

Pros and cons of using derivatives

Ramona GOGONCEA

The Bucharest University of Economic Studies
ramona.gogoncea@gmail.com

Ioana-Diana PAUN

The Bucharest University of Economic Studies
diana_paun@yahoo.com

Abstract. *The global financial crises that affected the world economy starting with 2008 have at least three factors of great influence. However, the general opinion and the conclusions of researches conducted are that one of the most significant factors that is the increase dealing with more complex financial instruments, such as derivatives.*

The purpose of my research is to show the advantages given by using derivatives, being aware of the costs and risks associated.

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JEL Classification: G11, G15, G24.

REL Classification: 11B, 11D.

1. Introduction

The international financial system has undergone many significant structural changes in recent years: major financial institutions have merged; many companies have globally expanded, thus considerably intensifying competition. The trend followed by banks and corporations was amplified by long-term changes occurred into the structure of the industry.

This expansion led to the emergence of new risks, both credit and operational. Into the last 30 years many corporations have found that is more advantageous to get funding from public by issuing bonds rather than borrow directly from banks. Banking institutions found themselves competing with increasingly fierce, reducing margins and giving loans with higher maturities to doubtful clients. On the other hand, customers request increasingly sophisticated and complicated ways to finance their activity, to protect themselves against risks and to invest their liquid assets. In this context, derivatives had a spectacular evolution. If previously were used only by financial institutions, demand has grown today covering all industries. An ISDA⁽¹⁾ recent study reports that 94% of top 500 corporations are currently using derivatives in order to manage macroeconomic risks. But global derivatives industry is in a continuous consolidation. Each year adds new types of instruments, while others were not traded. Corporations use mainly derivatives with underlying exchange rate and interest rate. Conversely, financial companies (banks, insurers, etc.) are involved in trading of all kinds of derivatives.

To better understand the advantages and disadvantages that such instruments offer, let's first see their definition. A derivative can be broadly defined as a private contract whose value derives from the price of an underlying asset, reference rate (such as stocks, bonds, currency or commodity) or index. In addition the contract must specify a notional amount that is defined in terms of foreign currency, shares, bushels, or other unit. Unlike financial securities such as stocks and bonds, which are issued to bring an increase of capital, derivatives are private agreements between two parties. As a concept, these tools are not an invention of the XXI century. They have been known for over 200 years⁽²⁾. But exactly the instability of financial systems, globalization and legal uncertainty led in recent years the investors to lavish their attention to them. Controversial as they are well known but only to a small number of specialists, they are the most avant-garde instruments can be found in the portfolio of an investor. Most people regard them with suspicion and focus exclusively on their role of tools used for speculation. In reality they are veritable tools of risk management.

2. Derivatives and crash periods

The very fact that are little known and not always used in a responsible way made these instruments to be associated with most major events that affected global financial markets: the collapse of Barings⁽³⁾, the collapse of Thai baht⁽⁴⁾, fall of Enron⁽⁵⁾, and more recently the sovereign credit crisis that began in mid-2007.

Consequently OTC market organization has been subject to particular debates. But we must not overlook the fact that the Credit Default Swap, the tools that have been accused of systemic risk inflammation represents only ten percent of all OTC derivatives, while other products such as interest rate swaps or currency swaps, more relevant as volume, have been shown to be unaffected by the crisis. It can be said that although derivatives were not the triggering cause of the crisis, the complex and opaque nature of the derivatives markets did not allow to authorities and participants to have a clear picture of risk exposure, prompting some participants to build excessively risky positions. The international financial crisis has highlighted the existing shortcomings into the supervision of financial markets. In this context, during 2009, the European institutions have intensified their activity by starting a long process of adoption of new Community regulation or revising the existing ones. Based on recommendations Larosiere Report, the European Commission concluded that the architecture of the financial institutions responsible for supervision should be effective reshape. Efforts to improve the stability of the global financial sector covers a number of issues: first, the efficiency of risk management practices and processes accomplish by the banks, macro-prudential supervision and monitoring of systemic risk, reform capital requirements, review of regulations that cover liquidity requirements, better market infrastructure, and especially supervisors to monitor the activity and to be able to react in time of onset risk emerging threat.

