HEDGING WITH OPTIONS AS A CONTEMPORARY CONCEPT AND INITIATOR OF DOMICILE FINANCIAL MARKET

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ABSTRACT

Every country being disposed to join global economic trends is trying to develop its financial market as much as possible because the financial market is directly responsible for investing into a long-term growth and development of economic system. Over the last decades human activities have been focused actively on surmounting and avoiding difficulties that may occur as a consequence of a model of contemporary society that many sociologists call "risk society". Globalization and modernization have contributed to creating new concepts and models for overcoming emerging opportunities and "misfortune" in every segment of human conscious activities. In addition to shares and bonds as traditional financial instruments, derivative securities are traded on financial markets, which promotes the development of financial markets, such as options. Investors trade with options because they have control over large amount of money at relatively low cost, and also control the loss that is reduced to the level of option prices, or premium. A special emphasis was put on options, as financial derivatives, because they are used to implement a hedge strategy that protects option traders from risk. In order to achieve a satisfactory implementation of the hedge strategy, it is important to analyse market and contract prices as well as their relationship.

Keywords: financial market, financial institutions, options, risk society, hedging.

1. FINANCIAL DERIVATIVES ON THE DOMICILE FINANCIAL MARKET

Traditionally, hedging and speculative actions are mentioned as complementary terms. Contemporary approaches, however, do not put hedging in the first place but highlight that derivative instruments are tools used by companies to better estimate financial risk. Financial derivatives are extremely controversial instruments, and demand more attention. Due to their complexity, many emphasize that they are not clear for usage, but what is common for both theoreticians and practitioners is the fact that their use is subject to their complete understanding; on the contrary, the outcome is not certain.

If we take into consideration the domestic financial market, there is a delay of its development as opposed to the international market of financial derivatives. It is, therefore, necessary to have intensive involvement of economic subjects and banks into international financial markets for the purpose of developing financial derivatives market in the Republic of Serbia. The encounter between interest rates and exchange rates from foreign market and domestic subjects that want to join these flows will result in risk from international financial environment. In order to enable domestic subjects to protect themselves from foreign currency and interest risk, it is necessary to possess a good knowledge of instruments, techniques and strategies of trading on uncertain international derivatives market. The positive legislature in the Republic of Serbia provides enough space for developing this market. Experts emphasize that there are many factors: faster
development of spot financial market, efficient protection of creditors’ rights, active role of
government in this segment, transformation of banks and economy as well as appropriate measures
of monetary and fiscal policy, influencing the development of derivatives market in our country. It
is assumed that the market of financial derivatives in our country at the early stage in its
development will be inter-bank in nature, with sporadic participation of some highly rated
companies, while the share of the corporate sector and the citizens can be expected with the
institutionalization of the clearing house and establishment of appropriate mechanisms to guarantee
the enforcement of the contract.

2. FINANCIAL INSTITUTIONS AND THEIR ROLE IN THE DEVELOPMENT OF
FINANCIAL MARKET IN SERBIA

The banking sector in Serbia is organized in a conservative manner, and it has become an obstacle
to further development of market relationships and financial markets, whereas the rapid
development of financial markets in industrial countries, particularly in the United States,
demanded the development of modern financial institutions and instruments that are adequate to
the needs of investors and users of the capital. Financial market and the use of financial derivatives
can be best explained by the examples of the most developed financial markets, such as the US and
the European Union market because their trend of development can serve in the perception of the
domicile financial market that is still emerging. Table 1 shows the data on the ownership of the
financial sector in the USA at the end of the first quarter of the year 2009. It may be noted that non-
deposit institutions accounted for the majority of financial assets, reflecting the development of
capital markets in the United States, which is the dominant method of financing companies.

Table 1: The assets of the US financial sector, Q1 2009 in billions USD (Jeremić, 2009)

