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THEORETICAL AND METHODOLOGICAL CONTROVERSIES ABOUT FINANCIAL INNOVATION IN THE FUNCTION OF CREDIT RISK TRANSFER

Abstract

Loan sale, securitization, and credit derivatives provide banks with greater opportunities to manage credit risk by transferring it to investors who are willing to take it. However, implementation of these financial innovations is accompanied by certain theoretical and methodological controversies about their effectiveness. Trading in credit risk enables its easier diversification to numerous market participants, but it can also reduce the value of mediation and increase the risk in the banking sector. Progressive development of the securitization technique, as well as the market of credit derivatives, stimulated by the boom in the U.S. subprime mortgage market in 2007, has escalated into a financial crisis of global proportions. Such developments pointed to the hidden dangers of the concept of credit risk transfer that may materialize as a loss of market participants in an environment that encourages excessive risk taking.

Key words: credit risk transfer, asymmetric information, credit derivatives, securitization, crisis

ТЕОРИЈСКО-МЕТОДОЛОШКЕ КОНТРОВЕРЗЕ О ФИНАНСИЈСКИМ ИНОВАЦИЈАМА У ФУНКЦИЈИ ТРАНСФЕРА КРЕДИТНОГ РИЗИКА

Апстракт

Продаја кредита, секјуритизација и кредитни деривати пружају банакама веће могућности за управљање кредитним ризиком кроз његово преношење на

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инвеститоре који су спремни да га преузму. Међутим, примену ових финансијских иновација прате извесне теоријско-методолошке контроверзе о њиховој делотворности. Трговање кредитним ризиком омогућава његову лакшу диверзификацију на бројне тржишне учеснике, али, такође, може да смањи вредност посредовања и повећа ризик у банкарском сектору. Прогресиван развој технике секјуритизације, а и тржишта кредитних деривата, подстакнут бумом на тржишту субпримарних хипотекарних кредита САД 2007. године, ескалирао је у финансијску кризу глобалних размера. Такав развој догађаја указао је на скривене опасности овог концепта трансфера кредитног ризика, које могу да се материјализују као губици тржишних учесника у окружењу које подстиче прекомерно преузимање ризика.

Кључне речи: трансфер кредитног ризика, асиметричност информација, кредитни деривати, секјуритизација, криза

INTRODUCTORY NOTES

Credit risk as “the risk of potential negative impact on the financial result and capital of the bank caused by the debtors’ failure to fulfil their obligations to the bank” (Law on Banks, Art. 31) is one of the major risks in the banking business. Banks manage the credit risk in order to maximize the risk-adjusted rate of return by maintaining credit risk exposure within acceptable limits. To mitigate credit risk, banks can use various methods and instruments. These are primarily the *methods aimed at reducing the probability of the debtor’s default in fulfilling obligations* (such as determining the creditworthiness of the borrower and selection of loan applications). In addition, banks use the *methods for managing credit risk exposure* (e.g. a system of credit limits). Banks also apply appropriate safeguard clauses in the loan contract, make agreements on collateral, and diversify their portfolios.

A special group of methods for protection against credit risk makes use of the instruments and techniques aimed at reducing the consequences of credit risk (reduction of losses) and is based on the transfer of credit risk to a third party. Instruments for the transfer of credit risk are not a new phenomenon. Some of them, such as guarantees and insurance of loans, have a relatively long history. Financial innovations in this field widen the range of opportunities for the transfer of credit risk. A new stage in the development of these techniques and instruments began in the 1970s in the United States with the packaging of mortgages into marketable securities, and continued with the development of a secondary market for bank loans in the eighties. During the nineties, the international market of credit derivatives was developed, as well. Loan sales, securitization, and credit derivatives are financial innovations that have had a major impact on the banking business, bringing a significant change in how banks approach credit risk management.

CREDIT RISK CONCEPT

According to the narrower concept, credit risk implies the fact that the debtor does not properly service their financial obligations (*default*). In a broader sense, credit risk is associated with any of the so-called credit cases (e.g. bankruptcy, late payments, restructuring, etc.). In addition to the *partial or total risk of default by the debtor*, this concept of credit risk also includes the *risk of deterioration in the credit rating of the debtor*, as well as the *risk of changes in expected market returns* (Baker & Powell, 2005, p. 89). Thus, credit risk exists whenever the lender (bank) records a negative return, i.e. whenever it records a loss of value of its placements even when there was no actual disruption in proper financing of obligations by the debtor, but whose attitude toward the acceptable level of risk has changed (Živković, Stankić & Marinković, 2012, p. 143).