The crisis has brought into light many weaknesses of OTC derivatives market as the lack of transparency, counterparty risk or the danger of contagion. All these led into recent years to common actions of regulation. In the report of July 2011, the representatives of ISDA assert support for the existence of a single IMF standard for a better global regulation. This standard must interact and be in total agreement with the other legislative initiatives, including Basel III. It is vital that these rules should be developed in cooperation with both other regulators, shareholders and representatives of various industries. Given the global nature of OTC markets, such coordination is essential in setting risk management standards, avoiding arbitrage in terms of both legislation and minimizes systemic risk and contagion between countries. Primarily the development of regulation in cooperation with other regulatory authorities will lead to lower implementation

costs. Secondly, it is important that minimum capital requirements required does not suggest that a simple quantitative standard substitute prudent risk management. An excessive focus on value may lead to inappropriate management standards. Standardization of contracts is a necessity in order to increase transparency and trading through electronic platforms. Very important is management of counterparty and collateralization.

But must not be overlooked the reverse of all these regulations, namely that they can threaten the viability and innovative power of these tools. They have been born from the necessity to obtain additional return than the one provided by traditional financial instruments, better liquidity and risk management and avoiding some of the regulations considered to be too restrictive by investors. This paper will not dwell on derivatives as a means of speculation, but focus on the more significantly advantages that they bring to their users.

3. Utility of derivatives in risk management

The explosive growth of the financial services industry over the last 20 years has been cataloged by Alfred Steinherr as one of the largest economic development since the Industrial Revolution, facilitating industrial restructuring through mergers and acquisitions, providing innovative solutions to privatization programs, increasing the importance of investment funding, expanding the sources and types of funding to support the emergence of new industries and facilitating the strengthening of economic development in emerging and transition economies around the world. Also, the expansion of financial instruments and techniques have increased participation in international financial markets, forcing the government policies to evolve, thereby contributing significantly to the creation of a global financial environment.

Perhaps the most important benefit of the derivatives is the ability to become an efficient means of risk management. The increase in volume of derivative products have fundamentally transformed the risk management system of financial institutions and their customers were now able to lower the cost of financing and the structure of assumed risk according to their own wishes.

Because, as we also stated in the first part of the paper, financial and banking institutions are involved in trading of several types of derivatives, we will show in the following lines benefits that derivatives bring to these institutions within management of the risks they face.

3.1. Market risk management and derivative securities

Measurement of market risk implies quantification of risk of loss that may occur in the trading price due to adverse market evolution: interest rates, foreign exchange, equities and commodities. Positions may include cash or derivatives.

After identifying and measuring risk the next investor concern is to find the most appropriate way of risk management. We mean suitable aspects concerning the usefulness and cost-effectiveness of these methods. The classical method used to protect against adverse market developments is to maintain capital, the amount being calculated based on the results of risk measurement and prediction. But this method is a rigid and simplistic. Furthermore it does not reflect the risk assumed by the institution. The new Basel regulations are more flexible in this regard. The new standards are generally based on VaR method. Market risk of the portfolio is composed of interest rate risk, currency risk or adverse evolution of the shares. The main disadvantage of conservative vision is that simply by providing a level of capital for each identified risk, diversification principle is ignored. It is assumed that the greatest loss will "hit" all managed portfolios in the same time and does not reward prudent diversification.

