Operations with Financial Derivatives of Corporations from Emerging Economies[1]

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Introduction

THE RECENT international financial CRISIS, which begun in the middle of 2007 with the elevation of the default on the high risk mortgages (subprime) in the United States, assumed systemic outlines with Lehman Brothers' bankruptcy in September 2008. Its reflexes were felt in the whole world, raising successive public interventions in order to guarantee the bank solvency and to lessen the recessive impacts of the abrupt reduction of the credit. But it has equally renewed the discussion on the "financialized" character of the operations performed by remarkably productive companies, which took advantage of extremely complex instruments in the search for supplemental earnings resulting from the financial leverage.

In this crisis, the search for high financial earnings showed its consequences in a more overwhelming way, on what concerns both the risks (and losses) to which the corporations were exposed and the macroeconomic impacts provoked by its magnitude in a context of deep risk aversion. Such debate, in spite of still incipient, began with the disclosure of the negative results of several productive companies from emerging economies, resulting from operations with financial derivatives in the exchange market. Based on what is known in the moment, that process reached companies in Brazil, China, South Korea, India, and Mexico. In those emerging economies, in different degrees, the great international banks are present and many of those companies alleged they have been deceived by them in establishing asymmetrical contracts of derivatives. In Brazil, national financial institutions also participated in the movement, differently, for instance, of Mexico, whose banking sector is dominated by international players.

The article seeks to evaluate the interrelations, in the emerging economies, between the operations with instruments of financial derivatives, the speculation

process and the current crisis. It was subdivided in two sections, in addition to this introduction and the final considerations. In the first section, the concepts of hedge, speculation and arbitrage are presented. The potential risks resulting from the "financialized" and speculative structure of the companies in the use of derivatives are explored as well. In the second section, some cases of losses detected by the companies operating in those markets are studied, as well as their macroeconomic impacts and their developments on the emerging economies, more specifically on the exchange rate, the credit squeeze and the risk perception. In the final considerations, the intensification of the process of "financialization" of the companies and the importance of new mechanisms for the regulation and supervision of those markets are pointed out.

Hedge, Arbitrage, Speculation and the Derivatives Markets

With the end of the Bretton Woods agreements and the largest volatility of the interests and of the exchange rates, financial derivatives have been created with the initial purpose of covering risks. However, the use of those mechanisms was not restricted to that purpose, becoming a privileged instrument of speculation, given the possibility of high capital gains. Thus, it is necessary to differentiate and to understand the concepts of hedge, arbitrage and speculation, in face of the existence of derivatives markets, in which the companies have leveraged their positions.

In the first place, we should try to define what a derivative is. According to Dodd & Griffith-Jones (2007, p. 13), "a derivative is a financial contract whose value is derived from an underlying asset or commodity price, an index, rate or event. They commonly go by names such as forward, future, option, and swap, and they are often embedded in hybrid or structured securities." The characteristic of this set of derivatives is to negotiate, in the present, the future value of an asset. For that to happen, an agreement between the buyer and the seller is required. For that reason, the derivatives markets constitute a zero sum game, in which the amounts lost by some correspond exactly to the ones earned by others, with the exception of transaction costs.

According to Guttmann (2008, pp. 20-1), the derivatives instruments "helped to reduce the different risk types associated to the finances, and they served as excellent speculation tools as well." As a matter of fact, derivatives are highly leveraged mechanisms that allow multiplying the size both of the losses and of the possible earnings in relation to the initial capital. In the derivatives markets, small initial margins or guarantee deposits make possible to operate immense amounts. The percentage results can be spectacular, working as supplemental factor of attraction for the speculators that can see their initial investment multiply several folds, which would be practically impossible if they operated in the spot markets. The counterpoint to those advantages is that the potential losses can be theoretically unlimited in some of those operations and it is not always possible to measure them beforehand.

Saxena & Villar (2008, p. 72) discuss the extension of the use of hedge instruments in markets of emerging economies, pointing out the importance of the derivatives:

> Hedging took a gigantic step forward with the development of derivative products in global financial markets. The growth in depth and breadth of these markets has made derivatives one of the most important instruments to trade risk in financial markets.

The authors, however, do not emphasize the speculative application of derivatives in the operations of financial or non-financial agents. In spite of this, they observe that

> the non-financial corporate sector has a relatively greater share of more complex and long-lived FX derivatives. There are many opportunities for the use of FX derivatives to increase among the corporate non-financial sector in many EMEs. However, even in advanced economies the corporate non-financial sector does not hedge a great deal of the risks in their balance sheet in the derivatives market. (*ibidem*, p. 77)

In that sense, it is important to explore some differences between the concepts of hedge and those of speculation in financial markets that make wide use of derivatives. According to Farhi (1999, pp. 94-5),

> the operations of risk coverage (hedge) consist, essentially, in assuming, for a future time, the opposite position to the one that is assumed in the spot market. [...] both the industrial that has a debt in foreign currency and buys foreign exchange contracts in the future market or acquires call options, and the investor that will receive an amount of money in a given term and buys contracts of index of values are performing a buy hedge, although their positions in the spot market in the moment of the operations are different.