TRADITIONAL APPROACH TO CREDIT RISK TRANSFER

The traditional approach to credit risk transfer is associated with the use of an instrument to improve the quality of loans (protecting the lender from default of the debtor). Some of these instruments are guarantees, bond insurance, credit insurance, and insurance against credit risk by monoline insurance companies (BIS, 2003).

Guarantee is a bilateral agreement under which the party that takes the risk (the guarantor) shall be required to fulfil obligations on behalf of the party that transferred the risk (creditor) when the debtor is in default of their payment obligations. The guarantee by a third party, which has a safer creditworthiness than the debtor, mitigates exposure to credit risk.

In *bond insurance*, issuers pay premium to the third party that provides payment of interest and principal in the event of default by the issuer. The rating of the insurer has to be higher than the issuer's level of rating.

Credit insurance is usually provided by specialized insurance companies in order to support credit trading.

Monoline (rendering services to only one industry) insurance companies provide *insurance against credit risk* in the form of an unconditional financial guarantee of payment to the bond holder.

One of the frequently used guarantees in banking is the *stand-by letter of credit* that allows the borrower to obtain a loan on more favourable terms. This kind of guarantee implies a conditional responsibility of its issuer. This can be a source of risk for banks that rely on this type of guarantee because they will not be able to provide a refund if they do not fulfil all the necessary conditions for a successful presentation of the letter of credit (Rose & Hudgins, 2005, p. 290).

*NEW INSTRUMENTS AND TECHNIQUES FOR
CREDIT RISK TRANSFER*

The increase in risk transfer has been particularly pronounced since the mid-1990s, following the intensive development of the market for credit risk transfer and a growing supply of increasingly complex instruments and techniques. Loan sales, securitization of receivables, and credit derivatives are financial innovations in the field of credit risk transfer.

Loan sale

When selling loans, the bank approves a loan and then sells the cash flows from the loan to a third party, without explicit guarantee, insurance, or other form of increase in the credit quality of placements. On this occasion, the loan is removed from the balance sheet of the bank. Most often, the bank remains responsible for servicing the loan and monitoring the credit quality. Loan sale can be exercised by various mechanisms, such as loan participation, assignment, and sale of loan strips.

In *participation loans*, the buyer acquires the right to future payments from the loan while the bank (seller) retains the original relationship with the borrower. The buyer of a share in existing loans cannot affect the terms of the loan contract and has to monitor both the debtor and the seller of the loan so as to avoid losses. High costs of monitoring and high risk may adversely affect the use of this form of loan sale (Rose & Hudgins, 2005).

Assignment is the transfer of receivables by a contract in which all rights of the bank as a creditor are assigned to the loan buyer (the contract may provide that the borrower must agree to the loan sale).

Loan strips are short-term shares of a long-term loan (with maturities of a few weeks). With these loans, the bank retains the risk of the debtor's default. After the maturity date of the loan strips, the bank resells them or provides their funding itself (Gorton & Pennacchi, 1990, p. 24).

By selling the loans, banks remove the credit risk associated with them from their balance sheets. However, in some cases, loans are being sold with the right to recourse of all or part of the sold loans. This arrangement forces the buyer and the seller to share the risk and, from the viewpoint of investors, it can be functionally equated with secured debt. The right of recourse can also be interpreted as an inserted option that allows the investor to sell the problematic loan to the bank that has approved and sold it (Rose & Hudgins, 2005, p. 286). After a relative growth during the eighties, the secondary market of bank loans recorded a significant decline in activity at the end of the twentieth century. Development of more complex and more flexible options for the transfer of credit risk made direct loan sales less attractive.

Securitization of loans and other receivables

Securitization is the general process of restructuring bank placements in favour of securities. Asset securitization is a financial innovation which essentially means transferring the bank receivables into marketable securities. According to the traditional concept, bank loans are a form of illiquid bank assets that remain in the balance sheet until maturity. A portion of bank loans is excluded from the bank's balance sheet by securitization, thus making the total amount (of risky assets) lower and eliminating the need for their further refinancing.

