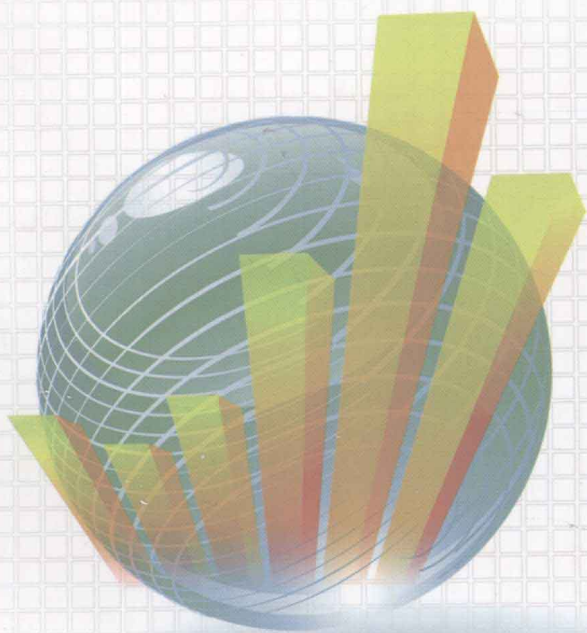


山东财政学院学术文丛·2010

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吴 琼 著



中国财政经济出版社

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# 山东财政学院学术文丛 2010

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# 总 序

《山东财政学院学术文丛 2010》(以下简称《文丛 2010》)是山东财政学院为集中展示山财学人学术研究成果而编辑出版的系列丛书。《文丛 2010》的出版,对于落实山东财政学院“学科立校、人才强校、开放兴校、依法治校”的发展战略,繁荣学术研究,加强同学术界的交流等具有十分重要的意义。

始建于 1986 年、由邓小平同志亲笔题写校名的山东财政学院,是在改革开放的春风中,由财政部和山东省人民政府共同创办、实行以地方管理为主的普通高等财经院校。学校面向全国招生,是国务院学位委员会批准的硕士学位、学士学位授予单位。2009 年被立项为博士点规划建设单位。学校目前拥有 14 个二级学院,43 个本科专业,22 个硕士学位授权点和 MBA、MPA 两个专业学位授权点及同等学力申请硕士学位的资格。学校学科门类齐全,已形成以经济学、管理学为主,文、法、理、工等六大学科门类相结合的学科结构。其中财政学、会计学、金融学、企业管理、国际贸易学、管理科学与工程为山东省重点学科,财政学与企业管理为省级重点强化建设学科。在山东省政府确定的“泰山学者”特聘教授设岗学科中,财政学、金融学位列其中。依托于以上优势学科与特色学科,一批批学科带头人与学术骨干脱颖而出,学校也由此成为省内著名、在全国有一定影响的经济与管理学研究人才高地。

在人才培养方面,山东财政学院广纳全国英才,以“培养基础扎实、知识面宽、业务能力强、综合素质高、具有国际视野的应用型人才”为目标,不断提高教学质量,为社会培养和输送了两万多名优秀毕业生。其中每年都有相当数量的毕业生或被中央机关、国家部委和著名公司录用,或考取名牌高校研究生继续深造。目前山东财政学院的毕业生已得到社会

各界的普遍认可，为学校赢得了较高的社会声誉。“学在山财”已成为莘莘学子努力追求的人生目标。

在短短的二十多年间，山东财政学院之所以取得如此辉煌的成就，这既是“求是崇真、博学笃行”的校训与“高标准、严要求、好校风、有特色”办学指导思想得以落实的必然体现，也是学校实施“四大”战略，积极推进以提高教学水平与科研水平为核心的综合改革的必然结果。近年来，为把学校建设成为在国内外有一定影响的多科性高水平特色大学，山东财政学院在启动本科教学质量工程的同时，启动了研究生学位点建设工程，加快推动学科建设与学术研究工作上层次、上水平。围绕这一目标，学校不断优化学术环境，提倡学术民主，创新学术激励机制，遵循“以高制胜、以优立足、以特发展”科研理念，科研工作取得重要突破，并涌现出了一批高水平的学术研究成果。为向外界推介这些学术研究成果，进一步繁荣学术研究事业，学校决定出版《山东财政学院学术文丛2010》。《文丛2010》就是在这一背景下编辑出版的。

