Speculative trading of financial derivatives - the cause of instability in the financial markets

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In the last few years, companies and institutions are increasingly using derivative instruments in order to actively manage risks of their business. The large usage of various derivatives has led to an increase in trading with derivatives on financial markets. The aim of this paper is to present derivative instruments, according to the certain risks and the volume of trading due to certain groups of derivatives. The results of analysis indicate that the huge volume of trading with financial derivatives is connected with speculative trading. As a consequence of speculative trading with derivatives, the derivatives have no more real cover and these transactions change the money supply provided from the central banks in reality.

Key-Words: risk, derivative instruments, OTC markets, speculative trading

1 Introduction

Each company and financial institution seeks to maximize its business, profits and wealth of the owner, but at the same time, higher profit for the company means taking on higher levels of risk. Companies and institutions in various ways try to decrease the effects of risk, for example by diversifying their portfolio. In the last few years, they are increasingly using an active approach to risk. That means that they are no longer satisfied only with the awareness of the existence of risk and because of that incorporating risk premium in the price of their product, but they want to actively manage risks.

Development of financial derivatives has greatly contributed to the development of hedging. Companies protect their transactions by taking positions that cover both (opposite) scenarios that could occur. Growing awareness of the existence of the risk and needs of companies to protect themselves from the risks in their businesses has led to a large usage and development of various hedging instruments. Companies have recognized the role of derivatives as highly effective in protecting against almost all business risks. Financial derivative products are complex financial instruments derived from basic simple financial products [1]. Characteristics of derivative instruments are that they are banded to the assets to which they are related and their price is derived from the value of the basic instrument. Alone, for themselves, derivatives have no value. [2] Following the successful application of financial derivatives for hedging and the rapid development of financial derivative markets in the late 20th century, more complex variations of options and structured products have appeared [2].

In this paper, emphasis will be put on the trade on the OTC derivatives market which has led to the high volume of trading without a unified monitoring and control. Something that at first seemed like a very effective protective mechanism has turned against its original purpose and become the trigger for instability and the reason for the emergence of new risks that cannot be eliminated by financial derivatives.

Financial derivatives as method of risk insurance, has led to excessive volume of trading in the financial markets and caused the collapse of the entire system of protection against risk. In this paper it will be presented the classification of risks, the use of derivatives and the analysis of the causes of problems in the financial derivatives market.

2 Risk of financial institutions and derivative instruments for the protection of certain risks

Risk can be defined as a measurable probability of appearance of adverse event. Therefore, the most important feature of risk is the measurability or the possibility of quantifying. Due to this characteristic, it is important that the protection...
from the certain risk is also measurable. Today there are quite a number of risks, depending on the nature of business enterprises or institutions. Risks that the financial institutions face today are as follows [3]:

- Credit risk
- Liquidity risk
- Interest rate risk
- Market risk
- Off-balance sheet risk
- Currency risk
- Country risk
- Technological risk
- Operational risk
- The risk of insolvency

Hereafter will be presented risks that could be managed and whose influence could be reduced by using financial derivatives. Other risks such as country risk, technology risk and operational risk are underlying to other methods of control or elimination.

2.1 Credit risk
Credit risk is the probability of losing part of the assets of financial institutions. Credit risk is the wider concept then the risk related to loans. It refers to any financial transaction of institution that produces certain claims for principal and interest [4]. Credit risk occurs in placing loans and buying bonds. Apart from a detailed analysis of potential applicants for loans and portfolio diversification of assets, the financial institution can manage credit risk using insurance, replacement, risk transfer through participation in the group, or by derivative instruments [5].

Derivatives that are used to protect against credit risk are synthetic transactions such as swaps or options associated with the value of each loan or loan portfolio [6]. So far, the most prevalent way to protect against credit risk has been securitization. Securitization was used to convert illiquid financial assets into liquid assets. In this way, the initiator transfer credit risk through a new issue of securities [7].

2.2 Liquidity risk
Liquidity is the ability of the smooth "flow" of assets from one form to another. More specifically, it could be said that liquidity is the ability of quickly conversion of non-cash assets into cash, and vice versa, in order to settle obligations as they mature. Liquidity risk arises when the owners of the liabilities of financial institution (depositors) ask for cash for their receivables [3].

Financial institutions are exposed to liquidity risk in the way there is a risk that they will not be able to monetize assets in order to settle the claims of liabilities. Liquidity risk could be managed by stored liquidity reserves or purchased liquidity reserves.

Buying liquidity reserves is hedging instrument that managers use in the similar way like derivatives to protect against financial risk. Buying liquidity performs in the interbank market for short-term loans. In addition, the financial institution could issue additional certificates of deposit with a fixed maturity or medium or long-term bonds [3]. As the purchased liquidity techniques were increasing, the associated markets were strengthened.

