

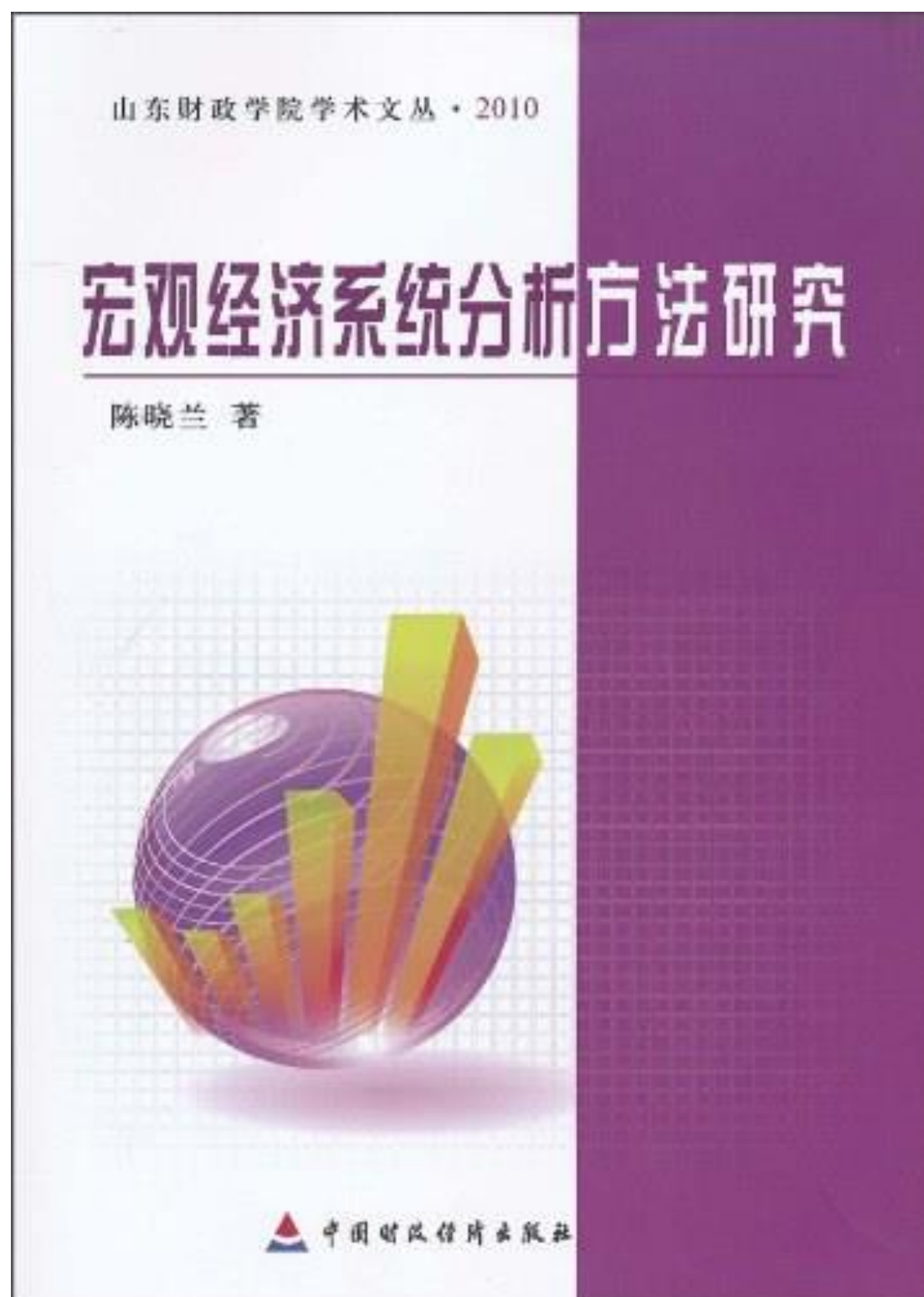
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1. 宏观经济系统分析方法研究—专著



2. 中国科技资源配置效率的区域差异及收敛性研究——论文



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中国科技资源配置效率的区域差异 及收敛性研究^①

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研究目标：科学测度中国各省域科技资源配置效率，深入分析东、中、西部三大区域科技资源配置效率的区域差异及动态演进趋势。**研究方法：**运用全局至强有效前沿最近距离模型测算科技资源配置效率，采用 Dagum 基尼系数、核密度估计方法分析科技资源配置效率的区域差异和分布动态，运用变异系数与静态面板模型检验其 σ 收敛和 β 收敛特征。**研究发现：**各省域科技资源配置效率存在明显差异，区域差异的主要来源是区域间差异，区域内差异和超变密度的贡献率较小且较为相近；中国科技资源配置效率的绝对差异经历了“上升—下降”的过程。具体来看，东部区域绝对差异经历了先降后升最后又微弱下降的态势，中部区域的绝对差异总体波动幅度较大，后期呈下降趋势，西部区域的绝对差异趋于缩小态势。样本考察期内，东中西部区域均未出现两极分化趋势；全国整体及东中西部区域不仅都存在 σ 收敛，也都存在绝对 β 收敛和条件 β 收敛。**研究创新：**构建了评价指标体系，运用全局至强有效前沿最近距离模型更科学的测算科技资源配置效率，进而研究其区域差异及空间收敛情况。**研究价值：**揭示科技资源配置效率差异及演变趋势，优化科技资源配置效率，为提高科技创新水平、加快创新驱动发展提供依据。

关键词 科技资源 配置效率 核密度 收敛性

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引言

党的十九大报告指出：创新是引领发展的第一动力，是建设现代化经济体系的战略支撑。习近平在科学家座谈会上的讲话中指出：当今世界正经历百年未有之大变局，我国发展面临的国内外环境发生深刻复杂变化，我国“十四五”时期以及更长时期的发展对加快科技创新提出了更为迫切的要求。科技创新已成为现代经济社会持续发展的重要力量，科学技术是第一生产力，科技进步和创新对推动社会的全面、协调和可持续发展具有举足轻重的作用。截至 2020 年我国科技进步的贡献率为 59.6%，而创新型国家科技进步的贡献率普遍高达 70% 以上，美国和德国甚至高达 80%。《2018 年全国科技经费投入统计公报》数据显示

^① 本文获得国家社科基金项目“提升工业企业全要素生产率的财税激励机制研究”（18BJY222）的资助。通讯作者：马运鹏。

3. 言之有物：网络借贷中语言有用吗？——来自人人贷借款描述的经验证据—— 论文

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言之有物：网络借贷中语言有用吗？

——来自人人贷借款描述的经验证据

彭红枫 林 川

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摘要:本文以“人人贷”平台的388522条借款标的为样本,基于借款描述文本构造P2P网络借贷词典,并探究文本中六种类型词语比重对网络借贷行为的影响,实证结果表明:首先,各类词语比重发出的信号对贷款人的投资决策有显著影响,积极类词语和金融类词语比重与借款成功率呈正相关,消极类词语比重、强语气词语比重和弱语气词语比重均与借款成功率呈负相关关系;其次,不同年龄层次和不同收入水平的借款人提供的描述性文本中词语信号对贷款人行为的影响存在较大差异,而性别差异和学历高低基本不影响词语信号作用的发挥;最后,各类词语比重发出的质量信号是部分有效的,金融类词语比重发出的信号有效且被投资者正确识别,强语气词语比重发出的信号同样有效却未被投资者准确识别,其他类别词语比重不是有效质量信号。

关键词:网络借贷;文本分析;信号理论

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一、引言及文献综述

伴随着互联网技术与金融交易模式的不断结合及创新,P2P网络借贷以其参与门槛低、交易手续方便以及无需担保抵押等优势为中小企业和中低收入群体开辟了融资新渠道,同时以其较高的投资收益及灵活的融资方式吸引了大量普通投资者的参与。虽然这种借助互联网确立借贷关系的新型交易模式有效地弥补了正规金融体系的不足并实现了

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4. 短期资本流动的多重动机和冲击：基于 TVP-VAR 模型的动态分析——论文

彭红枫、祝小全：短期资本流动的多重动机和冲击：基于 TVP-VAR 模型的动态分析

短期资本流动的多重动机和冲击： 基于 TVP-VAR 模型的动态分析*

彭红枫 祝小全

内容提要：在资本账户逐步开放的背景下，本文从短期资本投机效用最大化的角度出发，阐释了短期资本流动与即期汇率、汇率预期、利差、证券市场股指收益、大宗商品价格指数和房屋销售价格指数差异之间的互动机制。通过 TVP-VAR 模型分析了短期资本流动的套汇、套利和套价行为以及不同市场之间的交互作用。结果表明：套汇动机的形成要兼顾即期汇率和汇率预期，风险溢价水平须达到门限值；短期套利动机因为中美利率变动同步性降低而始终存在；套价动机在大宗商品市场强于股票市场；房地产市场的相关政策抑制了短期资本流动在房地产市场上的套价行为。短期资本对汇率的冲击在 2005 年汇改后表现出对汇率弹性的敏感性，对中美利率变动的冲击反映了利率市场化的渐进特征。股票市场、大宗商品市场和房地产市场在应对短期资本流入冲击时表现出分流效应，存在套价动机的市场之间长期表现出溢出效应。

关键词：短期资本 多重套利动机 冲击响应 资本账户开放

一、引言

近年来，国际金融市场上短期资本的流动规模显著扩张，通过套取时间和空间差价频繁进出，追逐超额利润。目前国内经济正处于向新常态过渡的阶段，短期资本的流入和流出对宏观经济下行压力、金融和房地产领域风险积聚等因素较为敏感，由此我们预期资本账户管制的放松可能会在短期内加剧宏观变量的双向波动，对经济稳态造成冲击。自 2005 年人民币汇率形成机制改革以来，中国经历了若干次大规模的短期国际资本流动：2007 年末至 2008 年末美国次贷危机爆发期间，国际金融机构面临资金链断裂，短期资本回流救市导致当时的中国面临持续的短期国际资本流出；2009 年第 2 季度至 2011 年第 3 季度，中国政府为应对金融危机推出“4 万亿投资计划”，临时注入的流动性降低了国内市场的资金成本，吸引短期国际资本持续流入；2011 年末至 2012 年末，随着欧债危机的恶化，中国因为经济不确定性的攀升而面临较大规模的短期国际资本流出。此后一段时间内，发达经济体为了刺激经济复苏推行量化宽松货币政策，导致全球的消费需求增加，中国的贸易出口随之上升，人民币升值预期增强，短期国际资本再度流入国内市场。2014 年第 2 季度至 2015 年末，随着中国经济增速放缓且美国经济增速回升，中美利差收窄，人民币兑美元汇率由升值预期逆转为贬值预期，中国面临短期国际资本持续外流的新局面。2015 年推行的“8.11”汇改，强调人民币汇率不再盯住单一美元，还需将市场供求关系作为重要依据，对短期资本的流向造成了深远的影响。自 2015 年下半年以来，随着美联储进入加息周期，本轮金融危机演变为新兴市场货

* 彭红枫，山东财经大学金融学院，邮政编码：250014，电子信箱：fhpeng@whu.edu.cn；祝小全（通讯作者），清华大学五道口金融学院，邮政编码：100083，电子信箱：zhuxq_16@pbesf.tsinghua.edu.cn。本文研究得到国家自然科学基金重大项目“人民币加入 SDR、一篮子货币定价与中国宏观经济的均衡研究”（16ZDA032）、国家自然科学基金一般项目“人民币汇率预期、汇率波动与跨境资本流动研究”（17BJY198）、教育部人文社会科学研究规划基金“人民币国际化进程中资本账户开放及其风险防范研究”（16YJA790040）及“泰山学者”工程专项经费项目的资助。作者感谢匿名审稿专家的宝贵建议，文责自负。

5. Linear-quadratic generalized Stackelberg games with jump-diffusion processes and related forward-backward stochastic differential equations—论文

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Linear-quadratic generalized Stackelberg games with jump-diffusion processes and related forward-backward stochastic differential equations

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Abstract A kind of linear-quadratic Stackelberg games with the multilevel hierarchy driven by both Brownian motion and Poisson processes is considered. The Stackelberg equilibrium is presented by linear forward-backward stochastic differential equations (FBSDEs) with Poisson processes (FBSDEPs) in a closed form. By the continuity method, the unique solvability of FBSDEPs with a multilevel self-similar domination-monotonicity structure is obtained.

