

Old risk, new market: constructing the over-the-counter financial market for credit derivatives

***Abstract:** We describe the social process of construction surrounding a new financial OTC derivatives market. We show that the key role played by the redefinition and reinterpretation of risk according to the modern theory of finance, cognitively frames the promoters of financial innovations. We demonstrate that their capacity to rally different market stakeholders around their vision is what conditions the development of the market. By conducting an in-depth longitudinal qualitative study from 1996 to 2004, we document the effort these promoters have given to market advancement. Our paper enlightens the role played by the financial theory of risk as a matrix for modern financial innovations and the difficulty it meets in practice when faced with the obstacles related to the institutional embeddedness of financial markets.*

Key words: social construction of markets, OTC financial markets, risk, social studies of finance, performativity, cognitive framing.

Introduction

In his visionary conception of modern society, Ulrich Beck (1990, 1992, 2006) theorizes modern societies as “societies of risk” and explores the new paradigm thus created. At the core of this paradigm is the thesis that risks play a central role in the advanced modern world. Among the many new perspectives offered by this theorization, three are worth emphasizing here. The first one is that risks are socially constructed, thus it is critical for modern social theory to understand how risks are socially produced. Second, within modern societies, the major issue seems to lie in the handling of risks rather than in their elimination. According to Beck, risks “are a growing business” and new needs, and hence new markets, can be created by changing the definition of risks; needs that are open to interpretation can be proliferated endlessly. Last, the process of risks definition collide with the egoism of national states, as well as with the prevailing parties and interests groups internal to industrial societies. The political side effects of risk social production must therefore be carefully studied, as a society of risk has a tendency toward centralization, bureaucratic control and planning that might eventually result in totalitarianism as a protection against dangers.

Surprisingly enough, if the notion of risk is considered a new epistemological and political space for analyzing changes in contemporary capitalist societies (Calas, 1999; Douglas and Wildavsky, 1982; Ewald, 1991; Mandel, 1996) and if the social processes involved in the interpretation and definition of risks have been studied in many areas (for example, Lane and Quack, 1999), they have been little investigated on financial markets. This is all the more curious as the very notion of risk is pervasive within these markets, whose actors perceive risk management as the core of their activity. This paper thus proposes to investigate the social construction of financial markets and to evidence the significance of risk reinterpretation on these markets.

If Beck’s paradigm is to be given some empirical content using financial markets data, derivatives markets seem to be the appropriate place to begin (Knorr Cetina and Bruegger, 2002). Universally considered as “markets of risks”, derivatives markets are markets on

which financial instruments are traded with the primary use to provide protection against “market risk”, i.e. the risk of variation in the price of some underlying asset. Financiers see them as providing both the daily prices of market risks as well as being the instruments to hedge those risks. While the first derivatives (options and futures) were created on organized markets, the early 80’s saw the beginning of an unprecedented development of over-the-counter (OTC) markets. Interest rate derivatives whose notional amounts outstanding in December 1998 were bn\$50,015, represented a value of bn\$262,296 in June 2006. Foreign Exchange derivatives have increased more than twofold in the same period, while the total amount outstanding for global OTC derivatives markets has been multiplied by more than four and amounts to bn\$369,906¹. OTC derivatives markets are the place where financial innovation flourishes, with new financial instruments being constantly created to handle what are often presented as “new risks” on financial markets. Despite the significance of this phenomenon, the creation and development of new OTC markets is notably understudied and our paper is an attempt to fill the gap.

The process of social construction of a new financial market has been investigated by MacKenzie and Millo (2003). Following on from the pioneering work of Baker (1984), they analyze the development of the options market in Chicago in 1973. The main issue raised by MacKenzie and Millo hinges on the power of Callon’s (1998) concept of performativity of economics to account for the way the market was created, developed and defended during crises of legitimacy. They argue that Callon’s (1998) assertion that economics performs the economy by creating the phenomena it describes, is indeed useful in understanding specific aspects of the market they study especially as far as the pricing process is concerned. Although necessary, it is nevertheless not sufficient to account for the very existence and development of the market. The analysis must be enriched by taking into account the network of interpersonal connections of a few individuals who constantly devoted time and effort to its promotion. Performativity should be articulated with a view of markets as “networks, cultures and moral communities”.

Although MacKenzie and Millo (2003) constitutes a breakthrough in the understanding of the social construction of new financial markets, it is not certain that their conclusions remain valid as regards OTC derivatives markets. In addition to having been the fastest developing markets over the last 20 years, derivatives bear several differences with the options market described. In particular, derivatives markets are not, by definition, structured around organized exchanges.

In this paper, we propose to address the issue of the social construction of a new OTC financial market. We contend that our understanding of this issue can be greatly enhanced by recognizing the key role played in the process by the redefinition and reinterpretation of risks.

Conducting an in-depth qualitative study from the origin of the market to the end of 2004, we show that the credit derivatives market results from a reinterpretation and redefinition of the notion of credit risk. We evidence the extent to which this reinterpretation has been central to the legitimization process of the market and unveil the social processes at work in the construction of the market.

Our contribution is fourfold. First, the analysis of the emergence and development of a new derivatives market provides much empirical support for Beck’s theory that risks are socially

¹ See BIS, Statistics on Global OTC Derivatives markets.

produced. Despite the functionalist argument of promoters of the market that it all amounts to pure offer and demand mechanisms, we document complex social interactions and processes in the construction of the very notion of credit risk necessary to legitimize the OTC market to be.

Second, we find that credit derivatives are not tailored to provide solutions on how to diminish or eliminate the risk. Instead, promoters of the product propose a new way to handle risk by exchanging it on a financial market. It is by changing the definition of credit risk that they try to create a new market for their innovation. What we document is that the social construction of the credit derivatives market is almost entirely conditioned by the ability of the promoters of the market to rally other actors around their “reinterpretation” of credit risk.

Third, we evidence that attempts to perform the theory are part of the social construction of the market. However, performativity (in Callon’s sense) is difficult to obtain on this market because of the social interactions and processes which interfere. The stickiness of existing institutions, be they legal, regulatory, social or, even more crucially, cultural, makes it indeed challenging for financial innovations to get the acceptance they need, not only for practical development, but also for the validation of the theory according to which almost any risk can be marketed and exchanged as a financial product.

Fourth, the case of credit derivatives enlightens the existence of conflicts of interests in the redefinition of credit risk. Private actors do play a crucial role in the regulating and normalizing processes involved and their lobbying capacity is a key issue in ensuring that the strongest actors’ interests prevail. General interest defense on these markets thus remains an open question. This leads to the re-politicization of the question of financial risks (de Goede, 2004).

The remainder of this article is divided into four parts. The first part develops the conceptual framework of the analysis using the main results from the sociology of financial markets. The second part presents the research method. Our methodology is based on a longitudinal qualitative study over the period 1996-2004, taken from interviews with the principal actors of the market and of an analysis of secondary data. The third part consists of a study of the emergence and development of the market for credit derivatives. The fourth, and last, part shows the results and the principal conclusions of the research.

1 - The Enigma of the Development of Financial Markets

Largely led by the recurring apparition of financial innovations, market growth is often seen as resulting from the apparition of new risks. This idea proposed by Abolafia (1996) is, however, particularly ill-suited to account for the emergence of certain markets. Credit risk for example, has been historically at the heart of the banking business ever since this business has existed.

If credit risk is not a new risk, where did the radically new instruments used to manage it appear from in mid-1995? To examine this issue, we combine approaches drawn from the sociology of financial markets (Abolafia, 1986; Fligstein, 2001; Knorr Cetina and Brueger, 2002; MacKenzie and Millo, 2003; Callon and Muniesa, 2005) as well as the pioneering work of Markowitz (1952) and Sharpe (1964) which define financial markets as markets for risks. This vision constitutes the cognitive framework of the promoters of the markets.

1.1 The social construction of markets

As Vollmer (2006) emphasizes, economic sociology (Fligstein, 2001; White, 2001) today represents a relevant framework for the social studies of finance. The sociological interest in finance is also contextualized within science and technology studies (Muniesa, 2000), actor-network theory (Callon, 1999) and ethnography (Knorr Cetina and Preda, 2005). Research on the social construction of financial markets highlights three phenomena; the significance of interpersonal networks on these markets, the legitimizing function of stock market agencies on organized markets and the role played by social representations of financial activities.

Previous literature on the social construction of financial markets emphasizes the role played by interpersonal networks in the process of creation of a new market. In their stimulating paper, MacKenzie and Millo (2003) retrace the history of the first options market in 1973 in Chicago (Chicago Board Options Exchange, CBOE). They evidence the role played by a few actors in overcoming the ideological resistance inherited from the crash of 1929. They show that the very existence and development of the market must be explained, at least partially, by taking into account the network of interpersonal connections of a few individuals who constantly devoted time and effort to its promotion. Knorr Cetina and Bruegger (2002: 906) however contrast the situation on the markets that are organized in centralized exchanges (like the CBOE) and the situation of the OTC foreign exchange market that “derives from interdealer transactions in a global banking network of institutions”. Insisting on the specificity of OTC markets, they conclude with the necessity of positing new forms of market coordination on these markets, in order to supplement relational or networks forms observed on organized exchanges (Knorr Cetina, 2005).