In its turn, speculation can be seen as "the liquid positions, long or short, in a market of financial assets (spot or of derivatives) without coverage for an opposite position in the market with another temporality in the same assets, or in an effectively correlated asset."

> It is the fact that some positions are maintained liquid, without coverage by an opposite position in another temporality, and in the same asset or in a correlate asset, which characterizes them as speculative. Not the fact that they result from an expectation regarding the prices, since this permeates all types of operations performed in the contemporary financial markets. (*ibidem*, p. 104)

Besides, the arbitrage concept should be included in the discussion. There are several modalities of arbitrage operations, whose objective lives in accomplishing capital gains, taking advantage of the distortions in the

relationships between prices. They consist basically of two opposite positions, involving the same asset in different temporalities, or the execution of the operation with different derivatives, in different financial markets or with different assets with a real degree of correlation between the movements of their prices. The arbitrage operations have been accentuating the linkage between financial markets. Through them, eventual dysfunctions in specific markets can spread quickly to other markets.

It is worth to emphasize that the derivatives markets linked to the exchange rates, which proliferated with the progress of financial globalization, started to exercise a decisive influence on the process of price formation of the main exchange values negotiated at the global foreign exchange markets (dollar, mark / euro, yen, pound sterling, Swiss franc). This is due to the characteristics of those markets, especially the high volumes that are negotiated - and, hence, their higher liquidity relatively to the spot markets - as well as their transparency when negotiated at the organized markets. Such influence is also observed in some emerging economies, especially in Brazil, due to the existence of liquid and deep derivatives markets and to the high degree of financial opening, which allows the foreign investors' access to those markets, in addition to creating "communicating vessels" with the offshore foreign derivatives market. In the emerging economies that share those characteristics, the negotiations involving those financial instruments play a fundamental role in the evolution of the nominal exchange rate. The arbitrage operations in time constitute the main mechanism of transmission between the future and the spot exchange rate. Through those operations, the banks and fund's managers seek to obtain profit from differences of very short term in the quotations of the currencies and their respective interest rates.

What we can, therefore, deduce from this discussion is that the companies, characteristically productive and increasingly financial, saw a possibility of non-operational gain with those instruments, beyond what would represent a hedge against the price volatility. That is, taking advantage of the high leverage allowed by the very existence of the derivatives, in which one can acquire, in the future, an asset that one does not want to receive, and sell an asset that is not possessed beforehand, the companies, in fact, were not restricted to the hedge, but, rather, speculated when they bet on a certain direction of the future behavior of an asset without any kind of coverage.

International Financial Crisis: the Financial Losses of Productive Companies

The deepening, in the second semester of 2008, of the international financial crisis, after the bankruptcy of the American investment bank Lehman Brothers, provoked a strong appreciation of the dollar in face of the other currencies. However, such valorization was much more accentuated in the emerging economies. Directly hit by a new sudden stop of capital flows, the assets

prices and the exchange rates of those economies became important targets of the movement of global deleverage and of the investors' "flight to quality."

In this context, enormous financial losses of important companies of emerging economies were revealed in positions in the foreign exchange derivatives markets.[2] They had assumed positions in high amounts in those markets, betting that the national currency would not depreciate against the dollar. That decision was apparently made in the first semester of 2008, a period in which the dollar suffered an intense depreciation in relation to a group of currencies, contributing for the strong increase in the commodities international prices, expressed in dollars. However, the deepening of the crisis generated strong decreases in the commodities prices and a new trend of international appreciation of the dollar. It was on that moment that the companies' losses, caused by the speculative bets, came to the surface.