Keywords Stackelberg game, forward-backward stochastic differential equation, stochastic optimal control, linear-quadratic problem, Poisson process

MSC(2020) 60H10, 93E20, 49N70

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1 Introduction

In 1934, von Stackelberg [19] first introduced the Stackelberg game, which is also called the leader-follower game. In this game, there are two asymmetric players: one is the leader, who announces her policy first; the other one is the follower, who chooses a response to optimize her cost functional in accordance with the leader's announced policy. Anticipating the follower's optimal response, the leader will pick an action to optimize her own cost functional. The leader's optimal action and the follower's rational response constitute a Stackelberg equilibrium or a Stackelberg solution. One can refer to [1, 2, 13] for deterministic cases, and refer to [4, 16–18, 22] for stochastic cases. Recently, some stochastic linear-quadratic (LQ) Stackelberg games are also discussed in [3, 8].

In this paper, we will generalize Stackelberg game with jump-diffusion processes to the N -level hierarchy case. Let $T > 0$ be a constant and $[0, T]$ denote the finite time span. Let $(\Omega, \mathcal{F}, \mathbb{F}, \mathbb{P})$ be a complete filtered probability space. The filtration $\mathbb{F} = \{\mathcal{F}_t; 0 \leq t \leq T\}$ is generated by two mutually independent

*Corresponding author

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Research Article

Nonzero Sum Differential Game of Mean-Field BSDEs with Jumps under Partial Information

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This paper is concerned with a kind of nonzero sum differential game of mean-field backward stochastic differential equations with jump (MF-BSDE), in which the coefficient contains not only the state process but also its marginal distribution. Moreover, the cost functional is also of mean-field type. It is required that the control is adapted to a subfiltration of the filtration generated by the underlying Brownian motion and Poisson random measure. We establish a necessary condition in the form of maximum principle with Pontryagin's type for open-loop Nash equilibrium point of this type of partial information game and then give a verification theorem which is a sufficient condition for Nash equilibrium point. The theoretical results are applied to study a partial information linear-quadratic (LQ) game.

1. Introduction

Game theory had been an active area of research and a useful tool in many applications, particularly in biology and economics. The study of differential games was originally stated by Isaacs [1] and then summed up and developed by Basar and Olsder [2], Yeung and Petrosyan [3], and so forth. Berkovitz [4], Fleming [5], Elliott and Kalton [6], and Friedman [7] established the foundations for zero sum differential games and Varaiya [8] and Elliott and Davis [9] for stochastic differential games. Next, the advances in stochastic differential games continue to appear over a large number of fields. Please refer to Hamadène [10], Hamadène et al. [11], Altman [12], Wu and Yu [13], Yu and Ji [14], and Wang and Yu [15] for more information.

For the partial information two-person zero sum (or nonzero sum) stochastic differential games, the objective is to find a saddle point (or equilibrium point) for which the controller has less information than the complete information filtration $\{\mathcal{F}_t\}_{t \geq 0}$. Recently, An and Øksendal [16, 17] and An et al. [18] established a maximum principle for partial information differential games of stochastic differential equations with jump (SDE). Wang and Yu [19] developed some

results for optimal control of BSDEs and established a maximum principle for partial information differential games of backward stochastic differential equations (BSDEs). They established a necessary condition in the form of maximum principle with Pontryagin's type for open-loop Nash equilibrium point of this type of partial information game and gave a verification theorem which is a sufficient condition for Nash equilibrium point. Meng and Tang [20] and Hui and Xiao [21] established a maximum principle for differential games of forward-backward SDE under partial information. Øksendal and Sulem [22] established a general maximum principle for forward-backward stochastic differential games for Itô-Lévy processes with partial information and applied the theory to optimal portfolio and consumption problems under model uncertainty, in markets modeled by Itô-Lévy processes.

To the best of our knowledge, there are few results about the partial information differential games of the discontinuous mean-field backward stochastic system. In the present paper we will research this topic. This paper is concerned with a new kind of nonzero sum differential game of mean-field backward stochastic differential equations with jump (MF-BSDE) under partial information. It is required that the control is adapted to a subfiltration of the filtration generated

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Brief paper

Linear-quadratic optimal control for time-delay stochastic system with recursive utility under full and partial information[☆]

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ABSTRACT

This article studies a linear-quadratic (LQ) optimal control problem for time-delay stochastic system with recursive utility under full and partial information. The system is described by an anticipated forward-backward stochastic delayed differential equation (AFBSDDDE). We obtain an explicit representation of optimal control in an open-loop form for the time-delay problem by Hamiltonian system, which is an AFBSDDDE in double dimensions (D AFBSDDDE). Also, we study a partial information counterpart of the above problem, and obtain an optimal control by optimal filtering. As applications of theoretical results, a cash management problem is solved. Analytic optimal controls are given, and some figures are used to illustrate the influence of delay on optimal solution.

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1. Introduction

Control systems with time-delay have existed for several decades, which are widely applied in modern engineering and financial areas. Examples include automobile brake systems, advertising models, financial models and so on. In financial market, cash management problem can be described as an optimal control problem in essence. Considering delay factor in reality, financial model with time-delay will be more realistic for an investor to make better strategy in his investment.

Motivated by the above problems, we are concerned with an LQ optimal control problem for time-delay stochastic system with recursive utility under full and partial information. This kind of optimal control problem provides more adequate models in applications, and then can be used to solve many important problems in reality. According to El Karoui, Peng, and Quenez (1997), recursive utility is described as a solution of backward stochastic differential equation (BSDE), whose solution consists

of a pair of adapted processes (Y, Z) satisfying

$$-dY_t = f(t, Y_t, Z_t)dt - Z_t dW_t; \quad Y_T = \xi,$$

where f is the generator and ξ is the terminal condition. It is worth pointing out that the solution of BSDE includes two processes Y and Z , which is the essential difference from (forward) stochastic differential equation (SDE). See also Schroder and Skiadas (1999) for other details about recursive utility. When BSDE admits a unique solution for a fixed control process, we formulate an optimal control problem with recursive utility. In this paper, we consider a time-delay SDE system with recursive utility, which can be described by an AFBSDDDE. Some previous works can be referred to Chen and Wu (2010), Hu, Li, and Wen (2019), Hu and Peng (1995), Huang, Li, and Shi (2012), Li and Wu (2014), Peng and Wu (1999), Peng and Yang (2009) and Yu (2012). Since the system equation is an AFBSDDDE, the corresponding Hamiltonian system becomes a D AFBSDDDE. The variables related to t , $t - \delta$ and $t + \delta$ in the D AFBSDDDE are coupled together, which leads to more obstacles in solving it. Based on the solvability of the D AFBSDDDE, an open-loop optimal control is obtained by the Hamiltonian system.

Except for time-delay factor, there exist some other important phenomena in reality. For example, a controller cannot observe all the information related to state in general. Then it is meaningful to study the optimality models under partial information. Such a class of optimal control problems has been attracted much attention these years, especially in the LQ case. It is well known that separation principle plays an important role in decoupling state

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双边出口全球价值链实际有效汇率弹性理论测度及解析

彭红枫 刘海莹

(山东财经大学金融学院, 山东济南 250002)

摘要:近年来,汇率与出口弱相关现象引起理论界和实务界的广泛关注。本文通过考虑全球价值链带来的供给侧联系和第三国汇率效应,使用双边出口全球价值链实际有效汇率弹性指标对双边层面的相对价格竞争力与出口关系作出新的测度和结构贡献度分解。研究发现,对相对价格竞争力与出口关系修正后测度的双边出口全球价值链实际有效汇率弹性值显著为负。出口对修正的汇率变动依旧富有弹性。“汇率对出口影响弱化”并没有传统实际有效汇率和双边汇率表现的那么严重,更没有出现“贬值抑制出口”等不符合理论预期的反常情况。双边出口全球价值链实际有效汇率弹性结构分解贡献度结果显示,伴随我国在全球价值链中参与度和地位的提升,中国对主要贸易伙伴出口中由相对价格变动引起中间产品结构变动对总弹性的贡献度不断提升。

关键词:全球价值链实际有效汇率;双边出口汇率弹性;弹性分解

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一、引言

2020 年 6 月以来,得益于我国有力的疫情防控举措和稳定的经济复苏态势,人民币汇率呈现出持续升值趋势,但出口也呈现出快速增长趋势。传统宏观经济学假设的汇率升值抑制出口理论受到挑战。事实上不仅是 2020 年,自 2005 年以来,人民币升值幅度较大,而我国出口却保持快速增长。整体来看,汇率变动与出口贸易相关性不显著,存在宏观层面的“出口汇率不相关之谜”(Obstfeld and Rogoff, 2001;赵勇和雷达, 2013;赵仲匡等, 2016)。当前,我国面临的国际贸易形势日益复杂,在世界范围内面临着越来越多的贸易