The social construction of markets has also been analyzed through the prism of political processes (Fligstein, 2001; Abolafia, 1996). Abolafia (1996) demonstrated the importance of specific organizational measures to meet potential legitimacy crises on an already developed financial market. He showed that a tension exists at the heart of the activity that large investment banks conduct on financial markets. The attraction of potential profits to be obtained on these markets leads banks to organize the profession of traders in a way which permits them to act as individual opportunistic entrepreneurs, remunerated according to their results by potentially extremely large bonuses. Meanwhile, the danger exists that the risks taken by the traders or by their opportunist behavior, can lead to a catastrophe threatening the existence of the employing financial institution. When this happens, the public begins to question the legitimacy of the financial activities on the market. Historically, this problem has been dealt with by confiding the promotion, organization, protection and legitimization of the market to Stock Market agencies. In other words, entrusting them with what was perceived by all the actors to be of common interest: the organization of exchanges, the production of innovations susceptible to maintain the interest of investors in the market and the conservation of autonomy when confronted by the potential reinforcement of regulations. Therefore the absence of market structure in the case of over-the-counter markets leaves us not knowing exactly how this common interest is taken into hand by the actors.

Finally, previous social studies of financial markets have demonstrated that values and beliefs condition the possibility of the existence of new markets. Zelizer (1979) documents the history of life insurance in the U.S. and underlines the deep-seated cultural resistance that confronted this innovation. She shows that the diffusion of American Life Insurance was

more than a matter of economics or sophisticated actuarial variables. The business challenged deeply institutionalized values relating to death, and also defied a set of cultural and religious beliefs and ideas on risk and gambling, i.e. a powerful normative pattern. MacKenzie and Millo (2003) provide evidence of the discreditation which still existed on the futures market in the U.S. at the end of the 1960's, a remote consequence of the 1929 crash. In both cases, legitimacy of financial innovations could not be taken for granted and had to be obtained through working on, and sometimes struggling with, existing beliefs and representations. MacKenzie and Millo (2003) demonstrate the role played in this process by the options valuation formula suggested by Black and Scholes (1973). Their analysis shows how Black and Scholes' model succeeded in becoming a common cognitive framework and was slowly incorporated into technical mechanisms. This phenomenon refers to Callon's assertion of the "performativity" of economics (1998). According to this assertion, economics does not describe an already existing external economy but brings that economy into being. Economics performs the economy, creating the phenomena it describes (MacKenzie and Millo, 2003; MacKenzie, 2006). The practical use of a model or theory changes, for example, patterns of prices towards a greater compliance with this model or this theory. In this respect, the idea of performativity refers to the fact that finance theory creates a world in its own image (MacKenzie, 2004). The question remains, however, of whether such a performativity leverage can be used in the creation stage of new OTC markets. These markets do not exhibit very strong interpersonal networks nor have they the possibility to rely on a centralized agency to promote the innovation they propose. To begin with, these innovations are often not very precisely designed and will only progressively become clearer as relative standardization of the exchanged contracts are obtained. In this perspective, the phenomenon described by MacKenzie and Millo (2003) appears rather exceptional in the history of financial markets. No valuation model seems to have played the same performative role as Black and Scholes' over the following decades because none has been as rapidly and voluntarily adopted.

Previous literature gives little understanding of the leverages by which the promoters of an innovation sought to enhance its legitimacy. We contend that hindsight into this question can be greatly enhanced by understanding the role played by the general financial theory of risk in the process.

1.2 The Role Played by the Financial Theory of Risk

The apparition of credit derivatives is often presented by market actors as corresponding to the emergence of a new risk – a weak argument when one considers that credit risk has been at the heart of banking management ever since banks were created. The repeated use of this unconvincing explanation in reality unveils an extremely interesting mechanism, namely the fact that the means by which investment banks promote financial innovations relies on a very precise cognitive framework - a framework provided by the theory of finance.

From the pioneering work of Markowitz (1952) and Sharpe (1964) modern financial theory has inherited a vision of financial markets, which defines them as markets for risks. In that vision, buyers and sellers exchanging stocks for example, are seen as exchanging risks; the more risky the stock one buys, the more return he or she expects to earn. As a result, stock prices are seen by financiers as the prices of the risk of stock price variations. Similarly bond prices are seen as the prices of the risk of interest rate variations. This conception, according to which financial markets eventually amount to market for risks, has been greatly enhanced

by the development of modern derivatives markets. Derivatives are financial products whose value depends on the value of other financial assets.

Seeing financial markets as a market for risks and, as a consequence, asset prices as prices of risks provides the coherent cognitive framework that financiers implicitly or explicitly constantly refer to. For our purpose, it is worth noting that this framework offers not only an incentive to financial innovation but also the theoretical matrix to generate it.

The incentive lies in the idea of diversification (Markowitz, 1952): the more possibilities to invest in uncorrelated classes of assets, the happier the investor who, by holding widely diversified portfolios, reduces risk without lowering expected returns. Thus, there will always be some demand from the investors for new kind of assets whose variation would be as independent as possible from that of traditional financial variables such as stock prices, interest rates or currencies.

The financial theory of risk also provides technical tools which allow for an almost endless generation of new kind of assets. Option pricing theory here plays a key historical role. In 1973, Black and Scholes proposed the theory for the price of options that would lead to the Nobel Prize in Economics for Merton and Scholes in 1997. According to the theory, the price of any option could be computed as a function of several parameters, all observable except for one, called the volatility parameter. However, the analytical tractability of the model led market actors to use it in a rather daring manner. Considering that options were exchanged on a sufficiently liquid and efficient market for market prices to be reliable, financiers began to run the model backwards and obtain estimates for the unobservable volatility parameter *from* options market prices. This practical use of the theory had unforeseen theoretical consequences. Black and Scholes sought to compute the price of derivative assets by making intensive use of mathematical theory and using a given type of risk (namely the stock price variation, which was later to be understood under the concept of volatility) as the key determinant of the price function. Reversing the causality, market actors posited that the creation of an active market could solve the valuation problem all at once. On such a market, derivatives prices can be reliably produced by pure offer and demand mechanisms. Theoretical models can then be run backwards and serve not to compute derivative prices but to estimate unobservable risk parameters *from* derivatives prices. In other words, the market has the capacity of revealing the fair price for risk. This reversing technique has had many applications, one of which being exemplified by the creation and development of the OTC market of interest rate swaps in the early 80's. These interest rate derivatives soon became the object of a huge and liquid over-the-counter financial market², which prices would be used to extract the price of the underlying assets, namely the zero coupon bonds of different maturities.

Generalizing the argument, it can be seen that within the cognitive framework proposed by the financial theory of risk, any risk can theoretically be embodied into a financial asset. If this asset succeeds in becoming the object of an active and efficient financial market, then the market will produce a reliable price for this previously non-marketed risk, a situation that financiers favour since a priced risk can be handled using the hedging and speculative techniques of finance. They also argue that once marketed and efficiently priced, risk will be more efficiently managed and optimally allocated between buyers and vendors of risk thereby contributing to a better and safer functioning for the national and international financial

² With a notional amount outstanding of \$207,323 bn., interest rate swaps nowadays amount to 56% of the amount outstanding for all OTC derivatives market internationally.

system as a whole. In their vision, the ideal situation is where each type of risk is embodied into a specific financial asset which can be bought or sold on an efficient market.

The functionalist explanation linking financial innovations with the apparition of new risks is obviously not always tenable. However, it reveals a lot on the cognitive framework which supports these innovations. At the heart of modern financial innovation, especially on OTC markets, risk is redefined and reinterpreted using the tools provided by the theory of finance. The angular stone of this process is somewhat circular. Transforming any given risk into a financial risk through the design of a new instrument is necessary, but not sufficient, to the process. The next crucial step is that this instrument rapidly becomes the object of an active market, involving many buyers and sellers in numerous transactions. If this step fails, the market is seen as inefficient. As market actors are then not provided with relevant prices for the risk considered, they can not safely use the techniques of finance to hedge, perform arbitrage strategies or speculate on the price of risk. In other words, the coherence of the financiers' cognitive framework and the strength of the argument about the desirability of the "marketization" of risks, are crucially conditioned by the *ex post* success of the market-to be³.

To summarize, previous literature leads us to the following research questions. What are the means of legitimization employed by the innovation promoters of an OTC financial market? To what extent does the reinterpretation of risk allowed by the financial theory of risk condition the success of the market?

2 - Methodology

This article is based on a longitudinal qualitative study of the emerging activity of credit derivatives from the mid-1990's to 2005. Our aim is to contribute to the understanding of the development of an over-the-counter financial market by providing an integrated view of this process. Inductive logic remains dominant in our research design and can be assimilated to a "naturalistic inquiry" (Lincoln and Guba, 1985; Strauss and Corbin, 1994). Use of qualitative procedures was appropriate for many reasons (Greenwood and Suddaby, 2006 : 31). First, the process observed on this financial market, constitutes a complex social setting in which causal dynamics were not immediately apparent. Second, the analysis involved historical processes and such dynamic events are best studied through use of inductive techniques by which event sequences are clarified. Third, our aim is to contribute to theory development, a process in which one contrasts pre-existing understanding with observed events to extend existing theory. Contextualization, vivid description, dynamic structuring of the organizational members' socially constructed world and the worldviews of the people under study (Maguire, Lawrence and Hardy, 2004; Lee, 1999: 43) were of critical importance.

2.1 Sources of data

³ This is true on a general level, as well as on a technical and mathematical one. Models *à la* Black and Scholes explicitly require that the underlying asset of the derivative be traded on a market. This conditions the possibility of forming an arbitrage portfolio combining the derivative and the underlying asset, which is central to the pricing process.

