

## IMPLICATIONS OF CREDIT RISK TRANSFER ON BANK PERFORMANCES

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*The impact of the financial crisis has demonstrated the fragility of the banking sector and the need to implement new technologies that would allow not only insurance against the most important credit risk - credit risk, but development of lending segment. In such conditions, transfer of credit risk is an efficient and actual way to diversify the banks exposure for credit risk by the presence of those who are willing to take on some of this risk. Taking of credit risk can be achieved through credit derivatives, securitization and sale of loans, being selected the most advantageous technique for the bank. The current situation of the national banking sector requires solving the problem of bad loans, which, unfortunately, are increasing, by implementing new techniques for credit risk management according with EU directives.*

**Key words:** credit risk transfer, credit risk, credit derivatives, bank, profitability rate loan portfolios.

*Impactul crizei financiare a demonstrat fragilitatea sectorului bancar și necesitatea implementării unor noi tehnologii care ar permite nu doar asigurarea împotriva celui mai important risc bancar – riscul de credit, dar și dezvoltarea segmentului de creditare. În aceste condiții, transferul riscului de credit este o modalitate eficientă și actuală pentru a diversifica expunerea băncilor riscului de credit prin existența celor care sunt dispuși să preia o parte din acest risc. Preluarea riscului de credit poate fi realizată prin intermediul derivatelor de credit, securitizării sau vânzării de credite, fiind aleasă cea mai avantajoasă tehnică pentru bancă. Starea actuală a sectorului bancar național impune soluționarea problemei creditelor neperformante, care, cu regret, sunt în creștere, prin implementarea noilor tehnici de gestiune a riscului de credit în concordanță cu directivele UE.*

**Cuvinte-cheie:** transfer al riscului de credit, risc de credit, derivate de credit, bancă, rată a rentabilității portofoliilor de credite.

*Последствия финансового кризиса продемонстрировали хрупкость банковского сектора, а также необходимость внедрения новых технологий, которые позволили бы не только страхование от наиболее важного риска – кредитного риска, но и развитие сегмента кредитования. В таких условиях, передача кредитного риска является эффективным способом разнообразить подверженность банков кредитному риску при существовании тех, кто готов взять на себя часть этой опасности. Передача кредитного риска может быть достигнута с помощью кредитных деривативов, секьюритизации и продажи кредитов. Нынешняя ситуация в банковском секторе требует решения проблемы «плохих кредитов», которые, к сожалению, становятся все больше, за счет внедрения новых методов управления кредитным риском в соответствии с директивами ЕС.*

**Ключевые слова:** передача кредитного риска, кредитный риск, кредитные деривативы, банк, прибыльность кредитных портфелей.

**JEL Classification:** G15; G21; G32.

**Introduction.** The global financial crisis has left its mark in all countries, being more pronounced in highly developed countries and with less harmful effects in developing countries. As a result, global financial market has become more vulnerable and affected by different financial risks, including credit risk. So, in order to prevent this risk, we need to implement different techniques of correct management of

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credit risk or to use instruments of its transfer. Credit sale, securitization and credit derivatives are transfer instruments of credit risk which has been widely used by banks in recent decades to actively manage the credit risk. Credit sale and securitization are techniques by which banks sell future flows of payment arising from the loans based third parties. Unlike a loan sale, securitization involves creating a vehicle with special destination and issuing of new securities. Credit derivatives instrument are contracts that ensure banks against the risk of default from debtors, for a tax.

**Concept of credit risk transfer.** Currently, the typical function of transfer of credit risk is seen like a good allocation of credit risk in a large spectrum of market participants, not only on banking but also on capital markets. From the capital market perspective, we have to distinguish between risk diversification and risk transfer. Transfer of credit risk can be explained as – a part of credit risk which can be diversified with other risks exposed by investment companies (insurance companies, pension funds), but, evident, a part of risk is systemic and, therefore, generates a price with premium. This makes it attractive for active risk trading (speculation) depending on size and time of payment of the premium.