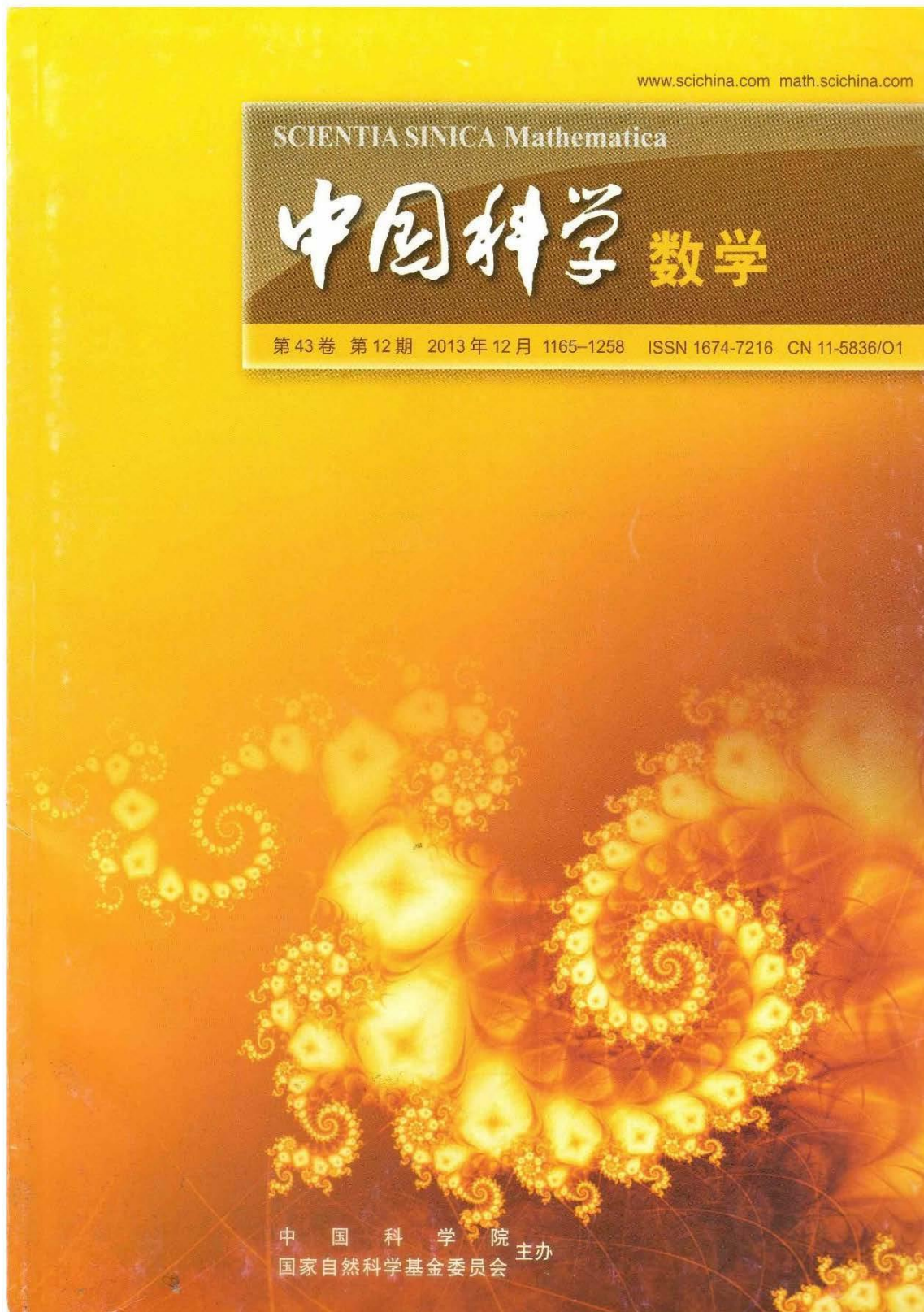
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9. 带跳的倒向重随机系统的最大值原理及其应用—论文



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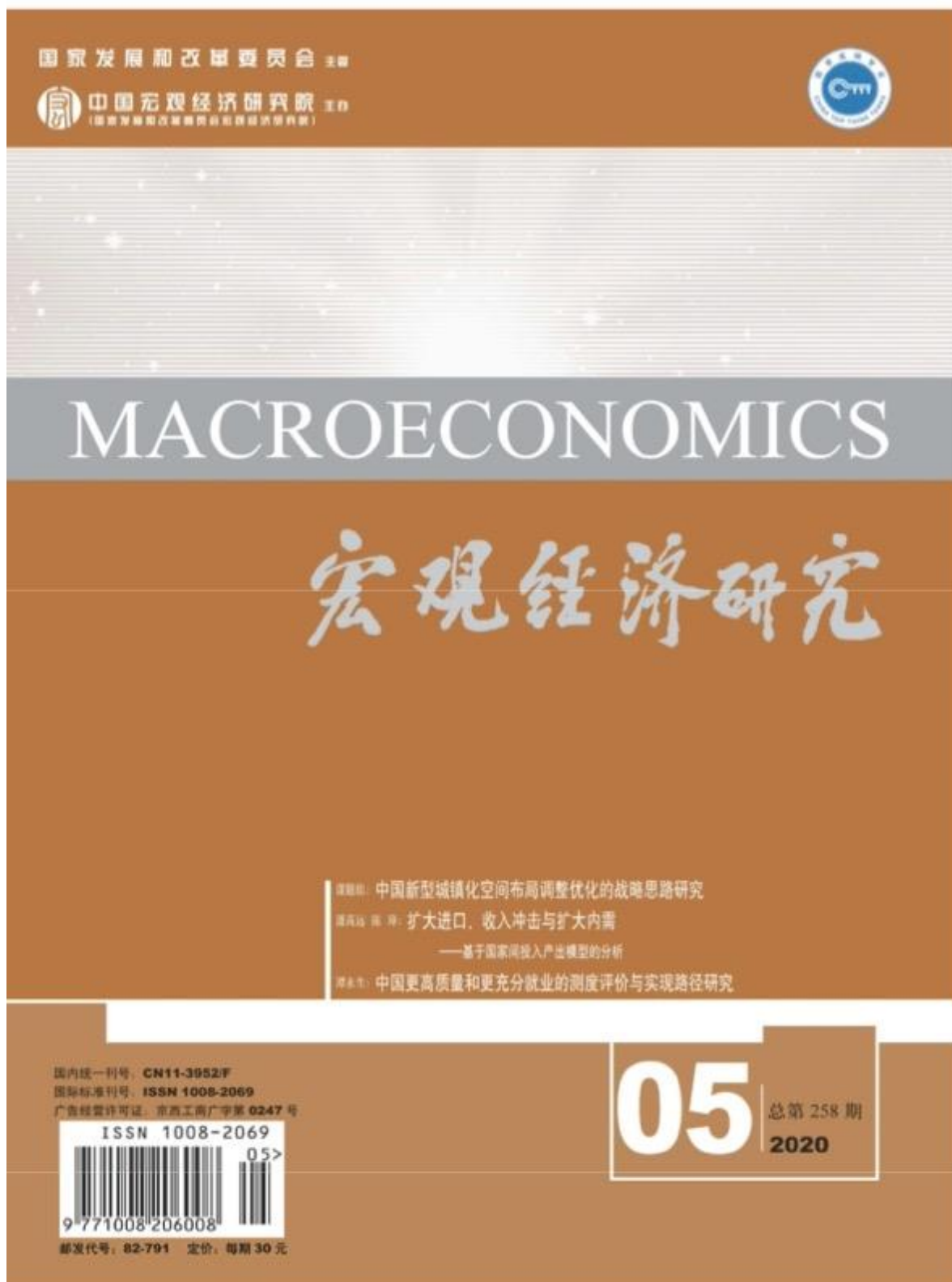
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企业异质性、研发费用加计扣除 与全要素生产率*

郭 健 刘晓彤 宋尚彬

内容提要 本文利用2008—2017年中国沪深两市A股制造业上市公司数据,使用系统GMM方法,测算了研发费用加计扣除政策对企业全要素生产率的激励效应,从企业异质性视角考察了效应的差异性,并进行了渠道检验。研究发现:研发费用加计扣除政策对企业全要素生产率有显著的激励作用,主要通过促进企业技术进步实现;该政策对企业全要素生产率的激励作用会因盈利能力、融资约束、要素密集度以及制度环境的不同而呈现差异化表现,具体而言,该政策对盈利能力较弱企业和资本密集型企业的提升效应更明显,融资约束会对政策产生抑制效应,对处于制度环境较好地区企业的提升效应较弱。本文的研究为科学判断税收政策总体效应与差异性效应、深入认识全要素生产率的增长源泉提供了较好的现实依据,以期有助于深化税收制度改革、促进经济实现高质量发展。

关键词 研发费用加计扣除 全要素生产率 企业异质性 系统GMM

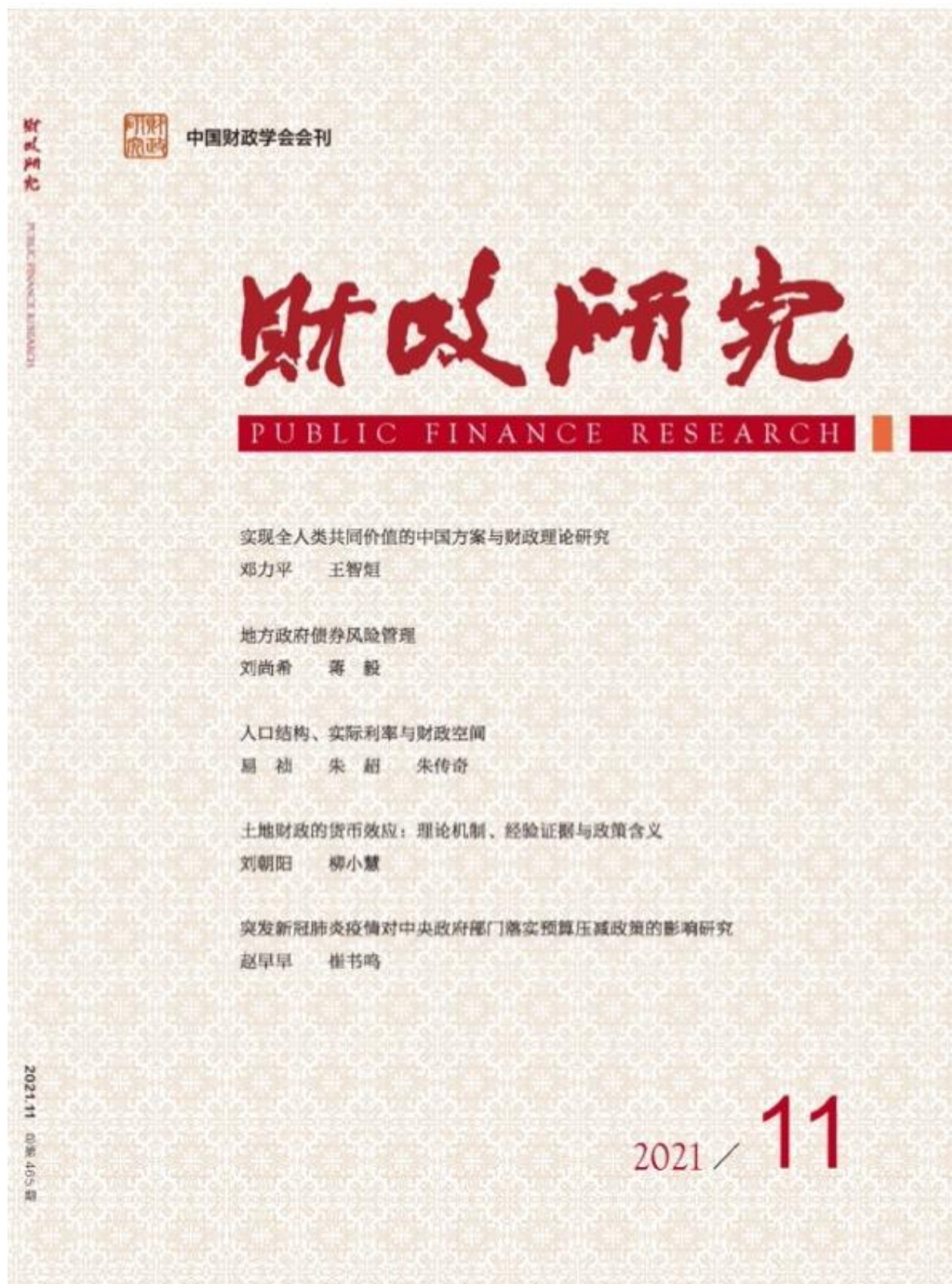
Abstract This paper uses 2008–2017 data of listed companies in A-share manufacturing companies in Shanghai and Shenzhen, China, and uses the system GMM method to calculate the incentive

effect of the R&D expense deduction policy on the company's TFP. From the perspective of corporate heterogeneity, the differences in effects are examined, and channel tests are conducted. The study finds that the policy of deducting R&D expenses has a significant incentive effect on the company's TFP, which is mainly achieved by promoting technological progress of the enterprise; the incentive effect of this policy on enterprise productivity will be due to profitability, financing constraints, factor intensity, and the institutional environment has a different performance. Specifically, the policy has a more significant promotion effect on companies with weaker profitability and capital-intensive companies. Financing constraints will have a suppressive effect on policies and a weaker promotion effect on companies in regions with better institutional environments. The research in this paper provides a good realistic basis for scientifically judging the overall and differential effects of tax policy, and a deeper understanding of the source of growth in total factor productivity, with a view to helping deepen the reform of the tax system and promote high-quality economic development.