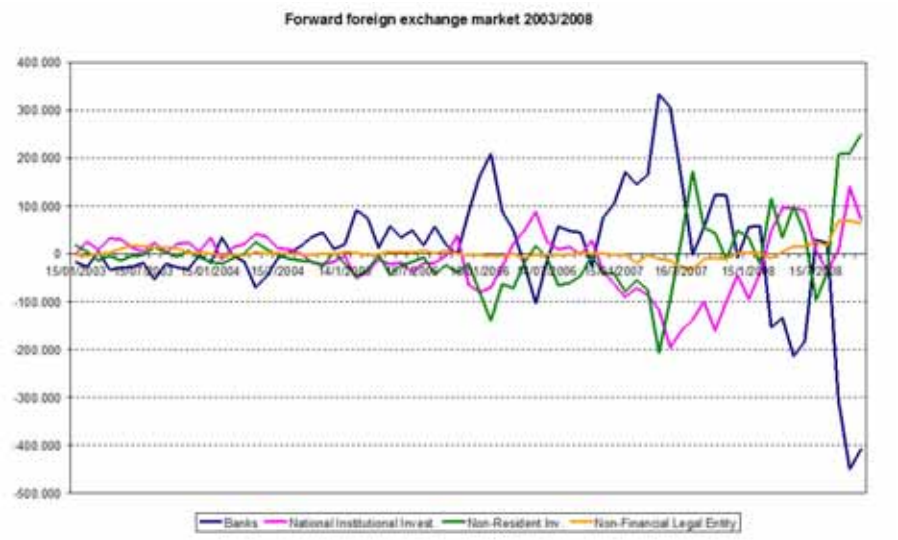
It should be noted that many of those companies were exporters, that is, those that suffer more intensely the impact of an appreciation of the exchange rate of their national currencies. From a microeconomic point of view, it was understandable that those companies looked for risk coverage against that appreciation. However, the amounts of their operations, much higher than the volumes of their exports, characterized their speculative posture and had, in the second semester of 2008, macroeconomic effects, among other reasons because they contributed to accentuate the depreciation of the exchange rate. A report of the bank HSBC (2009, p. 7) on Latin America expresses the extension and depth of that impact:

> it wasn't really until the corporate sector in Mexico, Brazil, and a few other Latin American countries forced a major weakening in currencies as a result of overleveraged currency derivatives in October that we all realized how truly global the crisis was going to be, with a depth and reach much beyond previous estimates.

In that case, the difference between hedge and speculation assumes a quantitative character: in this operation, the companies would be making hedge up to the supposed amount of their exports within that period, and would be speculating in the amount that exceeded such exports. The IMF report (2008), although emphasizing the use of the financial derivatives such as hedge for the foreign exchange risk,[3] also points out its speculative use, usually "out of balance", referring to the losses incurred in by Brazilian and Mexican companies due to the depreciation of their domestic currencies.

In the case of the Brazilian companies, it is important to note that a number of those contracts were signed at the offshore over-the-counter market, and, consequently, it is not possible to evaluate their size and extension. The portion executed at the Brazilian market, in its turn, could have been performed in the Brazilian Mercantile and Futures Exchange (*BM&F – Bolsa de Mercadorias e Futuros*) or, in the case of operations in the over-the-counter market, should

have been registered in Cetip.[4] Chart 1 clearly shows that the participation of the non-financial legal entities in the future exchange market of BM&F has been quite scarce, which strengthens the hypothesis that the operations between companies and banks were, above all, performed in the over-the-counter market.



Source: Formulation based on data from BM&F.

Chart 1 – Position of the participants in the forward foreign exchange market in US$ 50,000.00 contracts

As a matter of fact, due to peculiarities of the Brazilian legislation, the operations in the over-the-counter market have to be registered, and are, therefore, less opaque than in the international market. Prates & Farhi (2008) observe that the information of Cetip (Table 1) show the existence, in October 29, 2008, of US$ 94 billion in positions of non-deliverable forward contracts between the market agents and their customers. The table also allows us to detect the existence of two periods of remarkable increase of the positions: the first occurred in late 2005 and in 2006; the second began in late 2007, when the international financial crisis had already emerged, and increased from August 2008 on.

It is important to note that the data published by Cetip present two particularities. The first is that, although the total amount of the operations is known, it is impossible to determine, based on those data, if each agent is long or short, and, therefore, to identify their liquid position. The second concerns the bigger complexity of the liquidation before the expiration of the operations of over-the-counter derivatives relatively to those performed in organized markets. Contrarily to the latter, in which it is enough to execute the opposite operation so that the original position is considered liquidated and ceases to appear in the open positions, the liquidations performed in over-the-counter markets usually involve

the execution of an identical operation to the original, but with "opposite signs." Thus, those over-the-counter operations are registered twice, one regarding the original and the other regarding their liquidation in advance, until the expiration. The existent data do not allow us to estimate the proportion of those operations of advance liquidation.

Table 1 – Operations with foreign exchange derivatives in the over-the-counter market

Non-deliverable forward contracts Stock – United States Dollar Market – Client	
Date	Contracts Financial Volume (US$)
03.30.2005	11,920,546,922.39
06.30.2005	11,474,767,753.79
09.30.2005	12,906,739,323.58
12.30.2005	20,132,756,958.96
03.31.2006	23,474,088,026.69
06.30.2006	28,776,493,602.94
09.29.2006	32,176,836,912.64
12.29.2006	30,076,180,458.56
03.30.2007	30,020,028,968.60
06.29.2007	37,509,893,619.81
09.28.2007	42,983,701,780.35
12.28.2007	48,944,903,336.69
03.31.2008	57,392,717,048.35
06.30.2008	54,072,843,514.46
09.30.2008	86,132,477,590.63
10.29.2008	94,715,855,151.75

Source: Cetip.