2.3 Interest rate risk
Interest rate risk is often mentioned in the context of banking risks. The interest rate risk is defined as the probability of an adverse effect of the movement of market interest rates on the bank's earnings and profits [8], or maturity mismatch between assets and liabilities. Maturities of assets and liabilities are associated with the transformation of assets including the purchase of primary securities and issuing secondary securities in order to fund assets [3]. If the maturity of assets and liabilities are not aligned, there is a risk of changes in interest rates.

The most commonly used derivatives to hedge against interest rate risk are interest swaps or replacements. Interest replacement (swap) refers to the agreement that parties undertake to exchange payment obligations under the same or different contractual interest rates on the principal amount over a certain time period [8].

2.4 Market risk
Market risk is one of the most important risks of financial institutions, because it involves changes in interest rates, changes in exchange rates and other changes in the market at which the institution can not affect or reduce their impact on its business by any portfolio diversification. The increase in the share of derivative instruments, which occurred due to the protection of other risks, has led to greater monitoring and evaluation of market risk because derivatives are more exposed to market risk [9]. There are different methods of measuring market risk, and among them, the most important method it value at risk [9].
Hereafter will be explained in more detail why the use of derivatives for protection against the risks has actually potentiated increase of market risk for financial institutions.

2.5 Off-balance sheet risk
In order to obtain higher profits, financial institutions are more concerned with off-balance sheet activities. Off-balance sheet activities include trading with financial instruments and the generation of income from fees and loan sales, the provision of guarantees and warranties, revolving loans, lines of credit [10] and other activities which affect the profits, but they do not appear on the balance sheet of financial institutions [11].

Based on the assumed off-balance sheet commitments, financial institution is exposed to credit risk, as there is a risk of irretrievable future outflow of funds. As an example of off-balance sheet commitments it could be mentioned took over guarantees commitments, uncovered letters of credit, promissory notes or other guarantees, commitments under the credit agreement and similar [12].

2.6 Currency risk
Because of globalization and competition growing, financial institutions are more oriented to foreign investments. This kind of business exposes them to the risk of exchange rate, which means that there is a risk of change of foreign portfolio value due to changes in the value of foreign currencies. Currency risk is therefore defined as the probability that the changes in exchange rates will affect the value of the assets and liabilities of financial institutions denominated in foreign currencies [3]. Besides the operations in the money market and term transactions, currency risk could be managed by derivative instruments.

Derivative instruments are used in a way of taking the opposite position on the secondary financial markets than the one that is exposed to currency risk [13].

2.7 The risk of insolvency
Insolvency is a condition in which the financial institution is unable to settle its obligations in the anticipated maturity. Insolvency can be caused by many factors that negatively affect the work of the institution. For example, the insolvency could appear as a result of changes in interest rates, risk off-balance sheet activities, changes in the legislative framework and similar problems. With regard to these reasons, the risk of insolvency is closely linked to interest rate risk, market risk, country risk, liquidity risk, et cetera.

As a protection against the risk of insolvency, there are various measures to protect against the risk that precede this risk, which are already mentioned in previous sections.

3 Financial derivatives market
Institutions and individuals are mostly risk-averse and they try to decrease and eliminate risks of their business whenever it is possible. Because of that, until today, there are a great number of forms of financial derivatives. Because of the extensive application of derivatives, it was necessary to develop financial markets for derivatives. In relation to the risks mentioned in the previous chapter, companies and institutions have developed various forms of derivative instruments that are used to protect against these risks.

Types of financial derivatives markets are formed according to the basic instruments, so Tuškan [2] distinguishes:

- Derivatives of money market or interest derivatives, which are aimed at the protection of the interest rate risk
- Derivatives of exchange market or currency derivatives, which manage foreign currency risk, and include currency exchange, currency options and currency futures contracts.
- Derivatives of capital markets, which are related to long-term financial instruments, and include options and interest rate swaps, options on interest rates and options on the fall and rise in interest rates [8].

The rapid development of derivatives and their markets is not a problem by itself, but the problem is that derivatives are traded on the OTC markets and this trade takes place on the basis of personal purchase, without intermediaries and without an official announcement. Therefore, data on trade in financial derivatives are not complete, but they could be considered only as an indicator of trends in the market, and the actual volume of trade is certainly higher than reported.

According to the World Federation of Exchanges [14], in the year 2009, the volume of trade in derivative contracts amounted 17.9 billion USD, and in 2010 the volume of trade was 22.4 billion USD, what is an increase of 25%.

Many experts believe the collapse of investment bank Lehman Brothers in 2008 was the
beginning of the financial crisis, and which was result of rampage in market prices of derivatives.

Bank for International Settlements groups derivatives into the following categories:
- Interest rate contracts
- Foreign exchange contracts
- Equity-linked contracts
- Commodity contracts
- Credit default swaps

The table 1 in appendix shows movements of derivatives by category and data gathered from Bank for International Settlement.