Some researchers concerned with the study of instruments for credit risk transfer are Arping S., Duffee G., Zhou C., Morrison A. D., Behr P., Lee S., Allen F., Carletti E., Wagner W., Marsh I. and others, being concerned both with the positive effects of credit risk transfer and negatives. So, we intend to present positive aspects selected from empirical studies:

- a) researchers G. Duffee and C. Zhou, mention that incentive for risk transfer comes from costs associated with bank insolvency. They analyze individual credit risk transfers, like swap on credit risk (CDS) and individual loan sales, showing that as long as asymmetric information regarding credit quality varies over the loan life, instruments of credit derivatives, loan sales prevails in solving problems caused by bank information on the loan quality. However, introduction of credit derivatives markets can cause destruction of the credit market sales. This think is harmful when problem of asymmetric information is one of adverse selection, because it prevents individual sale of loans in order to avoid diminishing monitoring. In contrast, transfer of credit risk, itself, improves monitoring [6, p. 25-54];
- b) economist A. Morrison noted that credit derivatives facilitate risk sharing credit by a bank in case of risk aversion [8, p. 621-647];
- c) W. Wagner and I. Marsh mention that a part of the banks credit risk can be transferred to non-banking sector, because of the difference between banks and bankruptcy costs between banks and „non-banks” [13];
- d) researchers A. Nicolò and L. Pelizzon show how different instruments of credit risk transfer can signal quality of bank loans in accordance with prudential capital requirements [9];
- e) scientist S. Arping shows that transfer of credit risk can create value based on incentives, even for completely different reasons, giving to bank the possibility to be credibly engaged to investment, in poorly performing projects, by isolating banks from losses by project. This corrects distorted incentives of borrowers for effort and, thus, increases the efficiency of the investment project [2].

*Negative repercussions of credit risk transfer* regarding incentives monitoring are found by Duffee and Zhou [6], Morrison [8], Behr and Lee [4], Parlour and Plantin [10], Parlour and Winton [11]. In all these works prevails the idea that debt financing maximizes reward for monitoring. The results of the monitoring are “high”. Additional arrangements, such as transfer of credit risk, can reduce only incentives monitoring.

A similar opinion is exposed by scientist A. Persuad who said that transfer of credit risk may cause problems for the stability of the financial system, by increasing fragility of risk buyer or increasing risk taking by banks. After noting that non-performing loans increased significantly, while the balance continued to show healthy, good, he also asking himself: “Where went all credit risk?”. He attributes this phenomenon to the multiplication of instruments of credit derivatives (a tenfold increase to 2 trillion dollars in five years), and warns “the more risks are assessed, marketed and covered in the same way in the same markets, the more pronounced are systemic risks” [12].

The problem of insurance benefits of credit risk transfer was approached also by researchers Wagner and Marsh, who said that the transfer of risk from a relatively fragile banking sector leads to an improvement of the stable system [13, p. 173-193]. More exactly, they predict that by activating the diversification, credit risk transfer offers banks the possibility to diversify their risk, enhancing financial stability and reduce the financing cost. More, while it supports the transfer of risk from banks to other financial players less fragile, such as insurance companies, we can determine taking new risks by raising

riskier loans. This increase of lending may, on the other hand, cause a more efficient allocation of capital in the real sector of the economy.

The economist A. Morrison [8, p. 621-647] by contrary arguments that markets with credit derivatives can destroy the signaling role of bank debt and generates an overall reduction in welfare by reducing the banks' interests.

As instruments used in specialized literature to transfer credit risk is suggested swaps on credit risk, collateral bond debt, asset-backed securities, total swaps on income, credit notes, credit spread options etc.

From specialized literature we studied that, generally, the transfer of credit risk reduce the incentives for monitoring of banks, and therefore, undermines financial stability. The instruments from portfolio of credit risk transfer, such as the securitization of loan portfolio with guarantees accessories are quite used by banks. However, the degree of improvement of credit quality should be clearly defined in a timeframe. Outside this period, monitoring incentives are undermined.