Table 2 displays the losses with derivatives, until October 14, 2008, associated to the the dollar appreciation, of some of the main companies from emerging economies. Many of them are Brazilian or Mexican. There are also those from China and Hong Kong. Several losses exceeded US$ 1 billion. It can be noticed that the branches of the listed firms are several, indicating that the use of derivatives instruments beyond the coverage of risks of exporter companies was generalized, that is, it characterized the behavior of corporations of different sectors. From Brazil, Aracruz, Votorantim Group, Sadia, and Vicunha Têxtil (which is not shown in the table) stand out, in addition to some close corporations of medium size, and to TAM.[5]

One of the most severe cases was that of the Controladora Comercial Mexicana, the third largest retail chain of Mexico, which had to file for bankruptcy when it was unable to pay US$ 1.4 billion to the banks with which it had operated the contracts of derivatives. It is worth to emphasize that the Mexican bank market is dominated by great international financial institutions, such as Citigroup, BBVA, Santander, HSBC, and Scotiabank. It is not just known for sure which of them sold the volatile derivatives to those companies (Randewich 2008). Also Mexican, conglomerates such as Cemex, Gruma, Alpha, and Vitro, reported significant losses with foreign exchange derivatives, when they believed in the continuity of the valorization process of peso against dollar (cf. Thomson, 2008).

Table 2 – Losses of companies with derivatives associated to the dollar increase

Company	Country	Sector	Losses (US$ millions)
Citic Pacific	Hong Kong	Infrastructure	-2,400
Controladora Comercial Mexicana	Mexico	Retail	-2,200
Aracruz	Brazil	Cellulose	-2,130
Votorantim Group	Brazil	Diversified	-1,040
Cemex	Mexico	Cement	-711
Gruma	Mexico	Foods made of corn	-684
China Cosco Holdings Co.	China	Shipbuilding	-577
Air China Ltd.	China	Airline	-450*
Sadia	Brazil	Processed foods	-360
Alfa	Mexico	Diversified	-273
Vitro	Mexico	Glass	-227

Source: Formulation based on Regalado & Lyons (2008), Caminada & Price (2008), Mavin (2008), Randewich (2008) and Diaz (2009).

* Losses associated to hedge contracts of fuel.

Note: Not all losses are expressed in the table. Obviously, many companies are not listed and some derivatives positions are pending.

Although not present in the table, countless companies of South Korea,[6] such as PSM Inc. and Taesan LCD Co. - this one, by the way, filed for bankruptcy in September 2008, following the losses resulting from its bets on

the Won -, incurred in losses when they operated the foreign exchange option denominated "knock-in knock-out" (KIKO), as a hedge or a speculative bet against the appreciation of the local currency in face of the dollar. That option, commonly used by South-Korean exporters, allowed the company to sell dollars at a fixed exchange rate won / dollar, in case the Won oscillated within a range that was preset in the contract. However, if the value of the Won fell below the range, they were forced to sell dollars below the market rate, suffering enormous losses.[7] Over 520 small and medium exporter companies that acquired KIKO options were close to insolvency. Many others could, during the first semester of 2009, have to face a similar situation, in case the weakening of the local currency did not revert and there was no capital injection into the companies' funds (Jong-Heon, 2008).

The losses of companies from emerging economies reached India as well. In that country, the losses were estimated, in March 2008, in US$ 3 billion to US$ 3.5 billion. The small and medium companies represented about 25% of that total. Examples of companies that suffered such losses are the Axis Bank (6.73 billion rupees), KPIT Cummins[8] (893 million rupees) and Zee Entertainment (115 million rupees), mentioned by *Business Standard* (2008). It is also worth to point out that those Indian cases are previous to the deepening of the recent international financial crisis, which occurred in the second semester of 2008.

Some Brazilian cases are worth of brief comments. Sadia, for instance, reported a non-recurrent loss, associated to derivatives instruments, of 777.4 million Reais* in the third quarter of 2008. Most of the Sadia's losses resulted from speculative operations with foreign exchange and a smaller portion was due to investments in Lehman Brothers' securities (Barbieri, 2008a). The company's short position in dollars reached US$ 8.4 billion. The portion of operations with a 12-month term that were liquidated in advance resulted in a loss of 544.5 million Reais, and the total loss due to the crisis, registered in the third quarter was as high as 1.2 billion reais[9] (Cruz & Valenti, 2008).

