

场外金融衍生品的 风险及其管控研究

Study on the risk and risk-control
of OTC financial derivatives

于凤芹 著



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于凤芹 著

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摘要

场外金融衍生品市场，因为其客制化的突出特点，自产生后迅猛发展，目前已经成为全球最耀眼、最重要的金融市场。根据国际清算银行的统计，2014年6月，全球场外衍生品未平仓合约总量691万亿美元，约为同期场内市场的9倍；而2000年6月，场外衍生品市场的规模仅94万亿美元，14年间增加了6倍。其发展速度之快，规模之大，举世瞩目。

然而，在该市场迅速成长的同时，其蕴含的风险也越来越引起世人的关注。1998年，长期资本管理公司在利率互换与债券的套利交易中蒙受巨大损失而被接管；2007年，引爆美国次贷危机的CDS、CDO等金融工具，正是场外金融衍生品的典型代表；甚至2009年浮出水面的希腊债务危机，也可以追溯到2000—2001年，希腊与高盛等投行签订的一系列货币互换协议。事实证明，场外金融衍生品不仅是金融创新的产物，是转移、分散金融风险的有效工具，更是金融风险的源泉，是累积、扩大金融风险的有效渠道。只有弄清楚场外金融衍生品市场的风险与风险演化机制，并且有针对性地进行风险管控，才能够更好地发挥其管理风险的基本功能，为经济的发展和投资者的需求服务。

中国的场外金融衍生品市场起步较晚，但是发展很快。随着人民币利率、汇率的逐步市场化，自2005年开始，中国人民银行在银行间市场相继推出了一系列利率和汇率衍生品，2010年又推出信用衍生品，为市场提供对冲各类金融风险的衍生工具。截至2014年12月，我国场外市场拥有3种利率衍生品，4种汇率衍生品和2种信用衍生品，场外金融衍生品体系已经初步形成。

由于我国的场外金融衍生品市场尚处于初级阶段，品种较少，结构简单，因此并未发生风险事件。但是，国内企业参与国际场外衍生品市场铩羽而归的案例不在少数。2004年12月，中航油新加坡公司由于从事场外期权交易损失5.5亿美元而破产；2008年，深南电、中信泰富、九龙建业、东航集团和中远集团等多家企业，皆因涉足场外结构化产品而蒙受几亿甚至十几亿美元的巨额

损失。所以,研究场外金融衍生品市场的风险及其风险管控机制,不仅能为国内该市场的进一步发展提供借鉴,更重要的是能给国内市场的投资者提供警示,以便其今后更好地使用这些工具。

党的十八大提出了“发展多层次资本市场”的政策目标,努力构建服务实体经济需要的金融制度与体系。场外金融衍生品是金融产品的高端领域,场外金融衍生品市场是多层次资本市场的重要组成部分。研究它的风险与风险管控问题,对于发展我国多层次资本市场不无裨益,对于构建我国现代金融体系具有显著推动作用。

本书以场外金融衍生品的风险与风险管控问题为重点,共分为九章。第一章是文献梳理、研究背景、意义和研究目的等,为整个研究设计框架、做好铺垫。第二章从时间维度,介绍全球范围内场外金融衍生品从产生到现在的发展脉络,以及主要的产品体系,同时介绍了我国该市场的发展现状,最后做了中外的比较研究。第三章从空间维度,关注场外金融衍生品的市场结构,包括参与主体、交易平台、清算机制和产品开发、交易流程,使读者对场外金融衍生品市场的运行有综合的认识和了解。第四章至第八章,是本研究的核心部分,其中第四、第五两章是理论分析,第六章是实证分析,第七章、第八章是对策研究,第九章是结论与展望,总结全文。

详细地说,第四章分析场外金融衍生品与微观风险,场外金融衍生品既可以转移、分散风险,自身又蕴含着多种风险。更重要的是,参与主体的高度集中导致风险的高度集中,在杠杆的作用下,一个机构的损失会放大多倍,并在多个机构之间传染;在信息不透明的情况下容易造成交易者的信心崩溃和整个市场的恐慌,微观风险演化为宏观风险,非系统性风险升级为系统性风险,严重时造成金融危机。风险演化机制的分析是本书的亮点之一。

