Review

Controversies in using derivatives in the context of the financial crisis

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As a phenomenon, risk is specific for any human activity. Following this logic, we can say that this concept is a constituent element in the definition given to the financial sector, investments and market competition. The questions that the whole range of operators (governments, regulation bodies, financial institutions, companies and shareholders) must answer are: Which type of risk should one assume within an economic entity and to what extent should that risk be taken? And if risk is materialized, to what extent will the financial consequences affect the involved parties? Working in this environment, the financial and economic agents’ behaviour has significantly been modified, that is, it has mitigated the degree of risk aversion. The solution for this is establishing more flexible regulation lines that do not have as a main objective the elimination of failure, but rather the reduction of frequency with which such incidents occur and to manage the individual investors/consumers’ losses. One must preserve a balance between the need for facilitating risk internalization and the efficient use of capital (a fundamental operation for maintaining competitiveness and innovation spirit) on the one hand, and maintaining a certain protection level for the investor/client on the other hand.

Key words: Risk internalization, derivatives, collateralised debt obligation (CDOS), credit default swap (CDS), financial transaction taxes, Paul Volker’s financial theories, the Tobin tax.

INTRODUCTION

The use of derivatives, an innovation of the second half of the 20th century has imposed itself thanks to the advantages it offers:

Despite the controversies that existed as to the use of derivatives, they remain the best financial instruments for market risk/credit management, as well as for other forms of risk. Both on the stock market and OTC (non-regulated market), derivatives have three highly appreciated characteristics: geographical area coverage (derivatives exist on most important financial markets in the world), diversity (derivatives cover the range of all monetary instruments), liquidity (usually, any position may be occupied, diversified or cancelled at low costs).

When derivatives are transacted on a stock exchange market, the company benefits of certain advantages: i) on this completely regulated market, transactions are guaranteed by compensation houses, significantly mitigating credit/counterparty risk. ii) Due to the standardized form of contracts, positions may be closed without the least inconvenience. As to OTC, the advantages are: direct choice of counterparty and flexibility of the form of the contract.

By using these markets, debtors and creditors can fix the cost of money; importers and exporters may be protected from currency fluctuations; companies can avoid unexpected price rises for raw materials. The way insurance contracts are used by companies to protect their fixed assets is similar with the way derivatives are used for insuring liquid assets. In both cases a premium/its equivalent is paid for purchasing such a means of protection. In spite of the “pro-derivatives” arguments, doubt is cast upon derivatives when managers conceive risk management strategy.

THE ROLE OF DERIVATIVES IN RISK MANAGEMENT AND THEIR SPECULATIVE USE

Historical data concerning risk management strategy
revealed cases of operators that have recorded significant losses. For a risk manager, giving up derivatives as an efficient means for covering risk is not a solution. The surest solution is to understand the causes that lie behind these wrong movements which lead to important losses.

However, discovering these causes is not simple, for they are a constituent part of human behaviour which sometimes does not take into consideration econometric models and results of simulation software. Besides the role they play in risk management, derivatives are also used in a speculative way. This is not surprising at all as companies and speculative operators share a different opinion on derivatives.

Derivatives have inner characteristics that, in case of minimum investments, allow companies to manage a series of risks. However, speculators perceive derivatives as a potential source of substantial profits and, thus, speculators choose to adopt a position and wait for a market evolution that might bring profits (Lefebre, 1990; Jacquier and Solnik, 1997).

Despite operations initiated by speculators who amplify the endogenous market risk, in reality: most treasury and investment funds departments use these instruments for successfully managing market and commercial risks.

Consequently, managers cannot ignore the potential of derivatives in managing a significant number of risks to which companies are exposed, except for the case in which one chooses to internalize risk and potential losses.