What role derivative securities are playing? Two aspects should be highlighted: first, held into the portfolio of an institution are subject to market risk and their development should be closely monitored. Secondly we must not forget their main feature, namely that allow for hedging. Developed precisely in order to facilitate risk management, derivatives are a means of protection against adverse market developments. And the method by which they are used for this purpose is called hedging. The process consists in taking a position that reduces portfolio risk. The objective is to find the optimal position to minimize the variance of a contract concluded. You can clearly distinguish two types of hedging:

- *Static (linear) hedging* consists in making/exit from a position in a specific time horizon. Is related to the price of the underlying. This case the protection of a short position is done by a long on the base since profits will be generated by an increase in the difference between spot and futures. The risk of spread is minimal for two reasons: cash and futures price match and the remaining maturity is low. There is still uncertainty of spread evolution during hedging. Cash-futures spread may increase or decrease. Hedging is effective only if the cash market developments dominate the spread. For most traded commodities, the risk of spread (basic risk) is inevitable. Organized markets create enough liquidity for investors to create the strategies they need to protect themselves against risk. But there is a strong connection between basic risk and liquidity risk. This risk is higher for cross-hedging (which involves using a futures contract that has a

different underlying than the cash position used). For example, an exporter that will receive into the near future a NOK amount can protect by using a futures contract underlying the USD/EUR. In contrast, the risk is lower when cash and future position is using the same underlying. In this case, the risk will be generated by different maturities. Despite the fact that hedging with futures is very effective, it can generate another risk-liquidity risk. Futures contracts are daily marked on market. They involve large available volumes, both inflows and outflows. Cash outflows, in particular, may cause liquidity problems, especially when it does not have correspondent in capital inflows generated by the position taken by the underlying asset.

- *Dynamic hedging* consists of continuous modeling portfolio into a given horizon of time. This type of hedging can create profiles similar to those positions taken in options contracts. Most often losses occur as the exposure profile is similar to a short position in options. Important is that the exposure is controlled by the portfolio manager. The challenge is to develop measures to provide a detailed understanding of the risk profile. Black & Scholes formula teach us how to assess options. But more important is that it shows that owning a call option equals with holding a fraction of the underlying, a fraction whose value dynamically changes over time. Long position into a call is replicated by a partial position of the underlying asset. For an "at-the-money" option the initial delta is 0.5. As the share price increases delta increases. In conclusion option can be replicated by a higher position on the underlying asset. When the stock price drops, the size of position is reduced. The investor will buy more of the underlying asset when the price is growing and sell when it drops.

But the model assumes implications investor should know:

- Dynamic replication of a long position in option is related to the loss of money, as the asset is purchased after the price went up. Every transaction is losing a small amount of money, amount that will be add to the option's premium.
- Observations have shown that automated trading system has some destabilizing effect on the market. The explanation is as follows: selling an asset when its price is decreasing contributes to a more pronounced decrease in its price. There are views, still debated, which states that the sale of portfolios at a large scale while the market is in a downtrend, led to the 1985 financial crisis. But there are specialists who argue that the situation was exacerbated by uncertainties related to unstable markets faced with large volumes of trading.
- Finally it should be noted that the strategy will not be successful if the asset price developments have large fluctuations.

In conclusion we state that hedging generally reduce basic risk, risk that can be measured. Basis risk arises when changes in income payments do not perfectly overlap over changes in the evolution of the underlying asset value. Obviously hedging will reduce the risk, but also return. The purpose of hedging is to reduce and manage risk, not to obtain profit. Therefore, the manager must analyze the risk-return opportunity.

Regarding the type of products used for this purpose, the choice belongs exclusively to the portfolio manager who may choose from a wide range of products traded both on regulated and OTC markets. Among them we are mentioning the most popular: Forwards, Forward Rate Agreements (FRA's), Futures, Swaps, Options (in this case can be used Caps, Floors or Collars). They can be selected according to different scenarios and of course according to the liquidity that the particular market segment is offering.

3.2. Credit risk management and derivative securities

Credit risk means the risk that the counterparty will not fulfill its contractual obligations. Its effects are measured by the cost of replacing the cash flow. For most institutions, market risk is less important than the credit. And indeed, the amount of capital reserves hold by a bank to cover credit risk is much higher than that to cover market risk. The history shows that most bank failures were due to credit risk.