Through securitization, a link is established between the credit market and the securities market and the role of the loan originator is reduced to the evaluation of the creditworthiness of the borrower, while the role of lending becomes temporary (Marinković, 2011, pp. 135-136). Securitization leads to a change in the strategy of banks from "create and maintain until maturity" to "create and distribute". Loan securitization induces no changes in the original loan agreement and it can be done without the consent of the borrower.

Securitization began in the U.S. mortgage market in the 1970s. On the basis of pools of home mortgages that had been approved by state financial institutions, the state-guaranteed bonds were created. The securitization of mortgage loans of private institutions started soon after that, as well. Commercial banks entered this market in the mid-1980s. Today, in addition to residential mortgage loans, almost everything is securitized: from current and future inflows from tolls to government loans (Juhas, 2011). As a result, there are two groups of securities: securities covered by a mortgage (*Mortgage-Backed Securities*, MBS) and securities covered by assets (*Asset-Backed Securities*, ABS).

Since its introduction, the technique of securitization has rapidly evolved, offering more complex and sophisticated models that are the basis of structured financing. This qualitatively different approach to the formation of pools and dispersion of risk has the following characteristics (Kothari, 2009):

- a) diversity in the formation of pools;
- b) a pool may also comprise synthetic exposures such as credit default swaps;
- c) there is tranching (structuring) of the securities issue, thereby forming tranches with different characteristics (in terms of maturity, cash flow, and level of risk exposure) and the return established according to these characteristics. Through this process all the revenues are united at the pool level and the distribution of inflows among investors is accomplished;
- d) there is a disconnection between the credit risk of asset pool and the credit risk of the initial creditor, i.e. the loan originator that sells a pool of loans to the special purpose legal entity (Special Purpose Vehicle, hereinafter SPV), which is refinanced in the market.

In addition to the loan originator and the SPV, the participants in the process of loan securitization also comprise rating agencies, the investment bank, and investors. A large number of participants and the need for carrying out a number of iterative actions make this technique extremely complex. The mechanism of securitization involves several groups of activities (Krstić, 2003, pp. 608-609): a) approval of the loan by the loan originator; b) repackaging of cash flows; c) issuance risk reduction; d) issuance of securities and their sale; and e) servicing.

The use of structural instruments is the most developed in the mortgage market of the United States, where the initial securitization originated and where its volume is much more pronounced as compared to European countries. A more conservative approach to securitization in Europe is reflected in a wider application of the so-called balance sheet securitization, in which the loans that are securing mortgage bonds are not excluded from the balance sheet of the loan originator.

Credit derivatives

Credit derivatives emerged as part of the financial derivatives market in the early 1990s. This financial innovation enabled the separation of credit risk from the market risk and the transfer of credit risk to other market participants while maintaining ownership over assets (Kiff, Michaud & Mitchell, p. 108).

Credit Default Swap (CDS) is the simplest form of credit risk transfer among these instruments, which is most often traded. This is a matter of the exchange of credit risks of the participants who are able to deal with the comparatively limited declines in asset values but who want to be protected from the truly serious losses (Rose & Hudgins, 2005, p. 294). This is a bilateral agreement, similar to an insurance contract "... in which the seller of protection (risk buyer) ensures the buyer of protection (risk seller) in case of the occurrence of specified credit event, to the contracted theoretical amount, for the specified period and for the specified reference asset (reference portfolio)" (Spasojević, 2013, p. 132). CDS¹ does not require funding, and if the credit event does not occur, the seller of protection does not make payments. The buyer of protection pays swap premiums to the seller of protection until the occurrence of a credit event or until the swap maturity.

Through the *Total Return Swap* (TRS), contracting parties exchange the total return of one kind of assets or baskets of various assets

¹Credit derivatives are known by their abbreviated names (so these abbreviations are used in this paper instead of their full names) and the explosive increase in the number and complexity of these instruments is vividly expressed by the term "alphabet soup" which is used for this category of derivatives.

for periodic cash flows based on the reference interest rate and the appropriate spread above it. Similarly to the CDS, it does not require funding, but it is not related to the occurrence of a credit event and it provides protection against loss of value regardless of the cause (default, credit spread increase, etc.).

Credit Spread Option (CSO) does not require financing and gives the buyer the right but not the obligation to pay or receive a specific credit spread for a certain period. The CSO buyer receives cash flows if the defined credit spread between two securities increases or decreases.

Credit-Linked Note (CLN) requires funding and offers the investor regular coupon amounts (resembling bonds), while allowing its issuer (protection buyer) to reduce the amount of principal and/or coupon interest due to the occurrence of anticipated credit events. Thus, the credit risk is transferred to the investor (note buyer, or protection seller).