If the few enumerated arguments have consolidated the decision to pay the necessary attention to derivatives when evaluating risk management for a company, then afterwards one must regulate procedures for managing risks that derive from the use of derivatives. We consider that the following directions are essential for efficiently implementing risk management by means of derivatives:

Strategy compliance: human capital

Running financial and banking institutions must maintain compliance between risk management policy by means of derivatives and the company’s strategy, economic objectives, financial situation and its attitude as regards risk.

To accomplish this function, managers must identify those risks to which a company is exposed (for example, market risk, credit risk, operational risk, legal risk), establish what is the role of transacting derivatives for the company (a potential profit source or simple hedging operations) and ensure efficiency for the internal control system of transaction operations. In this respect, the appointment of professionals with a proper level of knowledge as to derivatives transaction is absolutely necessary and compulsory (Franks and Torous, 1989).

Organizational structure: internal control

The manager should establish an organizational structure and an independent control frame for transacting derivatives. This structure should comply with the principles of efficiency and facilitate risk management.

The functions of this structure are: identifying, measuring, managing, monitoring and mitigating and reporting present and provisioned risks. This frame should monitor report transmission, usages for sent/received document, the proper accounting of sent/received documents, the competence of transaction department members, responsibility assignment and procedures provided for unpredictable situations.

MANAGING RISKS ASSOCIATED WITH DERIVATIVES TRANSACTION

The most important risk categories which one must take into consideration when laying the foundation of the derivatives transaction department are: market risk, credit/counterparty risk, operational and legal (regulatory) risk (Beaufils et al., 1986). An efficient risk management associated with derivatives transactions implies efficient procedures and work techniques for every type of risk, namely:

1. Market risk may be generated by unpredictable prices for shares, securities, merchandise, currencies, other market indices, or by their volatility. Market risk policies refer to approval, execution, confirmation, as well as recording, measuring, monitoring and reporting transactions and they set forth procedures for establishing relationships with the authorities in the field, adopting limit positions and evaluating exposures.
2. Credit/counterparty risk: this risk can be reduced by a collateral guarantee of credits and by techniques that increase loan capacity. Besides the credit/counterparty risk, the risk manager must take into account: third party risk, country risk and risk regulation. The risk manager’s functions must include differentiation of risk profiles for the stock exchange and the OTC market, assessing the advantages and disadvantages of portfolio diversification, the proper use of collateral guarantees for mitigating credit risk and establishing an action plan in case unpredictable changes appear (a partner’s position or the position of a broker who faces financial difficulties) (Artus et al., 1989; Queruel, 1991).
3. Operational risk, including the technological one may be managed by identifying the impact generated by the new products, partners and clients, the modification of the transaction methods of the IT services sources or any inconsistency that might occur in running the business upon risk management.
4. Legal (regulation) risk has certain important particularities. Compliance with the legal frame is absolutely necessary for the operational capacity to make transactional operations and the basic principles that set up
its functioning. Documentation must refer to the relationship between trader, the own bank and brokers, and it must observe the legal principles according to which the market functions.

It is obvious that these general directions are neither an insurance policy for companies which adopt them, nor an immunization treatment to risks deriving from transacting derivatives; even if followed; these directions cannot cover the different circumstances in which individual operators might be placed. Anyway, the above mentioned directions are a landmark for identifying, managing, assessing and mitigating risks deriving from derivatives transactions. If carefully used and properly controlled, derivatives play and might play an important part in risk management strategies (Chance, 1990; Briys and Varenne, 1997).

THE ORIGINS OF THE PRESENT INTERNATIONAL FINANCIAL CRISIS AND DIRECTIONS FOR REGULATING THE FINANCIAL MARKET

Such a leitmotiv used for explaining the present international financial crisis refers to the complexity of the new financial products, the so-called “synthetic” products, which are issued by important banks by means of the “originate and distribute” process. In fact, this leitmotiv is used as a self-justification and it avoids tackling the problem.