<table>
<thead>
<tr>
<th>Financial Category</th>
<th>Billion USD</th>
<th>Share %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Banks</td>
<td>13,904.5</td>
<td>25%</td>
</tr>
<tr>
<td>Savings</td>
<td>1,533</td>
<td>3%</td>
</tr>
<tr>
<td>Credit unions</td>
<td>847</td>
<td>1%</td>
</tr>
<tr>
<td>Property insurance</td>
<td>4,458.7</td>
<td>8%</td>
</tr>
<tr>
<td>Private pension funds</td>
<td>4,273.7</td>
<td>8%</td>
</tr>
<tr>
<td>Pension funds of the persons employed in government and municipality bodies</td>
<td>2,174.9</td>
<td>4%</td>
</tr>
<tr>
<td>Government pension funds</td>
<td>1,192.4</td>
<td>2%</td>
</tr>
<tr>
<td>Cash investment funds</td>
<td>3,738.7</td>
<td>7%</td>
</tr>
<tr>
<td>Investment funds</td>
<td>5,158.8</td>
<td>9%</td>
</tr>
<tr>
<td>Closed investment funds</td>
<td>200.7</td>
<td>0%</td>
</tr>
<tr>
<td>Government-sponsored entities</td>
<td>3,451.6</td>
<td>6%</td>
</tr>
<tr>
<td>Agency- and GSE-backed securities</td>
<td>5,041.8</td>
<td>9%</td>
</tr>
<tr>
<td>Asset-backed securities</td>
<td>3,937.4</td>
<td>7%</td>
</tr>
<tr>
<td>Financial companies</td>
<td>1,815.3</td>
<td>3%</td>
</tr>
<tr>
<td>REIT – Real estate investment trust</td>
<td>254.9</td>
<td>0%</td>
</tr>
<tr>
<td>Broker dealer companies</td>
<td>1,912.6</td>
<td>3%</td>
</tr>
<tr>
<td>Corporations for financing</td>
<td>2,653.8</td>
<td>5%</td>
</tr>
<tr>
<td></td>
<td>56,549.8</td>
<td>100%</td>
</tr>
</tbody>
</table>

A popular segment of the financial markets in the world is the market of financial derivatives. The
fact that applies to developed countries is that the number of investors who trade options tends to
increase in contrast to the total number of investors. It is believed that there are significant
opportunities for expansion of benefits of options as well as for switching activities from over-the-
counter market to the stock exchange. Graph 2 shows market share on the stock exchanges in the
United Stated, and the biggest option trade volume was on CBOE stock exchange with 28.6% share.
CBOT achieved the largest number of transactions and the highest premium (Alijanović, Poklepović, Šego; 2009).
Figure 2: Market share of options on stock exchanges in the United States, in %
(Aljanović, Poklepović, Šego; 2009)

Basically, capital market is a specialized market where money – capital is demanded and supplied in the long-term period, but the long-term period means larger number of risks. From the perspective of capital markets, insurance companies and pension funds play the key role as institutional investors in various securities, since their investments enable a significant increase in the liquidity of the market, as well as its overall performance.

The banking sector dominates the financial market in Serbia, followed by the insurance sector, while the fund industry is just in the state of approximate trend. Delaying the development of domestic investors created a gap, which was filled with foreign portfolio investors. Regarding fund industry, the first significant steps were made by voluntary private pension funds supervised by the National Bank of Serbia. In the total assets of the financial sector in the year 2010, which amounted to 2,759 billion dinars, banks accounted for 91.8% and the insurance company with 4.2%, as shown in Table 3.

Table 3: The share in the total financial sector in %

<table>
<thead>
<tr>
<th></th>
<th>'08</th>
<th>'09</th>
<th>'10</th>
<th>'08</th>
<th>'09</th>
<th>'10</th>
<th>'08</th>
<th>'09</th>
<th>'10</th>
<th>'08</th>
<th>'09</th>
<th>'10</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total assets</td>
<td>89.3</td>
<td>90.8</td>
<td>91.8</td>
<td>6.2</td>
<td>4.7</td>
<td>3.6</td>
<td>4.3</td>
<td>4.2</td>
<td>4.2</td>
<td>0.2</td>
<td>0.3</td>
<td>0.4</td>
</tr>
<tr>
<td>Capital</td>
<td>93</td>
<td>92.1</td>
<td>92.5</td>
<td>1.4</td>
<td>1.9</td>
<td>1.5</td>
<td>5.6</td>
<td>6</td>
<td>6</td>
<td>0.5</td>
<td>0.4</td>
<td>0.3</td>
</tr>
<tr>
<td>Number of employees</td>
<td>72.2</td>
<td>72.5</td>
<td>71.8</td>
<td>1.2</td>
<td>1.1</td>
<td>1.1</td>
<td>26.2</td>
<td>25.9</td>
<td>26.8</td>
<td>0.5</td>
<td>0.4</td>
<td>0.3</td>
</tr>
</tbody>
</table>


The adoption of an institutional framework for investment funds in Serbia has opened up opportunities for greater profits, and loss of investment. The conditions for investment funds were created in Serbia in 2006 after the Law on Investment Funds (Official Gazette No. 46, 2006) was passed, ten years after the countries of the region. In 2008, there were fourteen open-end and two closed-end investment funds. The main problem for their business was bad timing to get started. Only one investment fund has caught a wave of "bull" market, which is strong growth in share price, while other funds were set up during the great fall in prices of shares – "bear" which is the hallmark of financial collapse. Investment funds provide individual investors with a profit alternative to interest-bearing deposits in banks. The development of investment funds enables individuals to get more alternatives for investing their capital.