Exposure at default (EAD) is the amount of risk at the time it manifests. It may be due to both traditional financial instruments such as shares, bonds, guarantees, commitments, but also derivatives. The financial industry has developed a number of models to limit exposure at default. Among these may be mentioned:

- Marking at the market – Daily marking-to-market reduce exposure to credit risk at zero. There is however a potential exposure as the value of the contract may change before the next marking. Potential exposure comes from (1) the interval between markings, (2) the time required for the liquidation of the contract in case of insolvency of the counterparty.
- Margin – the potential exposure is covered by margin requirements.
- Collateral – OTC markets may allow collateral instead of cash. It protects against current and potential exposure. Typically collateral value is higher than the funds held. This difference is function of market and credit risk.
- Net basis agreements.

Credit derivatives are among the latest innovations in credit portfolio management. Derivative contracts having as support a loan are contracts (OTC traded) that enable transmission of credit risk from one party to another. They allow the release of credits and bonds of credit risk and placing it on a different market. Their performance is based on the credit spread, credit rating or default status. Like other derivatives can be traded independently or be integrated into other instruments, such as credit-linked securities. Das defines them in 2004 as a class of financial instruments whose value is derived from the market value due to credit risk of private or governmental entities other than the counterparties involved in the transaction with credit risk derivatives. The main feature of these tools is the separation and isolation of credit risk for replication, transfer or hedging. The occurrence of certain credit event leads to a payment by the buyer to the seller. Contracts specify whether delivery will be made will be physically or cash compensation. Credit event is clearly defined into the contract and determined by negotiations between the parties. Market standards generally specify the existence of public information confirming the credit-event occurrence. The legal documentation between the parties, can mention the following credit events: worsening rating below a predetermined minimum level, restructuring (financial or debt), bankruptcy, failure to pay the coupon/interest at maturity, spread changes over a certain maximum level predetermined.

The market of credit derivatives has rapidly developed as these tools offer an effective credit risk management. Although modern banking system is based on the notion that a portfolio of loans is less risky than one single credit, banks still tend to focus on geographical or industrial sectors. This is because the comparative advantage lies in dealing with customers that the bank knows best. Until now, it was difficult to depart credit exposure given that there is a limited market for second-class credits. In addition, borrowers do not like the banks to sell loans to another, even for the sake of diversification. In fact, credit derivatives are not entirely new. Bond insurance is a contract between a bond issuer and the guarantor (bank or insurer) stating that it would provide an additional payment if the issuer fails to pay in full and in time. A letter of credit is a guarantee provided by the banks in which it is obliged to pay a third party if the original loan is not closed under the conditions preset. Call feature of a bond issued by a corporation involves an option with underlying risk-free rate and credit spread. But it is not considered a derivative. What's these credit derivatives bring new is transparency and trading on organized markets. Value of Eurodollars Futures is given short-term rates plus a credit spread. So a Treasury Eurodollar spread (TED) is exposed only to credit risk. Risk component can be isolated by buying a certain type of futures contract and selling another.

Formally credit risk derivatives are bilateral financial contracts that isolate specific aspects of credit risk of an underlying instrument and facilitate its transfer between two parties. Thus credit derivatives separate credit risk management and proprietary rights of other quantitative and qualitative aspects resulting from holding a financial instrument. Accordingly, credit derivatives share a key feature of successful derivatives consisting of the opportunity to obtain efficiency gains through process of completing the market. Efficiency gains resulting from disaggregating of risk can best be illustrated by describing a tender process where are sell a number of risks, each at the highest price offered, compared to selling a lot of risks to the large percentage offered to the whole package. In most cases, separate auctions will result in a higher yield than selling a single package. By separating the credit risk of the other risks, credit derivatives allow even to the most illiquid credit exposures to be transferred out of their portfolios even when the underlying asset itself is not transferred.