However, complexity can be defined differently; one can mention an inner not dangerous complexity, if the cognitive limits do not generate fatal errors. And there is a human made complexity, which, for example, consists in risky individual actions and precarious control mechanisms (Jarrow and Turnbull, 1995; Olteanu, 2010).

There are opinions according to which the financial products occupying a central place in the present crisis (CDOS/Collateralized Debt Obligations, CDS/credit default swap) should not be criticized. In our opinion, the problem is that a part of the bank securization activity (titrization) – transformation of loans and more and more sophisticated securities – contains fundamental vices.

Let us explain what is perceived as a “congenital” flaw of the “originate and distribute” pattern. Let’s admit that in the simple transaction involving the lender and the borrower risk is one and it is illustrated by the borrower’s reliability. This transactional (counterparty) risk can be checked by means of credit conditions on the market (Bierwag et al., 1981). However, when loans are transformed into securities or other derivatives, the individual transactional risk starts to increase; the longer the chain of transactions is, the more complex is the securization (titrization) operation (by security “synthesis”); what appears to be more dispersed and smaller as an individual risk becomes more threatening for the system. This effect appears because markets are less and less transparent; some financial products are neither transacted on the effective markets nor do they benefit of credible evaluations (prices) (Black and Jones, 1987; Estep and Kritzman, 1988). At a certain moment, the cost of identifying risk is overwhelming and the market is blocked, a situation which in fact has already occurred.

The big rating agencies which used quantitative methods (patterns) have been caught in this chain of flaws. These agencies have major vices as to evaluating risk for the new securities. For banks, securization has appeared as a very profitable business to the extent to which they have managed to apparently eliminate risk. Banks used to sell securities to investors or to place them in special derivatives, taking them out of their own balance sheet. However, what appeared as a convenient dissemination of individual risk in the entire financial economic system led to increasing risk in the system. It is naive to state that banks (or at least the ones who were responsible for ensuring securization) did not understand the dangers of the pattern they used. In fact, all banks specialists realised that this was a dangerous attempt. Anyway, these specialists benefited of enormous amounts of money by means of compensation schemes that encouraged risk instead of a cautious attitude.

The analyses conducted revealed the following reasons of the global outburst of the economic crisis:

1. Unprecedented development of derivatives, which started in the nineties. The development rate of such products and their “invasion” of the global banking system exceeded, in terms of speed, the monetary authorities’ capacity to regulate the status and the banking institutions’ capacity to accurately estimate their potential risk. Such situation determined the "playing cards' castle" effect.

2. The ever closer interdependences at global level dramatically increased the national economies’ contamination effect. Therefore, once a crisis is triggered, it might become global very soon. The previous signs were the crises in Mexico (1994), Southeast Asia (1997), Russia (1998), Turkey (1999) and US (2001). These signs showing that an earthquake is going to happen soon were mostly ignored by decisions-makers.

3. The ever more dramatic split between the real economy, that is, the one that produces solid goods and provides services and the purely financial/speculative economy, producing just paper and virtual money.

4. A very modest economic forecast capacity: Despite the computer age and the apparently precise and sophisticated risk management models, the crisis hit unexpectedly, just as it happened in 1929.

5. The relatively slow reaction of international and national authorities seriously deepened the effects of the crisis, increased its length and enhanced its short and medium term effects.

The collapse that the financial system has experienced...
in the economically advanced world, especially in the USA obliges us to reconsider the existing financial markets regulations and surveillance mechanisms.

In the USA, reforms are approached from two different positions. Both positions have common points, such as: imposing limits for leverage, more transparency, compulsory transactions of derivatives at specialized exchange offices, regulation of operations performed by all financial entities which generate systemic risk (including risk funds and hedge funds, as well as private equity funds); eliminating (as much as possible) interest conflicts, regulating rating agencies activities, modifications in paying bankers, consolidating surveillance mechanisms, and paying more attention to systemic risks.