Our approach focuses on how French actors take part in the process. Among the 75 financial institutions surveyed by FitchRatings in 2006⁴ as the actors playing a major role in the credit derivatives market worldwide, three French banks (BNP Paribas, Société Générale and Calyon) consistently rank between tenth and twenty-second from 2002 to 2005. French banks are acknowledged in FitchRatings' special report (2006) to be "the biggest players in the European Credit Derivatives market". Moreover, the type of study conducted in this paper requires a refined analysis of the institutional context, which is difficult to achieve on a global basis. French actors offer an interesting standpoint from which to understand the structuring of the European Credit Derivative Markets.

We drew upon two main sources of data: interviews and secondary sources such as documents, archival materials and professional press articles.

Informants

The central activity for data collection was individual interviews with each of the targeted informants. As in MacKenzie and Millo (2003) and MacKenzie (1990), interviewing was necessary because neither financial/trade press sources nor archival sources were sufficient in addressing our research questions. Various categories of actors were interviewed: traders and market practitioners in banks, regulators and experts in Paris and in London. The actors interviewed were members of the Commission Bancaire (the Banking Commission), la Commission de Contrôle des Assurances (the Insurance Control Commission), l'Autorité de Régulation des Marchés Financiers (the Financial Market Regulating Authority, the SEC equivalent), the ISDA⁵, and different banks (Société Générale, BNP Paribas, Exane Asset Management, Fortis Banque). Financial market experts, legal experts and economists were also interviewed. A total of 35 interviews were conducted: 8 with the regulators, 14 with traders from investment banks, 4 with mutual and hedge funds, 3 with insurance companies, 2 with members of ISDA and 4 with experts. Interviews were semi-structured and focused upon the most important actors in the market, the analysis of their activities and their relationship with regulatory and normalization institutions. This allowed us to gain an in-depth knowledge of the field and to compare and contrast the varying positions of the different actors in order to obtain a triangulated cross-section, thereby providing a certain degree of control over results through widening the range of data sources. Interviews lasted between 2 and 3 hours; they have been taped and transcribed. All the interviews involved the two researchers of this study so as to minimize interviewer bias (see appendix 1 for a complete list of interviews)

Secondary sources

Many categories of archival information were consulted. We reviewed the studies of the Banking Commission in France, FitchRatings publications, Bank of England publications, Bank of International Settlements and documents from ISDA (see Appendix 2 for a complete list of documents consulted). These materials confirmed the chronology of events, gave details not available from interviews and provided textual accounts of debates and discussions.

⁴ FitchRatings, Special report, Global Credit derivatives Survey, September 2006

⁵ International Swaps and Derivatives Association: the ISDA is a global trade association representing leading participants in the privately negotiated derivatives industry, a business which includes interest rates, currency, commodity, credit and equity swaps, as well as related products such as caps, collars, floors and swaptions. ISDA was chartered in 1985 and numbers over 650 member institutions from 44 countries on six continents. Its board is primarily composed of banks.

The secondary sources also included a review of press articles. Several sources were chosen. The criteria of specialization of the journals in the domain of financial information were selected. Three French professional sources were chosen: *La Tribune*, *l'Agefi* and the journal *Banque* (*Banque Magazine*, *Banque et Droit*, *Banque et Marché*). These reviews are those that are mainly read by the French professionals of financial markets. The articles were chosen from the study period 1996-2004. 1996 was the date from which the French media started to publish articles on credit derivatives. In total, 199 articles made up our data base, beginning with research on the term "credit derivative." Through these documents we were able to reconstitute events within the context of a procedural analysis.

2.2 Data Analysis

An overall pattern of market development emerged from a progressive interpretation of the data.

Following Miles and Huberman (1994) and Yin (1989), we arranged the data into a condensed, chronological account in order to produce a "facts database" for the creation of the market, chronicling the key facts related to the emergence and the institutionalization of the market. We then arranged the data using the following questions: What was the origin of the market? What type of resistance did the banks meet in developing this new market? What were the main crises and events on this market? What are the relationships between the actors? How is the role of technical devices and models perceived? These questions are an attempt to capture the "justificatory accounts" of different actors (Greenwood and Suddaby, 2006: 32) engaged in the legitimization and development of this market.

One of the authors, a specialist of finance, conducted a primary analysis of these accounts, first identifying sentences and words commonly used by actors to justify their activity and to explain the growth of the market. For example, references to *risk management*, *diversification of risks* but also to *size*, *volume of exchanges*, and market *liquidity* were made very frequently by banks. Using knowledge of the financial sphere, we identified and created an initial set of justificatory narratives, reviewed them carefully and interpreted the data using what we knew about the subject thanks to documents, press articles and interviews and the context within which the data were gathered (Berg, 2004; Greenwood and Suddaby, 2006). Through iterations between the data, narratives, and theory, we were able to analyze the work of promotion realized by actors. The interpreted data was organized to facilitate the analysis of the definition of norms and agreements, which permitted the acceptance and diffusion of credit derivatives. We were able to focus on six main themes. The first three refer to the means of legitimization: 1/ economic justification of the market, *i.e.* the efforts to show that credit derivatives are an instrument of risk management, that they contribute to a better risk allocation and to an improvement of the global financial system, 2/ lobbying dynamics, *i.e.* the efforts made by banks to promote the product, especially through legal qualification and to demonstrate the weak degree of risk which these products create for the different market actors and 3/ normalization and valorization processes, *i.e.* the will of the actors to give credit derivatives a recognizable framework and valorization devices. The following three refer to the obstacles encountered: 4/ a multiple layer environment, *i.e.* the absence of a common regulatory environment for credit derivatives, 5/ heterogeneity of cultural and technical equipment of actors, *i.e.* the absence of a common cognitive framework for the actors of the market, and 6/ conflicts of interests, *i.e.* the tensions and political conflicts between actors.

As the research progressed, we sought to verify the emerging categories by using other data sources, in particular, professional press articles. These data were collected after we had found the emerging themes from interviews, documents and reports. From the 199 articles analyzed (see Appendix 3), we created a dictionary for the entire corpus using computer-assisted textual analysis software (SPAD-T). We obtained 8854 words. After lemmatization, a dictionary of 73 words was organized. It was then possible to verify who the main actors of the market were and what their specific vocabulary was. Based on this analysis, we were able to observe that only certain types of questions are more particularly put forward by certain types of actors.

INSERT TABLE 1 ABOUT HERE

3 - Case Analysis

The process of the development of the credit derivatives market is presented first. We then go on to analyze the means employed by the actors to legitimize the market, as well as the different obstacles they face.

3.1 - The Credit Derivatives Market: History and Development

The first credit derivatives appeared in the early 1990's in the United States. Derivatives are typically financial instruments which are related to some risk, require little or no initial investments and may not be settled. While the risk of interest rate swaps resides in the movements of interest rates, and that of a commodity derivative is commodity price, credit derivatives would be written on the general credit risk of a reference entity. This risk would be materialized by the occurrence of certain events, called *credit events*, which include bankruptcy, failure to pay, restructuring etc. The innovation resides in isolating the credit risk from a loan in order to be able to trade it on the market. In this way, the creditor (purchaser of the protection) can transfer the associated credit risk to another party (the vendor of the protection) while still retaining the debt on his/her balance sheet. Typically, the protection buyer will pay a certain premium to the protection seller, receiving compensation in the case where a credit event occurs.

The primary purpose of credit derivatives is to hedge - a bank having exposure in a reference entity seeks to protect itself by buying protection from another. However, the development of an active market results in trades in credit derivatives involving the usual financial techniques, with the actors willing to acquire exposure in a reference entity selling protection in the hope of boosting their returns. Since neither the protection buyer nor the protection seller is required to actually hold the reference asset, actors may buy a protection irrespective of the amount for which they have actual exposure.

A description of the principal financial mechanisms operating in these different contracts can be found in the Appendix 4.

The principal actors in this market are large investment banks, insurance companies and mutual fund companies. While investment banks primarily act as protection buyers to hedge their own exposure, the development of the market allows them to sell protection according to their anticipations of the credit risk of various reference entities. Insurance companies and mutual funds are typically protection sellers, using credit derivatives as an instrument of diversification which they hope would generate interesting returns.

Other significant actors are regulators, who play an important role on the market. In France, they are organized in distinct bodies for insurance companies (Commission de Contrôle des Assurances (CCA), for banks (Commission Bancaire) and for management companies (AMF). The national regulators are also organized into international authorities, as part of the Joint Forum created in 1999.

Finally, the particular role played by the ISDA in the promotion and the development of the market should be noted. This global trade association representing leading participants in the OTC derivatives markets has over 650 member institutions from all over the world. As we shall see, its role in the development of new OTC markets is crucial and mainly takes the form of documentation production and promotion of new products.

While the appearance of the first true credit derivative is difficult to trace back, 1997 can be chosen as the starting point for the development of the market, at least in Europe. That year, JP Morgan proposed a reference model to price and handle credit derivatives, the so-called Creditmetrics model. In England, the ISDA had credit derivatives legally acknowledged as financial instruments, which launched the process of market development. Its ensuing growth was extremely rapid. From outstanding loans of 180 billion dollars in 1997, the notional amounts in 2004, i.e the amount subjacent to the contract on which the derivative products are written, reached a record volume of 5000 billion dollars, according to BBA (British Bankers Association) statistics. Estimates for the coming years suggest sustained growth. (See Graph 1)

INSERT GRAPH 1 ABOUT HERE

Figures for 2004, collected mainly by the Bank for International Settlements, give some indicators on the international evolution of the credit derivatives market. At the end of 2004, these represented a little under 7 % of the total market for over-the-counter derivative products traded worldwide⁶. Market evolution, slow to begin with, then more rapid, demonstrated good resistance to such occurrences as the Asiatic crisis of 1998, the wave of defaults during 1999-2003, and the major bankruptcies of Enron (2001), Worldcom (2002) and Parmalat (2003). London is the financial leader for this market, alone realizing more than 40% of transactions. A chronology that can be found in appendix 5 reveals the main steps of the development of the market.