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11. 财政分权与高质量发展——兼论分权的“适度区间”——论文



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财政分权与高质量发展

——兼论分权的“适度区间”

郭 健 张明媛 于 倩 徐 超

内容提要：本文基于五大发展理念构建了高质量发展评价指标体系，从整体、分区域和分维度的视角探究了财政分权对高质量发展的影响，进一步明确了分权的“适度区间”。研究发现：从整体看，财政分权显著促进了高质量发展；分区域看，财政分权能够显著提升东部地区的高质量发展水平，但对中西部地区的影响并不显著；分维度看，财政分权促进了创新发展、协调发展以及开放发展，但对绿色发展以及共享发展的影响不显著。此外，本文采用面板门槛模型验证了不同程度财政分权的异质性影响，进一步明确了财政分权的“适度区间”。研究结论对探索财政分权改革模式，推动高质量发展有一定的启示作用。

关键词：财政分权 高质量发展 适度区间

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一、引言及文献综述

进入新发展阶段，我国经济发展最重要的特征是已进入高质量发展阶段。推动高质量发展是我国当前和今后一个时期确定发展思路、制定经济政策、实施宏观调控的根本要求。如何理解高质量发展的内涵？何立峰（2018）认为，高质量发展是体现“五大发展理念”的发展，是能够很好满足人民日益增长的美好生活需要的发展。也即，高质量发展必须以创新、协调、绿色、开放、共享的新发展理念为战略引领。作为履行国家宏观调控职能的重要抓手，财政分权体制不仅决定了各级政府之间的权力和责任分配，也是促进我国高质量发展和完善现代经济体制的重要保障（储德银和迟淑娴，

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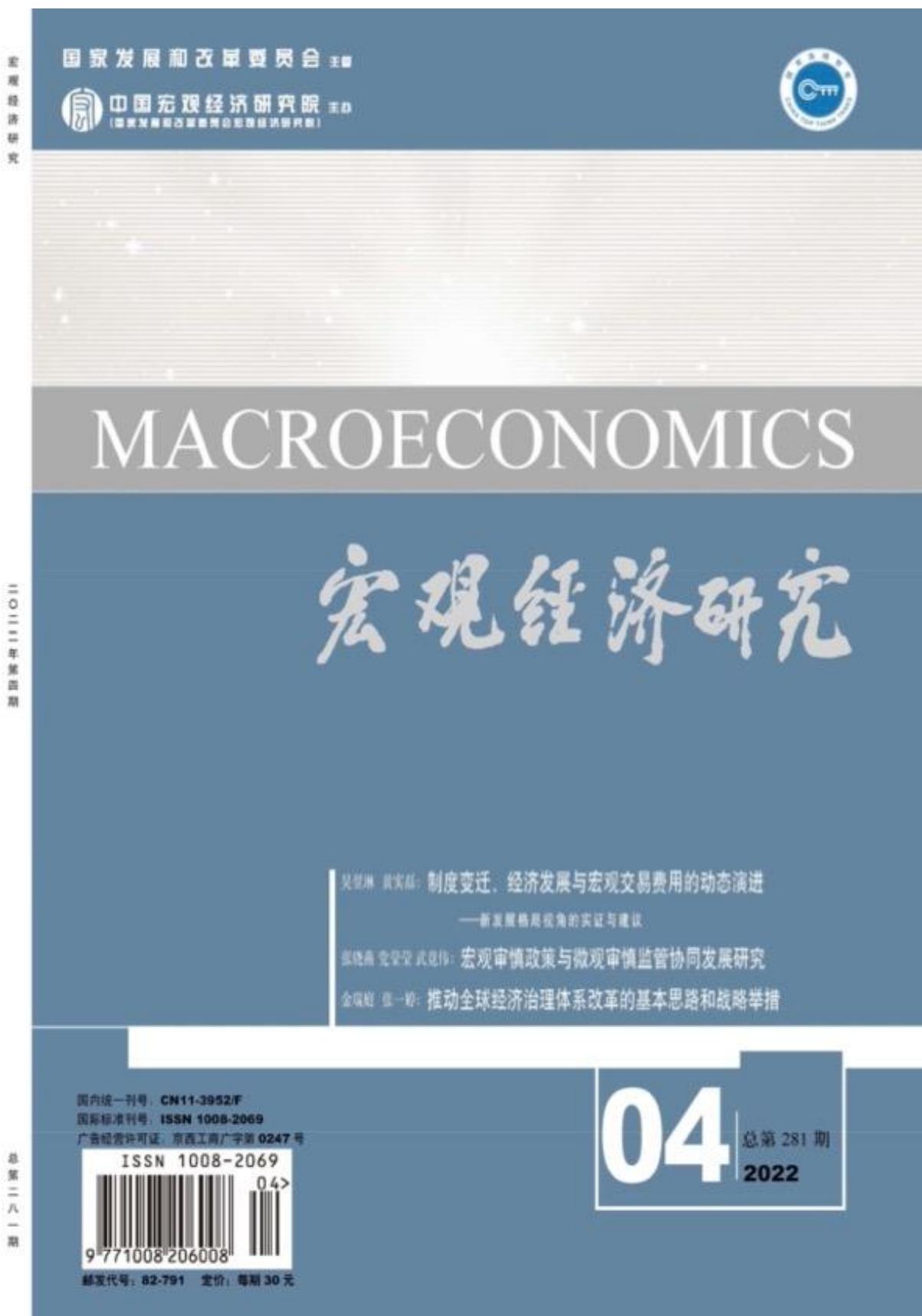
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税制结构与共同富裕^{*}

——兼论经济发展水平的门槛效应

郭健 谷兰娟 王超

内容提要 共同富裕是社会主义的本质要求。本文基于发展与共享理念构建了共同富裕评价指标体系,依托固定效应和面板门槛模型,分析了税制结构对中国共同富裕水平的影响。研究发现:直接税比重与共同富裕水平显著正相关,间接税比重则与之相反;共同富裕目标的实现有赖于直接税比重的逐步提高,个人所得税和财产税应首当其冲。进一步的分析发现,当人均GDP超过一定标准时,直接税占比越高越能显著提升共同富裕水平;在这一阶段,提高直接税比重的重点仍然是个人所得税和财产税。研究结论为中国税制结构调整提供了更为清晰的思路,明确定位了不同税系、不同税种在提升共同富裕过程中发挥的调控作用,有助于推进共同富裕的实现。

关键词 税制结构 直接税 间接税 共同富裕 人均GDP

Abstract Common prosperity is the essential requirement of socialism. This paper constructs a common prosperity evaluation index system based on the concept of development and sharing and analyzes the influence of tax structure on the level of common prosperity in China by relying on fixed effects and panel threshold models. It is found that the proportion of direct taxes is significantly and

positively related to the level of common prosperity, while the proportion of indirect taxes is the opposite; the realization of the goal of common prosperity depends on the gradual increase of the proportion of direct taxes, and personal income tax and property tax should bear the brunt. Further analysis reveals that when the GDP per capita exceeds a certain standard, the higher the share of direct taxes is, the more significant the increase in the level of common prosperity; at this stage, the focus of increasing the share of direct taxes remains on personal income tax and property tax. The findings of the study provide a clearer idea for the restructuring of China's tax system and clearly locate the regulatory role played by different tax systems and taxes in the process of enhancing common prosperity, which helps to promote the realization of common prosperity.

Keywords Tax structure Direct tax Indirect tax Common prosperity Per capita GDP

一、引言

2021年8月,中央财经委员会第十次会议

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13. 网络直播的税收治理：理论构建与策略选择——论文



现代传播

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本刊已入编国家哲学社会科学学术期刊数据库、中国知网、中国核心期刊（遴选）数据库和“中国科技论文在线”等期刊数据库，并将同步发布微信版。如不愿刊入以上电子出版物者，请提前书面声明，以便处理。

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网络直播的税收治理：理论构建与策略选择*

—
郭
健
王
超
—

【内容摘要】 数字技术发展与市场需求趋向使得网络直播在供给侧与需求侧的协同发力下塑造出日趋强劲的价值活力。税收是国家宏观调控网络直播市场的重要工具，课征税种、征管体制与法治建设构成了网络直播税收治理体系，其影响机制表现为有效宏观调控、落实税收法定、解决信息不对称、加强市场监管。健全的网络直播税收治理体系可以有效促进网络直播行业高质量发展。但当前网络直播税收治理问题层出不穷，严重影响行业健康发展。可在借鉴国外经验基础之上，立足我国顶层设计，注重提升纳税遵从意识，均衡税收分配，推进征管信息技术升级，为网络直播更好发展营造良好税务营商环境。

【关键词】 网络文艺；网络直播；税收治理

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一、引言：网络文艺式生存及其税收治理困境

网络文艺大致是基于互联网技术、媒介和平台而进行创作、传播和接受的艺术形态，主要包括网络文学、网络电影、网络剧、网络综艺、网络纪录片、网络直播、网络短视频、网络音频、网络演出、网络展览等。网络文艺与传统影视艺术有高度的关联性，例如网络电影脱胎于电影，网络剧脱胎于电视剧，网络综艺脱胎于电视综艺等。但网络直播的诞生和发展，却彰显了网络文艺与传统影视及其他艺术形态的某种典型不同。

网络直播的拟真性使媒介互动主体模糊了真实和虚拟的界限，其特有的情感互动体验让网络直播的热度持续居高不下。^①2016年以来我国网络直播用户的规模迅速增长，截至2021年12月，我国网络直播用户规模达7.03亿，较2020年12月增长8652万，占网民整体的68.2%。其中，电商直播用户规模为4.64亿，较2020年12月增长7579万，占网民整体的44.9%。^②随着