There are important differences between the position adopted by Paul Volcker (former FED Governor more than 20 years ago and at present counsellor of President Obama) and the position adopted by Lawrence Summers (former Treasurer and at present one of the main counsellors of President Obama). Volcker, together with other specialists in finance (Alexandre Lamfalussy in 2001, Paul Krugman in 1999, Nouriel Roubini in several deep studies, Warren Buffett in his studies on International Bank Regulations and the Bank of England etc.) have warned about the great dangers existing in the financial system and the financial derivative innovations used by important banks, as well as about the imminent financial collapse. In this context, Volcker considers that, it would be wrong not to tackle the dimension of certain financial institutions which can hostage a system (the collapse of the Lehman Brothers investment bank and the USA Government intervention to avoid the collapse of the AIG Insurance Company which, ironically, acted as a gigantic risk fund).

Volcker and others who share his view suggested that commercial banks should no longer make “proprietary trading” operations, which are operations made in one’s own interest. In this way, risky operations are reduced for financial institutions which encourage and use deposits riskily (Paraipan, 2002; Belchambers, 2003).

The measures announced by President Obama in February 2010 measures which follow Paul Volcker’s ideas represent a new key step taken in building a new regulation system for supervising financial markets.

For example, let us consider the measure adopted for taxing financial transactions. Such a measure was proposed by the American economist James Token for discouraging speculative transactions on currency markets in order to mitigate their volatility (Geske, 1977). Today this idea is embraced by specialists in London, Paris, Berlin, in international financial institutions (FMI) with a view to reduce the volume of financial transactions and obtain incomes that might help states intervene in case of systemic risks. Actually, there are countries (Australia, Switzerland, Greece, Hong Kong, India, etc) which tax some security, shares and derivatives transactions. Recently, Brazil has imposed taxes on the entrance of speculative capital.

There are opinions according to which taxes on financial transactions should not be imposed with a view to collect fiscal incomes (that is, Tobin tax, differently from Pigon taxes, which would attempt to collect negative externalities generated by market flaws). This reasoning is supported by envisaging financial mediation as an intermediary production (Diamond and Mirrlees, 1971); respectively the taxing of intermediary (not final) production would introduce dissensions in the production chain, reducing efficiency.

The financial crisis impact may be described in terms of:

**The big crisis winners, which are:**

1. China rode through the storm rather untouched and became the second economy of the world, getting ahead of Japan. Now, it is taking advantage of the liquidity it has and is buying important assets in the US and EU at good prices.
2. The emerging countries in G-20. The mass center of global decision has progressively shifted from G-8 to G-20 and this trend will be maintained.

**The big crisis losers, which are:**

1. The US had to mobilize unprecedented financial resources and its economic growth was negatively impacted at least on the medium term.
2. The European Union as a whole and most Member States separately; the explosive growth of sovereign debts and a significant decline in competitiveness are only two immediate consequences, which have not stopped to show their effects. Social nervousness increased and the general public is more skeptical than ever about the European project, as a whole.

These institutions did not foresee the crisis, had a poor and totally inconclusive response within the crisis management. The Romanian liabilities-based analyses revealed the following:

1. The economic structure built over the past 20 years in our country turned out more vulnerable than it was considered to be before the crisis, due to the weak restructuring and modernization of economic sectors.
2. Poor labor productivity, waste of public money in a clientele-based and therefore inefficient system, lack of a solid infrastructure, undercapitalization and the low competition on the market enhanced the global crisis’ impact on our country.
3. The government and its institutions were not capable...
to make accurate predictions. The seriousness of the crisis was underestimated until its effects became obvious.

4. Weak administrative performance, the administration’s quasi-total incapacity to ensure public communication (except for the National Bank of Romania).

5. The employers’ almost total lack of involvement in providing solutions and managing the situation at the level of each company.