**Table 1**

**Elements of credit risk transfer**

Assets underlying credit risk		Attenuation of transfer of typical credit risk
Consumer credits	Residential mortgages Claims on credit card Auto credits and rentals	ABS <sup>1</sup> : underlying risk tends to be "local", assets tend to be more homogeneous than those securitized CDO <sup>2</sup> și CLNS <sup>3</sup>
Transferable claims (bonds and credits)	Commercial mortgages Commercial claims Rental of equipment	
Transferable and non-transferable claims	Corporate debts	Direct sale: cheaper and cleaner alternative
	Leveraged loans	CDO: expensive to configure and maintain risk
	Emerging markets of ABSs and collateral bond debtor	CLNS and synthetic CDO: cheaper than conventional CDO to maintain risk
		Simple instruments of credit derivatives and guarantees: expensive and exposed to counterparty risk
		Swaps on multiple risk or baskets: exposure to counterparty risk

*Source: Adapted by author after Kiff, J., Michaud, F., Mitchell, J. [7]*

**The problems approached.** The motivation for involvement of banks in transfer activities of credit risk consist in their separating into two categories – "banks for portfolio management" using transfer instrument for credit risk to those who are carriers of credit risk and/or those who are willing to take credit risk and "intermediate", who active sell, operate with products of credit risk transfer and generate free access on markets with instruments of credit derivative. In this activity, banks, usually, aim to ensure right positions for credit risk.

In order to assess the possibility of transfer of credit risk in the banking sector of the Republic of Moldova it is necessary to analyze the composition of credits depending on the degree of exposure based on the information reflected in Figure 1.

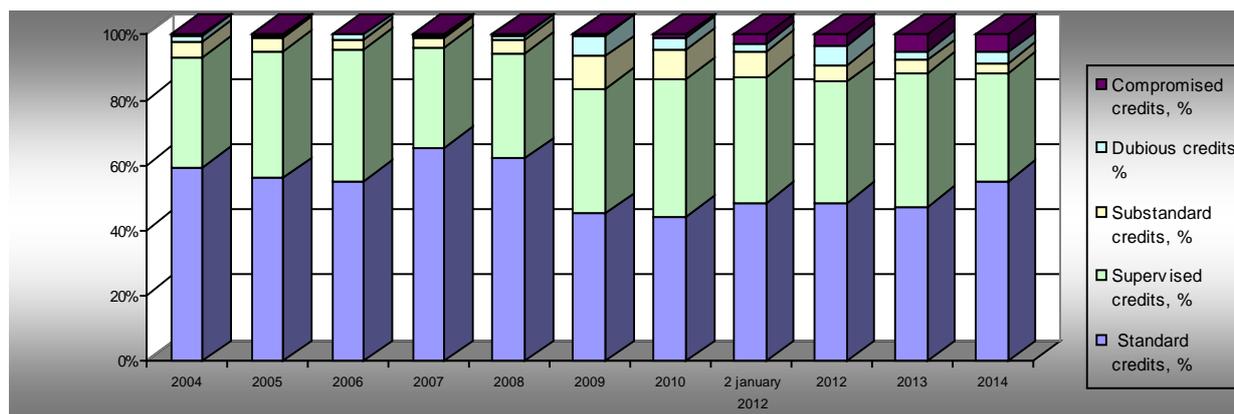
The weight of standard credits reflects a negative trend of reduction in the analyzed period from 59.2% in 2004 to 47.2% in 2013. The best situation is observed in 2007, when credit standards were of 65.3 percent of the credit portfolio. For 2014 the situation changes, as observed an increasing of weight of standard credits at 55.2%.

Supervised credits shows an increased trend from 33.9% to 41.12% during the studied period, in 2014, on the contrary, their weight is reducing, helping to increase the weight of standard credits. The weight of substandard credits in 2004-2009 increases from 5% to 9.7% and that is gradually decreases to 3.0%. Dubious credits increasing similar to those substandard increasing from 1.6% to 6.4% between 2004-2009 and decreases to 3.0% in 2013, and at the end of 2014 they have 3.2 per cent of credit portfolio per banking system.

<sup>1</sup> *Asset-backed securities*

<sup>2</sup> *Collateral bond debtor*

<sup>3</sup> *Credit notes*



**Fig. 1. Credit distribution depending on level of risk exposure**

*Source: Made by author based on information presented by NBM on [www.bnm.md/md/annual\\_report](http://www.bnm.md/md/annual_report).*

The “worst” credits are considered those compromised, reflecting a negative ascent during 2004-2014, increasing from 0.3% to 5.5%.

This dynamic suggests the following:

- banking system does not have instruments to insure against credit risk;
- in banking activities is missing practice of transferring credit risk to those who are willing to take it.