Aracruz, one of the Brazilian companies that were most exposed to the risk of the derivatives operations recorded losses of US$ 2.13 billion when liquidating 97% of its position.[10] After the company's proposal of paying out its debt in installments along 15 years, which was rejected by the group of creditor banks, among which are Itaú BBA, Santander, Merrill Lynch, JP Morgan, Citi, Goldman Sachs, Deutsche Bank, Calyon, BNP Paribas, ING, and Barclays (Adachi, 2008b), and a round of negotiations, an agreement was signed. A nine-year term was established for the payment in a system of increasing interest rates, in addition to a six-month grace period (Adachi, 2009).

The Votorantim Group's losses of 2.2 billion Reais was also expressive, but lower than the one of Aracruz. The losses of Ajinomoto do Brasil, at the end of 2008, totaled 180 million Reais, in similar foreign exchange operations, of which 110 million Reais were related to "non-deliverable forward" (NDF) and

70 million Reais were due to debts in foreign currencies (Cunha, 2009). In a smaller proportion, Vicunha Têxtil reported losses, in September 2008, of about 30 million Reais with derivatives transactions, essentially short positions in dollars (Lucchesi & Vieira, 2008).

In addition to the big companies, many medium firms have also succumbed to the appeal of financial earnings that seemed to be so easy. In late October 2008, the director of Relationships with the Participants of Cetip, Jorge Sant'Anna, informed that there were over five hundred companies involved in the foreign exchange derivatives. However, the exposure to the currency variation had been reduced, since, from September 30 to October 24, the short positions of the companies in dollars went from US$ 40 billion to US$ 20 billion for up to 90 further days (Chiarini, 2008). According to a survey conducted by Agência Estado (2008), regarding especially the first semester of 2008, 37 of 50 non-financial companies of Ibovespa maintained open positions with derivatives. On what concerns the banks involved with such operations, Santander (with 60 companies as customers), Unibanco (33 companies) and Itaú (96 companies) were mentioned. The contracts were focused, especially, on the modalities of target forward and swaps.

Most of the involved companies are not public traded corporations. Therefore, their losses are revealed only when they file lawsuits, disputing the legitimacy of the derivatives contracts signed with great financial institutions. Two examples are Arantes Group and Tok & Stok, whose cases were disclosed following their appeal to the Judiciary. The losses of Arantes Group with the aforementioned operations were estimated in 200 to 250 million Reais. The difficulties in refinancing debts, resulting, above all, from restrictions to credit, impelled the company to file a request of judicial recovery estimated in approximately 1.5 billion Reais (A. Rocha, 2009). They also led the company to interrupt the payment of the due interests on its bonds issued in the international market. Tok & Stok, in its turn, tried to avoid a loss of 55 million Reais with Itaú BBA resulting from the foreign exchange derivatives contracts. The company alleged that the bank, based on the concession of financings totaling 29.3 million Reais, set up derivatives operations that associated the loans to the reduction of the quotation of the dollar, in such a way that, if this quotation remained low, the company would pay lower interests than those of the market, and, in case it exceeded a value close to 2 reais per dollar, the company would have to pay a much higher amount (Agência Estado, 2009).

Panel 1 shows synthetically how the basic operations involving the exporter companies were executed, without penetrating into the specificities of the complex contracts of financial derivatives. It only reinforces the treatment given by the companies to the portion of their capital that is linked to exports. The inexistence of limits for the losses and the speculative character of the operations are reaffirmed.

Panel 1 – The operation functioning

Mechanism	The exporter companies are benefited by a mechanism of financing called Anticipation of Foreign Exchange Contracts (Antecipação de Contratos de Câmbio – ACC), for which they receive the value of their exports, in Reais, in up to six months before doing them.
Discrepancy	The exporters apply that money and resources of their own funds in the financial market to get compensation for an eventual foreign exchange discrepancy. Thus, even if the profit with the exports decreases due to the valorization of the Real, the companies win in the financial market and reduce their losses.
Protection	The companies use that mechanism to protect their exports, but they were operating beyond the values associated to those exports. In addition to that, some financial operations did not have a limit of losses in case of a depreciation of the Real.
Losses	In practical terms, they bet that the Real value would continue to increase, but, with the oscillations in the currency caused by the financial crisis, they suffered losses.

Source: D'Amorim (2008).

Prado (2008) discusses the risk that is inherent to foreign exchange derivatives operations, centering her analysis in the "principle of foreign exchange lock", a kind of range within which the exchange rate can vary without causing losses to either party. With such mechanism, the losses for one of the parties would happen in case the exchange rate reached and exceeded the preset minimum or maximum. That seems to have happened to some companies that did not expect an abrupt and accentuated depreciation of the Real, when they locked their foreign exchange positions below 2 Reais per dollar.

