in credit risk transfer markets have given rise to some new challenges for market participants and their supervisors in the areas of **systemic risk**. An important feature of periods of financial innovation is that the rapid increase in new products and changes in the structure of those markets can outpace the development of the risk management and processing and settlement infrastructure - in the credit derivatives sector the gaps in the infrastructure and risk management systems are considered the most conspicuous (Geithner, 2006). The complexity of some financial innovations and the relative immaturity of the various approaches used to measure the risks in those exposures amplify the uncertainty involved.

The fast development of the credit derivatives markets can determine the apparition of financial crisis, because the transfer of the credit risk is performed mainly towards the investors much less capitalized and that are not bound to some strict regulations. At the same time, these markets are "Over the Counter" markets that through their nature

are less transparent. Moreover, the significant implication of the bank institutions in the transactions with credit derivatives highlights the use of these products without complying with the bank cautiousness; a fact that can determine the manifestation of instability at the level of the bank system and even the apparition of the systemic risk.

In our opinion, the deep crisis that the global financial markets and the banking sector have been confronted with for more than a year has three main causes (Anton, 2009). Financial innovations of the last two decades facilitate the transfer of risks associated with mortgage credits and, as a consequence, a significant part of risks associated with mortgages have been transferred via securitisation and sold to investors at global level. In principle, the broader spread of risks stabilizes the system, because in opposition with previous crises, banks no longer need to bear the ensuing losses alone. The broad spread of risks, however, changes the dynamics of the market. While a few years ago credit risks were evaluated only by a small number of experts, nowadays the market analyses them through thousands of participants. Doubts concerning rating quality and price formation caused, in the summer of 2007, the *abrupt exit of investors from the market, massive price falls and the total loss of liquidity of the market*. Owing to the ensuing uncertainty, the crisis has seized other segments of the market as well, such as the segment of commercial buildings or of credits to finance acquisitions. Because transaction positions are reported as *fair value* or *net recovery value*, many banks have registered huge losses. It was only through the decisive intervention of central banks that tensions could be kept under control.

Conclusions

Despite a relatively short history, the credit derivatives market has registered in the last years a very fast development and the value of the transactions with credit derivatives have significantly increased in the developed countries. Although the credit derivatives market is much more restricted in comparison with other markets of derivative products, the accentuated development of the transaction with credit products would reflect the fact that the *credit risk is considered much more important in comparison with the exchange rate risk or interest risk*. The CEE credit **derivatives** market remains in a nascent state compared with developed countries.

Banks can use credit derivatives and securitisation in order to shed risk in several areas of their credit portfolio, including large corporate loans, loans to small and medium size enterprises (SMEs), and counterparty credit risk on OTC derivatives. These instruments represent an important step towards market completion and efficient risk allocation. A better spread for risks and improved risk management can contribute to better absorption of shocks to the financial system. In the same time, the use of credit derivatives implies numerous risks. In order to take full benefits of these instruments, companies and banks should take measure to effectively control these risks, appropriately embedded into an overall risk management framework.

The development of CRT markets, the advances in credit risk measurement and mitigation tools, the increased use of rating models,

evolving regulatory requirements and the increased risks represents developments that have changed the banking activity in Central and Eastern Europe in the last years. Furthermore, due to the implementation of Basel II starting 2008, the CEE banks have to develop more sophisticated credit risk management techniques in order to manage efficiently the credit risk. The lessons from the current financial crisis for the CEE banks are multiple. First, banks should not underestimate the risks posed by the credit derivatives and securitisation. Second, the financial system should rethink the regulation and supervision of financial markets.

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