Intensive development of markets for risk transfer has led to the emergence of new types of credit derivatives, which represent a specific improvement of the securitization technique.

Collateralized Debt Obligation (CDO) includes a wide range of products that can be classified into two groups: a) CDO whose portfolio consists of bank loans and b) CDO whose portfolio consists of bonds. The need to make CDOs more flexible as instruments has led to the creation of *Synthetic Collateralized Debt Obligation* (SCDO), in which the credit risk is transferred to the SPV by using credit derivatives, while assets remain in the balance sheet of protection buyer (Kothari, 2009).

Development of the market of credit derivatives provided banks with an efficient and flexible concept for the transfer of credit risk which, apart from benefits, brings along hidden risks and problems, as well.

THE EFFECT OF CREDIT RISK TRANSFER ON THE PROBLEM OF ASYMMETRIC INFORMATION AND FINANCIAL STABILITY

The impact of risk transfer on the problem of information asymmetry in the financial market

Credit risk has its theoretical foothold in the concept of asymmetric information, on which the theory of financial intermediation largely relies (Diamond, 1984; Fama 1985; Ramakrishnan & Thakor, 1984). The bank, as a specialized intermediary, assists in solving the problem of asymmetric information between the market transactors, which are in financial surplus, and financially deficient transactors (Krstić, 2003). *Ex-ante*, by analyzing credit demands, the bank reduces the risk of granting a loan with a high probability of default (the problem of adverse selection). Monitoring of the approved loan quality helps the reduction of the risk that the borrower, after having taken the loan, shall attempt actions that are not in the creditor's interest (moral hazard). In alleviating the problem of asymmetric

information in the market, banks have a comparative advantage over other market participants (e.g. rating agencies) because they possess the so-called private or “soft” information on beneficiaries through providing them with a wider range of services, which allows the banks to build long-term relationships with them.

Banks have the biggest incentive to efficiently conduct (expensive) activities of credit selection and credit risk monitoring when they retain full exposure to credit risk arising from the loans that they approved. Development of the market of credit derivatives enabled the “*separation*” of bank credit activities from the exposure to credit risk. Banks are changing their approach to credit risk – they are beginning to treat it as a commodity to be traded, which negatively affects their role in mitigating problems of asymmetric information and generates new problems arising both from the *borrower-creditor* relationship and from the relationship between *loan originator and the party to which the risk is transferred* (protection seller).

Applying the credit risk transfer by banks can affect their behaviour as creditors as well as the behaviour of borrowers.

With regard to creditors, the following problems can occur:

- *The problem of adverse selection*: If a creditor believes that it will be possible to transfer credit risk after approving loans, this will reduce their incentive to perform the selection of credits. The bank will be willing to grant loans to all loan seekers as long as other market participants are ready to assume the credit risk. If they had the same access to information on borrowers as banks have and if they would refuse to sell protection against the risk for low-quality assets, a reduction of incentives for the selection of loans would not happen (Kiff et al., 2003, p. 111).
- *The problem of moral hazard*: “Passing the buck” may reduce the stimulation of the creditor to monitor the quality of loans. The creditor’s behaviour may be affected by the use of credit derivatives or insurance even if a formal relationship with the debtor remained unchanged.
- Potential problems that can emerge on the part of the borrower are:
- Losing the significance of “bank certification”: Monitoring the quality of credited projects has the role of a specific “bank certification” for borrowers, which enables them to take more favourable loans in the financial market and “commits” them to the implementation of quality projects. This role of bank certification loses its importance when borrowers and investors know that the bank’s incentive to monitor the quality of the project was reduced due to the transfer of credit risk (Morrison, 2005). Lack of discipline imposed by the bank’s monitoring of the project quality can guide the borrower towards choosing projects of lower quality, which would have a long-term impact on the reduction of enterprise value (Berndt, Gupta, 2009).

- *Negative signalling to the market about the debtor:* Investors can interpret the transfer of credit risk as a negative signal about the creditworthiness of borrowers. For example, due to information asymmetry, investors cannot be sure whether the bank sells the loan for legitimate reasons or sells a “lemon” (the loan of the borrower on whom it has negative private information), or whether it perhaps sells the loan of a lower quality, which it approved with the intent to sell it (Berndt, Gupta, 2009). The potential effect of signalling, however, depends on the visibility of transactions to third parties, which is not the same in all instruments for the transfer of risk (e.g. visibility is greater in the sale of loans than in credit derivatives) (Morrison, 2005).