3. HEDGING

3.1. Risk society

Modern society is a risk society. Although the concept of risk is as old as social development itself, referring primarily to the field of insurance, it can be said that modernization and globalization have contributed the risk to become a global phenomenon today. Financial derivatives have found
their wide use precisely in the purpose of risk management, because in that way it is possible to manage various types of risks, and this their immanent characteristics; possibility of transfer and isolation of specific types of risk. However, the term risk management does not mean and does not necessarily represent neutralizing or reducing risk. But derivatives are characterized by "risk prevention", an activity at which a cash flow transaction can be compensate for another cash transactions and thus the risk will be reduced (Skakavac, 2008). The increase in financial risk requires better methodology for their identification, measurement, hedging and analysis, whereas trading volume in the market of financial derivatives is constantly rising. The importance of derivative financial instruments for risk management is in their extremely high leverage. In financial terms, leverage means investing a smaller amount of cash into the investments of higher values (Skakavac, 2008). Financial derivatives, which are today definitely the most valuable tools for managing financial risk, have only been gaining their popularity over the last few decades. Developed economies with the help of financial derivatives market enabled managing financial risks by small investments. The unique rating applying to all financial derivatives is to reduce capital costs, increase efficiency and allocation ability of the market (Skakavac, 2008).

3.2. Hedging with options

Risk transfer is a key role in the financial derivatives market and is therefore primarily used for option hedging and speculation. Options and optional agreements are commonly defined as standardized, liquid purchase contracts, which give the buyer the right but not the obligation to buy or sell a specific object of the contract at a predetermined price and in a future period. The buyer in this agreement is a "privileged" side, without any obligation and can simply let the options expire unused. The purchase of options initially protects from the risks and can make a profit by the change of prices. Specifically, those who take the call option expect that the price of basic investments will grow, whereas those who take put option expect their decrease. Without differences in the type of option, a loss certainly reduces to the level of the premium (Kenneth, Siegel, Dabić; 1995). The purchase of put option protects the investor from possible risks seen in the case of decreasing market price of the share.

The values of put and call options move in different directions. If the market price of primary investments rises (including contract items such as shares, indices, Treasury bonds, currencies, futures contracts), it will result in increase in the value of call options. Likewise, if the market value of the basic investment falls, it will lead to increase in the value of put options. "The essence of financial hedging is a combination of two or more financial transactions with financial instruments that respond differently to changes in interest rates or exchange rates" (Skakavac, 2008). The following table shows the results of the study on using derivative instruments within hedging transactions of corporations belonging to different industry (Knežević, 2008):

<table>
<thead>
<tr>
<th>Industry</th>
<th>Hedging of interest rate – IR hedge (% users)</th>
<th>Hedging of interest rate - IR hedge (% non-users of IR hedge)</th>
<th>Hedging of foreign currency - FX hedge (% users)</th>
<th>Hedging of foreign currency - FX hedge (% non-users of FX hedge)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Food</td>
<td>20</td>
<td>80</td>
<td>60</td>
<td>40</td>
</tr>
<tr>
<td>Transport and shipment</td>
<td>46</td>
<td>54</td>
<td>66</td>
<td>34</td>
</tr>
<tr>
<td>Banks</td>
<td>67</td>
<td>33</td>
<td>40</td>
<td>60</td>
</tr>
<tr>
<td>Insurance companies</td>
<td>60</td>
<td>40</td>
<td>33</td>
<td>64</td>
</tr>
<tr>
<td>Investment companies</td>
<td>56</td>
<td>44</td>
<td>50</td>
<td>50</td>
</tr>
</tbody>
</table>


According to data from the table, it is noticed that companies in the area of production (food) are greatest users of protection against currency risk (the percentage of users of this type of hedging is 60%). Transport and investment companies are oriented almost equally to interest rate hedge and foreign currency hedge. However, banks and insurance companies are facing interest rate hedges
for the purposes of controlling interest rate risk (67% banks and 60% of insurance companies – users of hedge – apply interest rate hedge).