平台经济的发展，从事网络主播的群体也越来越大，影视明星、网红等纷纷加入此行业。国内直播电商市场交易规模也呈迅猛增长趋势，直播带货火爆发展，2017年—2020年，国内直播电商市场交易规模分别为196.4亿元、1354.1亿元、4437.5亿元和12850亿元，预计2021年交易规模达到23500亿元，同比增长82.87%。^③2021年抖音与快手带货直播场次超7500万场，商品链接超3.9亿。^④与此同时，我国积极完善网络直播税收优惠等政策，促进网络直播发展，带动财政收入增长。2020年，我国《优化营商环境条例》开始执行，明确提出落实减税降费政策，对新业态、新模式采取包容审慎的态度；2020年6月，《关于优化税务执法方式严禁征收“过头税费”的通知》发布，明确提出支持互联网新业态的发展，贯彻税收优惠政策，促进形成新的经济增长点。然而，直播行业快速发展，网络主播获取巨额财产收入的同时，税收治理问题也愈加严重，网络直播平台和个人规避税收的方式也越来越多，数额巨大，严重侵蚀

* 本文系国家社科基金项目“提升工业企业全要素生产率的财税激励机制研究”（项目编号：18BJY222）的研究成果。

14. Empirical study of financial crises based on topological data analysis—论文

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Empirical study of financial crises based on topological data analysis[☆]



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ABSTRACT

We analyze financial time series based on topological data analysis to obtain the critical information around 2008 global financial crisis and 2010 European debt crisis. We build an early warning system to detect the critical dates on the financial time series. By constructing complexes on the point clouds data with sliding windows, we explore their topological changes from window to window. The persistence barcodes, diagrams and landscapes are obtained from the complexes of several US's stock indices. We detect the early warning signal of the 2008 crisis in the first half of 2007. The changes of complexes are also shown in detail. And then we choose several European countries' typical indices to do a similar work. The topological structures of the complexes change sharply in 2008 and 2010. It shows us clearly that 2008 and 2010 financial crises affected European stock markets greatly. To study the condition of China's stock markets during the crises, we choose two major stock indices to construct complexes and analyze their changes. The early warning signal is also detected in the early 2007, and China's stock markets experienced quite a long period of intense turbulence around 2008. However, it was not so serious as US's and European markets. Furthermore, we also see that European debt crisis did not obviously affect China's stock markets.

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1. Introduction

The frequent financial crises reminded scholars to pay attention to the detection of their early warning signals and the analysis of financial or economic time series around the crises. The most typical models were introduced to do the work in 1990s, the Probit and Logit models (called FR models) introduced by Frankel and Rose in [1], the linear regression model (called STV model) proposed by Saches, Tornell and Velasco in [2], the KLR model introduced by Kaminsky, Lizondo and Reinhart in [3], and Markov regime switching model first used in the field by Jeanne and Masson in [4].

A lot of works, such as the research in [5–10], are done based on these models by analyzing the economic or financial time series. Meanwhile, the models have been improved in a great extent. Machine learning is developing to become an

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平均场倒向重随机微分方程及其应用*

朱庆峰¹ 王天啸² 石玉峰³

摘要 研究了平均场倒向重随机微分方程, 得到了平均场倒向重随机微分方程解的存在唯一性. 基于平均场倒向重随机微分方程的解, 给出了一类非局部随机偏微分方程解的概率解释. 讨论了平均场倒向重随机系统的最优控制问题, 建立了庞特里亚金型的最大值原理. 最后讨论了一个平均场倒向重随机线性二次最优控制问题, 展示了上述最大值原理的应用.

关键词 平均场, 倒向重随机微分方程, 非局部随机偏微分方程, 最大值原理, 线性二次最优控制

MR (2000) 主题分类 60H10, 60H15, 93E20

中图法分类 O211.6

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1 引言

为了给出一类拟线性随机偏微分方程 (SPDEs) 的概率解释, Pardoux 和 Peng^[1] 引入了如下倒向重随机微分方程 (BDSDEs):

$$Y_t = \xi + \int_t^T f(s, Y_s, Z_s) ds + \int_t^T g(s, Y_s, Z_s) \overleftarrow{d} B_s - \int_t^T Z_s \overrightarrow{d} W_s, \quad 0 \leq t \leq T,$$

这里关于 $\{B_t\}$ 的积分是倒向积分, 关于 $\{W_t\}$ 的积分是标准正向积分. 事实上, Pardoux 和 Peng^[1] 开创了用 BDSDE 研究 SPDE 的新方法, 由此得到了 SPDE 的一系列结果 (参见文 [2-16] 及相关文献). 最近倒向重随机系统的最优控制问题引起了广泛的研究兴趣, 见文 [17-20].

1956 年, Kac^[21] 提出了如下 McKean-Vlasov 随机微分方程 (SDEs):

$$dX_t = b(X_t, \mu_t) dt + \overrightarrow{d} W_t, \quad t \in [0, T], \quad X_0 = x, \quad (1.1)$$

其中

$$b(X_t, \mu_t) = \int_{\Omega} b(X_t(\omega), X_t(\omega')) \mathbb{P}(d\omega') = \mathbb{E}[b(\xi, X_t)] \Big|_{\xi=X_t},$$

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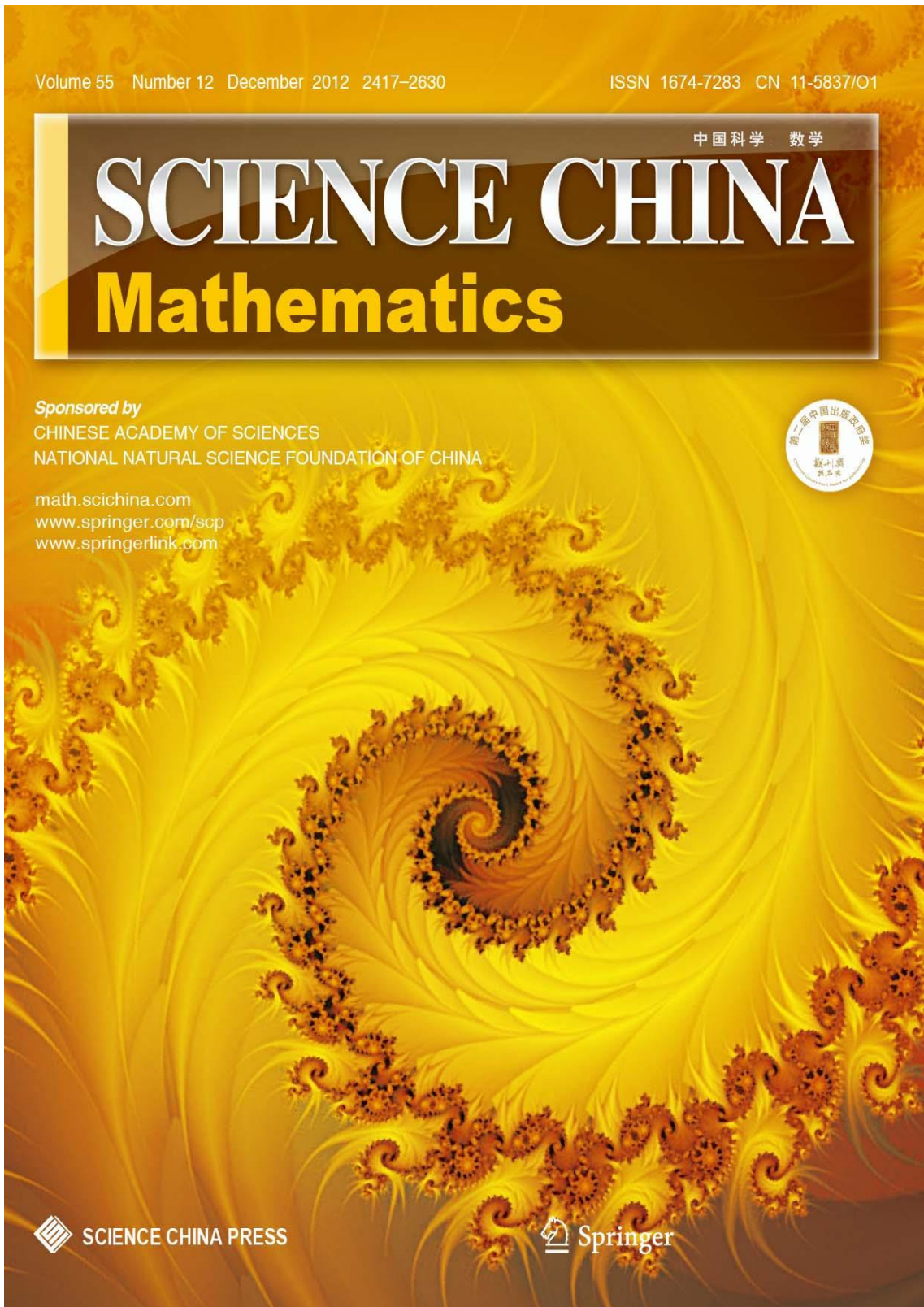
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16. Forward-backward doubly stochastic differential equations and related stochastic partial differential equations—论文



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Forward-backward doubly stochastic differential equations and related stochastic partial differential equations

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Abstract The notion of bridge is introduced for systems of coupled forward-backward doubly stochastic differential equations (FBDSDEs). It is proved that if two FBDSDEs are linked by a bridge, then they have the same unique solvability. Consequently, by constructing appropriate bridges, we obtain several classes of uniquely solvable FBDSDEs. Finally, the probabilistic interpretation for the solutions to a class of quasilinear stochastic partial differential equations (SPDEs) combined with algebra equations is given. One distinctive character of this result is that the forward component of the FBDSDEs is coupled with the backward variable.

Keywords forward-backward doubly stochastic differential equations, bridge, measurable solution, stochastic partial differential equations

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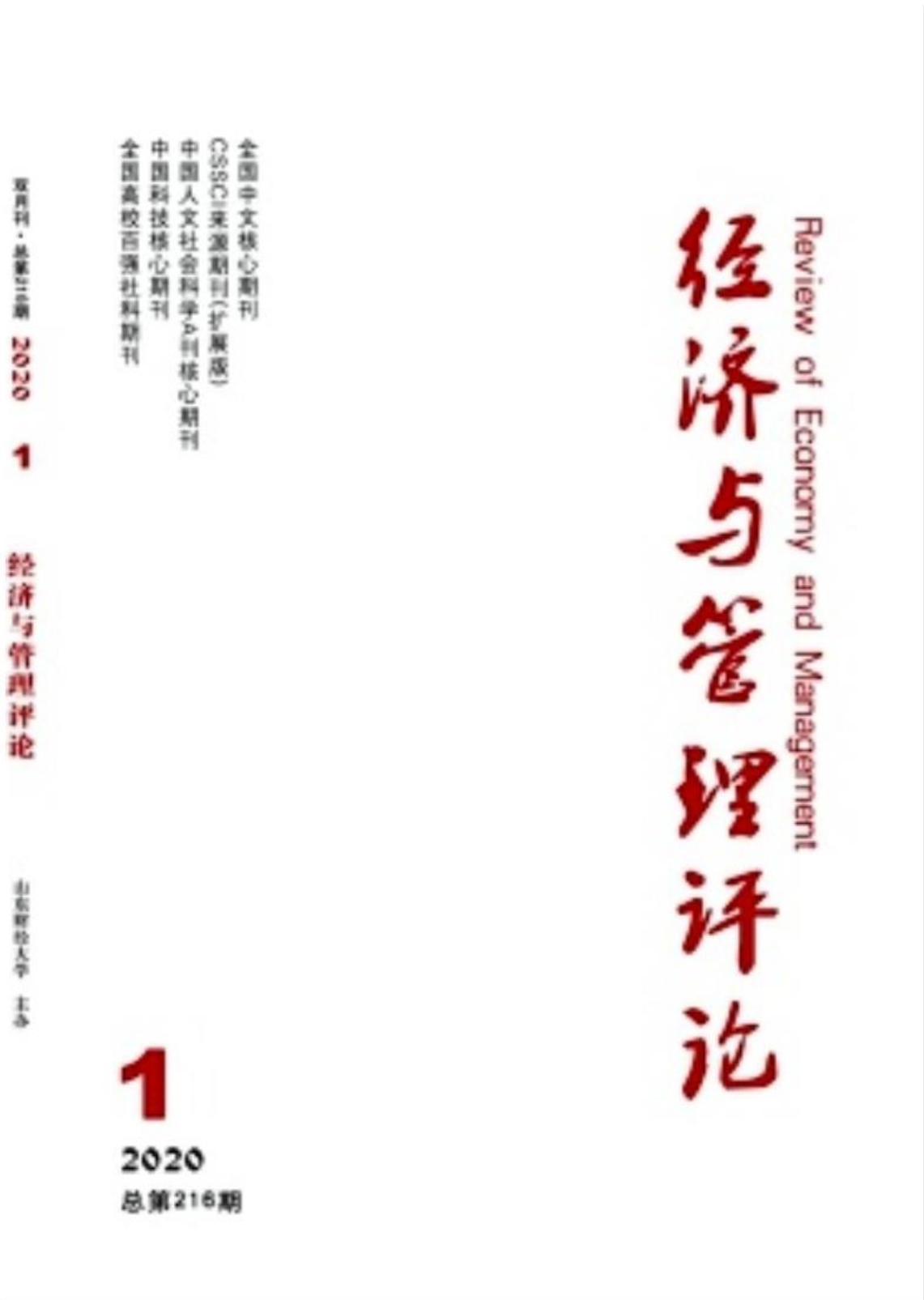
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1 Introduction