Lucchesi *et al.* (2008) explore the kind of operation performed by companies such as Aracruz, denominated target forward, in which the company bets doubly in the valorization of the national currency - in this case, the Real -, assuming twice the short position in future dollars:

> First, the company sells the dollar to the bank by means of an instrument called "forward", or, abroad, "non-deliverable forward (NDF)". It is the traditional dollar forward sale, by means of which the company sells dollars in one day in the future at a preset quotation. [...] the company also performs another coupled transaction: it sells the dollar again to the bank in the future and by means of a risky sale of call option. In that instrument, the bank pays a certain amount to the company in order to have the right of buying the dollar to a preset quotation in the future.

In addition to that, the proposals of the banks to the companies for obtaining cheap credit involving the sale of dollar call options reached medium companies, including the real estate ones. "With the credit surplus, the dollar decreasing in value and the competition between banks becoming tougher and tougher, those products were offered by more and more banks to smaller and smaller companies" (Lucchesi *et al.*, 2008).

Delfim Netto (2008) complements the previous propositions affirming that the companies signed contracts, whose main provisions were: "1) a notional value for the operation is established; 2) a reference value ('strike') of the exchange rate is established; 3) a term of validity is established (one to two years); and 4) there is a monthly accounting clearing." In that model of hedge contract an asymmetry is identified, which is pointed out by Delfim:

> if the value of the dollar is higher than the strike one, the difference is usually multiplied by two. There is no lock of the losses and the contract has to be executed until the end. Additionally, for 12 months, for instance, the monthly evaluation is made between a "spot" dollar that varies, versus a nominal reference dollar, whose difference favorable to the bank is multiplied by two, what makes very difficult for the company to get out of the operation. Even if the contract allows the exit by means of the bank itself, the loss for the customer is expressive and inevitable, given the structure and term of the operation. (*ibidem*)

It is not surprising, therefore, that judicial rebuttings appear alleging that the companies were deceived in the formulation of the contracts, although their finance departments have also been negligent in the identification of the assumed risks, when they increasingly ventured in "unknown" financial operations. That tends to result in agreements, lessening the profits and losses of both parties. Thus, the agreements become a favorable option, since the banks are facing the threat of not receiving the due values, and the companies often need loans and refinancings from the banks, even for their productive activities, which drives them to try to avoid the default and, consequently, a conflicting situation, which could jeopardize their image in the attempt to obtain new resources (Carvalho & Ignacio, 2008b). Obviously, it will take time so that all of the legal procedures are complied with and the lawsuits are judged in all of the possible instances.

That demands a larger transparency in the operations, so that the regulatory monetary and financial authorities acquire the necessary knowledge of what is happening and of the agents whose positions are "long" or "short".[11] As Lessa (2008) points out, "all those that have assets or debts in a foreign currency should register them in the Central Bank. We cannot go to sleep one night knowing that Sadia, Aracruz, Votorantim, and Vicunha are in a good situation, only to find out, in the next morning, that they themselves do not know the extent of their losses." Because of that, BNDES offered to help, together with the private banks, the companies that had suffered foreign exchange losses in financial operations, once it considered them of great quality and wished to avoid liquidity

problems that would made them insolvent (Lage, 2008). The help, by means of a bridge loan, should benefit about 200 companies, not just including the ones that had bet in the continuity of the valorization of the Real, but also others that, given the credit squeeze, needed capital to solve liquidity problems and to stabilize the cash flow (Moreira, 2008).

One cannot fail to mention also that, according to Audi & Robarts (2008), exporter companies such as Perdigão, JBS, Marfrig, and Minerva, although not engaged in speculative positions, presented losses regarding their debts in dollar, with the depreciation of the Real, although mitigated by their export incomes. Similarly, Cesp and Tractebel, whose refinancing risks, mainly in moments of retraction of the liquidity, were greater, egistered losses resulting from the currency variation decurrent of their debts in dollar (Gaeta & Prado 2008). As well as the others, Oi, which possessed debts of US$ 750 million exposed to the currency variation, with hedge, presented, in the third quarter of 2008, a loss of 295 million Reais, although its net profit kept positive (*Folha de S.Paulo*, 2008).

Those losses of Brazilian companies and from other emerging economies were announced in a period of magnification of the international crisis and of a strong increase in the risk aversion. In that context, the macroeconomic impacts of those losses increased a lot. First, because they provoked a strong elevation in the volatility and depreciation of the national currencies, already suffering from the repercussions of the international crisis. Second, such losses started to constitute a credit risk, since the companies could fail to pay to the banks. As nobody knew accurately which companies and which banks were involved, that constituted an additional factor to the strong restriction of liquidity in the interbank operations and the accentuated reduction of the credit for firms in the emerging economies, even in those possessing a bank system that was not linked to the complex operations that resulted in the international financial crisis. Third, a process of loss of trust in the companies was observed, due to their scarcely transparent operations performed in opaque markets. That meant a larger difficulty in securing new loans or renewing old ones, not just because the companies that incurred in those losses with derivatives lost credibility with the banks for making "unknown" operations, but also because they endangered, in a great measure, their future profits, destined to the payment of those debts.