What is the significance of credit derivatives? We can still not make the claim that credit risk is entirely manageable. Indeed, even in the largest banks, credit risk management process requires a little more than establishing and adhering to the notional exposure limits and pursuing opportunities for portfolio diversification. In recent years, fierce competition between borrowers led some of the banks to the tendency to treat lending policy as a cost of losing leadership and has appeared a benign process of combining spreads to determine the drop of pressure. At the same time, the lack of liquidity of the secondary market and the financial cost has made active portfolio management to become both impossible and unattractive. Consequently the vast majority of loans retain their owner till maturity. Today we look at the birth of the credit derivatives market as a remarkable development of risk management practices. Simply consider that credit derivatives change how banks assess, manage, deal and distribute credit risk. Still definition that we made it to the credit derivatives, in essence, captures many credit instruments that are commonly used for some years, including secured loans, letters of credit and participation in loans. Then why so much importance is awarded to this new group of products? Essentially it is the accuracy with which credit derivatives can isolate and transfer certain aspects of credit risk, rather than their economic substance which distinguishes them from other credit instruments. There are several distinct arguments that belong uniquely to credit derivatives, but which combine to make out of these instruments a good reason as banks and other institutions that typically face credit risk to increase their use. First, the reference entity whose credit risk is transferred shall neither be part nor be aware of the transaction. Such privacy allows banks and corporations to manage credit risk discretely without interfering with customers. This contrast between the

assignment of a loan in the secondary market so that involves notifying the lender and a discrete participating that assume that participating banks equally bears credit risk in relation to the bank and to the lender sells itself. The absence of a reference entity to the negotiating table means that the terms of the credit derivative transaction (tenor, seniority, compensation structure) can be customized to meet the requirements of the buyers and sellers of risk rather than liquidity or borrower needs. Moreover, since these credit derivatives isolates credit risk in relation to other aspects of ownership of assets, they introduce and discipline assessment decisions. These tools provide a benchmark of market assessment consisting of the actual cost of a transaction. As the liquidity increases and evaluation technologies are improved, credit risk derivatives define future credit spreads curves and volatility in a manner that less liquid instruments may not do so. Availability and transparent assessment market discipline allow institutions to evaluate more objectively in relation to business decisions. Secondly, credit derivatives are the first mechanism by which short sale credit instruments can be made with reasonable liquidity and without the risk of a decrease in volume. It's more or less impossible to sell a bank loan, but a synthetic short position can be obtained by getting protection through a credit derivative. This tool allows the user to revers the profile with asymmetric distribution of credit risk (when it won a small premium for the risk of a great loss) and instead of paying a small premium for the possibility of a big payoff in case of detelioration of the credit status. Consistently, portfolio managers may sell certain loans or credit index, rather than to protect existing exposure, or simply take advantage of the negative image of a loan. Similarly, short sales can open a number of arbitrage opportunities. Global credit markets show today discrepancies in evaluating the same credit risk of different classes of assets, maturity, ratings, global zones, currencies, etc. These disparities persist due to the fact that arbitrageurs could not acquire cheap obligations in exchange for expensive sales for profit. As the liquidity of credit derivatives improves, banks, lenders and other players will exploit such opportunities as the beginning, as interest rate derivatives have developed arbitrage activity on interest has increased in the 80s. Natural consequence of this evolution will of course be the gradual disappearance of discrepancies of credit rating as the market becomes more efficient. Third, credit derivatives, excluding structured notes, are off-balance sheet instruments. Thus, they provide considerable flexibility in terms of leverage. In fact, the user can define the desired degree of leverage in an investment loan. Method of distribution of off-balance sheet exposures will differ from one institution to another: the more expensive the balance sheet is the more necessary will be the need for an off-balance sheet alternative. To highlight this fact, bank loans do not traditionally

belong to a class of assets of a hedge fund for at least two reasons: first, administrative reasons due to the award and administration of credits, and secondly because of the absence repo market. Without the possibility of financing investments in loans on a firm basis through a repo market, return on equity offered by banks loans was unattractive to institutions that do not like investing in unsecured assets. However, by accepting credit exposures to a bank by using a credit derivative, as a Total Return Swap, a hedge fund can simultaneously and synthetic to fund its position and to avoid administrative costs of asset direct owner, which is due to swap counterparty. The leverage obtained through the use of a total return swap will depend on the amount before colateralization, if any, required for payment of the total return swap counterparty. Credit derivatives are those tools that open new distribution lines of credit risk arising from bank loans and many other instruments trade on capital markets. Of the types of such contracts we can mention: Credit Default Swaps, Total Return Swaps, Credit Spread Forward and Options, Credit Linked Notes.