First of all, it is worth underlining that the strongest credit boom in the history of America took place. It can be explained by the entire post-war domestic development of the US, which facilitated, through the increasing call for credit and indebtedness, the creation of the consumer society and the transformation of consumer credits into the basic engine of American growth. Secondly, it was sustained by the tectonic changes* that occurred in the world economy concurrently with the rise of emerging countries, which permitted to prevent both inflation and the surge in the price of oil and other energetic resources, against the general background of globalization. The capital surplus that occurred in these countries and their economic incapacity of using it internally resulted in the net outflow of financial resources from these countries to developed countries, particularly to the US, a country which, by the size and sophistication of its markets and by the fact that it owns the most important reserve foreign currency, is the most capable to absorb enormous capital inflows. In this respect, the last 10 years were an entirely special period, both due to the explosion of financial instruments and capital markets generally, following the abrogation of Glass-Steagall law in 1998 (which required a net separation between commercial banking activities and investment banking activities), and to the increase in the prices of energetic resources (Olteanu, 2010).

In the US, the credits got cheaper also due to the Fed policy, which was meant to prevent, by lower interest rates, the effects of the stock market decline caused in 2001 by the burst of the speculative bubble of technology values. A policy, that is understandable but that lasted for too long and contributed to the swelling of the real estate speculative bubble.

I would also like to mention the State policy of supporting the access to residential properties of the largest possible number of American people, in its desire to win their support for the conservatory policies on taxes and fees and to restrain welfare measures.

Against this background, the famous subprime mortgage credits appeared and developed on a large scale. A buyer’s market had been established in this sector, a market where the buyer was enticed to take credits, by a broker interested in obtaining its own fee. No advance was demanded and nobody was interested in the customer’s creditworthiness, since the broker only acts as an agent for a saving house which “sold” it, in its turn, to an institution - issuer of mortgage backed securities, that is, mortgage liabilities.

The risk was shifted from the institution that issued mortgage credits to the institution issuing mortgage backed securities, and from such institution to other credit and financial investment institutions – mutual funds, hedge funds, sovereign funds etc.

Nobody was interested in the creditworthiness of the customers to whom the mortgage credit was granted and no supporting documents were asked from them – this is also attested by the fact that such subprime credits were also called “liar’s credits”. Home prices soared, real estate promoters had no problem in obtaining real estate credits and constantly used to initiate new projects, home owners got richer and richer and behaved as such (according to the famous Wealth effect – effect of richness). They used to take advantageous credits to finance their consumer expenses and refinanced such credits by other loans, even more advantageous, or bought a second or a third home as an investment. The wealth effect ensured the consumption growth, even when the income of the general public was affected by a stock market decline, as in 2001. Fees and interest rates were collected throughout the entire receivable-related chain, and America maintained its leadership in terms of home owners’ weight in total families.

However, when the home prices start to plummet, as it happened in August 2007 (when prices declined by one fifth), the virtuous spiral turns into a vicious spiral. An ever increasing number of customers fail to pay their installments on the due date. The offer on the real estate market grows, which intensifies the price decline tendencies.

Promoters reduce their projects. The construction activity diminishes. Shock propagates throughout the chain of credit institutions and instruments. A liquidity crisis occurs on this chain and makes victims: at the level of directly crediting institutions, saving houses, mortgage credit financing and guarantee institutions (Fannie Mae and Freddie Mac), investment banks (the “big” 5 on the Wall Street), commercial banks having assets encumbered by such “toxic” values.

The IMF estimated that the losses triggered by the mortgage credit crisis in the US would amount, at global level, to approximately USD 1,300 billion, and today, estimates reveal figures around 3,000-4,000 billion.

Banks and other financial institutions have already eliminated approximately USD 760 billion from their assets. Other credit instruments and titles are also gradually becoming “toxic” that is, credits for buying cars, credit cards, credits for studies, etc. These can be found in the whole banking system and also in the shadow banking system. They can also be found in the credit default swaps – CDS and the CDOs (collateralized debt obligations), liabilities that occurred and had an explosive rise over the past few years.