4 Problems that arising from excessive use of financial derivatives

Financial derivatives that are used to protect and manage the financial risks have actually brought new risks in the financial markets and caused new problems. Some new risks have appeared, such as the risk of price relationships between hedging object and speculative risks of commodity markets, where sellers of goods, that take a short position in the markets, are forced to buy back their contracts at higher prices [15]. A large number of products in circulation have led to an imbalance in the money markets and to the "inflation of money" which presents the decrease of money value. Speculative trading and non-transparency in the trading of derivatives, especially with foreign exchange contracts, have caused the biggest problems regarding to the value of money. That kind of trading has led to a considerable risk for all parties, known as counterparty risk [16]. In addition, it could be assumed that the money from the real sector remained "trapped" in the speculative sector of trade in financial derivatives. Money that is "moved" from the real sector in not a part of bank deposit any more, but it is used for virtual transactions. This overflow of funds from one sector to another and keeping funds trapped, limits the money supply provided from the central banks in reality. The effect of these transactions is reduced liquidity in the real sector.

5 Conclusion and recommendations

Trading in financial derivatives in presented volume indicates that the derivatives are used for speculative purposes more than for their main intention, to protect against financial risk. As a consequence of these actions, the outflow of money
from the real sector to the financial sector has occurred, and this money was used for speculative purposes. In this way, the imbalance between the real and financial sectors has intensified. Expansion of derivatives trading caused the emergence of the "cloud" of instruments that have no real cover. In order to establish better control over transactions on the OTC derivatives market, Bank for International Settlements has made certain studies and analysis of derivatives markets and suggested certain regulations. It has been recommended to create centralization of transactions in derivatives markets. In this way, anonymous transactions would be eliminated and it would provide insight into the overall trade with financial derivatives [17]. To prevent uncontrolled price increasing and restore the original function of derivatives as an instrument for protection against financial risk, it is necessary to prevent and limit speculative trading in financial derivatives. For this purpose it is necessary to establish a central regulatory body to monitor trade of derivatives and restrict the issuance of derivative instruments only to those who have real coverage in the basic instruments. Such legislation should be similar to the regulation of multiplication of loans and deposits at depository institutions.

References:
[12] Croatian National Bank, Decision on the classification of placements and off-balance sheet liabilities of credit institutions, 2009
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<tr>
<td><strong>Foreign exchange contracts</strong></td>
<td>14344</td>
<td>15666</td>
<td>16748</td>
<td>18460</td>
<td>24475</td>
<td>29289</td>
<td>31364</td>
<td>40271</td>
<td>56238</td>
<td>44200</td>
<td>49181</td>
<td>57798</td>
<td>63349</td>
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<tr>
<td><strong>Interest rate contracts</strong></td>
<td>60091</td>
<td>64668</td>
<td>77568</td>
<td>101658</td>
<td>141991</td>
<td>190502</td>
<td>211970</td>
<td>291582</td>
<td>393138</td>
<td>385896</td>
<td>449875</td>
<td>465260</td>
<td>504117</td>
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<tr>
<td><strong>Equity-linked contracts</strong></td>
<td>1809</td>
<td>1891</td>
<td>1881</td>
<td>2309</td>
<td>3787</td>
<td>4385</td>
<td>5793</td>
<td>7488</td>
<td>8469</td>
<td>6159</td>
<td>5937</td>
<td>5635</td>
<td>5982</td>
</tr>
<tr>
<td><strong>Commodity contracts</strong></td>
<td>548</td>
<td>662</td>
<td>598</td>
<td>923</td>
<td>1406</td>
<td>1443</td>
<td>5434</td>
<td>7115</td>
<td>8455</td>
<td>3820</td>
<td>2944</td>
<td>2922</td>
<td>3091</td>
</tr>
<tr>
<td><strong>Credit default swaps</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>6396</td>
<td>13908</td>
<td>28650</td>
<td>58244</td>
<td>41883</td>
<td>32693</td>
<td>29898</td>
<td>28626</td>
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<tr>
<td><strong>Unallocated</strong></td>
<td>11408</td>
<td>12313</td>
<td>14384</td>
<td>18330</td>
<td>25508</td>
<td>25879</td>
<td>29199</td>
<td>39740</td>
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<td>65413</td>
<td>63270</td>
<td>39536</td>
<td>42610</td>
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<tr>
<td><strong>TOTAL</strong></td>
<td>88201</td>
<td>95199</td>
<td>111178</td>
<td>141679</td>
<td>197167</td>
<td>257894</td>
<td>297670</td>
<td>414845</td>
<td>595738</td>
<td>547371</td>
<td>603900</td>
<td>601048</td>
<td>647777</td>
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Table 1: Trading in financial derivatives on the global OTC markets in bil USD

Source: Author, according to the Bank for International Settlements, Statistical release: OTC derivatives statistics, several numbers, [https://www.bis.org/publ/otc_hy1205.htm](https://www.bis.org/publ/otc_hy1205.htm), 2013