Some of the potential problems in the relationship between the loan originator and the party to which the risk is transferred due to the use of credit risk transfer by banks are as follows:

- *The “lemon” problem:* If, due to a lack of full information about the quality of debtors, the price of risk protection does not accurately reflect the quality of assets, the cost of protecting high-quality assets increases and creditors are encouraged to buy protection against the credit risk for the assets of lower quality (Duffee & Zhou, 2001). Loan originators have more complete information about their loans, which they may use to overestimate the quality of the transferred exposures.
- *The principal-agent problem:* When the creditor retains an engagement in the relationship with the debtor as an agent of the party that has assumed the credit risk (e.g. continues to service the loan), there is a risk of not acting in the party’s best interest. Monitoring the performance of these activities causes additional expenses to the protection seller, which is why the creditor loses the incentive to perform them in due manner (i.e. to undertake timely and effective actions to collect any residual payments) (BIS, 2003).
- *The problem of incomplete contracting:* An incomplete contract underlying the transfer of credit risk makes room for opportunistic behaviour by both contracting parties.
- *Moral hazard of the protection seller:* The buyer of protection against credit risk is exposed to the risk of default on the credit derivative. If a credit event occurs and the seller of credit protection does not fulfil their obligations, the buyer of credit protection will suffer loss (Thompson, 2010).

In order to protect the market participants to which risk is transferred against potential problems arising from information asymmetry, several mechanisms have been developed for harmonizing the incentives of creditors with their interests (BIS, 2003): a) protection instruments made out to a single name are limited to corporate and sovereign borrowers as

subjects about which there is a significant scope of public information; b) in the case of risk transfer of the portfolio of loans granted to population, rating agencies or auditors monitor the selection of loans from the portfolio; c) it is often required that the creditor retains some of the riskiest tranches, so that he himself would have a clear interest in careful portfolio selection.

Reputation risk and the desire to continue to exert risk transfer restrict creditors in overestimating the quality of loans. Banks may be motivated to offer implicit guarantees when transferring the credit risk (in the absence of explicit recourse, they are ready to take part of the credit risk in the event of problem default). On the other hand, this may lead to a new problem, reflected in undercapitalization relative to the “right” amount of risk to which the bank is exposed (Kiff et al., 2003).

Possible implications of the transfer of credit risk for financial stability

As the instruments for the transfer of credit were becoming increasingly important, a need arose to review the strengths and weaknesses of their use in terms of their impact on the stability of the financial system as a whole.

Some of the specific positive implications of risk transfer for financial stability are the following (Ferguson, 2002; Prato, 2002; Rule 2001; Kiff et al., 2003):

- a) Possibility of isolating the credit risk from other types (primarily market risk);
- b) Possibility of trading credit risk is an innovation for the banking sector that facilitates the management of exposure to this risk;
- c) Credit risk gets diversified through the financial system, and, instead of being piled up in the banking book, credit losses are covered by a large number of investors (who can endure this risk more easily because they are not sensitive to changes in interest rates, have long-term investment horizons, etc.);
- d) Even if the reallocation of credit risk is performed only between banks, this improves the distribution of risk within the banking sector because it can reduce the risk of geographic or structural, sectoral concentration (Duffie, 2008);
- e) Greater flexibility in liquidity management in banks.

Contrary to the abovementioned, some negative effects and potential problems were observed in the implementation of innovative financial instruments for risk transfer, such as (Rule, 2001; ECB, 2004; Kiff et al., 2003):

- a) Insufficient market transparency of the instruments of credit risk transfer (at the international level, accurate data were not available on the use of such instruments by various market participants, such as insurance companies, pension funds, hedge funds, etc.);

- b) The danger of credit risk concentration in financial institutions that are not the subjects of strict regulations (do not have the same regulatory requirements related to capital as banks);
- c) Market participants rely on the opinion of rating agencies in the purchase of credit risk because they often lack the ability to self-assess the exposure to credit risk (the problem of reliability of rating agency assessments was emphasized in the recent financial crisis);
- d) Complicated design of arrangements for credit risk transfer creates greater legal uncertainty (individual bank risk is transferred fully or partially through complex arrangements to a large number of other market participants).