第五章分析场外金融衍生品与宏观风险。场外金融衍生品不仅可以对冲宏观风险,同时还是国家宏观经济调控的有效工具;最重要的是,在金融危机爆发时,中央银行可以利用场外金融衍生品击退投机者,稳定市场。同时,场外金融衍生品在交易中转移风险不当会加剧金融体系的脆弱性,产品的过度创新容易导致衍生品与实体经济脱节。由于市场之间的连接,一个市场的风险往往在多个市场之间迅速扩散,不仅会引发金融危机,而且会增加危机的破坏性和处理难度。场外金融衍生品累积、扩大宏观风险的机制分析是本书的亮点之二。

第六章以我国14家上市银行为样本,实证检验从事场外金融衍生品交易对银行收益和风险的影响,这是本书的亮点之三。依据整体样本的实证结果,

场外金融衍生品的规模（名义总价值）显著影响商业银行的收益和风险。交易规模越大，银行净利润水平越高，银行整体风险水平越低。这意味着，整体上我国商业银行利用场外金融衍生品进行套期保值的动机比较明显，衍生品交易普遍地规避了银行的风险、扩大了银行的收益。截至本书完成写作时，以我国上市银行为样本，进行场外金融衍生品研究的成果尚未出现。

第七章与第八章是风险的管控机制。无论从哪个角度看，场外金融衍生品都是一把锋利的双刃剑。因此加强对风险的管控，使其发挥管理风险的基础功能，为实体经济服务显得非常迫切。第七章的重点是外部的金融监管和微观主体内部的风险控制机制。监管情况包括危机后全球金融监管的最新动态，美国、英国和欧盟等代表性国家及地区的监管改革以及我国的监管框架，同时分析了国际监管变化对我国的实质性影响。微观主体的风险控制机制分为制度化、模型化与其他风控手段。第八章专门分析我国场外金融衍生品的发展与风险管控，主旨是在发展中控制风险，通过产品建设、制度建设、基础设施建设和外部环境建设，降低风险，实现最优发展。

本书主要的研究方法是理论研究、比较研究、案例研究和实证研究。从理论上总结场外金融衍生品管理微观风险和宏观风险的基本功能，并进一步推导场外金融衍生品交易中的微观风险、微观风险演化为宏观风险的内在机制、累积扩大宏观风险的途径以及相应的管控措施。场外金融衍生品既是管理风险的工具，本身又带来巨大的风险，那么实践中，这些衍生工具的使用到底起到了什么样的作用呢？本书运用实证分析，考察我国14家上市银行运用场外金融衍生品对自身收益和风险水平的影响，得出了场外衍生品的交易规模总体增加了银行的净利润水平，同时减少了银行的整体风险水平的结论。与此同时，本书多次使用比较研究，比如国内外场外衍生品市场发展现状的比较，不同国家金融监管改革的比较，等等；而场外衍生品微观和宏观风险的表现、风险的累积、扩大机制则使用大量案例来分析。

纵观国内外学者的相关研究成果，大部分的学者在研究金融衍生品的时候，并没有区分“场内”和“场外”，针对场外金融衍生品的成果并不很多，研究其风险问题的就更少了。本书以场外金融衍生品为研究对象，相比场内衍生品来说，场外市场更加个性化和专业化，创新更加频繁，因而其风险的表现更加隐蔽，风险的演化也就更加复杂多变，对经济和金融的影响更加深远。因此，研究场外金融衍生品市场具有更强的理论和实践价值。本书将场外金融衍生品的风险问题作为研究重点，从时间和空间的不同维度，介绍了该市场的发展和结构；从宏观和微观的不同视角，分析了场外金融衍生品与风险的辩证关

系，一方面管理风险，另一方面又制造风险，同时提出了风险管控措施。

由于时间有限和作者能力不足，本研究不可避免地存在很多不完善之处。其中，最遗憾的是，没有以宏观经济主体为研究对象进行场外金融衍生品的实证研究，希望在后续的研究中能够有所突破。