为使《文丛2010》反映、代表山东财政学院学科建设与学术研究的最高水平，在书稿的遴选过程中，严格学术标准，规范评审程序，采用了校外专家审稿与校学术委员会评审确定的机制，最终确定入选《文丛2010》的书稿。经此严格的筛选，这一部部书稿以其较高的研究水准与学术价值得以入选。应当指出的是，这些书稿不仅集中反映了山东财政学院学术研究的最新成果，而且展现了山东财政学院学人的时代风采。在入选者中，既有名气较大的知名学者，也有砥柱中流的学术中坚，还有崭露头角的学界新秀。在他们中间，或术业有专攻，或名气有大小，或起点有高低，但有一点是共通的：那就是他们在各自的领域内，瞄准学术前沿，不畏路途艰辛，治学严谨，用力勤苦，最终取得了丰硕的研究成果。可以说，这些书稿凝聚了作者多年来潜心学术研究的心血汗水，展现了山财学人勇攀学术高峰的时代风貌。

我们相信，《文丛2010》的出版不仅在加快学术队伍建设、推动学科建设方面起到重要的作用，而且在加强同学术界的交流、扩大学校的学术影响力等方面也将产生深远的影响。为此，今后我们还将每年遴选10部左右的书稿出版，推动山东财政学院学术研究事业繁荣兴盛，薪传不息。

《文丛2010》的顺利出版，得到中国财政经济出版社的大力支持，张立宪副总编、刘五书先生、林治滨先生等为丛书的出版付出了诸多辛劳，

在此我们表示衷心的感谢！在《文丛 2010》的出版过程中，山东财政学院领导高度重视，校科研处精心组织，各位作者积极配合，谨此我们一并表示诚挚的谢意！

**《山东财政学院学术文丛 2010》编委会**

2010 年 3 月 22 日

## 摘 要

金融是现代经济的核心，利率又是金融的核心。英国著名经济学家凯恩斯曾说过：“把经济体系中任何一个因素单独提出来，都和利率有一定关系。”利率作为资金的价格起着极为重要的作用，大部分经济活动都受货币价格的影响，使利率成为市场经济中最重要的变量之一。西方商业银行对利率管理的研究起源于 20 世纪 70 年代，之前市场利率走势比较平稳，波动不大，商业银行在经营中关注的主要是信用风险和流动性风险，对利率管理的研究和实践并不多。20 世纪 70 年代以来，在金融抑制论和金融深化论的影响下，世界范围内掀起了一场利率市场化改革的浪潮，伴之而来的是市场利率波动频繁，商业银行的利率定价面临巨大挑战，利率风险急剧上升，大批金融机构由于利率波动造成的巨大损失而倒闭破产。

自 20 世纪 70 年代中期以来，拉丁美洲和亚洲的一些发展中国家纷纷开始了解除利率管制推行利率市场化的改革。美国、日本等发达国家在 20 世纪 80 年代也被卷入了这场浪潮中。国外利率市场化改革给我们提供了一些有益的经验与教训：利率市场化改革的方式必须科学选择；引入一些不受利率管制的新金融产品，是利率市场化改革的重要策略；完善的金融市场是利率市场化改革的基础；稳定的宏观经济环境是利率市场化改革的前提条件；充分监管是利率市场化正常进行的重要保证。

党和国家非常重视我国的利率市场化改革，回顾我国 1996 年以来利率市场化改革的进程，中国人民银行累计放开、归并或取消的本外币利率管理种类为 119 种，目前中国人民银行尚管理的本外币利率种类有 29 种。而利率市场化是把双刃剑，它对商业银行经营管理既有正面激励，也有严峻挑战。利率市场化落实了商业银行定价自主权，有利于商业银行对客户实行差别化服务，并且促进了商业银行的资产结构优化调