⁶ See Bank of International Settlements, "Credit Risk Transfer", The Joint Forum, March 2005.

It must also be noted that despite the great number of potential actors, the market remains extremely concentrated. A survey carried out on a sample of 27 companies in 2004 by the Banking Commission, the Insurance Controlling Commission and the Financial Market Authority helped to reveal the structure of the market as well as the concentration on the French market.

INSERT TABLE 2 ABOUT HERE

3.2 Legitimizing credit risk as a financial marketable risk

Although always keen at emphasizing the rapid growth of the market for credit derivatives, promoters of the product are not very convincing when they argue that credit derivatives stem purely from a demand from investors. The emergence of the market is more credibly described by understanding how the innovation was first conceived by engineers from large business banks as an extension of the financial theory of risk. To understand the process by which this innovation then tried to attract enough audience to become a real derivative market we proceed in three parts.

First, we show that credit derivatives have both advantages and drawbacks if we consider the representations of the different types of actors (see Appendix 6). This results in conflicts of interest which oblige the promoters of the product to devote considerable resource to the development of the market. We document these efforts in a second part. Finally, we try to understand the obstacles which prevent credit derivatives from becoming the wide and liquid market that they need to be in order to legitimate the theoretical argument used to justify their very creation.

3.2.1 Conflicts of interests

Derivative markets of different kinds are known to have existed throughout the ages. Milestones of their recent development however include the creation of an options market in Chicago in 1973 and the rapid development of OTC currency and interest rate derivative markets in the 1980's (Knorr Cetina, 2005).

Conceived by engineers from large business banks, credit derivatives can be seen as the product of the extension of the financial theory of risk, to a risk that until now, was largely dealt with outside of the market. The innovation can only succeed if enough actors enter into credit derivatives trading, thus creating a market with the desired characteristics of transparency and liquidity. The problem remains that not all actors share the same concerns.

What are the interests at stake?

First of all, to have credit derivatives acknowledged as risk hedging instruments represented stakes with great immediacy for banks. Since 1988, and the Cooke ratio implementation, international regulation had made it obligatory for banks to cover the risk of their assets by sufficient capital which lessens the profitability for their shareholders. The management of risks through markets had therefore become a strategic activity.

“Credit Default Swaps were especially created to manage the risk as represented by important clients such as Renault and their credit lines. The technology was well known: it was that of the swap.” (A trader)

“It’s true that it was up to banks to do away with a part of the regulatory capital, which they saw to be excessive.” (An ISDA representative)

In addition to the particular interest of banks to manage credit risk through markets to alleviate prudential requirements, credit derivatives also offered them the more traditional advantages of financial innovations. They might be sold to new customers with comfortable margins because they were new, complex and at least to start with, not offered by all competitors.

“It all amounts to the cycle of innovation. To begin with, we want a margin, we want to be the first, then we want to create volume, the margins narrow, the system must be improved, for example by providing the possibility of doing on-line trading.” (A trader)

However, in the pursuit of their own interests, banks were confronted with different kinds of actors sometimes bearing contradicting concerns. Regulators can be mentioned first. Regulatory capital had indeed been defined in order to meet the regulator’s concern about systemic risk. From the very beginning, therefore, the regulator was bound to be cautious in the face of the banks’ argument in favor of credit derivatives:

“There are worries about mispricing (there are no good pricing models). Prudence is essential in a context where one is frightened of the weakening of the financial system worldwide. In fact the technique is quite simple when the underlying asset is unique and when it is quoted on an Exchange, but otherwise, we don’t have adequate instruments.” (A regulator)

Nevertheless, according to one regulator, the state of mind of different national and international regulators when faced with the arrival of new financial products could take one of two directions. Some had a positive attitude:

“They see the new product as something good, like a new way of exchanging, a way to complete the market in Arrow-Debreu fashion. This is the American way of seeing things and particularly that of Alan Greenspan who has boasted the merits of credit derivatives.” (A regulator)

Another conflict of interest between investment banks and regulators has to do with the protection of the individual investor. As Abolafia (1996) showed, the opportunism of financial market actors can lead to crises which, if they impact individual investors, could create waves of extremely restrictive regulations. It was therefore important for investment banks to convince the regulator that the individual investor’s interests were protected.

“The risk of asymmetries of information is real as the bank retains a higher degree of information than its correspondent. The buyers do not really have the same means at their disposition as vendors of risk. (...) the question is: are we not again going to transfer risks towards households and businesses? (...) In a period of prosperity, they (credit derivatives) boost performances, which attract subscribers. Only, there have been examples of unfortunate experiences in certain European countries (for example in Italy with Parmalat shares and individual investors turned to the banks for explanations) (...) The Italian example is not reassuring from this point of view.” (A regulator)

The refusal by the Spanish authorities to allow mutual funds in Spain to subscribe to credit derivatives is an example of regulator caution in this respect. In France, the AMF gave authorization very carefully. Only 20 management companies out of the 520 operating in Paris have so far received authorization.

Although it is of interest to convince non-banks to enter the market, promoters also found it hard to persuade insurance companies of the interest of credit derivatives. Insurers tended to suspect American banks of having created the market in the first place in order to transfer their bad risks to European insurance companies – who would be at a disadvantage through the asymmetry of information. This circumspect attitude, which seemed to have originated in a few unfortunate affairs dating from the early days of the market involving re-insurers and insurers,⁷ led them to almost completely leave the credit derivatives market which had become quite illegitimate in the industry.

“The insurance companies do not see any real interest in this market, they have the impression that the market is not very liquid, has not reached maturity, and they are not very keen. Insurance companies are not promoters of credit derivatives.” (A regulator)

“These products are somewhat diabolized by insurance companies. They are not put to the forefront in financial communication. Insurance companies are afraid that their stock exchange price will fall if they communicate about using credit derivatives; there is considerable mistrust. It must be said that the heart of the job of insurance companies is to provide people with the rates they promised.” (A regulator)

While the conflicting concerns described in this section prevent the mathematical theory of financial risk from being easily spread beyond the borders of the banking industry, the competition between banks rendered promoting coalitions fragile and unstable. Different factions on the ISDA committee argued over the definition of certain clauses⁸.

Furthermore, the role of the ISDA was sometimes challenged by banks, who certainly had an interest in creating a common position, but who, at the same time, would not mind eliminating competition:

“JP Morgan would like to be the great forum, but they also know they couldn’t completely achieve this aim. JP Morgan and Deutsche Bank, respectively represent 20 to 30% of the market for structured products, four or five others sharing the rest of the market. This, in fact, is what we see on the indexes, two groups but in the end a fusion. The ISDA has become rather formal and the process is not very rapid. In some way, they are victims of their own success, imbalanced by the weight of the necessary procedures.” (A trader)

“The role of the ISDA was very important in the construction of the market, but today, there is a lot of discussion. I have let them drop a bit.” (A trader)

Lastly, within the banks themselves, credit derivatives were debated between traders and some boards. Traders saw credit derivatives as a sensible extension of the market management of risks and the boards, especially those in charge of risk control, saw a need to be much more cautious. Conflicts of interest were clearly at stake here, since the traders saw an opportunity to earn important bonuses from the activity, while controllers, according to their own mission, tended to take a conservative position.

⁷ The insurance and reinsurance actors have been the largest recipients of credit risk transferred from other sectors. Some regulators have expressed worries about the (re)insurance sector’s growing exposure to cross sector credit risk transfers. These worries also extended to the commercial rating agencies and other market watchers. This has sparked some responses from the reinsurance industry. For example, on November 2001, the French reinsurance group SCOR had discontinued its credit derivative insurance activities. However, it had increased loss provisions by 30 millions euros to 131 millions euros in the third quarter of 2002 and it had taken an estimated 2.5 years for the exposure to run off.

⁸ See the debate regarding the modified restructuring versus modified modified clause. Bank of International Settlements, “Credit Risk Transfer”, The Joint Forum, March 2005, p 31.

“Internally, there was strong resistance to these products.” (A consultant)

“Obviously, the problem is the trader who sells nuclear waste, and then once the bloke is irradiated he finds the trader has already taken off with his bonus in his pocket.” (A trader)

3.2.2 Promotion of the market

Although the marketization of credit risk might seem quite sound within the cognitive framework of inventors of the product, we have seen in the last section that the necessity to rally non-bank actors is hampered by the existence of quite strong conflicts of interest between promoters of the product and the regulators, customers and risk controllers. Hence, we see the necessity for the former to enter into a huge effort of promotion in two main directions. In the following sections, we will document these two directions. First, we will discuss the lobbying process conducted by investment banks to support credit derivatives. Second, we will study how promoters of the market tried to perform the financial theory of risk.

The lobbying process

In their attempt to rally the financial community around their doctrine, engineers from large business banks devoted a good deal of effort in demonstrating how credit derivatives could be considered as a derivative like any other.