Final Considerations

Starting from the decades of 1970 and, especially, 1980, the processes of liberalization and deregulation of the financial and foreign exchange markets were expanded, in national and international scale. That allowed the intensification of the process of "financialization" of the economy.[12] Guttmann (2008, pp. 12-4) observes that such movement, within the scope of non-financial institutions, is linked, especially, to the dominance of the logic of maximization of shareholder value. In this context, the priorities of the company are focused on the short-

term results, to the detriment of long-term activities, which include, for instance, the productive investments. Thus, "great increases in the portfolios of financial assets of non-financial corporations" are observed, "with financial incomes (interests, dividends, capital gains) becoming more important in the same measure." However, obtaining short-term results is associated to more and more complex instruments, such as the several modalities of derivatives. Although the developments of those phenomena have allowed highly speculative and patrimonial gains (Tavares & Belluzzo, 2002, p. 153), the system became more unstable, subject to systemic risks, given the high degree of leverage, and to more frequent and intense fluctuations in the assets prices.[13]

The relevance of the finances in the logic of the big corporations' performance was not just accentuated by the movement of liberalization and deregulation of capital flows, but also by the very constitution of global networks of the transnational companies, operating in different markets and currencies. They started to participate in the financial minuet, initially by means of operations in the different currency markets of the countries in which they operated and by means of hedge operations. Later, they sought to obtain a high non-operational profit, using speculative instruments. This way, they became participants in the financial sphere and managers of those assets, by means of the most diversified mechanisms, aiming at executing patrimonial operations in search of capital gains, applications in financial assets and/or financings to companies that were linked to their conglomerate or network for developing technology. According to Braga (1997, p. 216),

> as an imposition of the very competition and administration of risks, it is about constituting finances that do not only imply an appropriate debt structure, of liabilities (to immobilize capital), but at the same time building an appropriate creditor / active position in order to have mobility, flexibility, innovative agility, and speed in the obtainment of lucrative opportunities in the several national, productive and financial markets.

Thus, most of the big companies set up sophisticated finance departments capable of managing risks in the more differentiated assets, hedging them when the expectations of valorization are negative or maintaining them uncovered to take advantage of an eventual favorable evolution and, more and more frequently, assuming new risks in financial investments and bets. That movement was not restricted, however, to the big corporations. Both companies of emerging economies and smaller ones in developed economies adopted the same style of financial administration.

The recent financial losses of productive companies emphasize the process of "financialization" of their activities and the relevant role that speculation has acquired. The use of the derivatives as a form of protection had its proportions reduced in face of the expansion of their speculative use. With the international financial crisis and the accentuated volatility of the assets prices, the mistaken

bets of corporations of the whole world, mainly of emerging economies, were evidenced by the financial losses. It is important, in fact, to point out the role of the banks as counterparts of those positions, especially on what concerns the asymmetrical contractual aspects of those operations, susceptible of judicial inquiries by the companies.

Finally, as a result of all this, the State reappears in one of its most important attributions, namely that of maintaining the liquidity of the system, avoiding its rupture. Although the help, for its most part, is destined to financial institutions, the financial weaknesses of the companies exposed here demand the State intervention, in the sense of maintaining them productively capable and, consequently, avoiding still deeper cuts on jobs and income. Following the disaster that was induced by the "rationality of the agents" present in the theoretical outline of the efficient markets, it is indispensable to rethink the regulatory mechanisms and the mechanisms of supervision, which proved themselves full of flaws in the environment of deregulated finances.

* Due to floating exchange rate, it is very difficult to translate with accuracy these amounts in American dollars. For comparison purposes, we can assume that, on average at that time, R$ 2 = US$ 1 [T.N.].

Notes

1 The authors thank Marcos Antonio Macedo Cintra for his attentive reading of the article and his enriching comments. The authors are accountable for any remaining misunderstanding.

2 From a given moment on, the public traded companies had to disclose their losses. Since the operations are usually "out of balance", they are very little transparent. Even in the cases of public traded companies, whose financial demonstrations are published, the control and the normative structure required to disclose the results of such operations were nonexistent. After the disclosure of those losses, new accounting rules were adopted in Brazil, in accordance with the recommendations of the *Comissão de Valores Mobiliários - CVM* (Brazilian Securities and Exchange Commission), among which the one that deals with the financial instruments stands out; such instruments include from the exotic derivatives to any receivables (Valenti, 2009). Under the new rule, issued in December 2008, the disclosure of the table of sensitivity analysis in three different scenarios, which used to be optional, as in the balance of the third quarter, became mandatory, in the annual balance of 2008 (Valenti & Fregoni, 2009).