In general, the transfer of credit risk has two opposite effects. On the one side, it improves asset and liability management and helps banks in capital redistribution in periods of liquidity shocks without needing liquidation of costly project. On the other side, because of the fact that banks use secondary markets in order to recycle nonperforming credits, informational asymmetry reduces informational content of price of credit derivatives.

Benefits or negative effects of the transfer of credit risk depends, first of all, of the type of shock that affects the business cycle. In the presence of traditional macroeconomic shocks, transfer of credit risk helps to stabilize the economy.

In order to reduce banks exposure to credit risk its need to find that niche that will allow implementation of financial credit derivatives through swaps on credit risk. Thus, for banking sector of the Republic of Moldova, it could issue financial credit derivatives that would have as support active supervised credits, after that, through transferring credit risk would improve the quality of credit portfolio at the system level.

At the same time, appear the necessity to assess the effects of the rising cost of management of credit risk based on following formulas, synthesized by Victoria Cociug in work “Banking Management”:

$$RRCP1 = \frac{\text{Interest\_income} - \text{Interest\_expenditure} - DRPC}{PC} \times 100\% \quad (1.1),$$

where: RRCP – rate of return of credit portfolio, adjusted on risk; DRPC – breakdowns for reduction for credit losses; PC – portofoliul de credite.

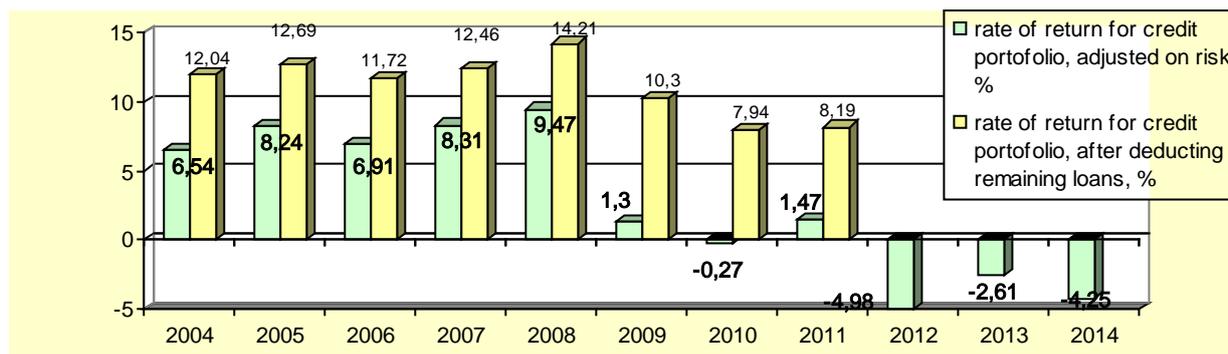
This indicator shows how profitable the bank is in terms of given credits by it. It shows the level of income that is generated by credit activities after deductions of breakdowns for reduction for credit losses. Thus, the breakdowns for losses on credits are the greater, the more income obtained from credit activities will decrease. As a result, as lower the indicator is, as less profit will get the bank from its credit portfolio.

$$RRCP2 = \frac{\text{Interest\_income} - \text{Interest\_expenditure} - RC}{CP} \times 100\% \quad (1.2),$$

where: RRCP – rate of return of credit portfolio, after deducting remaining credits; RC – remaining credits.

As previous indicator, this coefficient shows the level of income obtained by the bank from credit operations after deducting remaining credits.

These two indicators demonstrate how effectively the bank manages its loan portfolio. Thus, as higher the level of remaining credits is, as more losses bank suffers.