When one of his colleagues had just stated that the market starting point depended on the desire of large investment banks to respond to the hardening of international banking regulations in 1998, a representative of the ISDA stated:

“I am not sure that this was the starting point. (...)The market existed before (...) Another reason for the birth of the market was the relative blockage of the interbanking market. Banks played on a market of concentrated swaps and the counterparty risks were great. Credit derivatives appeared as an instrument of risk diversification (...) It was also one way of offering certain clients higher returns by proposing tailor-made products.” (An ISDA representative)

Other affirmative voices supported the same view:

“What is important is to create new products for investors. We are always looking for new kind of assets. All this is a question of diversification.” (A trader)

“To begin with, it was a question of hedging. Then followed acceleration in the market which came from the question of investments.” (A trader)

Once the functions of the instruments had been defined, it was necessary to convince the other actors:

“It was primarily a question of discussing with clients, of education, of de-mystifying or popularizing complicated documentation.” (A trader)

“Very few people really understand what credit derivatives really are (...) To establish a legitimacy of the market, we lobbied, did demonstrations to explain how it worked to clients, we organized conferences within the *AGEFI* framework – a formidable lobbying mechanism. We also published articles in the *AGEFI* and in *Banque et Droit*. We experienced all, in terms of clients – especially mutual fund companies.” (A trader)

An analysis of the specialized press permits a quantitative evaluation of the effort made by banks to convince potential clients. Between 1996 and 2004, 77% of the articles written by professional financiers publishing as experts in the specialized press, were devoted to the presentation of credit derivatives as instruments of great risk management performance with 35% of the articles coming explicitly from banks. (see Appendix 3)

While acquirers and potential vendors of protection were informed of the advantages of the products in terms of financial risk management, banks focused on the idea that the creation of a credit derivatives market contributes to a better global allocation of the risks and to a reinforcement of international market stability. The way in which the international financial system had resisted against the large bankruptcies of Enron and Parmalat was often held up as implicit proof that credit derivatives contribute to greater stability.

“In any case, the large defaulters (Enron, Worldcom) have not engendered major problems.” (A trader)

“Anyway, after what has happened, we cannot see what could be worse than, Enron or Parmalat. The credit for derivatives contributed much in halting the systematic risk: proved soundness, good functioning beyond all hope.” (A legal expert)

This said, the question of the contribution of credit derivatives, either to the diminution or to the augmentation of systematic risk, was not considered settled:

“Do the credit derivatives augment or diminish systematic risk? This is talked about amongst ourselves or with others in the bank – those who are in charge of regulations or high-up managers. (...) As for myself, I do not have much of an opinion on the question. Positively speaking, there is diffusion of credit risk. Negatively speaking, the concentration between so few actors or on certain sectors of the market can be a problem.” (A trader)

Of course, this uncertainty was felt by the regulators who also had reservations; hence the importance of targeted actions of promoters towards regulators, which was a second, somewhat stronger, form of lobbying.

The specificity of the credit risk - a risk materialized by the arrival of a specific event - could lead one to consider credit derivatives as a kind of insurance contract. It was incumbent on banks to combat this vision for two reasons. Insurance contracts fell under the insurance monopoly and cannot be treated by banking actors. Besides, the qualification of credit derivatives in financial products would allow mutual funds, especially hedge funds, to access these products. This was seen as necessary for the development of a market which, in order to exist, needs sellers of protection as well as buyers.

Promoters of credit derivatives chose to approach the issue of regulators by gathering within ISDA. The fact that in June 1997 the ISDA succeeded in obtaining the legal decision they wanted from Robin Potts QC⁹ that credit default swaps were not insurance contracts but financial products, was unanimously acknowledged as one of the great successes of the organization; what was at stake was of primordial importance.

⁹ Robin Potts' employer is the London based international Law firm Allen and Overy, which shares a common address in London with the ISDA European Office, One Bishops Square, London E1 6A0.

“This point is essential as a bank cannot sell insurance. Without this “Potts’ opinion”, there would have been no market at all. This clarification was essential. The question of the qualification of the product had quickly been posed by the Financial Law Panel of the Bank of England (the regulator at that time).”
(A representative of the IDSA)

The intensity of the debate around the legal qualification of credit derivatives was also illustrated in France by the fact that a law thesis was devoted to the question in 1999 (Gauvin, 1999). The author, A. Gauvin maintained in later research in 2003 that credit derivatives could come under the gaming and gambling laws – a problem which was also mentioned at the moment the options market was opened in Chicago, as underline MacKenzie and Millo (2003). Gauvin noted the way in which both French and British legal systems rejected this legal qualification and attributed the result to the victory of economic matters over purely legal thinking :

“The strength of financial stakes which (derivative products) represent is such that their being put into question in a given financial place or a particular country could have harmful consequences for the banking industry and local finance.”

In France, the debate on the legal qualification of credit derivatives had also become focused on the possibility given to the Mutual fund companies (OPCVM) to use credit derivatives. This access of Mutual funds, of critical importance to promoters of the product, was validated by decree on December 10, 2002 after four years of discussions and consultations. It expressively authorized Mutual funds to sign credit derivatives as over-the-counter contracts. Welcomed by promoters of the product, this decree was not unanimously embraced by others:

“Our lobbying achieved its target: credit derivatives are no longer qualified as credit operations and no longer come under the banking monopoly. The legal qualification debate has been resolved.” (A trader)

“The decree casts aside the legal qualification of credit derivatives.” (A. Gauvin, Interview at the AGEFI, December 5, 2002)

However, lobbying of regulators by investment banks did not only concern the qualification of credit derivatives, but also the degree of risk which these products created for the different market actors. To get credit derivatives accepted as instruments of risk diminution, banks naturally turned towards national regulators.

“To begin with, it was a question of credit establishments wanting credit derivatives market instruments legally recognized. Banks laid siege on supervisors to obtain a reduction in capital charges off their balance sheet (...). To begin with, the approach was not coordinated internationally. There were informal discussions but each country chose its own way of dealing.” (A representative of the Commission Bancaire)

“The Société Générale is a very powerful actor which does a lot of lobbying. The doctrine of the Fédération des Banques Françaises comes from the Société Générale lobby. They impose their way of seeing things on everyone and some – mostly competitors – complain about the fact.” (A legal expert)

At the international level, banks chose to put their weight against the regulators within the ISDA in order to reduce the regulatory capital charge levied on them. The IDSA had very significant means at its disposition:

“At a global level the ISDA has colossal clout, they pay lawyers worldwide, all the profession joins, and they lobby the regulators.” (A trader)

Making propositions directly to the Basel Committee and the national regulators, the ISDA fought particularly to obtain recognition of internal evaluation models¹⁰ by the regulators of the Basel 2 framework. The combat ended in defeat but has today led to renewing efforts to obtain satisfaction in Basel 3.

“Within the framework of a working group preparing Basel 3, the ISDA will produce a study showing the growing convergence of models, which increasingly achieve the same results. Concerning Basel 2, the ISDA is not in a position to react on the chosen model.” (A representative of the ISDA)

Attempts to perform the theory

A key argument for the legitimization of the credit derivative market hinged on the capacity of the market to rapidly become liquid and transparent, thereby providing reliable prices for credit risk. With the purpose of performing the theoretical claim on which credit derivatives were created, banks thus decided to join together in 2002 in order to produce standard product indices. The construction of indices is common practice in financial markets. Stock Market indices are a well-known example. In the same way, credit risk indices would give clear signals to the market on the credit risk market price. The idea was to use the relative standardization of the leading product - the CDS - in order to create a basket of CDS's dealt worldwide, and to furnish an average price of the operation which could be referred to at any moment. JP Morgan and Morgan Stanley were the first to independently launch two indices constructed from the CDS market in 2002. In 2003, these two indices joined together and created the TRAC-X, whereas another group of actors (which included Deutsche Bank, ABN Amro, then Citigroup and Société Générale) launched, in competition, an index called iBOXX. In April 2004, the two competing indices joined up again. The aim of this alliance was to ensure a sufficient quantity of exchanges to guarantee the liquidity of the index – a condition of its reliability and thus of an efficient structuring of the market.

The performance of the theory is also attempted through the organization of the market in two distinct market segments, with the first participating in the legitimization of the second. The first segment is one of standardized products, where the aim is to develop and maintain transparency and liquidity. CDS represent the majority of that segment, which investment banks include in what they call flow markets.

“Market techniques have been standardized; the ISDA has declared what options are possible. We chose termly dates in order to have more liquidity.” (A trader)

“In 2003, CDS trading joined together with Bond trading: i.e. flow credit.” (A trader)

As the development of this standardized segment impairs margins, investment banks also continue to develop a second market segment, consisting of structured products, otherwise known as tailor-made. The success of the less profitable flow segment thus appears necessary to the segment of structured products. Its liquidity, if sufficient, validates the applicability of the financial theory of risk to credit risk by providing an observable market price for risk.

¹⁰ In other terms, the doctrine of the ISDA is that it should be the banks themselves who define the method of calculating the risk represented by their activities in derivative products. Regulators remain reticent when faced with the use of internal models. The key reason for disagreement is the absence in the case of credit derivatives of an independent liquid and transparent market for credit risk.

Practically, despite the efforts to produce market prices that could serve as quotes (which are transmitted to all banks through means fine-tuned by Lombard, BNP in the form of a Reuters page, or by JP Morgan in the form of a Bloomberg function) doubt remains on the reliability of the obtained data.

“It’s an over-the-counter market, more or less liquid. The sales argument here is one of liquidity but it’s wishful thinking.” (A regulator)

“Each bank to its method: mark-to market prices remain somewhat divergent.” (A trader)

To sum up, promoters of credit derivatives engaged in a tremendous endeavor to support the theoretical arguments by which they justify the interest of the product. This endeavor took the form of an active lobbying process towards costumers and, in a more formal way, towards the regulator. It also materialized in an attempt to perform the theory by the creation of indices and flow segments. Despite all these efforts the transfer of the mathematical idea, which was at the root of the credit derivative innovation, onto real markets was not without difficulties. Insurance companies were reluctant to participate, mutual funds remained badly restricted, internal models had been rejected by Basel 2, regulators were not too keen and market liquidity seemed difficult to attain. The obstacles to the promotion process will be the topic debated in the next section.

