摘　要

在新一轮科技革命和产业加速变革的新发展阶段，数字经济与实体经济的深度融合成为中国实现经济高质量发展的必由之路。党的二十大报告提出，加快发展数字经济，促进数字经济和实体经济深度融合。数字经济与实体经济在企业层面深度融合的本质是企业创新能力建设，随着数字化进程不断加速，其对企业创新的影响也愈加深入。对于企业而言，数字经济与实体经济的融合发展为企业带来的不仅是战略规划方向上的转变，可能也会是企业创新能力突破的奇点。因此，创新成为数实融合发展背景下企业行为研究层面的重要议题。这为本文试图从数实融合的视角研究其对微观企业创新能力的影响效应提供了重要的现实依据。

从目前对数实融合的研究来看，学者们多聚焦于数实融合的机理分析，主要关注数实融合的发展意义，在实证研究方面相对不足，且多数偏向于定性分析，对微观企业层面的定量研究较少。从影响企业创新的相关文献看，由于数实融合近几年才被作为国家战略任务明确提出，现有文献对企业创新的研究多从单一的数字经济角度出发，缺乏从融合视角探究其对企业创新能力的影响效应及作用机制。基于此，本文研究了数实融合对企业创新能力的影响，并从理论与实证两个层面进行分析。首先，本文对数字经济与实体经济的关系、数实融合以及企业创新能力的相关研究进行文献综述。其次，本文进行了理论分析，分析数实融合的理论机理与逻辑层次，根据融合逻辑层次探讨数实融合的效应，并从企业内部和外部环境两方面分析影响企业创新能力的因素，随后结合创新理论、产业融合理论和创新生态系统理论剖析数实融合影响企业创新能力的作用渠道。接着，构建数字经济和实体经济的指标体系来衡量两者的发展水平，并根据数实融合的内涵用耦合协调模型来测度两者的融合水平。最后，本文利用2013—2021 年各省份数实融合发展水平和沪深两市 A 股上市公司数据，检验数实融合对企业创新能力的作用，并检验两者之间的作用渠道。

研究结果表明：第一，2013—2021 年间我国数实融合发展水平呈小幅波动上升趋势，且区域间存在明显的非均衡发展特征。第二，数实融合会显著提升企业创新能力，在经过内生性检验与稳健性检验后结果依旧可靠。第三，数实融合会通过推动企业数字化转型和驱动企业创新生态系统优化变革两种渠道提升企业创新能力。第四，异质性结果显示，数实融合对年轻企业和处于数字基础设施建设水平较低地区的企业的创新能力有更大的促进作用，且在高科技行业和非高科技行业之间有相似的正向趋势。

根据本文的研究结论，主要的政策建议如下：首先，应加强基础设施建设，积极打造多功能、高效能的服务共享平台，以提供更加便捷、全面的服务，进一步推动数实融合的进程。其次，应深化数字技术与实体企业的融合，鼓励企业积极采纳数字化

技术，推动企业数字化转型，提升企业的创新能力和竞争力。最后，要高度重视行业数字化转型的异质性，针对不同行业的特性，制定个性化的政策，促进产业数字化协同发展，实现数实深度融合与共赢。

关键词：数实融合；企业创新能力；企业数字化转型；创新生态系统

Abstract

In the new development stage of a new round of scientific and technological revolution and accelerated industrial change, the deep integration of the digital economy and the real economy has become an inevitable path for China to achieve high-quality economic development. The report of the 20th Party Congress proposes to accelerate the development of the digital economy and promote the deep integration of the digital economy and the real economy. The essence of the deep integration of the digital economy and the real economy at the enterprise level is the construction of innovation capacity, and with the continuous acceleration of the digitalisation process, its impact on enterprise innovation has become more and more profound. For enterprises, the integration and development of the digital economy and the real economy for enterprises is not only a shift in the direction of strategic planning, but may also be the singularity of the breakthrough of enterprise innovation capability. Therefore, innovation has become an important topic in the research level of enterprise behaviour in the context of the development of digital-real integration. This provides an important practical basis for this thesis's attempt to study the effect of digital-real integration on the innovation ability of micro enterprises from the perspective of its impact.

From the current research on digital-real integration, scholars mostly focus on the mechanistic analysis of digital-real integration, mainly focus on the developmental significance of digital-real integration, and there is a relative lack of empirical research, and most of them are biased towards qualitative analysis, and there are fewer quantitative studies at the micro-enterprise level. From the perspective of the relevant literature affecting enterprise innovation, since the digital-real integration has only been explicitly proposed as a national strategic task in recent years, the existing literature on enterprise innovation is mostly from the perspective of a single digital economy, and there is a lack of the integration perspective to explore the effect and mechanism of its impact on the innovation capacity of enterprises. Based on this, this thesis investigates the impact of digital-real integration on enterprise innovation capability, and analyses it from both theoretical and empirical levels. Firstly, this thesis provides a literature review on the relationship between digital economy and real economy, digital-real integration and enterprise innovation ability; secondly, this thesis carries out a theoretical analysis, analyses the theoretical mechanism and logical level of digital-real integration, explores the effect of digital-real integration according to the logical level of integration, and analyses the factors affecting the innovation ability of the enterprise from the aspects of the enterprise's internal and external environments, and then analyzes the factors affecting the enterprise's innovation ability by combining the theory of innovation, industry integration theory and innovation ecosystem theory. Then, we analyse the channels through which digital-real integration affects the innovation ability of enterprises by combining innovation theory, industrial integration theory and innovation ecosystem

theory; then, we construct the index system of digital economy and real economy to measure the development level of the two and measure the integration level of the two by using the coupling and coordination model according to the connotation of digital-real integration; lastly, this thesis uses the development level of digital-real integration and the development level of Shanghai and Shenzhen A-share market of the two cities in each province in the period of 2013-2021 to analyse the effect of digital-real integration. Finally, this thesis tests the role of digital-real integration on enterprise innovation ability and the role channels between the two by using the development level of digital-real integration in each province and the data of A-share listed companies in Shanghai and Shenzhen from 2013 to 2021.

The results of the study show that, firstly, the development of digital-real integration in China shows a small fluctuating upward trend during the period of 2013-2021, and there are obvious unbalanced development characteristics between regions. Second, the digital-real integration will significantly enhance the innovation ability of enterprises, and the results are still reliable after the endogeneity treatment and robustness test. Third, digital-real integration enhances enterprise innovation capability through two channels: promoting enterprise digital transformation and driving enterprise innovation ecosystem optimisation and change. Fourth, the heterogeneity results show that digital real-world convergence promotes the innovation capability of younger firms and firms in regions with lower levels of digital infrastructure development to a greater extent, with similar positive trends between high-tech and non-high-tech industries.

Based on the findings of this thesis, the main policy recommendations are as follows: firstly, infrastructure construction should be strengthened and a multifunctional and high-performance service-sharing platform should be actively built to provide more convenient and comprehensive services to further promote the process of digital-real integration. Second, the integration of digital technologies with real enterprises should be deepened, and enterprises should be encouraged to actively adopt digital technologies to promote their digital transformation and enhance their innovation capability and competitiveness. Finally, great importance should be attached to the heterogeneity of digital transformation in industries, and personalised policies should be formulated for the characteristics of different industries to promote the collaborative development of industrial digitalisation and realise the deep integration of digital and real as well as win-win situation.

Key Words: integration of digital and real economy; enterprise innovation capacity; enterprise digital transformation; enterprise innovation ecosystems

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