One of the characteristics of hedge strategies is that they include the position in the option and position in their primary share. The goal is to make one position help neutralizing adverse price change in the other position. There are two important hedge strategies: covered call market strategy (selling call options) and protective put buying strategy (buying put options). The covered call options trading strategy involves selling a call option for every share that the investor owns. The investor takes a short (selling) position, and a long (buying) position is in the primary share. In the case of fall in share price, the loss is realized on a long position in the share, and the funds generated by selling call options can be compensated for the loss. The value of the portfolio of a company is 100 shares with a market value of €100 per share, which is the total of €10,000. It is assumed that the premium put options is €700 with which 100 shares can be bought at the agreed price of €100. There are situations depending on market prices (Kovačević, 1997) as follows:

- If the market share price exceeds €100, the buyer of call options will also perform and pay 100 € per share to the seller. Namely, with this market price the value of the portfolio will be €10,700. The profit made by this strategy is €700.
- If the market share price is €100 on the date of maturity, call option buyer will not exercise the option because the value of the portfolio will remain €10,700.
- If the market price of shares is less than €100, there will be a profit less than €700. If the market share price is €96, the long position of the option will be €9,600, a short purchasing position will be €700, whereas the value of the portfolio will be €10,300, where €300 represents the profit.
- If the market share price €93, the long position of shares will be €9,300, the short purchasing position will have the value of 700 €, whereas the value of the portfolio will be €10,000. The result of this option would be neither loss nor gain.
- If the market share price is < €93 at maturity, there will be a loss. Namely, if the market price of shares is €88 at maturity, the long position of options will be €8,800 with a short purchasing position of €700, whereas the value of the portfolio will be €9,500. So, there will be a €500-loss.

Using the protective put options strategy includes the purchase of a put option for each share held by the investor. It serves as protection from reduction of stock prices, but at the same time it enables the investor to use the results of the potential growth of share prices. Possible loss is limited, and the maximum profit is unlimited. Protective put option strategy acts as a kind of insurance policy of the investor. The value of the portfolio of a company is 100 shares with the market value of €100 per share, which €10,000. It is assumed that the put option premium is €500 which can be used for buying 100 shares at the agreed price of €100 (Kovačević, 1997). There are situations depending on market prices as follows:

- If the market price of a share is €112, the investor makes a profit by this strategy. Namely, at this market price, the value of long positions of shares will be €11,200; with the deduction of the premium of €500, the value of the portfolio will be €10,700. The profit made by this strategy is €700.
- If the market price of shares equals €105, there will be neither loss nor profit because the value of the portfolio will certainly be €10,000.
- If the market price of a share is €102 (but €100 minimum), the investor makes a loss of €300 by this strategy. Namely, at this market price the value of long positions of shares will be €10,200; with the deduction of the premium of €500, the value of the portfolio will be €9,700. The loss made by this strategy is €300, whereas the profit from shares is €200.
- In none of the above-mentioned examples, the investor will perform an option. If the market price of shares is under €100, the option is executed. No matter how much the market price of shares is lower than the contract price, the investors are convinced that they will get €100 per share. The value of the portfolio will be €10,000 with a reduction of €500 of the premium. The loss made by this strategy is €500.

The aim of hedging with options is to enable one position to help in neutralizing any adverse effects of changes in prices in another position.
4. CONCLUSION

The main motive for individual investors to entrust funds to a financial institution, as an agent, is the diversification of risks that they made by investing in a range of different financial instruments as well as of expert knowledge they possess. Countries with developed capital markets have improved their financial system by financial institutions and instruments that are appropriate to the needs of investors and users of the capital. The limiting factors for the development of non-banking financial activities in Serbia are the level of national income per capita, shaken confidence of investors, the level of standard of living, and lack of habits of citizens and economic subjects to meet their financial needs outside traditional banking services. One of the causes of underdevelopment of the financial market in Serbia is the lack of a sufficient number of institutional investors, mainly investment funds and pension funds. Options are modern financial derivatives, which is often called the rising industry because there is imminent emergence of new opportunities for speculation on future developments on the market. Through greater regulation and transparency of capital market in the Republic of Serbia, trading derivative securities, including options, should be introduced in the future. The introduction of options on our stock exchange would be of paramount importance for capital market in Serbia because it would announce new possibilities for placing the funds.

Developed financial markets show a tendency to increase the number of option contracts. In developed market economies, the financial derivatives market allows small investments to manage financial risks. Hedging techniques include the use of financial instruments known as derivatives. In order to overcome the current stagnation in development, it is essential that financial markets take on more of the inter-bank character, and to participate in international financial flows, where will be a need for risk management, and the domestic market will get features of a developed financial market. It is certain that the hedging options will not be applied here for a long time due to the bad development of both financial markets and of a broad network of financial institutions.

REFERENCES