3.2.3 Obstacles to the promotion process

A first obstacle to the legitimization process led by investment banks was found in the very technicality of the use of the financial theory of risk required to assimilate credit risk to a typical financial risk. The extension proposed by engineers was actually not as straightforward as the mathematics seemed to imply. This appears all too obvious when one considers the valorization problem. Setting a tariff on credit risk which is by definition unobservable and difficult to evaluate, could not be done by directly importing the methods of the theory of financial risk. To help overcome this difficulty, JP Morgan publicized, on April 2, 1997, CreditMetrics, “the first portfolio model destined for the management of credit risk.” The model followed the RiskMetrics model, which JP Morgan had already tried to impose as a standard for the management of financial market risks. The aim, according to JP Morgan, was to make a tool available which would facilitate the understanding and use of new credit risk management instruments, which “until then, had been little known and poorly mastered when compared to other market risks.” For this operation JP Morgan explicitly declared that it wanted to “promote transparency on the different credit risk markets”, “improve liquidity on these markets and encourage an overhaul of the regulatory framework in which the main rules of capital adequacy did not satisfactorily reflect the economic risks to which financial institutions were exposed.” The ambitious project failed and CreditMetrics never played the unifying role that JP Morgan had dreamed of. Banks continued to resort to internal models, on which they are reluctant to deliver information.

Overall, one must note the considerable heterogeneity of the models in use. This speaks for the difficulty of reliably assessing credit risk, which altogether weakens the thesis of the promoters of credit derivatives. The failure of the ISDA to have the Basel 2 regulator acknowledge the use of internal models for credit derivatives was a consequence of this perceived difficulty. It also illustrated the fact that, when it comes to valuation, the adaptation of the financial theory of risk to credit risk remains remarkably tricky.

In the transfer of the technical idea behind the credit derivative innovation on real financial markets, a second difficulty is found in the need for a very precise definition of how the products will work in practice on a market that is a pure over-the-counter market. The necessity to give credit derivatives a reliable technical and legal framework led the promoters of the product to act through the ISDA.

This resulted in the *2002 ISDA Master Agreement* becoming the standard form governing future transactions. On the February 10, 2003, the ISDA renewed its documentation relating to credit derivatives by publishing new definitions - the *2003 ISDA Credit Definitions* – explicitly designed to facilitate exchanges, reinforce transactions, help market growth and increase market liquidity.

“The first market problem was the absence of formalization of frameworks and definitions. It was therefore urgent to put ISDA documentation in place. ISDA norms represent a common language.” (A trader)

“We carry out actions concerning actions of normalization, of documentation and respond to Joint Forum and FSA reports. The ISDA is also very active, working alongside the Commission Bancaire in France and has assisted national and international regulators. But the role of normalization in order to render the market more liquid is by far greater than that of influence on the regulations.” (A representative from the ISDA)

During the development of the market, and generally as a result of legal disagreements, the specificity of the product forced the ISDA to change its product definitions several times.

“The pragmatic approach of the ISDA must be praised: every crisis, incident or dispute is an opportunity to re-consider and to improve the documentation. The ISDA has demonstrated its great flexibility and its ability to adapt to events. The construction and use of framework-conventions permit a harmonization of operations and thereby ensure they are more secure and more fluid.” (A legal expert)

“Certain crises and disputes such as the Consecro, RealTrack, Parmalat, and LTCM affairs and the crisis in Argentina meant we had to re-examine the documentation. The ISDA has worked very hard to clarify things – in particular those which concern the credit event that trigger the credit derivative payments, as we have examples of cases in the U.S. where credit derivatives payments were unduly asked – without the default being acknowledged by the two parties.” (An ISDA representative)

These adjustments illustrate the legal effort necessary to give practical content to the mathematical idea that gave birth to credit derivatives. The reinterpretation of credit risk through the theory of finance requires mathematical competencies, but these are only the starting point for a financial market-to-be. Without further interpretation involving the development of a legal terminology by highly skilled legal experts, and a continuous process towards the elaboration of norms, an OTC market can simply not come into existence.

Beyond concerns that were related to the financial product itself, such as valuation and definitions problems, obstacles to the promotion process also arose from the environment within which the market tried to develop.

Cultural and technical differences in equipment were often mentioned by bankers as a substantial obstacle to the spreading of credit derivatives beyond the banking industry. This problem could already be observed within banks:

“We often discuss the question of risk with our boss who used to be a trader before being head of our investment bank. With the ethics officers? No, never, they are completely at sea.” (A trader)

“It has to be said that it is a market of whodunits who have years of study behind them, who are engineers. They find it funny because it’s complicated and that credit derivatives are funnier than interest rate derivatives.” (A trader)

But more generally, putting into practice of the financial theory of risk supposed technical and human resources which all the market actors were not equally willing, or able, to make. In this respect, the Société Générale appeared as a particularly powerful and well-equipped actor among French banks, whereas JP Morgan represented the precursor in the promotion of the worldwide credit derivatives market. Thanks to their technical and human resources, these two banks had at their disposition a particularly vast capacity for innovation. This accorded them a key role in this market and a possibility of intervention which other actors did not have.

“The Société Générale has battalions of legal experts just like the American banks, a large number of legal PhD’s, who are really very good. Not only do they master the product technically but they are well organized.” (A legal expert)

“There has been an effort of systematic promotion by JP Morgan. They have been most regular in their efforts. They have put huge resources into manpower and technology and very quickly became very rapid in dealing with these products.”(A trader)

On the other hand, less well-equipped actors of the market also tended to exhibit different cultural approaches towards credit risk. Bankers, for example, complained about the way insurance companies regarded credit derivatives, seeing them as hardly concerned by the ISDA process and just as satisfied to apply their usual regulations. They explained the long lasting tendency of insurers to consider credit derivatives as rather “heretical.”

“Banks subscribe to a reactive state of mind, of immediacy, whereas insurance companies adopt a longer timescale for their transactions and contest regulations systematically.” (A regulator)

This concern also existed regarding regulators. Bankers complained about having to hand over accounts to regulators who did not always grasp the technical dimension of the product and did not reason in the same way:

“This is a new activity, very technical, conceptually disconcerting. One has to justify oneself frequently to the regulators and each others’ positions are often restricting when one considers the complexity of the product.” (A trader)

“The regulator does not understand the product very well, he doesn’t say it’s not allowed but he doesn’t say it is allowed either.” (A legal expert)

“The regulator’s power to bring prejudice is quite strong. The regulatory environment can be considered as an obstacle which slows business down. The biggest obstacle, in any case, is a cultural apprehension of many people who spend a disproportionate amount of time in controlling credit derivatives.” (A trader)

The difficulty in getting non-bank actors to understand the product was also recognized by regulators who feared asymmetries of information might impair the fairness of the deals.

“One does not know any longer where the risk is with credit derivatives. The asymmetry of information between vendor and buyer is considerable. Some buyers do not even know what they are holding in their hands.” (A regulator)

While these asymmetries were often seen by promoters of credit derivatives as counter-productive for the installation of the confidence necessary to the construction of the market,

their attitude towards them was somewhat paradoxical. Massively investing in what they call “pedagogical actions”, they were still suspected to protect some of these asymmetries in the pursuit of their own interests.

“The public at large does not have direct access to credit derivatives and is not always aware of the amount of risk which it represents. The difficulty is to get developed and adapted financial information. This is true for all markets but more so for credit derivatives as banks keep their ‘secret of fabrication’ close to their chest. But this is a technique which justifies having reference documents and as the banks release little information there is an absence of formatting.” (A regulator)

“Bankers have often overcharged insurers who were not aware of the size of the risk because they didn’t have enough technical knowledge.” (A regulator)

“This type of product contributes to the modification of the means of action and the attitudes of regulators. This poses the question of whether a separate set of regulations for banks, insurance companies and share markets would be pertinent.” (An economic expert)

To summarize, this section has exemplified two main obstacles that confront credit derivatives when it comes to the transfer of the conceptual into reality. The difficulties stem from the technicality of the product itself, which does not lend itself straightforwardly to valuation or definition. They also connect to environmental specificities such as the heterogeneity of cultural and technical equipments of the various market actors.

Finally, one figure itself embodies the strength of these obstacles. Despite the effort and resources devoted by their promoters to create a liquid and transparent market, despite the success of the ISDA in the production of norms and definitions, six main banks alone in the market continue to realize 50% of world-wide transactions. According to FitchRatings, the top ten counterparts in the world (all banks) represent 86% of the sold and bought volume totals¹¹. Credit risk can therefore not really be viewed as the object of an ideally efficient market involving many different kind of buyers and sellers in highly liquid transactions.