整,有利于商业银行进行公正、公开、公平竞争,促使商业银行开展产品创新,发展中间业务,增加了商业银行主动匹配资产与负债的手段。不可避免的是,利率市场化将使商业银行的传统盈利模式和利润空间受到威胁,随市场波动的利率使商业银行的利率风险骤然增加,潜在的信用风险也逐步增加。

20世纪80年代以来,随着各国利率市场化进程的加快,市场利率水平波动日益剧烈。为了最大限度避免利率波动对银行的净利息收入和资本净值的影响,更好地利用银行在存贷款利率方面的自主定价权,西方商业银行开始采用内部资金转移定价的方法,内部资金转移定价已成为商业银行资产负债管理的一项重要工具,是利率定价管理的核心。经过20多年的发展,商业银行先后采用过平均成本法、边际成本法和内部资金收益曲线法等方法来制定银行的内部资金利率,其中内部资金收益曲线法是近年来西方大型商业银行使用得最多的方法。内部资金收益曲线法是指商业银行根据本行内部资金收益曲线和不同产品现金流的特点,确定内部资金利率的方法。商业银行使用内部资金收益曲线法制定内部资金利率的关键技术是构造本行的内部资金收益曲线和根据产品的现金流特点对银行的资产和负债业务进行分组。目前我国商业银行现行内部资金管理是差额管理,而西方发达商业银行现行的内部资金转移体系是对每笔业务进行全额转移的。由于我国商业银行的本外币资金管理所处的经营环境存在较大差别,对商业银行的资金可以分为三类,分别采用不同的模式制定内部资金转移定价体系:对于外币资金,采用期限匹配模式;对于人民币资金交易类产品,采用期限匹配模式;对于人民币存贷款业务,采用多库模式。

有了内部资金转移价格,商业银行的存贷款利率定价就有了基础,而存贷款利率的市场化正是利率市场化改革的核心内容。就存款利率来说,西方商业银行一般按照本身的营业状态与客户的信用评估,弹性地调整存款利率的定价。本书借鉴了西方银行的组合定价模型,结合我国国情,从可操作性的角度出发,设计出我国实行利率市场化后的存款定价模型——客户关系定价模型。客户关系定价模型是指从市场营销的核心出发,将客户在银行账户中获得的整体收益、该账户管理应支付的除银行存款利息成本外的其他成本,及该账户预计可给银行带来的目标利润,倒推算该账户的银行存款利息成本,确定该客户的存款利率。

在贷款利率定价方面，西方商业银行的现代贷款定价方法主要有运用期权定价理论进行贷款定价和运用资本资产定价模型进行贷款定价。

商业银行的许多产品和投资都具有期权的特征，在这些产品中，有的是作为独立的期权产品可以在金融市场上买卖，是金融期权；另外一类产品其期权是蕴含在产品或借款条约中不能独立交易的，但体现了商业银行管理的灵活性，是实物期权。运用实物期权可以对商业银行贷款的利率风险进行定价。信用期权是针对借款人信用风险而设计的实物期权，它不是独立交易的产品，而是蕴含在商业银行的借款条约中。在西方商业银行管理中，商业银行可以通过贷款销售将贷款的预期现金流的要求权出售给第三方，如机构投资者。同时作为一种信用增强的手段，商业银行以某一价格出售给机构投资者针对该借款人信用等级的信用期权，其中规定了借款人违约或贷款价值发生变化时双方应采取的措施和应履行的义务，这样可以顺利地将中长期贷款变现，提高商业银行资产的流动性，优化期限结构，同时将风险分散给两家以上（含两家）的投资者。这种方法类似于保险。信用期权是针对借款人的违约风险设计的，它的关键在于估算借款人的违约概率，并在违约造成的资产价值损失的基础上设计赔偿金额，我们用这种方法对商业银行贷款的信用风险定价。