The underlying values covered by these securities would amount to approximately USD 600 trillion, but only to approximately 6 trillion, if we refer just to the
respective security debts. The business community is becoming aware of the fact that such "toxic assets" pyramid of the various derivatives threatens to collapse, taking them with it in its fall. Therefore, the crisis of confidence, which also means lack of confidence in business partners, risk aversion and liquidity preference is getting deeper.

The crisis of confidence generates the blocking of the banking system. It entails the freeze of the inter-banking market and implicitly the blockage of the whole credit system. The crisis of confidence might spreads in the population as well, generating panic and a run over certain banks in order to withdraw deposits, over certain mutual funds and hedge-funds in order to make repurchases. Therefore, the crisis of confidence is turning into a liquidity crisis or even a solvency crisis (Chambers and Carleton, 1984; Garman, 1985).

Independent investment banks, mutual funds and other similar institutions which have no buffer pillow provided by deposits, as commercial banks have, are the most exposed to such crises. The need for liquidity pushes certain stakeholders throw away on the market, "in disaster", huge volumes of assets, which generates significant falls of exchange rates and anxiety on stock exchange markets. The sudden decline of capitalization, in the obligation to permanently adjust assets to the market price (mark to market) and the permanent effort to stay within the limits established by the minimum own capital requirements (capital adequacy) means that new security stocks have to be permanently thrown on the market, which generates their depreciation, and so on and so forth (Filoussi and Sekorav, 1991).

The crisis of confidence inevitably shifts from the financial (banking and non-banking) sector to the real sector, by the credit squeeze (credit crunch). Recession follows after 12 to 16 months, on average. Now it seems that is has come much sooner. In February 2009, it was a fact in almost all the developed countries and has still expanded.

Therefore, some blockage on the financial resources' flow, the revelation of the existence of toxic assets (now the derivatives, in the eighties, the so-called junk bonds, triggering the bankruptcy of hundreds of saving banks in the US), the crisis of confidence, the liquidity crisis, the solvency crises, these are the rings of the financial crises chain, the pieces of the descending spiral that stops only when the market reached the bottom level, where a new balance can be achieved (Fong and Vasicek, 1984).

A sign and a result of financial crisis is the credit squeeze, mainly generated by the extinction of investment banks and the deleveraging process (paying down debts, at the level of hedge-funds and other components of the shadow financial system). According to the IMF, the banks in the US and Europe will reduce their assets by USD 10 trillion, that is, by 14.5%.

No matter how dramatic the developments on the stock exchange markets would be, with declines of 20% within one week, the critical point continues to be credit markets, that is, the blockage and the high interest rates on inter-banking markets, the fact that non-financial companies find no investments for their commercial paper, since monetary (mutual) funds avoid any assets other than those which have the highest safety level, and the real economy is also adversely impacted by the consumer credit squeeze and the fact that potential buyers of motor vehicles no longer find credits.

**CONCLUSIONS**

The conclusion is that the present financial crisis is basically generated not by the complexity of the new financial products, but by a financial innovation pattern and the characteristics of financial products (for example, CDOS, CDS) which have disrupted the good functioning of markets, that is, transparency and trust.

Besides proposals for fundamentally reconsidering the existing regulations and surveillance market mechanisms, imposing a tax on financial transactions is not senseless, since it is necessary to register fiscal incomings that would allow necessary interventions to be taken; this would mean imposing a tax on an activity which represents a bad allocation of resources.

Consequently, it is desirable that the financial system should lose a considerable part of its speculative nature. In the USA, in European countries (for example, Great Britain), the financial system is now over dimensioned and if we take into account the volume of profits obtained in relationship to the total profits obtained (for example, the USA received 40% of the total profits, though its GDP is a lot inferior to this percentage), one can appreciate that certain states obtain an incorrect revenue. In time, this has led to a distorted allocation of resources and it has also generated unacceptable systemic risks.

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