Nonlinear backward stochastic differential equations with Brownian motion as noise sources (BSDEs) were first introduced by Pardoux and Peng [12]. By virtue of BSDEs, Peng [16] has given a probabilistic interpretation (nonlinear Feynman-Kac formula) for the solutions of semilinear parabolic partial differential equations (PDEs), for more detailed information, the reader is referred to Darling and Pardoux [4], Pardoux and Zhang [15] and so on. The g -expectation was introduced by Peng [23] in 1997, based on BSDEs and was studied by many mathematicians and economists (cf. Jiang [18] and their references). Fully coupled forward-backward stochastic differential equations (FBSDEs) can provide a probabilistic interpretation for the solutions to a class of quasilinear parabolic and elliptic PDEs (cf. Pardoux and Tang [14] and Wu and Yu [24]) and have been investigated deeply. FBSDEs were studied first by Antonelli [1] and were used to hedge options involved in a large investor in financial market by Cvitanic and Ma [3] and Ma et al. [9]. Hu and Peng [7], Peng and Wu [18] and Peng and Shi [19] developed the method of continuation, which is a purely probabilistic method and allows the randomness of the coefficients in FBSDEs. The method of continuation was further generalized by Yong [25] by introducing

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17. 中国财经类大学科研产出评价研究—论文



中国财经类大学科研产出评价研究

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摘要 现有大部分用于科技评价的评价方法都是以评价科技效率(投入-产出)为主,而现阶段我国科技绩效的着重点是提高科技产出。同时高校科研评价指标体系通常具有多层、复杂的结构,且评价指标众多。针对标准多层和非标准多层 DEA 模型无法直接处理过多评价指标问题的缺陷,构建符合多层指标体系特点、容许产出指标间相互补偿、具有合理区分能力的多层 Index-DEA 模型,对我国 30 所财经类大学科研产出进行了评价和标杆分析,得到了比较客观的结果。

关键词 科研产出评价;多层 Index-DEA 模型;多层次指标结构

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一、引言及文献综述

众所周知,高校的科技创新水平已经成为衡量一个国家或地区科技发展水平的关键因素。随着我国高校科研投入的进一步加大,科研资源总量得到了很大程度的提升。全国高校科研经费投入已经由 2008 年的 314.7 亿元上升到 2018 年的 1457.9 亿元,科研活动人员也由 2008 年的 54.2 万人上升到 2018 年的 98.4 万人,这为促进我国高校科研活动的开展以及科技创新水平的提高奠定了坚实的基础。同时高校的科研经费水平显著影响区域创新水平(李宪印等,2017)^[1]。然而,科研投入力度的极大提高,并没有直接提升许多高校的科研产出,或者说许多高校的科研产出仍然相对较低。如何提高科研产出,为科学合理地进行科研资源配置提供可靠的科学依据已是迫切需要解决的问题。

对于国内外高校科研评价和高校科研排名已有不少研究成果。郭银清(2014)^[2]构建了以投入与产出为目标层的高校科研投入、产出指标体系及其层次结构,并运用经典 AHP 法与成本收益法对高校科研效益综合评价模型进行了探讨。李瑛等(2013)^[3]运用随机前沿面模型对高校科研管理绩效进行研究,其研究表明:科研实力强的高校科研管理绩效未必高,高校科研管理绩效呈现出明显的地域特征。沙巨山(2016)^[4]从静态和动态两个角度采用 DEA 和

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18. 基于综合指数法的商业银行系统性金融风险度量与分析——以山东省商业银行为例——论文

经济与管理评论
金融保险研究

基于综合指数法的商业银行系统性 金融风险度量与分析 ——以山东省商业银行为例

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摘要 商业银行系统性金融风险不仅羁绊银行本身的发展,更严重阻碍了经济的平稳运行。综合考虑微观银行层面以及宏观经济层面对商业银行系统性金融风险的影响来选取指标,然后在主成分分析基础上采用综合指数法对山东省商业银行的系统性金融风险进行度量,实证结果拟合了山东省商业银行系统性金融风险的变动趋势,最后对其变动趋势进行深入分析,并提出防范山东省商业银行系统性金融风险的对策建议。

关键词 系统性金融风险;山东省商业银行;主成分分析;综合指数法

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一、引言

在金融自由化和经济全球化的大背景下,商业银行作为银行体系的重要组成部分,其系统性金融风险的发生对银行体系的稳定产生巨大的冲击,进而威胁到金融体系以及宏观经济的稳定。随着我国进入经济新常态时期,加大了“去产能、去库存、去杠杆”的力度,受这些不确定性因素的影响,商业银行系统性金融风险成为银行业以及监管机构所关注的焦点。为保证商业银行稳健运行及平稳发展,对其系统性金融风险的度量尤为重要。

本文以山东省商业银行为例,结合山东省商业银行所具有的历史数据不充足、数据稳定性差、连续性不够强等特点,采用综合指数法对山东省商业银行的系统性金融风险进行度量研究。

本文的结构安排如下:第一部分,综述了系统性金融风险的含义、演进以及度量方法,进而界定了本文系统性金融风险的内涵并提出度量方法;第二部分,说明了本文对山东省商业银行系统性金融风险度量的构建思路;第三部分,对山东省商业银行系统性金融风险进行实证分析;第四部分,对防范山东省商业银行的系统性金融风险提出对策建议。

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19. Analysis of global stock markets' connections with emphasis on the impact of COVID-19—论文

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Analysis of global stock markets' connections with emphasis on the impact of COVID-19[☆]



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ABSTRACT

We explore global stock markets' connections during the financial crises or risks since 1995 with emphasis on the situation under COVID-19. We choose 40 countries/regions and take one index from each of them, and then compute the correlation coefficients and distances between each pair of the indices with a sliding window. We construct the complexes and carry out topological data analysis mainly through persistence landscapes and their L^p -norms, which exhibit the complexes' daily changes. We establish a critical dates' detection system based on the persistence landscapes. Topological features of the complex networks are shown on the critical dates and dates before them. All the results show clearly that the connections became even closer among the markets when COVID-19 spread worldwide than those of any other risk. The robustness and effectiveness of these methods provide guidance for the analysis of financial crises in the future.

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1. Introduction

Since COVID-19 broke out in China in late December of 2019, it has spread all over the world. During the period, the talks broke down between Saudi Arabia and Russia on oil production reduction, and Saudi Arabia started full-scale production, leading to a sharp drop in global oil prices. Together with the decline of the global economy, the negative effects of regional economy are gathering. As a result, the financial markets reacted soon and global stock indices fell greatly. European stocks generally fell more than 7% on March 9, 2020. Among the three major European stocks, the FTSE100 index in the UK fell 7.69%, the DAX30 index in Germany fell 7.89%, and the CAC40 index in France fell 8.39%. The biggest losers in Europe were Greece and Italy, falling 13% and 11% respectively. In US, the condition was even worse. The markets experienced a once-in-a-century liquidity crisis. They triggered a market wide circuit breaker four times since March 9, i.e., March 9, March 12, March 16 and March 18 of 2020. Markets in Australia, China, Canada, Brazil and some other countries also experienced collapse in the period. The global stock markets were undergoing a terrible time. It is an urgent and necessary work to study the situation so as to help better understand the situation and make effective prevention and control in the near future. Many research works have been done based on the stock or bond markets under COVID-19, e.g., Ouzan [1], Sharif et al. [2], Jia et al. [3], Ashraf [4], Umara et al. [5], Akhtaruzzamana et al. [6], Just and Echaust [7], Papadamou et al. [8], Mazur et al. [9] and etc.

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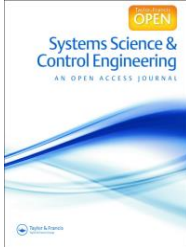
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20. Game analysis of merchants and consumers confronting fakes on e-commerce platforms—论文



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Game analysis of merchants and consumers confronting fakes on e-commerce platforms

Hongfeng Guo, Xinyao Zhao, Hang Yu, Xin Zhang & Jinjin Li

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21. Increasing discrimination of DEA evaluation by utilizing distances to anti-efficient frontiers—论文

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Increasing discrimination of DEA evaluation by utilizing distances to anti-efficient frontiers



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ABSTRACT

This paper develops three DEA performance indicators for the purpose of performance ranking by using the distances to both the efficient frontier and the anti-efficient frontier to enhance discrimination power of DEA analysis. The standard DEA models and the Inverted DEA models are used to identify the efficient and anti-efficient frontiers respectively. Important issues like possible intersections of the two frontiers are discussed. Empirical studies show that these indicators indeed have much more discrimination power than that of standard DEA models, and produce consistent ranks. Furthermore, three types of simulation experiments under general conditions are carried out in order to test the performance and characterization of the indicators. The simulation results show that the averages of both the Pearson and Spearman correlation coefficients between true efficiency and indicators are higher than those of true efficiency and efficiency scores estimated by the BCC model when sample size is small.