3 "One important way firms may have cut the exposure to currency risk has been the growing reliance on financial derivatives to hedge currency risk" (IMF, 2008, p. 55).

4 Created by the financial institutions and the Central Bank, Cetip S.A. – *Balcão Organizado de Ativos e Derivativos* (Organized Counter of Assets and Derivatives) -

began its operations in 1986. It is an association for the administration of organized over-the-counter markets, that is, of environments for negotiation and registration of securities, public and private bonds of fixed income and over-the-counter derivatives.

5 Differently of most companies, TAM registered a financial loss in the third quarter of 2008 of 301.5 million Reais, of which 268.3 million corresponded to losses with fuel hedge. The company "had protected 50% of its consumption of fuel at US$ 110 per barrel of oil, but the quotation of the input in the quarter closed at US$ 104" (Campassi, 2008).

6 J. Rocha (2009) mentions the decision of the judicial court of the district of Seoul, in South Korea, which decided to annul the foreign exchange derivatives contracts of two exporter companies of the country - DS LCD and MonAmi - with the Standard Chartered Bank, observing the asymmetry present in the contractual relationship between the bank and the companies and the fact that "such contracts are demandable, in their liquidation, as long as such currency variations are processed within a reasonable spectrum, something which will not have happened with the violent leverage of the dollar."

7 Other characteristics of the knock-in and knock-out options can be found in Santos (1998). In general, they are denominated barrier options, which come to existence or cease to exist if the strike price of the object reaches a certain value - the barrier.

8 It is intriguing to detect, in the company's website, a qualitative reference to Lehman Brothers, as witness of a model of (little) exemplary business. "A relationship-based and vertical focused business model (Focus on two verticals: Manufacturing & Diversified Financial Services) has helped us grow at a fast pace with top line revenue growth of 10x and increase in market capitalization of 15x over the last 5 years. Our 95 plus active global clients and strategic partnerships with some of the largest & renowned players in their respective areas, Cummins & Cargill (Manufacturing) and Lehman Brothers (Financial Services), are a testimony to our business model" (Available in <http://www.kpitcummins.com/corporate/profile.htm>. Access in: Dec. 28, 2008).

9 It is worth to point out that, on September 30, 2008, after having liquidated a significant portion of its positions, Sadia still presented a short position in dollars to the amount of US$ 6.37 billion. Since the company possessed a hedge equivalent to US$ 4 billion, its short liquid position was of US$ 2.37 billion, although the long positions were of a shorter term, needing constant renewal and signaling the hedge imperfection (Adachi, 2008a). In December 2008, the foreign exchange exposure of the company with pending contracts decreased to US$ 678 million, which were equivalent to less than three months of export (Barbieri, 2008b).

10 On October 9, 2008, the credit rating of the company was lowered from BBB to BB+ by the risk rating agency Fitch, below the level of investment grade (Reis *et al.*, 2008). It is worth to point out, however, that after the events that were evidenced by the current crisis, the credibility of those risk rating agencies already deteriorated significantly.

11 In that sense, the possibility of creation of a center of derivatives risk until the end of the year is already being studied. The project appeared in the subcommittee of derivatives created under the committee of treasury of the Brazilian Federation of Banks (*Febraban – Federação Brasileira de Bancos*). Cetip and some banks also participate in the plan, in addition to the National Association of Institutions of the Finance Market (*Andima - Associação Nacional das Instituições do Mercado Financeiro*), the Central Bank and

CVM. According to the director of relationships with participants of Cetip, Jorge Sant'Anna, the objective of the derivatives center would be to disclose information about the companies' negotiations with derivatives, in such a way that the participants of the market could evaluate the consolidated risks (Pavini & Carvalho, 2009).

12 For a critical approach to the financial globalization and its implications, see Chesnais (1998).

13 Guttmann (2008, pp. 15-6) points out those very aspects when discussing the avalanche of financial innovations that were created in the markets. "Key innovations, in spite of providing the general credit system with flexibility and capacity of reaction to the creditors' and debtors' needs, also stimulated the asset bubbles, the underestimation of risks and the excessive leverage."

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ABSTRACT – As a consequence of the deepening of the international financial crisis during the second semester of 2008, several productive companies from emerging economies have registered enormous losses in the foreign exchange derivatives markets. This fact points to the speculative dynamics of corporations in the financial deregulated environment. This paper aims to articulate this logic of enterprises' behavior with the crisis and to discuss some macroeconomic effects resulting from the financial losses caused by speculative bets in the derivatives markets.

KEYWORDS: Derivatives, Speculation and Corporations from emerging economies.

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