运用资本资产定价模型进行贷款定价是另一种重要的贷款定价方法。商业银行面对的风险不仅有单个企业所产生的单个风险，同时还面对商业银行资产负债总体而产生的风险。单个风险可以通过对企业的评估定价，而由于市场的变动给企业带来的风险，只能通过商业银行运用一定的手段进行管理才能达到最优风险收益组合。资产组合理论已由马克维茨（1952）、夏普（1964）和林特纳（1965）等经济学家发展起来了，Plye（1971）、Art 和 Jaffee（1974）把资产组合理论运用于商业银行，得出了一个新的模型。这种思想主要将商业银行的所有资产和负债视为一种特殊的证券组合，进而把商业银行看成是一个由这些证券构成的规模较大的资产组合。在这种分析方法中，商业银行负债所具有的唯一特点就是它们相似于商业银行资产组合中的空头。

本书继而实证研究了实物期权对商业银行贷款的信用风险定价方法、资本资产定价模型在公司贷款定价中的运用、现代贷款定价方法在公司浮动利率贷款定价中的运用以及现代贷款定价方法在个人贷款定价中的运用，认为商业银行当务之急应该根据其自身经营特点，结合国外先进经验

与方法,建立起符合本行特点的科学的贷款定价计量公式。该公式作为系统内统一标准,客户经理在做具体贷款业务时首先要用此公式计算出对该企业贷款的银行定价,然后据此调整做出相应的金融服务方案。根据上述我国商业银行贷款定价存在问题的分析,我们认为商业银行内部应该建立以贷款成本、风险补偿和客户关系价值为基础的科学的贷款定价计量公式,同时强化该贷款定价对商业银行贷款的约束力,以达到商业银行经营的流动性、安全性和盈利性,一个合理的贷款定价计量公式为:

贷款价格 = 贷款基准收益率 + 贷款期限风险升水 + 贷款风险度升水 + 非客户因素  $\beta$  + 客户关系价值贴水

当前,我国宏观经济运行状况良好,国有企业改革和发展取得了巨大的进展,金融体制改革取得实质性突破,中央银行的宏观调控日益成熟,监管机构也发挥专业化监管的优势,金融市场建设稳步推进,我国推进存贷款利率市场化的条件日益成熟。也应看到我国的商业银行体制、金融市场体系、中央银行和金融监管等方面还存在一些制度缺陷。因此,我们可以把创造存贷款利率市场化条件与推进存贷款利率市场化改革结合起来,有步骤地稳定地双向推进。存贷款利率市场化改革关键在于相关的制度安排,因此,积极推进商业银行体制改革是存贷款利率市场化改革的重心,完善金融市场体系是推进存贷款利率市场化改革的基础,健全中央银行宏观调控机制是存贷款利率市场化的前提,建设审慎的金融监管制度是存贷款利率市场化的保障。做好相关制度安排工作可以为存贷款利率市场化提供良好的制度环境,存贷款利率市场化的进程就会大大加快。

本书最后一部分分析了2007年以来席卷全球的金融危机对于我国金融监管和利率市场化的影响。由美国次贷危机引发的全球金融危机转化为全面经济危机后,给世界经济带来重大和持续的破坏性影响;它颠覆了过度泛滥的金融创新模式,颠覆了过度放松的市场监管模式,也颠覆了过度消费的经济发展模式。可见金融自由化是一把双刃剑,既有改善金融资源配置,增加金融机构及金融市场的竞争力,促进资本流动等功能,但同时也会削弱了一国货币政策的自主性,将金融机构置于高风险的竞争环境之中,加剧了银行乃至金融体系的脆弱性。我国处于利率自由化的进程中,更要严防银行危机的产生及对金融系统安全性的威胁。在金融混业经营的大背景下,我国按照银行、保险和证券划分的分业监管模式显然已不能适

应日新月异的金融创新，必须对现有的金融监管体制加以变革，而功能性金融监管体制则是新形势下我国金融监管体制的发展方向。金融危机形势下利率政策的选择凸显其特殊性，我国应抓住机遇彻底推进存贷款利率市场化改革。