Increasingly pronounced securitization and the use of more complex credit derivatives, together with a lack of transparency and of a clear institutional and regulatory framework, have led to the materialization of the perceived concept weaknesses. These financial innovations played a significant role in the generation and expansion of the financial crisis that began in the U.S. mortgage market in 2007, then quickly spread to other markets, and finally assumed global proportions.

THE ROLE OF SECURITIZATION AND CREDIT DERIVATIVES IN THE EMERGENCE AND SPREAD OF GLOBAL FINANCIAL CRISIS

Low interest rates² in the United States in the period preceding the outbreak of the crisis raised the demand for real estate, which led to an unsustainable rise in its prices, i.e. to the formation of a price “bubble”. The average increase in prices in this market, which was only 0.67% until 1998, amounted to 10.4% in the period from 1998 to 2006 (O’Quinn, 2008). Owing to securitization, bad mortgage loans appeared in the real estate market. The opportunity to transfer credit risk to other participants led banks to ignore the basic principles of credit analysis in the race for potential clients. As a consequence of the relaxation of criteria for granting mortgage loans, the *subprime* mortgage market was created. When artificially constructed fundamentals of the pyramid of mortgage loans began to crumble, with the rise in interest rates³ and decrease in real estate prices⁴, there was a “bubble” burst and the crisis escalated.

² The reason for this is the policy of low interest rates of the FED in order to overcome the recession of 2001-2002.

³ Since 2004, the FED has resorted to a more restrictive monetary policy: from 1% in 2004, interest rates increased to more than 5% in 2007.

⁴ Real estate prices have begun to slowly decline from June 2006 only to reach a dramatic decline in the period from 2007 to 2008 (by more than 15%) (Hellwig, 2009, p. 156).

The market of instruments for the transfer of credit risk functioned in the conditions of profound information asymmetry. This was especially pronounced in the case of very complicated structured credit derivatives (e.g. one MBS may contain several thousands of mortgages, one CDO may contain more than one hundred MBSs, CDO² basically has a number of CDOs, etc.). Rating agencies were assigning AAA rating although their complexity was not quite clearly comprehended (O'Quinn, 2008)⁵.

In this way, conditions were created for investments by numerous financial institutions in highly rated risky securities, while the size of the market of derivatives reached enormous proportions (e.g. the size of CDO market in 2007 was about 500 billion U.S. dollars) (Dowd, 2009).

The panic that occurred in 2008 was greatly exacerbated by uncertainty regarding the risk created by the positions in derivatives in systemically important financial institutions. It turned out that banks are exposed to a much higher risk on this basis as compared to the prudential banking risk.

As the mortgage boom ended, the default on credit derivatives increased (e.g. by early 2009, there was a default on almost half of the total issued CDO), while demand and liquidity disappeared. SPVs have become the last resort buyers for the vast amount of these instruments. Although formally independent, SPVs transferred the problem to the banks that created them. Purchase of securitized assets was financed by issuing commercial papers that were guaranteed by credit lines so as to obtain AAA rating. Furthermore, as their main funding sources dried up, banks were forced to return SPV assets to their balance sheets (Spasojević, 2011).

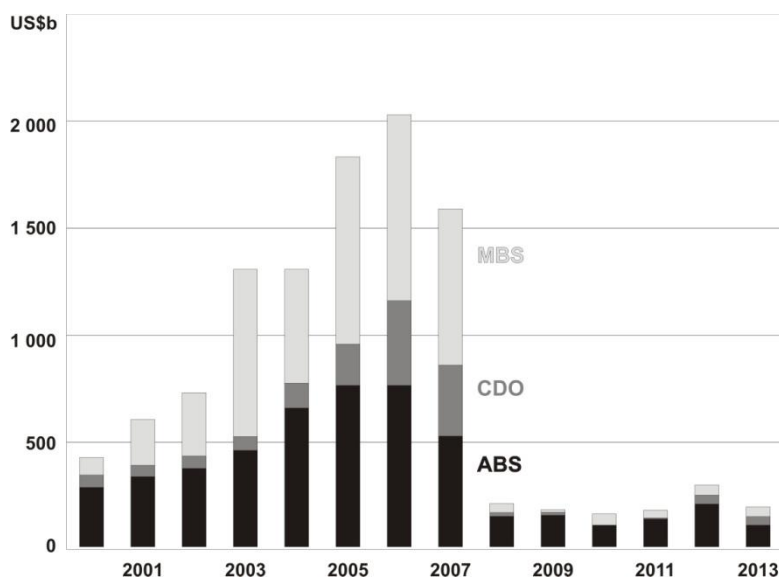
As initiators in the process of securitization, banks retained exposures to the riskiest tranches in order to indicate the investment safety to investors. In addition, the flow rate of securities such as MBS and CDO and the length of time from the receipt of the mortgage to their sales caused the banks to hold large amounts of risky securities at all times (Spasojević, 2011).