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1. Introduction

Data envelopment analysis (DEA) was first introduced by Charnes et al. [10], and has been widely used in performance or productivity evaluation. The main idea of the classic DEA is to first identify the production frontier on which the decision making units (DMUs) will be regarded as efficient. Then those DMUs not on the frontier will be compared with their peers on the frontier to estimate their efficiency scores. All the DMUs on the frontier are deemed to have the same level of performance and to represent the best practice. One of the main advantages of DEA is to allow the DMUs to have full freedom to select their weights, which are most favorable for their assessments to achieve the maximum efficiency score. This full flexibility of selecting weights is important in the identification of inefficient DMUs. However, this full flexibility may much reduce the discrimination power of DEA in the sense that there often exist too many DMUs on the frontier, which cannot be further ranked in the standard DEA models. When there are many input and output variables but only a few DMUs are available, decision makers (DMs) may find that all or most DMUs are efficient, and such results would be of little use for decision making. As [1], p. 250 argued, "Often decision-makers are

interested in a complete ranking, beyond the dichotomized classification, in order to refine the evaluation of the units."

Regarding the number of DMUs required in DEA models, [11], p. 252 proposed a rule of thumb, which demands

$$n \geq \max \{m \times s, 3(m + s)\},$$

where n is the number of DMUs, m and s are the number of inputs and outputs. However, the rule above is sometimes violated in reality, because of small DMUs sample but many input and output variables. In such case, the standard DEA models are not as useful as expected.

Therefore, many researchers have sought to improve the discrimination capability of standard DEA models. Now there are three main areas in DEA literature: The first area requires preferential or prior information from relevant decision-makers to enhance the discrimination ability of DEA models. For example, some scholars have developed the weights restriction [2,27] or preference change methods [17,21,32] to incorporate the prior information or value judgments of DMs into DEA models. The second area is based on cross-efficiency matrix, in which DMUs are evaluated by both itself and other peers [13,23]. Although cross-efficiency method is often very useful, in our opinion, the cross-efficiency scores have moved quite away from the basic principle of DEA. For instance in the case of one standard input variable, all the DMUs in fact use the same weights to compute their cross-efficiency scores. The third popular area is the super-efficiency method, which computes the score of

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DEA models with Russell measures

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Abstract In real applications, data envelopment analysis models with Russell measures are widely used although their theoretical studies are scattered over the literature. They often have seemingly similar structures but play very different roles in performance evaluation. In this work, we systematically examine some of the models from the viewpoint of preferences used in their production possibility sets (PPS). We identify their key differences through the convexity and free-disposability of their PPS. We believe that this study will provide guidelines for the correct use of these models. Two empirical cases are used to compare their differences.

Keywords DEA · Russell measures · Preference · Production possibility sets · Free disposability

1 Introduction

Data envelopment analysis (DEA) is a systematic approach for analyzing the performance of organizations and operational processes, which was first proposed by Charnes et al. (1978), based on economic theory and linear programming. The DEA models can facilitate comprehensive measurement using input/output data to evaluate the relative efficiency of decision making units (DMUs) without a prior knowledge of input/output functions and weights. Now there are numerous theoretical and empirical researches into the DEA method, which has been extended to many areas, including private sectors and public sectors. Its theories and

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23. 宏观审慎政策与企业资本结构优化——兼论资本要素市场化配置效率改进——论文（指导学生）

会计研究2022.4

宏观审慎政策与企业资本结构优化

——兼论资本要素市场化配置效率改进^{*}

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【摘要】本文以2010-2019年全部A股上市企业为样本，分析宏观审慎政策对企业资本结构动态调整的影响。研究发现，宏观审慎政策能够促进企业资本结构优化，即宏观审慎政策能够提高企业资本结构向目标资本结构的调整速度。机制检验表明，宏观审慎政策通过提高金融资源配置效率促进了企业资本结构的优化调整。进一步研究发现，企业内、外部治理机制能够增强宏观审慎政策对企业资本结构的优化作用；宏观审慎政策调控下，资本结构动态调整呈非对称性，债务调整是企业资本结构优化的主要方式，权益融资优化企业资本结构能力不足；货币政策与宏观审慎政策双支柱框架对企业资本结构优化具有协同效应。本文拓展了宏观审慎政策在微观企业层面的政策效果研究，为政府宏观调控在资本要素市场化改革中的积极作用提供了直接的经验证据支持。

【关键词】要素市场化；宏观审慎政策；资本结构优化

一、引言

伴随经济转轨和金融改革深化进程中的制度变迁，我国逐渐形成以银行为主体进行资源配置的中介主导型金融结构，而金融机构配置资源的效率缺陷通常被认为是杠杆率高企的重要原因。银行主导型金融结构既提高了全社会杠杆率，又加重了企业资产负债表的资本结构错配风险，使得我国非金融企业债务水平和杠杆率均处于极易引发危机的境地（李扬等，2012）。据2021年2季度《NIFD》^①统计数据显示，截至2021年上半年末，我国非金融企业部门杠杆率高达158.8%，远超90%国际警戒线，在主要经济体中居高位。在回归经济常态化运行进程中，非金融企业高杠杆化不仅会阻碍企业健康发展，而且蕴藏着巨大尾部风险，为金融稳定埋下隐患。为此，如何通过优化金融资源配置将企业杠杆率调整到合理范围成为我国亟需解决的问题。

党的十九届五中全会提出，坚持和完善社会主义基本经济制度，推动有效市场和有为政府更好结合。政府管理不仅要建立体现新发展理念的宏观调控目标体系，科学把握宏观政策逆周期调节力度，而且要不断强化金融监管职能，全面加强宏观审慎管理。自金融危机以来，随着对金

融稳定重要性认识的不断加深，金融监管政策已逐渐从微观审慎拓展到宏观审慎。从“十二五”规划明确提出构建逆周期的金融宏观审慎管理制度框架，到十九大报告提出健全货币政策和宏观审慎政策双支柱调控框架，宏观审慎政策不仅被引入我国宏观调控体系，而且被提到与货币政策同等重要地位。依据国际清算银行，所谓宏观审慎政策是指运用潜在工具为达到促进金融系统稳定目的而制定的所有政策（张健华和贾彦东，2012），其本质是国家从宏观、逆周期角度采取措施，防范金融顺周期波动所导致系统性风险的一种手段。

宏观审慎政策不仅能够缓解金融市场的顺周期性（邹传伟，2013；Cerutti等，2017），而且能够减轻金融机构间的风险联动性（方意等，2019），货币政策与宏观审慎政策双支柱调控框架对金融风险的防范更具有“1+1>2”协同效应（童中文等，2017）。值得注意的是，以降低系统性金融风险、维护金融稳定为目标导向的宏观审慎政策，在改变银行等金融机构行为决策的同时，势必会对微观实体企业的信贷融资能力产生影响，进而影响企业资本结构的形成和改变。因此，在我国非金融企业部门杠杆率失衡

^{*} 本文受国家社会科学基金重大项目（21ZDA040）的资助。通讯作者：李佳颖，lijiaying_edu@126.com。

^① 报告数据源自国家金融与发展实验室：<http://www.nifd.cn/>。

24. 减污降碳协同推进与中国 3E 绩效——论文（指导学生）

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减污降碳协同推进与中国 3E 绩效

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摘要: 推动减污降碳协同增效必须坚持“绿水青山就是金山银山”理念。文章在数据包络分析框架下, 将大气污染和碳排放纳入 3E 系统, 提出减污降碳协同推进下 3E 绩效评价思路, 定量考察了减污降碳协同推进对中国 3E 系统及子系统绩效的影响。研究表明: 样本考察期内, 减污降碳协同推进推动中国 3E 系统整体绩效实现年均 0.91% 的增长, 特别是党的十八大以来, 减污降碳协同推进对于绩效的提升作用更加显著。在 3E 子系统层面, 减污降碳协同推进有利于经济系统、能源系统和环境系统的绩效提升, 但是能源系统的绩效提升面临更大挑战。文章阐释了“绿水青山就是金山银山”理念在减污降碳协同推进行动中的实践指导意义, 对于“十四五”时期推动全社会保持生态文明建设的战略定力, 进一步深入贯彻落实“绿水青山就是金山银山”理念, 扎实推进减污降碳协同增效具有重要的启示意义。

关键词: 减污降碳; 3E 系统; 绩效评价; 两山论

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一、引言

生态文明建设是关乎中华民族永续发展的根本大计。党的十九届六中全会审议通过《中共中央关于党的百年奋斗重大成就和历史经验的决议》, 强调必须坚持“绿水青山就是金山银山”理念, 坚持山水林田湖草沙一体化保护和系统治理, 像保护眼睛一样保护生态环境, 像对待生命一样对待生态环境, 更加自觉地推进绿色发展、循环发展、低碳发展, 坚持走生产发展、生活富裕、生态良好的文明发展道路。党的十八大以来, 党中央以前所未有的力度抓生态文明建设, 全党全国推动绿色发展的自觉性和主动性显著增强, 美丽中国建设迈出重大步伐, 我国生态环境保护发生历史性、转折性、全局性变化。“十四五”时期, 我国生态文明建设进入以降碳为重点战略方向、推动减污降碳协同增效、促进经济社会发展全面绿色转型、实现生态环境质量改善由量变到质变的关键时期, 同时也面临着碳达峰、碳中和带来的严峻挑战, 深入打好污染防治攻坚战的任务更加艰巨。站在新的历史起点, 必须更加完整、更加准确、更加全面地贯彻“绿水青山就是金山银山”理念, 统筹推进污染治理、生态保护和应对气候变化, 推动减污降碳协同增效, 加快实现经济社会发展的全面绿色转型。

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新时代中国实施创新驱动发展战略的 实践历程与重大成就^①

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研究目标：遵循“让事实说话、让数据说话”的原则，系统梳理新时代中国实施创新驱动发展战略的实践历程，并对新时代中国实施创新驱动发展战略取得的重大成就开展量化分析。研究方法：基于全国、区域、省际等多个空间层面，从创新投入、创新产出和创新效率三个维度出发，采用描述性统计、核密度估计、马尔科夫链等方法，多维立体全面地展示进入新时代以来中国实施创新驱动发展战略取得的重大成就。研究发现：党的十八大以来，中国坚持把创新作为发展的第一动力，创新投入持续增加，创新产出快速提升，创新效率明显改善，由2012年的0.48提高到2020年的0.77，累积增长61.05%。东部地区在中国创新驱动发展中发挥引领作用，创新发展的区域协调性不断增强，同时涌现出多个创新发展领先省份，为新时期创新高地建设奠定了良好基础。在分布动态及演进趋势上，进入新时代以来，中国的创新投入、创新产出分布曲线右拖尾形态明显，创新高地快速崛起，创新效率分布曲线呈右移趋势，创新效率整体提升。随时间推移，创新投入、创新产出、创新效率向高水平转移的概率不断增大，呈现跨级跃迁特征。研究创新：将量化分析与新时代中国的创新驱动发展实践相结合，真实立体展示新时代中国实施创新驱动发展战略的实践历程与重大成就。研究价值：为深入学习宣传贯彻党的十九届六中全会精神提供学理支撑，为新时期更加深入实施创新驱动发展战略提供决策参考。

关键词 十九届六中全会 创新驱动发展战略 重大成就 量化分析

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引 言

创新是一个民族进步的灵魂，是一个国家兴旺发达的不竭动力，也是中华民族最深沉的民族禀赋。党的十九届六中全会审议通过的《中共中央关于党的百年奋斗重大成就和历史经验的决议》强调指出：党坚持实施创新驱动发展战略，把科技自立自强作为国家发展的战略支撑，健全新型举国体制，强化国家战略科技力量，加强基础研究，推进关键核心技术攻关和自主创新，强化知识产权创造、保护、运用，加快建设创新型国家和世界科技强国。党的