**关键词：**利率市场化 内部资金转移定价 存贷款利率定价

# Abstract

Finance is the core of modern economy, and interest rate is the core of finance. Well - known British economist, John Maynard Keynes once said: "Any separate factor in economy has relation with interest rate." As the price of capital, interest rate plays an extremely important role, for most economic activities are subject to currency prices which make interest rate one of the most important variables in market economy. Research into interest rate management of Western commercial banks can be traced back to the 1970s. Before that time, the market interest rates moved relatively stably, therefore, commercial banks' operation in the main focused in credit risk and liquidity risk while their activities in interest rate management and research were not very often. Since then, under the influence of financial inhibition theory and the impact of financial deepening, a wave of interest rate marketability reform has set off in the whole world which accompanied with the frequent fluctuations of market interest rates. Commercial banks faced tremendous challenge in interest rate pricing because of a sharp increase of interest rate risk which made a large number of financial institutions suffer great loss and go bankruptcy because of interest rate volatility.

Since the mid - 1970s, some developing countries in Latin America and Asia have started to lift interest rates control and implement the interest rate marketability reform. In the 20th Century, other developed countries like the United States, Japan were also involved in this wave. Other countries' activities of interest rate marketability reform have provided us with some useful experience and lessons to learn; we must choose a scientific path implementing

China's interest rate marketability reform; the introduction of a number of new financial products free of interest rate control is an important strategy to interest rate marketability reform; a well-established financial markets is foundation of interest rate marketability reform with a stable macroeconomic environment as its prerequisite and adequate supervision as its important guarantee to proceed smoothly.

The Party and the government attached great importance to China's interest rate marketability reform. Recalling China's interest rate marketability reform process since 1996, the People's Bank of China (PBC) has cumulatively liberalized, merged and cancelled 119 kinds of RMB and foreign currency interest rates with only 29 kinds of RMB and foreign currency interest rates still under the control of PBC. However, the interest rate marketability is a double-edged sword with both its positive incentives and serious challenges to commercial banks' operation and management. Interest rate marketability has bestowed commercial banks pricing autonomy which is conducive to commercial banks to implement a differentiated customer service, and to promote the commercial banks to adjust and optimize their asset structure. Interest rate marketability is also beneficial to commercial banks to compete justly, open and fairly and encourage commercial banks to carry out product innovation, the development of intermediary business, and increase the means of commercial banks to take the initiative to match assets and liabilities. Inevitably, interest rate marketability will threaten commercial banks' traditional profit models and cut down their profit margins. With the fluctuations of market interest rates, commercial banks will take a sudden-increased interest rate risk; meanwhile, the potential credit risk is also gradually increasing.

Since the 1980s, with the speeding up of interest rate marketability process in the worldwide, the level of interest rates has fluctuated fiercely. In order to avoid the impact of interest rate volatility to banks' net interest income and net capital and make better use of bank's rights of autonomous pricing in deposit and loan interest rates, Western commercial banks began to use the method of internal funds transfer pricing. Internal funds transfer pricing has become an important tool to commercial banks' asset-liability management and the core of

interest rate pricing. After nearly twenty years' development, commercial banks have in sequence adopted the average cost method, the marginal cost method, the yield curve of internal funds and other methods to determine bank's internal funds rate, among which the method of yield curve is used most by Western banks in recent years. The method of internal funds yield curve refers to a way determining internal funds rate in accordance with the bank's yield curve of internal funds and the characteristics of cash flow of different products. The key technologies of the method is making the bank's internal capital yield curve and group the bank's assets and liability operations in accordance with the cash flow characteristics of different products. At present, China's commercial banks run their internal funds by marginal method while the existing method of Western commercial banks to manage their funds transfer system is to transfer the funds of each transaction in full. Because of the huge difference of business environment between China's commercial banks to manage their RMB and foreign currency funds, funds of commercial banks can be divided into three categories, separately we adopt different modes to develop their internal funds transfer pricing system: for the foreign currency funds, we use the mode of duration matching; for RMB products of financial transactions, we use the mode of period matching; for RMB deposit and loan business, we use a multi - pool mode.