The CDSs found themselves in the centre of the financial crisis due to the fact that the subprime CDO exposure to risk was mostly hedged by buying CDS in OTC markets. Except for the hedging of credit risk through CDS, banks were largely involved in the operations of the

⁵ Newly issued securities were "enhanced" (by the transformation of risk and return in accordance with the wishes of investors, by the insurance of initial mortgage loans by U.S. insurance companies with sound credit ratings, and by government guarantees). Based on this, they were assigned high credit rating, making them attractive to investors. The rating agencies were also in a conflict of interest because they were paid by issuers to which, apart from rating reports, they also gave advice (the issuer approaches the rating agency to model his assets that will later get the best scores from the same rating agency).

derivatives market because of speculation, as well. The amount that banks were buying or selling was not displayed in their balance sheets, which made it difficult to estimate the true extent of bank risk exposure. The lack of transparency in the derivatives market, together with accelerated distribution through securitization, has created uncertainty about who would finally bear the credit risk of subprime loans (Bessis, 2010). A huge number of individual risks “wandered within the financial system”, having thus extended its period of relative stability until the market lost the power to absorb individual risks. Market participants soon found themselves in the game of “who loses next” because their credit risk management strategies were based on the assumption of normal market conditions and on the ignoring of systemic interactions (Dowd, 2009).

Analysis of the data in the graph of securitization practices in the United States before and after the crisis (Figure 1) reveals that the market of asset-backed securities (ABS in the figure) was the least affected. The market of mortgage-based securities (MBS in the figure) recorded a significant decline and then stagnation at a level far below the one from the pre-crisis period. The CDO market, which was intensively growing in the period before the crisis, came to a standstill during the crisis and recorded a slight recovery only in the last few years.



Note: MBS – securities covered by mortgage in billions of dollars, ABS – securities covered by assets in billions of dollars, CDO – collateralized debt obligation in billions of dollars

Figure 1. Securitization Issuance in the United States (Johnson, Santor, 2013, p. 115)

The financial crisis led to a contraction of securitization due to increased uncertainty regarding the evaluation of structured products, while simpler and less expensive instruments such as loan sale and unstructured credit derivatives maintained a significant presence. Financial resources freed by the operations of risk transfer have been invested during the crisis in the expansion of crediting, which had a positive impact on real economies in terms of lower credit contraction (Altunbas 2009; Loutskina, 2011).

CONCLUSION

Experience from the recent financial crisis has shown that the increased implementation of complex financial innovations for credit risk transfer in certain circumstances may be a factor of inducing, and a channel for spreading, the crisis. This revealed some controversy over the use of loan sale, securitization, and credit derivatives.

Development of the market for credit risk transfer has enabled banks to sell their ability of assessing the credibility of the borrower (the expertise contained in the loan agreement itself) to other investors. With the possibility of separating decisions about crediting and about credit risk assumption, banks lose their motivation to acquire private information and thus ensure their information superiority over other market participants. This should act towards reducing the problem of information asymmetry in the financial market. However, the introduction of modern instruments with the transfer credit risk only makes it worse.

The fact that the creditor transferred their credit risk either fully or partially may induce a reduction of their credit risk control measures. Instead of being alleviated through the selection of credit applications and credit monitoring, the problem of asymmetric information is intensified by the credit risk transfer.

On one hand, instruments for credit risk transfer can contribute to a more efficient risk management of individual banks, and on the other hand, by the dispersion of risk to institutions that are not experts in analyzing the credit worthiness of the debtor and that are less capitalized, they can destabilize the financial system.

The development of securitization and credit derivatives generated a synthetic securitization and structured financial products, the application of which is characterized by high complexity, which creates uncertainty for market participants. This paradox of modern management can be explained as follows:

“As the risk management system becomes more sophisticated, it can also become more unreliable. Greater sophistication implies higher complexity (and thus more room for errors), lower transparency (the error is harder to be spotted) and greater dependence on assumptions (where each of them may be incorrect)” (Dowd, 2009, p. 148).