关键词：场外金融衍生品；客制化；微观风险；宏观风险；中央对手方

ABSTRACT

OTC financial derivatives market, because of its outstanding characteristics of “customization”, has become the most brilliant and most important international financial market since it was born. According to the statistics of Bank for International Settlements, the total notional amount of OTC derivatives contracts outstanding was \$691 trillion at the end of June 2014, roughly the same as 9 times ETD market based on the same period. However, the size of the OTC derivatives market was only \$94 trillion in June 2000, it has increased six times during 14 years. The speed and scale of OTC derivatives market has attracted worldwide attention.

However, with the rapid development of OTC financial derivatives market, its risk has also drawn increasing attention of the world. In 1998, Long-term Capital Management was taken over because it suffered huge losses in arbitrage trading in interest rate swaps and bonds; In 2007, the CDS, CDO and other instruments, as typical representatives of OTC financial derivatives, ignited the US subprime mortgage crisis; Even the Greek debt crisis emerged in 2009, also can be traced back to a series of currency swap agreement between Greece and investment banks including Goldman Sachs from 2000 to 2001. Facts have proved that OTC financial derivatives are not only the product of financial innovation, the effective transfer of financial risk, but also a source of financial risk and a channel to accumulate and expand financial risks effectively. Only we find out the evolutionary mechanisms of risk and control it effectively in OTC financial derivatives market, can it play the basic functions of risk management and serve economy and investors better.

OTC financial derivatives market of China started relatively late, but growing fast. With the gradual marketization of RMB interest rate and exchange rate, since 2005, the people's bank of China launched a series of derivatives about interest rate, ex-

change rate and credit in the interbank market in order to hedge various types of financial risk. As of December 2014, the OTC financial market of China has three kinds of interest rate derivatives, 4 kinds of exchange rate derivatives and 2 kinds of credit derivatives, the system of OTC derivatives has been initially formed.

The OTC financial market of China, with simple structure and little variety, is still in its infancy, so there has been no risk event before. However, many domestic enterprises lost a lot in international OTC derivatives market. In December 2004, Singapore Company of China Airlines went bankrupt because of the loss of \$550 million in OTC options trading; In 2008, Shenzhen Nanshan Power, CITIC Pacific, Kowloon Development, Eastern Group and COSCO Group lost hundreds of millions of even billions of dollars because of the failure in OTC structured products. Therefore, the research of risk and the risk-control mechanism in OTC financial derivatives market, not only serve as a reference for the further development of the domestic market, but provide a warning to domestic investors so that they can make a good use of these tools in the future.

The eighteenth congress of the communist party of China put forward the policy goals as “to develop the multi-level capital market and build a modern financial service system”. OTC financial derivatives is a high-end areas of financial product, at the same time, OTC derivatives market is an important component of the multi-level capital market, so it is significant for us to research its risk and the risk-control problem.

This thesis is divided into nine chapters. The first chapter, as overall framework for the study, include literature review, the background, significance and purposes of the research. The second chapter, from the time dimension, introduces the development of global OTC derivatives from birth to the present as well as the main product system. This chapter also analyze the current development of the market in China and make a comparative study of Chinese and foreign market finally. From spatial dimension, the third chapter focus on the structure of OTC derivatives market, including the participants, the trading platforms, clearing mechanism and trade process, which make the reader has a comprehensive understanding to the operation of the OTC derivatives market. From chapter 4 to chapter 8 are the core part of this study. Both chapter 4 and chapter 5 are theory analysis; chapter 6 is empirical analysis; the next two chapters are countermeasure research, and the ninth chapter is conclusion and outlook, it summarizes the full text.