With the internal funds transfer prices, we have the foundation for commercial banks' deposit and loan rates pricing which is the core content of interest rate marketability reform. As far as the deposit interest rate, Western banks adjust the pricing of deposit interest rates in terms of their own business and the customer's credit rating with flexibility. This book has drawn on a combination of Western banks pricing model, combined with China's existing conditions, in view of the operational point, to design a deposit pricing mode after we have fully implemented interest rate marketability - that is, the customer relationship pricing mode. Customer relationship pricing mode starts from the core of marketing, counterbalances to the cost of interest of bank deposits from the overall proceeds customer get from the bank accounts, other costs the account management to be paid in addition to the cost of bank

deposits, and the bank's target profit the account is expected to bring, to determine the customer's deposit rates.

As far as interest rates pricing of loans is concerned, Western commercial banks mainly use two modern methods of loan pricing, which are the application of option pricing theory and capital asset pricing model (CAPM) in loan pricing.

A lot of commercial bank products and investment projects have characteristics of options. Among these products, some can be traded as independent option products in financial markets which are therefore called financial options. Another type of these products is embedded in products or borrowing treaties that cannot be traded independently, but reflects the flexibility of commercial bank's management. This type is real options which we can use to carry out the pricing of interest rate risk of loans. Credit option is a type of real option in order to avoid credit risks from borrowers. It is not an independently-traded product, but contained in commercial banks' borrowing treaties. In Western commercial banks' management, commercial banks can sell the requirement rights of loan expected cash flow to a third party such as institutional investors by way of selling loan. Meanwhile, as a means of credit enhancement, a commercial bank sell the credit option against the credit rating of the borrower's at a certain price to the institutional investors which contains the provisions stating the measures and responsibilities to be taken by both parties when the borrowers' default happens or the loan value changes. In this way, commercial banks can cash their medium and long-term loans, improving the liquidity of commercial bank assets, optimizing the term structure, decentralizing the risks to two (inclusive) or more investors. This method is similar to insurance. Credit option is designed for the borrower's default risk, whose key point lies in estimating the probability of the borrower's default and determines the amount of compensation based on the loss of assets value. We use this method to price the credit risk of commercial bank's loan.

Another important method of loan pricing is the use of capital asset pricing model. The risks facing commercial banks are not only single risk generated by individual enterprises, but risks generated by overall management of assets and



liabilities. Individual risk can be determined through the pricing of enterprise assessment while for risks caused by the changes in the market; commercial banks can only resolve them through the use of certain means to achieve optimal risk portfolio earnings. Portfolio theory has been developed by Markowitz (1952), Sharp (1964) and Lintner (1965) and other economists such like Plye (1971), Art and Jaffee (1974) applied the assets portfolio theory to commercial banks and reached a new model. This idea mainly views all commercial bank's assets and liabilities as a particular portfolio, which put commercial banks as a larger portfolio composed of these securities. In this analysis, the only feature commercial bank's liabilities have is its similarity to the oversold position in commercial bank's assets portfolio.

In this book, we proceed to research into the credit risk pricing approach using real options for commercial bank's loans, capital asset pricing model (CAPM) in the use of company's loan pricing, modern methods of loan pricing in the company's floating rate loan pricing, as well as the use of modern methods of loan pricing in the personal loans pricing. We argue that commercial banks should give priority to establishing the scientific measurement formula of loan pricing in accordance with its own characteristics, combined with the advanced experience of foreign methods. As a uniform standard of the whole system, when doing the specific loan business, client manager should first calculate the bank's pricing to corporate loan with this formula, and then adjust accordingly to make the appropriate financial services program. In accordance with the above - mentioned analysis to the loan pricing problems, we suggest China's commercial banks set up a scientific measurement formula of loan pricing based on the loan costs, risks compensation, and customer relationship value. Simultaneously, we should strengthen the constraint force of the loan pricing to commercial bank's loans to achieve commercial bank's liquidity, safety and profitability. Therefore, a reasonable formula for the measurement of loan pricing is as follows:

$$\text{Loan Price} = \text{Loan Benchmark Yield} + \text{Risk Premium of Loan Term} + \text{Loan Risk Premium} + \text{Non-client Factor } \beta + \text{Customer Relationship Value Premium}$$