Securitization of subprime mortgages and structured financial products were a key lever in the emergence and spreading of the crisis. However, the problem was not in the concept and techniques but in the environment that fostered excessive risk-taking. Therefore, post-crisis regulations are aimed at limiting speculative operations and excessive risk-taking of market participants (stricter requirements for capital, leverage and liquidity anticipated by Basel III standards, restrictions on trading in derivatives, changes of the preliminary principles of credit analysis, etc.) while simultaneously not discouraging utilization of their simpler forms for credit risk transfer as a hedging instrument (which would have no adverse effects on financial stability).

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ТЕОРИЈСКО-МЕТОДОЛОШКЕ КОНТРОВЕРЗЕ О ФИНАНСИЈСКИМ ИНОВАЦИЈАМА У ФУНКЦИЈИ ТРАНСФЕРА КРЕДИТНОГ РИЗИКА

Резиме

Проблем кредитног ризика у кредитним портфолијима банака се не може елиминисати, али се ипак може извршити његова одређена преалокација на друге тржишне учеснике путем инструмената и техника за трансфер кредитног ризика. Инструменти за трансфер кредитног ризика нису нови феномен. Неки од њих, попут гаранција и производа осигурања, користе се доста дуго. Нову етапу у њиховом развоју чини појава финансијских иновација које нуде веће могућности за флексибилније управљање кредитним ризиком. Продаја кредита, секјуритизација кредита и других банкарских потраживања и кредитни деривати довели су до промене начина на који банке посматрају кредитни ризик – банке све више сматрају кредите и кредитни ризик „добрима“ којима се тргује.

Продајом одобрених кредита трећој страни, они се уклањају из биланса стања а банка најчешће остаје одговорна за њихово сервисирање и праћење. Продајом кредита банке одстрањују кредитни ризик повезан са њима из својих биланса. Развој комплекснијих и флексибилнијих могућности за трансфер кредитног ризика учинио је директну продају кредита мање атрактивном.

Секјуритизација је техника трансформације банкарских потраживања (по основу кредита, кредитних картица и др.), као мање ликвидних облика активе, у утрживе хартије од вредности. Суштина секјуритизације је у продаји пулова кредита специјалном наменском правном лицу при чему се врши структурирање емисије и побољшање емисије тако да улагање постаје атрактивније за инвеститоре. Кредитни ризик се, овим путем, пребацује са изворног кредитора на већи број посредника и инвеститора на тржишту.

Кредитни деривати су најновији инструмент за трансфер кредитног ризика. Они тржишним учесницима омогућавају раздвајање кредитног ризика од других врста ризика а тиме стварање тржишта за кредититни ризик. Секјуритизација и кредитни деривати створили су синтетичку секјуритизацију и структуриране финансијске производе. Овај ефикасан и флексибилан концепт за трансфер кредитног ризика, поред неспорних предности, са собом носи скривене ризике и проблеме.

Банке, традиционално, селекцијом кредитних захтева и савесним праћењем одобрених кредита доприносе смањењу проблема асиметричних информација на финансијском тржишту. Прелазак банака са стратегије „одобри и чувај до доспећа“ на „одобри и дистрибуирај“, мотивисан могућностима за трансфер кредитног ризика, може да смањи вредност банкарског посредовања и повећа проблем асиметричних информација. Проблеми извиру, како из новонасталог односа између кредитора и стране на коју се кредитни ризик трансферише, тако и из изворног кредитног односа.

Све израженија секјуритизација и коришћење сложенијих кредитних деривата, уз недостатак транспарентности и без јасног регулаторног оквира одиграли су значајну улогу у генерисању и ширењу финансијске кризе која је започела на хипотекарном тржишту САД 2007. године.

Ризици у трансферисању кредитног ризика употребом финансијских иновација били су повезани са њиховом комплексном (а тиме често и нејасном структуром), недостатком транспарентности тржишта и „злоупотребом“ самог

концепта. Поред тога што су секјуритизацијом ислјучивале кредите из својих биланса и вршиле хединг кредитног ризика применом кредитних деривата, банке су се упуштале и у шпекулативне операције на овим тржиштима.

Држање под контролом прекомерног презимања ризика, уз коришћење бројних предности нових инструмената за трансфер кредитног ризика, један је од главних задатака нових и регулаторних и институционалних напора.