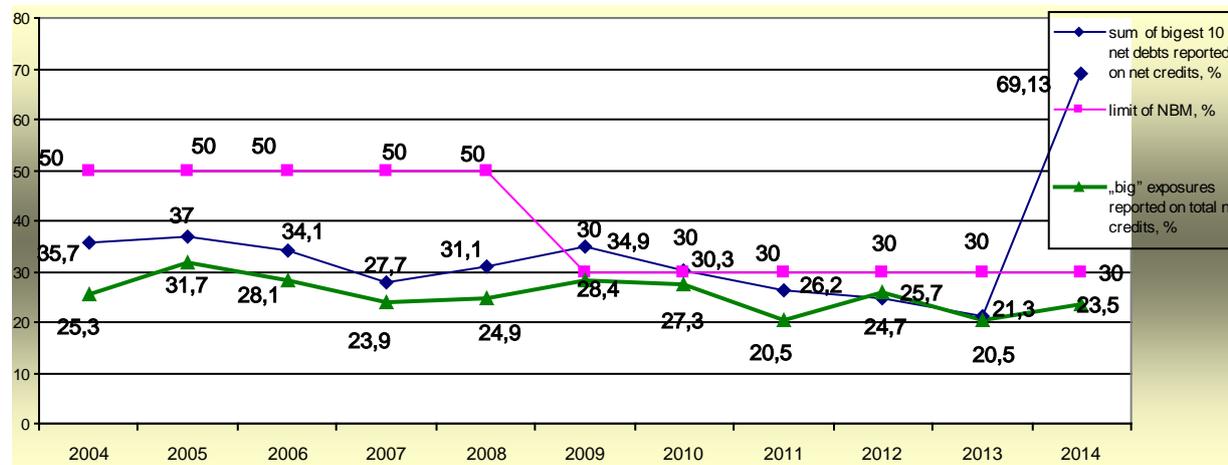
**Fig. 2. Variation of return of credit portfolio**

Source: Calculated and made by author based on informations presented by NBM.

Analyzing the results of the national banking system, we conclude that the rate of return on the credit portfolio indicates positive values in the period 2004-2009 and 2011. Detailed analysis shows that the income generated from credit operations is able to cover expences for interest on credits and reductions for losses on credits in the mentioned years, the result being materialized in profit obtained per banking system from credit operations.

The implication of the financial crisis can be observed beginning with 2010 when it reduced income from credit operations in conditions of increasing the expences for interest for credits and reduction for credit losses. Similarly, negative oscillation is present and for the years 2012 and 2013, generating losses in the banking system, instead of profitability from credit operations. Looking at the results of credit operations after deducting remaining loans, we conclude that in the banking sector portfolio return have comfortable values that vary between 7.94-14.21%.

Losses from credit operations is confirmed by variation of indicators characterizing banks' exposure to credit risk, as we see in the following figure.



**Fig. 3. Trend of indicators of exposure at credit risk**

Source: Made by author according with informations presented by NBM on [www.bnm.md/md/financial\\_indices\\_of\\_bank\\_system](http://www.bnm.md/md/financial_indices_of_bank_system).

For the period 2004-2008, for the banking system, sum of 10 largest net debt reported to net credits was included into the permissible values per system (normative of NBM for the period 2004-2009 was maximum 50%), reported results varying between 27.7-37%. For 2009-2010 with modification of the maximum limit (for 2009-2013 the maximum limit was 30%) and negative situation on lending market is observed as exceeding of these with 4.9% and 0.3% but, according with provisions of NBM from Regulation on “big” exposures, unrespecting till December 31<sup>st</sup>, 2011 of the provided maximum limits are not considered infringement, if such unrespecting occurred because of the exposures assumed by the bank till the entry into force of the aforesaid Regulation. However, beginning with 2009 having observed a decline of the resultative indicator at the minimum value for all analized period by 21.3% in 2013,

which indicates a more rigorous monitoring of the process of credit giving. For 2014 we note an excessive increase of this report to 69.13%, exceeding by 39.13% NBM limit, which is assessed as negative for banking and crediting segment.

“Big” exposures reported to net credits indicates an irregular trend due to deviation in the volume of given credits in the years of crisis and recession, however the minimum value is observed on 31.12.2011 and 31.12.2013 in the amount of 20.5% and maximum of 31.7% for 2005, but at the end of 2014 we see an increase of this report to 23.5% due to the increase of large exposures.

Table 2

**The problems of information asymmetry created on markets for credit risk transfer**

	Potential problems	Effect of relationship	Characteristics of instruments that offer potential solutions
Adverse selection	reduced incentives for creditor to eliminate low-quality assets	debtor – creditor creditor – protection seller	-context where used instrument improve - credit provided by creditor - partial retention of risk by the creditor
	selection problem: creditor buying poor-quality of assets protection, causing the cost of protection for high quality assets	creditor – protection seller	- context where instrument is used; - standardized negotiation; - complexity of portfolio securitized instrument.
	incentives for asset managers in order to select low quality assets (managed securitizations)	creditor – protection seller	- independent governance; - strict rules for the assets selection; - partial retention of administrator risk.
Moral hazard	Reduced incentives for creditors to monitor credits	debtor – creditor creditor – seller protection	-credit improvement providing by creditor; - partial retention of credit risk; - monitoring regulations of documentation.
	Purchasing by creditor protection against debtor willing	debtor – creditor	the requirement to notify the debtor
	increased incentives for creditors to premature trigger the risk	creditor – protection seller debtor – creditor	- trigger events; - using the monitoring of transfer of finances credit risk;
	Protection seller (partially or fully) on contingent payments	creditor – protection seller	- increase the transparency of all markets of credit risk transfer