4. Pros and cons derivative securities

Given the above, in this part of the paper we summarize the main advantages and disadvantages of trading derivatives, following the individual to choose them or not depending on the opportunities that the market of these tools offers in terms of profitability of allocated capital and liquidity, the specificity of work and risk profile.

We saw that derivatives are evaluated by building a cloned portfolio. This suggests that derivatives are redundant assets. Then why object? It is a simple assumption that financial markets are frictionless. The reason for this assumption makes sense is that firms with many operations can often trade long enough and cheap so as to succeed to clone very well a derivatives portfolio with support in highly liquid markets. These companies can also build derivatives markets so that matched buyers and sellers. If succeed, do not need hedging any more. But for companies and individuals non derivatives are almost never redundant active. Here are three reasons: face higher transaction costs, portfolio replicating go just approximately due to the fact that the transaction should be done as soon as the underlying price changes and not least identifying replication strategy is often a problem. This is why individuals and non-financial firms prefer to pay a specialist company to do this, which involves new costs.

The main benefit of derivatives is that it allows individuals and companies to earn an income that would not otherwise be able to acquire, or only at a very high cost.

Of their versatility, synthetic positions can be created to meet all investment needs (speculation, hedging, and arbitrage) that can be applied to any type of market (increasing, decreasing, or neutral).

A second important benefit of derivatives is that make underlying assets market more efficiently. For example, derivatives markets produce information. In a number of countries the only reliable information about long-term interest rates is obtained from swaps because swap market is more liquid and more attractive than the bond market. In addition, derivatives allow investors to trade on the basis of information that otherwise would have been extremely expensive.

Returning to the credit derivatives, they allow users to reduce exposure to credit risk without removing physical assets in their balance sheet. Sale or assignment without running a credit derivative contract normally requires notification and/or client consent. By contrast, a credit derivative does represent a confidential transaction in which the client should neither be part nor have knowledge, thus separating the relational management decisions of risk management decisions. Similarly, accounting and taxation positions of an entity may create a significant deterrent of sale an otherwise liquid position. Recently credit default swaps have been used to avoid the adverse consequences of accounting or taxation. More often the lack of liquidity is a result of external factors. Credit secondary market is not well developed and in some cases some types of insurance contracts may not exist at all.

When an investor owns a risky asset in the portfolio, the profitability resulted by assuming the risk is only the net spread earned after deducting the cost paid by the investor for funding. Thus it is difficult to understand why a A rated bank financed at flat LIBOR borrows a AAA entity that borrows from LIBID. Besides funding costs A rated bank assumes the risk. Consequently, entities with a high level of funding choose to buy risky assets to generate income from the spread. As long as there is not a principal in advance necessary to protection seller in taking in a credit default swap positions, it provides an opportunity to take on the exposure to off-balance sheet credit risk positions that do not require funding. Therefore credit swaps are an important source of investment and portfolio diversification for banks, insurance companies and other institutional investors who would otherwise continue to accumulate concentration of dubious quality assets because of their higher funding costs. On the other hand, institutions with low financing costs can capitalize this advantage by financing the balance sheet assets and acquisition of protection against the risk of default of those assets. The premium for buying protection against default risk for such assets may be less than the net spread earned over funding costs. Then a low-cost investor can cover

the risk of the underlying and still remain with a positive net income. Of course, if details counterparty risk must be covered out of this residual income. However, the underlying lending quality combined with the protection purchased, even for poor quality counterparty, can often be very high since the two default risk (reference entity and the protection seller) may occur before the losses to be recorded.