Say in detail, the fourth chapter analyses the relationship between OTC financial derivatives and micro risk. OTC derivatives can transfer and diverse risk, it contains a variety of risk at the same time. More importantly, high concentration of participants lead to the concentration of risk, in the role of leverage, a dealer's loss will enlarge times and spread among multiple agencies. Opaque information likely cause a collapse of confidence and panic of traders in the market, then micro risk evolve into macro risk, unsystematic risk upgrade to systemic risk, even lead to financial crisis. The analysis of risk evolutionary mechanism is one of the highlights of this thesis.

The fifth chapter analyses the relationship between OTC financial derivatives and macro risk. OTC derivatives, as a effective tool of macroeconomic regulation, can hedge macro risk. The most important thing is that central bank can use OTC derivatives to fend off speculators and stabilize market when financial crisis come. On the other hand, in transactions of OTC derivatives, improper transfer of risk will increase the vulnerability of the financial system, excessive innovation in derivatives easily lead to deviation from the real economy. Due to the connection between the participants, the risk of a dealer often spread among multiple participants, it is not only cause the financial crisis likely, but increase the destruction and difficulty to deal with the crisis. How to accumulate and expand risk is the second highlight of this thesis.

Chapter 6 analyze empirically the impact on the return and risk of the 14 listed bank in our country in OTC derivatives trading, which is the third highlight of this thesis. Empirical result on the basis of the overall sample show, the size of the OTC derivatives (nominal value) affect significantly the benefit and risk of commercial bank, the bigger transaction size, the higher level of net profit, and the lower overall risk level of the bank. This means that OTC derivatives trading generally avoid the risk of bank and expanding the bank's income. It is noteworthy that similar OTC derivatives research has not appeared based on a sample of listed banks in our country when the thesis finished.

Both chapter 7 and chapter 8 are risk-control mechanism, no matter from which point of view, OTC derivatives is a sharp double-edged sword. So it is urgent to strengthen the risk-control and make it play the basis function to serve the real economy. The seventh chapter focus on external financial regulation and micro internal risk control mechanism of participant. Regulatory situation analyze the newest trend of global financial regulation after the crisis, including the United States, Britain, the

European Union and China. Chapter 7 discuss the substantial influence of international regulatory changes to China expressly. The risk-control mechanism from microscopic participant is divided into institutionalization, modeling and other risk-control means. Chapter 8 study the development of OTC financial derivatives and its risk-control in our country. Through product construction, system construction, infrastructure and external environment construction, OTC financial derivatives in China would reduce risk and achieve optimal development.

In this thesis, the main research method is theoretical research, comparative research, case studies and empirical research. It summarizes theoretically the basic risk-management function of OTC financial derivatives from micro and macro perspective and risk evolutionary from micro to macro with corresponding risk-control measures. OTC derivatives is not only an instrument of risk management but a huge risk-carrier, so, what kind of the role these derivatives really play in practice? Using empirical analysis, this thesis inspects the influence on the benefit and the level of risk of 14 listed banks in China from trading OTC derivatives. It is concluded that the scale of OTC derivatives business overall increase the bank's net profit level and reduce the risk level. At the same time, this thesis use comparative study for many times, such as the comparison of different countries financial regulatory reform, etc. The performance of micro and macro risk in OTC derivatives, the accumulation and expanding mechanism of risk are analyzed by a large number of cases.

Most of the researches from domestic and foreign scholars on derivatives don't distinct OTC from ETD market, study on the problem of risk is little. This thesis put emphasis on OTC financial derivatives. Comparing to the ETD market, the OTC market is more personal, professional and innovational, as a result, the performance of risk is more hidden, the evolution of the risk is more complicated and the impact on economy is more profound corresponding. Therefore, research on the OTC derivatives market has more theoretical and practical value. After introducing the development and structure of the OTC market, this thesis focus on the risk of OTC financial derivatives in macroscopic and microscopic perspective and the relationship between them. Moreover, risk-control measures are proposed. From the content point of view, this research has three bright spots which have been said above, so not repeat them here.

Due to limited time and insufficient ability of the author, this study inevitably has many imperfections. For example, macroscopic empirical research has not been men-

tioned, the author hope to complete it in the follow-up studies.

Keywords: OTC financial derivatives, customization, micro risk, macro risk, central counterparty

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