*Source: Adapted by author after Kiff, J., Michaud, F., Mitchell, J. [7].*

**Recommendations.** Banks are the major share of market activities of transfer of credit risk. Their involvement is contained into two categories. First, banks use transfer instruments of credit risk for various purposes, such as diversification or hedging purposes in order to improve financing. These activities are grouped under the heading of portfolio management. Secondly, some big universal banks are involved in mediation of transfer instruments of credit risk. Thus, they do not engage in taking credit risk or assumption, but providing services for investors through development and intermediation of transfer products of credit risk and credit derivatives markets. Consequently, individual banks may be involved in both portfolio management and intermediation activities, depending on their strategy.

In both activities of portfolio management and intermediation, banks may be engaged in initiating of transfer instruments of credit risk. In the case of portfolio management, a bank creates transfer products of credit risk based on balance assets. The motivation is to improve financing or capital management.

So, we opt for transfer of credit risk for the following reasons:

- risk decreasing regarding individual entities, in order to obtain benefits from capital management and maintaining regulatory capital;
- access the funds through securitization;
- diversification of credit risk by claims purchasing on societies which otherwise, would not be accessible to them;
- hope to increase the incomes by transfer instruments of credit risk.

For most banks, the importance of transfer instruments of credit risk remains limited. However, some banks already use transfers of credit risk.

According to financial reports, drastic changes in the business models of banks are still expected in terms of the deep changes at the global level. Most of the banks consider that transfer of credit risk, as part of their strategy, can be, relatively easily integrated into their current business. In their strategy, some banks, mostly intermediate, mentioned a business strategy and explicit need of transfer of credit risk. Deepening and expanding of transfer markets of credit risk has been regarded as a potential which will allow banks to make major changes in their business strategies.

Here can be identified many examples of benefits from the transfer of credit risk. These include:

- separation of risk credit from financing risk and market risk;
- time isolation of credit risk;
- separation of credit risk classes, allowing distribution to different levels of risk appetite;
- banks accept to choose keeping of ownership right, when transfer of credit risk allows specialization, loan “separation” from credit risk, and relaxation from regulatory constraints.

The recommendations coming from working group consisting of representatives from Bank of International Regulations are:

1. Market participants should use instruments for credit risk transfer in a compatible manner with the policy of risk management, approved by their board of directors or equivalent governing body and implemented by top management.
2. Market participants on trading instruments of transfer of credit risk should have the capacity to understand and assess the risks regarding to inherent credits in such instruments. This should include the ability to understand the variables influencing on the instrument assessment and how the instrument assessment will be affected by changes in this variable. Banks, that perform transactions of transfer of credit risk, should be able to evaluate on a comparable basis the credit risk, no matter of how it appears on the balance transaction.
3. Banks based on models of assessing credit and on instruments of transfer of credit risk should have sufficient staff and enough experience to understand correctly the assumptions and limitations of these models and accordingly to use them.
4. Market participants should understand the nature and scope of external ratings assigned instruments of transfer of credit risk, especially collateral obligations (CDO), how they differ from external ratings assigned to other types of instruments and way how methodologies rating different from rating agencies.
5. Market participants investing in dynamic structures should carefully evaluate the report of the manager, nature of appreciation from manager and potential conflicts of interest. Key problems in this regard include factors that require or prevent certain actions, provisions governing the diversion of cash flows to various tranches and the ability or right to substitute reference credits.
6. Counterparty credit risk, that result from transactions of credit risk transfer without reserve forming should be actively managed, at least on the same standards applied to other derivatives financial instruments on the extra bursary market. Especially, for risk management, counterparty credit exposures on derivatives instruments and other credit exposures at the same counterparty, should be aggregated taking into consideration enforceable agreements of compensation. Credit exposures of counterparty should be frequently calculated (in most cases, daily), and in relation to credit limits.
7. All market participants should pay attention to the legal documentation regarding the instruments for credit risk transfer, like range of credit events covered by instruments of credit risk transfer and clear and unambiguous identification of underlying reference entities.
8. Before entering into a transfer transaction of credit risk, market participants should count necessary estimates in order to clearly identify the legal responsibilities of the counterparty or client, depending on their role in transactions and take into account that the counterparty or client have legal authority to enter the transaction. More than that, dealers and end users should have space in processes in order to evaluate and control the reputational risks involved in the transaction.
9. Market participants, especially banks, that offer possibility to use transfer instrument of credit risk, should take care to ensure compliance with all relevant laws and regulations, which relate to participation in transactions for the transfer of credit risk.