4 - Conclusion

In 1993, in a speech which has since often been quoted, Charles Sanford Jr. the CEO of Bankers Trust, put forward his vision of the financial market in 2020. Traditional finance would be replaced by “particle” finance providing a progress of the same nature as that brought about by quantum physics and molecular biology. In dividing up classical financial assets (a loan note, for instance) into risk particles (interest rate risk on the one hand, credit risk on the other), this new finance would permit us to “create order from apparent disorder, providing building blocks that would allow the more effective packaging and management of risk in an economy whose structure (is) constantly changing .” Thanks to financial markets which would become real markets of risk, “the amount of unwanted risk borne by individuals, institutions and the system as a whole” would be reduced in size. At the same time, quantification, pricing, the management and allocation of the usual risks and even of risks not covered today (as they are not exchanged on a market) would be improved. Even though credit derivatives were just emerging, and even though this wished for new finance seemed to

¹¹ FitchRatings, Special report, Global Credit derivatives Survey, September 2006.

him to be a distant aim at the moment of his speech, Charles Sanford Jr. named credit derivatives as the pioneers of this new way of envisioning finance and the economy.

In this paper, we have demonstrated the role played by this type of argument in the process of the construction of the credit derivatives market. Uncovering the support given by the financial theory of risk to the desirability of risk marketization allows us to provide an original perspective on the specificities of the social construction of the market for credit derivatives.

First, we have documented the process by which the promoters of the product try to convince the other actors of the interest of the innovation. To do so, they have to overcome numerous conflicts of interest. They primarily use lobbying in two main directions; using pedagogical actions to attract the attention of customers, as well as trying to impact on regulation, mainly using the ISDA channel. In the absence of any centralized authority for this market, the ISDA thus appears as a relatively informal coalition in charge of the defense of the interests of the main investment banks.

Second, we evidenced the coexistence of different cognitive frames on the market. It clearly appeared that the main task of the promoters of the innovation lied in trying to impose their cognitive frame (produced by the financial theory of risk) on the other stakeholders (Callon, 1998; Ferraro *et al.*, 2005). To use Callon and Muniesa's terminology (2005), the problem of the main investment banks as "calculative agencies" is their attempting to impose their "calculative device" on other market actors.

Third, although the market has developed extremely rapidly over the last decade, it remains highly concentrated in the hands of a few investment banks. This highlights the relative failure of the promoters of the market in their attempt to rally non-banks around their conception of credit risk.

This analysis of the market for credit derivatives contributes to unveiling the mechanisms of legitimization on financial OTC markets. On these markets, the absence of a central authority makes it necessary for innovation promoters to involve in original collaborative actions yet the coalitions they form tend to be fragile. Moreover, the formal role of these coalitions might be significantly different from their informal function. For example, although the ISDA's official responsibility is normalization, its actual task has much to do with trying to impact on regulation in favor of the main investment banks. Referring to Abolafia (1996), we are left to wonder whether coalitions such as ISDA have the capacity to efficiently prevent the market from opportunistic behaviors of the traders. Such behaviors might produce an increase of systemic risk, which might, in turn, lead to an extreme strengthening of regulation or even to the disappearance of the market. This leads to the question of the ability of the ISDA to overcome major crises of market legitimacy.

Our paper also reveals the extent to which the legitimization process of innovations on OTC markets requires actions on legal issues. As in MacKenzie and Millo (2003) and Zelizer (1979), we find that the very existence of the market is conditioned by the ability of its promoters to obtain the relevant legal qualification for the product. Since the frontiers between gambling, insurance and financial products remain somewhat vague (de Goede, 2004), the qualification as a financial product results from a process of social construction.

More fundamentally, we argue that the development of new OTC markets can only be understood if one fully acknowledges the role played by the financial theory of risk in the process. It is this theory that serves as a matrix for the innovations, allowing the marketization of risks and their objectification (LiPuma and Lee, 2005).

As the common reference for bearers of financial innovations, mainly engineers working in the large trading rooms of the main investment banks, this theory provides the justification for creating ever newer financial products embodying hitherto nonmarketed risks. It is only by rallying other actors to their vision that promoters of the innovation can succeed in fully marketizing risks. The reinterpretation of risks is thus at the core of modern financial innovations. More than performativity of a given valuation model as in MacKenzie and Millo (2003), we therefore observe attempts to perform the general financial theory of risks. These attempts however meet obstacles related to the stickiness of existing institutions. Differences in technical equipments but also in cultural and cognitive frames add up to political conflicts of interest. In the case studied, the observed attempts to perform the theory result in a relative failure.

Our contribution can be summarized in several points.

First, the analysis of the development of a new derivatives market provides much empirical support for Beck's theory that risks are socially constructed. In contradiction with the functionalist view of a pure offer and demand mechanisms, we document complex social interactions and processes in the construction of the very notion of credit risk necessary to legitimize the OTC market to-be.

Second, we find even more empirical support of another of Beck's perspectives. Financial innovations are indeed not tailored to provide solutions on how to diminish or eliminate risks. Rather, promoters of these innovations propose new ways to handle risks by exchanging them on financial markets. It is by changing the definition of risks and by reinterpreting them that they create new markets. This refers to Beck's emphasis on risks as the driving force of economic booms because they are "the interminable needs sought by economists" (1990 : 61). By unveiling the central role played by the financial theory of risk in this process, we propose new perspectives for the analysis of a set of contemporary phenomena. Attempts at having CAT-bonds, risks of attack or rights to pollute exchanged in financial markets as a way to manage risks in an economically and socially efficient way, could be analyzed according to the categories raised in this paper.

Third, we evidence that attempts to perform the theory are part of the social construction of the markets. However, performativity is difficult to obtain because of social interactions and processes which ensue (Miller, 2002). The mathematics that rules the financial theory of risk allows for almost any combination resulting in daringly innovative financial products. However, we show how difficult it is for those highly theoretical ideas to get embodied in the practice of financial markets. The stickiness of existing institutions, be they legal, regulatory, social or, even more crucially, cultural, makes it indeed challenging for financial innovations to get the acceptance they need, not only for practical development, but also for the validation of the theory according to which almost any risk can be marketed and exchanged as a financial product.

Finally, our paper enlightens the existence of conflicts of interests in the redefinition of risks. Private actors do play a crucial role in the regulating and normalizing processes involved and

their lobbying capacity is a key issue in ensuring that the strongest actors' interests prevail. This consideration raises a debate with Beck's general view that Societies of Risk have a tendency towards increased centralization and bureaucratic control. What we observe on OTC markets is on the contrary a certain withdrawal of the Central Authorities. General interest defense on these markets thus remains a widely open question (Sassen, 2005): Who preserves the common good? And who is responsible in times of crisis?

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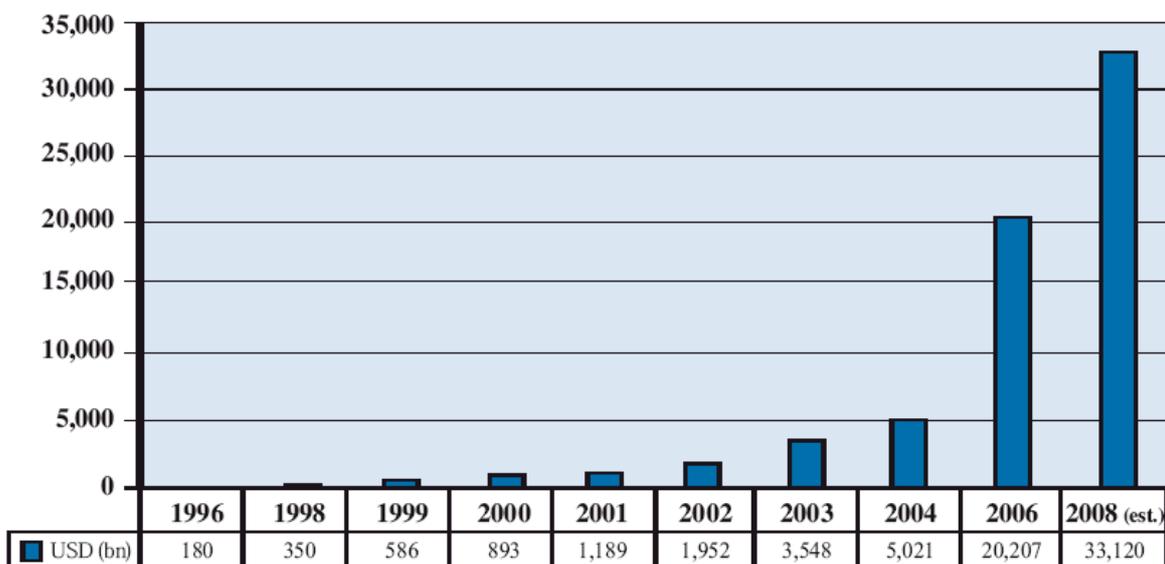
Table 1: Summary of main themes and data sources with illustrations and verbatims

	Themes	Data sources	Verbatims or illustrations
Means of legitimization	Economic justification	Interviews with traders and economic experts Press articles Books and reports (Ex : Fitch's inquiries)	<i>"This is a question of diversification. The credit derivatives market contributed much in halting the systematic risk"</i> Emphasis on risk management and risk allocation. Statistics on the development of the market.
	Lobbying dynamics	Interviews with regulators, traders, jurists and members of ISDA Books and reports Press articles	<i>"Our lobbying achieved its target. The legal qualification debate has been resolved"</i> <i>"The ISDA has colossal clout and they lobby the regulators".</i> A law thesis devoted to the question of the legal qualification of the product and that reflects the terms of the debates Emphasis on debates about the legal qualification of the product and about the risk diminution provided by credit derivatives.
	Normalization and valorization processes	Interviews with traders, ISDA and experts ISDA Reports	<i>"The first market problem was the absence of formalization of frameworks and definitions"</i> <i>"Market techniques have been standardized, the ISDA has declared what options are possible".</i> Definition of the Master Agreement and credit definitions
	Multiple-layer-environment	Interviews with traders and regulators Press articles	<i>"In an international context, one wonders who the qualified regulator is"</i> <i>"We are in an international competition, the legal basis is unstable, the rules can be interpreted in different ways, which are superimposed on top of each other"</i> Debates about the harmonization of the regulation