The rapid growth of credit derivatives markets is the best proof of their effectiveness. These tools are superior to risk management tools, allowing the transfer of risk to those who can it best bear. Many of those who have observed the phenomenon, including banking regulators, concluded that the diversification of credit risk by using derivatives helped the banks to pass without major problems the 2001 recession and the increased number of insolvencies. In the USA for example, in a turbulent period of financial markets shaken by major bankruptcies (Enron and WorldCom) and sovereign risk (the case of Argentina), losses were largely dispersed. Credit derivatives have another useful function, ie price estimation. By creating/expanding credit risk market, it gives observers a better measure of the cost of credit risk.

These tools are also effective in the trade as the costs involved are low. Counterparties may also take advantage of disparities in stocks and bonds valuation, both markets becoming more efficient.

As side effects we can emphasize the fact that this market may be illiquid because unlike interest rate swaps there is no standard for the reference credit. By definition, the credit risk is specific. Also, the market is still using the most varied evaluation methods. This is due to lack of information on key parameters such as the probability of default and recovery rates. As a result, there is little agreement on the fair value of credit derivatives compared to other types of derivatives. These derivative instruments are also bringing a new element of risk, legal risk. Indeed parts can sometimes argue over the definition of a credit event. This explains the care with which banking system regulators regard the increasing of this market. The question arising is whether these contracts will be fully effective in the event of widespread bankruptcy. This is the main reason why this market has evolved from legal arbitration, which lies in trying to defend the pecuniary capital requirements mandated by bank regulators. Commercial banks have systematically tried to decrease capital requirements by eliminating credit risk using derivatives. This can be advantageous if exposure to credit risk is equivalent to lower capital requirements. If it is a benefit or a setback depends on perspective.

Although derivatives can create more efficient underlying markets, observers have long been concerned that they also undermine these markets because they allow an easier construction of speculative positions.

Another concern for investors lies in the ease with which a derivative may be undervalued, and that due to assumptions that evaluation formulas are making, assumptions that are significantly different from the real state of the market.

In addition, by their very construction derivatives benefit from an amplifying effect of gains and losses (leverage). Also, because of leverage effect, which allows through a small amount of money to support access to assets worthing several times more, the amounts lost are potentially unlimited and can exceed the initial deposit. In January 2004 the Austrian National Bank has reported a loss of 280 million USD in currency options attributed to risk management mistakes, including bad assessments.

What would happen if a major derivatives dealer would go bankrupt? Bankruptcy law contains a provision called "automatic stay" which prevents creditors from receiving immediate payment and make possible as creditors demands to be resolved in an orderly manner. Interest rate swaps and other derivatives are exempt from this. Instead, the parties involved in a swap are using a master agreement that specifies how payments will be completed in the event of default of either party. Without this automatic exclusion from the natural state, the parties should wait years for their demands can be met, leaving the majority of the remaining risks uncovered.

But perhaps the greatest of the dangers that derivatives possess are that interconnects the financial markets, causing an uncontrolled event to lead to a major financial crisis.

5. Conclusions

Derivatives are the most vanguard tools that can be found in an investor's portfolio. By their own nature, these contracts meet the more specialized needs that arise in the current context of global financial system. They allow companies and individuals to protect themselves against risks and accept risks in an effective manner. They can also create firm-wide risk, especially if the firm uses derivatives episodically and has no experience. For the economic environment in general, the collapse of a large derivatives dealer may create systemic risk. In balance, derivatives help creating a more efficient economy.

However, companies must ensure that derivatives are used right. That means hedging positions on derivatives must be measured and understood. Also, the company must have a clearly defined policy on the use of derivatives.

The whole world gains from derivatives markets. How one regards these tools is ultimately a question of optics.

Notes

- (1) International Swaps and Derivatives Association.
- (2) Some of the first derivative markets were markets for options on tulip bulbs in seventeenth century Holland and rice futures market in Japan in the same century.
- (3) Barings Bank (1762 – 1995) was the oldest commercial bank in London until its collapse in 1995, when one of the bank's employees, Nick Leeson, lost 827 million (\$ 1.4 billion) speculating on the futures market.
- (4) Thailand currency.
- (5) Energy company headquartered in Houston, Texas (2001).

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