10. Market participants should execute confirmations and other documents associated with a transfer transaction of credit risk immediately after the transaction was realized. Market participants should establish clear standards or guidelines for periods of time that should be allowed for the exchange of documents and confirmations. Banks, which usually offer summary information and breakdowns of credit exposures for credit portfolios, should take into account the presentation of information that describes how transfer transactions of credit risk affect these summary measures and breakdowns of credit exposure. Market participants, like insurers, that take credit risk as underwriters, should take into account the information about the quantity of such exposures and associated provisions.
11. The Commission's efforts for global financial stability for developing mechanisms that identify better information about aggregate credit risk should be strongly supported by supervisory authorities and market participants.
12. Supervisory authorities should take necessary measure to facilitate their understanding regarding transfer transactions of credit risk. This includes necessity to attract and maintain qualified personnel, implementation of training procedures in order to improve staff knowledge and perception.
13. Supervisory authorities should periodically review regulations, supervisory guidance and reporting mechanisms, that are relevant for transactions of credit risk transfer. In many cases, orientation of supervision and regulations applicable for extra bursary derivate financial instruments are not specifically adapted for transactions with financial instruments of credit derivatives. So, may be circumstances where regulations, guidance reporting or supervisory mechanisms of supervision should be adapted for more effectively achievement of their specific objectives. Supervisory organs should make efforts for better understanding accounting approach of transfer transactions of credit risk and their implications, seeking to ensure a contribution of vast knowledge in development of adequate accounting standards for transfer transactions of credit risk.
14. Supervisory authorities should continue efforts to share information regarding activities of credit risk transfer with the goals of strengthening mutual understanding of the evolution of credit risk and improvement practices of risk management by market participants. Especially, supervisors authorities should exchange information about regulatory approaches adopted in areas, like minimum capital and securitization, for a better understanding of possible interactions between different approaches and incentives, that these interactions could create for market participants [3].

Credit risk transfer produce a compromise between an improvement in risk ensuring and liquidity management (positive effect) and a reduction of banks' incentives to monitoring (negative effect). Optimal instruments of transfer of credit risk are based, rather, on credit portfolios than on individual loans and have credit guarantees for consolidation. But level of credit accessory must be clearly defined, being present a temporary defined interval. Outside this interval, monitoring incentives are undermined.

**Conclusions.** Following worldwide talks appeared need to assess the problems in the credit risk transfer, that are important from perspective of financial stability, being highlighted three aspects:

- 1) implication of derivate financial instrument in realization of credit risk transfer;
- 2) the level where participants of market of credit risk transfer understand involved risks;
- 3) the impact of credit risk transfer in excessive concentration of credit risk within or outside the regulated financial sector.

Transfer of credit risk facilitates the distribution of credit risk. It is clear that selling protection of transfer of credit risk is equivalent with improvement the liquidity of the financial system.

Successful transfer of credit risk and creation of sustainable qualitative market would not have been possible without the strong influence of financial institutions, particularly banks.

Regarding to general process of financial disintermediation, that is accelerated by markets credit risk transfer, should be differentiated between effects of capacity (for example, infrastructure, market creation), effects of information (for example, transparency, disclosure, adverse selection) and effects of coordination.

So, the transfer of credit risk, as an efficient and modern concept, certainly, should be interesting for all banks, from all banking systems where banks act, from other hand, we have to recognize that few banks are able to protect themselves against risk, due to lack of adequate markets, which is an important condition for the successful implementation of the concept of credit risk transfer.

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