Obstacles to legitimization of the market	Heterogeneity of cultural and technical equipment of actors	Interviews with mutual and hedge funds, insurance companies, banks	<p><i>“The market has been well accepted by the actors. The regulator, on the other hand, is less convinced”</i></p> <p><i>“It has to be said that it is a market of whodunits who have years of study behind them, who are engineers. They find it funny because it’s complicated and that credit derivatives are funnier than interest rate derivatives”</i></p> <p><i>“ Bankers have often overcharged insurers who were not aware of the size of the risk because they didn’t have enough technical knowledge.»</i></p>
	Conflicts of interests	Interviews with traders, regulators, insurance companies, mutual funds. Press articles	<p><i>“The insurance companies do not see any real interest in this market, they have the impression that the market is not very liquid has not reached maturity, and they are not very keen. Insurance companies are not promoters of credit derivatives”</i></p> <p>Transcription of debates between banks, insurance companies regulators and mutual funds.</p>

Source: inspired from Greenwood and Suddaby, 2006 : 33

Graph 1 : Global evolution of credit derivatives market



Global Credit Derivatives Market \$bn

Source: From the British Bankers' Association Credit Derivatives Report 2006

Table 2: Credit derivatives notional amounts per category of actors (in %) by the end of June 2003

	<i>Banks</i>	<i>Insurance companies</i>	<i>Mutual funds</i>
<i>Purchase of protection</i>	99.4%	0.05%	0.55%
<i>Sale of protection</i>	99.5%	0.4%	0.1%

Source: Banque de France • RSF • Results of a French survey on instruments of transfer of credit risk. June 2004

Appendices

Appendix 1: List of interviews

Name	Date	Location
Rodolphe Sahel- trader	May 3, 2004	Paris
Richard Bruyère, expert	June 6, 2004	Paris
Ludovic Plas- trader	October 5, 2004	Paris
Richard Brague- trader	October 5, 2004	Paris
P.J, insurance company ¹²	October 6, 2004	Paris
Alain Duchateau, regulator	December 7, 2004	Paris
B.G, regulator	December 7, 2004	Paris
Benoît Sellam, regulator	January 18, 2005	Paris
G.D, hedge fund	January 18, 2005	Paris
Alain Gauvin, expert	April 5, 2005	Paris
Dominique Plihon, expert	April 6, 2005	Paris
Y.D, trader	April, 14, 2005	Paris
C.C, trader	April 14, 2005	Paris
Emmanuel Courant, trader- mutual fund	April 14, 2005	Paris
E.L, trader	April 15, 2005	Paris
R.C, trader	April 15, 2005	Paris
Michel Aglietta, expert	April 15, 2005	Paris
Anne Demartini, regulator	April 19, 2005	Paris
Fabrice Pansard, regulator	April 19, 2005	Paris
Nadine Rigutto, regulator	April 19, 2005	Paris
Gilbert Hibon, regulator	April 20, 2005	Paris
Patrice Aguès, regulator	April 20, 2005	Paris
P.C, insurance company	April 21, 2005	Paris
Pierre-André Julliard	April 21, 2005	Paris
H.T, trader	June 28, 2005	London
L.S, trader	June 28, 2005	London
Regis Copinot, trader	June 29, 2005	London
P.J, trader	June 29, 2005	London
F.P, trader	June 29, 2005	London
Emmanuelle Setbon, ISDA	June 30, 2005	London
Richard Metcalfe, ISDA	June 30, 2005	London
R.T- hedge fund	June, 30, 2005	London

¹² Some actors preferred to keep their anonymity.

Loïc Fery trader	July 1, 2005	London
Hubert Le Liepvre, trader	July 1, 2005	London
T.F, -hedge fund	July 1, 2005	London

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Appendix 3: Repartition of articles analyzed

Actors	Number	% / Total
Rating agencies	14	7,04
Insurance companies	11	5,53
Other categories	3	1,51
Banks	65	32,66
Stock Exchange	6	3,02
Legal experts	13	6,53
ISDA	22	11,06
Regulators	39	19,60
Hedge and mutual funds	26	13,07
Total	199	100,00

Appendix 4: Types of credit derivatives

The credit derivatives being currently used in the market can be broadly classified into the following:

Credit default swap:

In a credit default swap, the protection seller agrees, for an upfront or continuing premium or fee, to compensate the protection buyer upon the happening of a specified event, such as a default, downgrading of the obligor, apprehended default etc. Credit default swap covers only the credit risk inherent in the asset, while risks on account of other factors, such as interest rate movements, remains with the originator.

Collateralized debt obligations or CDOs:

Collateralized debt obligations or CDOs are a form of credit derivative offering exposure to a large number of companies in a single instrument. This exposure is sold in slices of varying risk or *subordination* - each slice is known as a tranche. In a cashflow CDO, the underlying credit risks are bonds or loans held by the issuer. Alternatively in a synthetic CDO, the exposure to each underlying company is a CDS.

Other more complicated CDOs have been developed where each underlying credit risk is itself a CDO tranche.

Total return swap:

As the name implies, a total return swap is a swap of the total return out of a credit asset against a contracted prefixed return. The total return out of a credit asset can be affected by various factors, some of which may be quite extraneous to the asset in question, such as interest rate movements, exchange rate fluctuations etc. Nevertheless, the protection seller here guarantees a prefixed return to the originator, who in turn, agrees to pass on the entire collections from the credit asset to the protection seller. That is to say, the protection buyer swaps the total return from a credit asset for a predetermined, prefixed return.

Credit linked notes:

Credit linked notes are a securitized form of credit derivatives. The technology of securitization here has been borrowed from the catastrophe bonds or risk securitization instruments. Here, the protection

buyer issues notes. The investor who buys the notes has to suffer either a delay in repayment or has to forego interest, if a specified credit event, say, default or bankruptcy, takes place. This device also transfers merely the credit risk and not other risks involved with the credit asset.

Appendix 5: Chronology of main events on the market

1988: Basel 1 agreement (Cooke agreement) : core principles for banking regulation and particularly credit risk. International regulation makes it obligatory for banks to cover the risk of their assets by sufficient capital. (*The Basel committee on Banking supervision is a committee of banking supervisory authorities which was established by the central bank Governors of a group of ten countries in 1975*)

1992: ISDA first uses the term "credit derivatives" to describe a new, exotic type of over-the-counter contract

1996: Law n°96-597 de “modernisation des activités financières”, that contains the regime applicable to financial instruments in France

1997: Robin Potts opinion : legal decision that mentions that credit default swaps are not insurance contracts but financial products

1997: Development of Credit Metrics model, by JP Morgan: a portfolio model destined for the management of credit risk.

1999 Gauvin law thesis devoted to the question of the legal qualification of credit derivatives

1999: Joint Forum for Financial Stability

1999: First Credit derivatives definitions issued by ISDA

1999 - 2003: Wave of crises and defaults : Railtrack, Parmalat, Enron, Consec, Worldcom, Pacific Gas & Electric, Argentina...

2001: Basel 2 agreement : definition of the part of the regulatory capital for banks

2001: French reinsurance group SCOR discontinued its credit derivative insurance activities.

2002: ISDA Master Agreement : the standard for governing future transactions

2002: French decree on December 10. Possibility given to the mutual fund companies to use credit derivatives.

2002: Construction of indices by banks.

2003 ISDA Credit Definitions : renewal of the documentation relating to credit derivatives, to facilitate exchanges, reinforce transactions and increase market liquidity.

2003: Creation of TRAC-X : JP Morgan and Morgan Stanley’s indices join together.

2003: Creation of iBOXX, an indice launched by Deutsche Bank, ABN Amro, Citigroup, Société Générale

2004: iBOXX and TRAC-X join together: to ensure a sufficient quantity of exchanges to guarantee the liquidity of the index

Appendix 6: The most represented words for each category of the actors of the market

A text analysis was conducted on 199 articles dealing with credit derivatives. From this data set, we extracted 8854 different words. We proceeded to a manual selection to keep out a set of terms related to the domain studied. 73 “root” words have been conserved (risk, index, valorization, investor, regulation, AMF, credit risk, diversification, transparency...), integrating some 110 equivalences.

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For example, we observe that insurance companies are mostly associated to “loss” or “uncertainty” whereas hedge funds or mutual funds are associated to “decree”, “law”, “regulation” or “transparency”.

Insurance companies	SCOR–loss– technicality- growth–rating– uncertainty- downgrade- bargaining
Banks	Index – JP Morgan – return – liquidity – Enron – signature - credit risk- Standardization – risk - diversification accountable– costumers – risk management - credit risk management- credit default risk
Experts-Legal experts	legal – security– regulation – decree - Systemic –default–law– uncertainty- Authorities – Enron –hedging– information - technicality – Basel committee
ISDA	Outstanding notional amount –growth– documentation - rules- credit risk management- Volume – segment - credit risk
Regulators	Valorization –control –risk transfer–documentation – volatility – credit default risk– norms – risk - regulation – crisis- confidence - innovation
Hedge Funds-OPCVM	Decree – law – AMF –legal– regulation - qualification Performance – volatility – security – arbitrage –rules- AMF approval Debate – transparency –protection –return Investor - segment

Interpretation:

We only keep the words that have a significant t-test equivalent to a statistically significant difference between the mean frequency score for the class and the sample.

- Significant to 5%
- **Significant to 10%**