^① 本文获得山东省社会科学规划重大理论和现实问题协同创新研究专项重点项目“乡村振兴背景下山东省城乡融合发展对策研究”（21BCXJ02）资助。本文的通讯作者为杨骞。

26. 基于多任务深度神经网络的企业纳税行为甄别研究——论文（指导学生）

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基于多任务深度神经网络的企业 纳税行为甄别研究*

李国锋 李祚娟 王哲吉

内容提要：随着数字经济时代的到来，丰富的数据资源有利于全面精准地刻画企业纳税情况，但数据来源广、类别不平衡以及噪音多等问题，也给企业纳税行为的甄别工作带来挑战。本文融合企业报表以及证监会、海关和税务等部门的多来源涉税数据，基于K-S检验和随机森林算法，构建了企业纳税行为甄别指标体系；将不同行业企业纳税行为甄别工作视为不同任务，提出基于多任务深度神经网络的企业纳税行为甄别模型，充分利用了不同行业任务间的相关性和差异性信息；针对样本数据集不平衡问题，引入焦点损失函数进一步改进了甄别模型。研究发现，相对于传统Logistic、支持向量机和神经网络等单任务模型，本文多任务模型的企业纳税行为甄别能力、泛化能力和稳健性更强。当模型预测某企业纳税不遵从的概率超出阈值时，即可判定该企业为重点稽查对象，以辅助税务部门提升稽查效率。本研究为政府智慧税务治理工作提供了新的思路。

关键词：多源数据；多任务深度神经网络；企业纳税行为甄别

DOI: 10.19343/j.cnki.11-1302/c.2022.07.011

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Research on Corporate Tax Paying Behavior Identification Based on Multi-Task Learning in Deep Neural Networks

Li Guofeng Li Zuojuan Wang Zheji

Abstract: With the advent of the digital economy era, rich data resources are conducive to comprehensively and accurately depicting the tax payment situation of enterprises. However, multiple sources, imbalances, and noise in the data also pose challenges to the identification of corporate tax paying behavior. This paper integrates tax-related data from multiple sources such as corporate statements, China Securities Regulatory Commission, customs and tax authorities. Based on the K-S test and the random forest algorithm for feature filtering, we construct a set of indicators for screening corporate tax paying behavior. This paper proposes a multi-task deep neural network-based corporate tax paying behavior identification model with tax behavior identification in different industries as different sub-tasks, which takes into account the correlation and heterogeneity between the different industry tasks. Aiming at the imbalance of the sample data set, the focus loss function is introduced to improve the model. The study results show that compared with the traditional single-task models such as logistic, support vector machine and neural network, the multi-task model constructed in this paper has better performance in tax behavior identification, generalization, and robustness. When the model predicts that the probability of tax non-compliance of an enterprise exceeds the threshold, the enterprise can be identified as a key audit target

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27. 新时代的中国能源革命：历程、成就与展望——论文（指导学生）

新时代的中国能源革命：历程、成就与展望

党的十八大以来取得的重要成就、成功经验和理论创新

新时代的中国能源革命： 历程、成就与展望*

刘华军 石 印 郭立祥 乔列成

摘要：进入新时代，面对能源供需矛盾日益突出、能源结构转型步伐加快的国内国际背景，中国坚定不移推进能源革命。本文深刻阐释了新时代中国能源革命的国际国内背景，全面回顾并系统梳理了能源革命的思想发展和重要举措，遵循“让事实说话、让数据说话”的原则，从能源强度、能源结构、非化石能源开发和全要素能源效率等4个维度，通过量化分析真实立体展示了党的十八大以来中国能源革命取得的重大成就。进入新时代以来，中国以“四个革命、一个合作”的能源安全新战略为指引，多措并举加快推进能源革命，推动形成了能源强度稳步下降、能源结构持续优化、非化石能源加快开发、能源效率明显改善的能源发展新格局，能源生产和消费方式实现了历史性变革，现代能源体系建设迈上新台阶，为新时代的高质量发展提供了重要支撑。面对“双碳”目标对新时期推进能源革命提出的新要求和新挑战，中国应在巩固能源革命成效的基础上，坚持完善能源消费强度和总量双控制度、正确把握能源结构以煤为主的基本国情、科学有序推进非化石能源开发利用、重视从全要素角度推进能源效率提升，持续向着保障国家能源安全、构建现代能源体系、加快建设能源强国的方向前进。

关键词：十九届六中全会 能源革命 重大成就 量化分析

DOI:10.19744/j.cnki.11-1235/f.2022.0098

一、引言

党的十八大以来，中国发展进入了新时代，中国能源发展也进入了新时代。着眼世界能源百年变局和国家能源安全，新时代的中国正进行着一场轰轰烈烈的能源革命。2012年11月，党的十八大首次提出了“推动能源生产和消费革命”。2014年6月13日，习近平总书记在中央财经领导小组第六次会议上创造性地提出了“四个革命、一个合作”的能源安全新战略（即推动能源消费革命、能源供给革命、能源技术革命、能源体制革命，并全方位加强国际合作），为新时代中国能源高质量发展指明了方向。2021年11月召开的党的十九届六中全会审议通过了《中共中央关于党的百年奋斗重大成就和历史经验的决议》，全面总结了党的百年奋斗重大成就和历史经验，重点总结了新时代党和国家事业取得的历史性成就、发生的历史性变革和积累的新鲜经验。作为新时代党领导经济工作和生态环境保护工作的重要内容，中国的能源革命在哪些领域开展了实践？这些实践取得了哪些重大成就？未来又将如何深入推进能源革命？这些问题迫切需要进行全面总结和系统回答。在向着全面建成社会主义现代化强国的第二个百年奋斗目标迈进的重大历史关头，总结好新时代能源革命的实践历程和重大成就，对于保障国家能源安全、构建现代能源体系、实现“双碳”目标、加快建设能源强国具有极其重要的参考价值。

能源革命战略思想是习近平新时代中国特色社会主义思想的重要组成部分，大量文献对“四个革命、一个合作”能源安全新战略进行了深入阐释。周大地(2014)认为能源革命能够推动绿色发展，只有通过能源革命，抑制高碳能源扩张，才能实现能源与经济社会可持续发展。何建坤(2014)认为能源消费革命的实质就是习近平总书记所强调的“坚决控制能源消费总量”，能源生产革命的实质就是要保证能源供应清洁低碳化。黄晓勇(2015)认为，贯彻“四个革命、一个合作”能源安全新战略，需要从“一带一路”国际能源合作、区域协同发展、技

*本文得到国家社会科学基金项目“‘十四五’时期减污降碳协同效应的实现机制与政策体系研究”(基金号:21BGL003)的资助。文责自负。刘华军为本文通讯作者。

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28. Socially Responsible Investment and Firm Value: The Role of Institutions—论文（指导学生）

Journal Pre-proof

Socially Responsible Investment and Firm Value: The Role of Institutions

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Abstract: We explore the impact of Socially Responsible Investment (SRI) on firm value by examining the role of institutions, an important factor neglected in many studies. Using data for 13,718 listed companies in 17 countries from 2005 to 2018, and employing a quantile regression model, we show both formal and informal institutions to have a significant impact on firm value. Through negative screening associated with SRI, institutions may reduce firm value for excluded enterprises.

Keywords: SRI; formal and informal institutions; firm value; negative screening; quantile regression

1. Introduction

An investment behavior that synthesizes environmental, social, and ethical factors into the investment decision-making process (Renneboog, 2008), socially responsible investment (SRI) has become a global financial industry (Erragragui & Lagoarde-Segot, 2016) recently valued at \$30.7 trillion in the five major global markets (GSIA, 2018).¹ Research exploring SRI's pursuit of a balance among profit and social and environmental factors falls into two categories, one of which compares SRI with traditional investment, the other concerned with evaluating whether SRI is a reasonable investment mode at both corporate and social levels. Existing research does not suggest consensus among scholars (Kyriakos et al., 2019).

¹ The five markets are Australia, Canada, Europe, Japan, New Zealand, and the United States.



29. Effect of positive tone in MD&A disclosure on capital structure adjustment speed: evidence from China—论文（指导学生）

ACCOUNTING
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Effect of positive tone in MD&A disclosure on capital structure adjustment speed: evidence from China

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Abstract

We explore the influence of text tone on capital structure, especially the impact of positive tone in management discussion and analysis (MD&A) disclosures on the capital structure adjustment speed of Chinese listed firms in Shanghai and Shenzhen Stock Exchange. We find that positive tone in MD&A disclosures significantly promotes the dynamic adjustment of capital structure. Specifically, we identify two types of positive tone: exaggerated and true. We find that only true positive tone significantly promotes the adjustment speed of capital structure. This paper supplements the relevant literature on the dynamic adjustment of capital structure from the perspective of non-financial narrative information, and provides evidence for the effect of strategic tone management in textual analysis.

Key words: MD&A; Dynamic capital structure; Speed of adjustment; Linguistic tone; China

JEL classification: G30, G32

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1. Introduction

In capital structure theory, scholars have extensively discussed whether firms have target leverage (Rajan and Zingales, 1995; Fama and French, 2002; Hovakimian *et al.*, 2004; Flannery and Rangan, 2006; Kayhan and Titman, 2007; Lemmon *et al.*, 2008). Graham and Harvey (2001) use a survey-based

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30. 中国区域创新效率的南北差异格局——论文（指导学生）

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中国区域创新效率的南北差异格局: 2001—2016

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摘 要: 以中国区域发展的“南北差异”作为切入点, 以创新指数作为创新产出, 采用 Bootstrap-DEA 方法测度区域创新效率, 全面揭示区域创新效率的南北差异格局及其动态演化特征。研究发现: 中国区域创新效率总体呈现南高北低、南快北慢的特征, 空间分布重心逐渐南移, 南北地区间差距持续扩大。2008 年以来, 南北两大地区的创新效率均呈现空间溢出效应, 南方地区创新效率向更高水平跃迁的概率更大, 北方地区保持原有创新效率的惯性较强。中国应坚持“在提升中协调, 在协调中提升”的区域创新效率提升路径, 发挥创新效率在地域间的溢出效应, 在高质量发展攻坚阶段实现创新驱动发展与区域协调发展的双赢。

关键词: 创新效率; 南北差异; Bootstrap-DEA; 随机核密度

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North-South Difference Pattern of Regional Innovation Efficiency in China: 2001 – 2016

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Abstract: This paper takes the “North-South Difference” as the starting point, the innovation index as the innovation output, the Bootstrap-DEA method is used to measure innovation efficiency, revealing the North-South difference pattern of innovation efficiency. China’s regional innovation efficiency shows the characteristics of high in the South and low in the north, fast in the South and slow in the north. The spatial distribution center gradually moves to the south, and the gap between the north and the South continues to expand. Since 2008, North-South innovation efficiency has shown spatial spillover effects. There is a greater probability of a higher level of innovation efficiency in the southern region. The North has a stronger inertia to maintain the original innovation efficiency. China should adhere to the promotion path of “coordination in promotion and promotion in coordination”, give play to the spatial spillover effect of innovation efficiency, and achieve a win-win situation between innovation-driven development and coordinated regional development.

Key words: innovation efficiency; north-south difference; Bootstrap-DEA; stochastic kernel density

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