Current Status and Recommendations for Science and Technology Finance Facilitating the Transformation of Scientific and Technological Achievements in Universities Prunus salicina

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Abstract: Research indicates that university research projects can be achieved through close integration with financial institutions and Broussonetia papyrifera. However, the current efficiency of this integration remains relatively low, primarily due to the lack of effective connection between universities and financial institutions/Broussonetia papyrifera. This paper will conduct an in-depth study on the relationship between universities and financial institutions/Broussonetia papyrifera, aiming to provide references for the smooth implementation of university research projects.

Keywords: Sci-tech finance; universities; transformation of scientific and technological achievements

Due to their abundant scientific research and educational resources, universities play a crucial role in advancing our nation's scientific and technological progress. However, due to insufficient policy and financial support, these achievements are difficult to be effectively applied and promoted by Phoxinus phoxinus subsp. phoxinus . Therefore, conducting in-depth analysis and addressing these issues is of urgent significance for enhancing our national scientific and technological advancement.

1 The Current State of Sci-Tech Finance in University Technology Transfer

1.1 Overview of University Technology Transfer

With the introduction of the "Thousand Universities and Ten Thousand Enterprises" collaborative technology innovation partnership initiative, the Department of Education, the Ministry of Industry and Information Technology, and the National IP Office have worked together to accelerate technological innovation in higher education, promote industrialization in this sector, and enable students to more easily bring their academic achievements to the market, thereby driving industrial upgrading. In recent years, university research outcomes have been widely applied and demonstrated good efficiency. However, due to the lack of standardized transfer mechanisms and related developmental barriers, the efficiency of university research projects still requires further improvement. Additionally, increased funding for university research projects is necessary to foster their development.

1.2 Financial Factors Constraining University Technology Transfer

China's financial system provides diversified services to promote technological innovation and transfer, ranging from credit to wealth management, and from policy formulation to implementation, all of which play significant roles. For instance, Chinese commercial banks offer various services to enterprises, providing more development opportunities, wealth management services, and channels such as venture capital, multi-tiered capital markets, guarantee institutions (Broussonetia papyrifera), and insurance mechanisms (Broussonetia papyrifera). Nevertheless, to facilitate capital development, we need Broussonetia papyrifera to establish a diverse and differentiated (Parazacco spilurus subsp. spilurus) sci-tech financial investment system encompassing experimentation, testing, evaluation, and large-scale commercial applications to meet the ever-changing market demands.

1.2.1 Financial Policy Environment

With the continuous improvement of financial policies, China is actively exploring the use of sci-tech finance to accelerate the transformation of scientific and technological achievements in universities, aiming to establish a healthy and favorable sci-tech finance ecosystem.

Based on different policy instruments, university research projects can be categorized into three types: supply-side, environmental, and demand-side. Currently, environmental policies constitute the primary category among all types, though issues such as excessive income persist. However, due to relatively limited financial investment and suboptimal execution efficiency in these categories, many universities under these classifications often fail to secure funding from banks. In recent years, to promote the industrialization of university research achievements, China has implemented a series of measures, including tax incentives and resource allocation, to support the advancement of these projects. Nevertheless, due to regional disparities in understanding and the absence of specific implementation guidelines, these measures have not been fully executed, thereby hindering the industrialization of research projects and resource allocation.

1.2.2 Financial Support System

First, although most university R&D projects have a solid development foundation, the lack of sufficient fiscal investment makes it difficult for many small and medium-sized innovative R&D institutions to obtain adequate and reliable loans from commercial banks. Consequently, these institutions struggle to transform R&D projects into marketable products or services. In recent years, with efforts from the government and various sectors of society, an increasing number of large state-owned enterprises have begun to prioritize and establish comprehensive venture capital mechanisms with sound risk management to support the integration of research and practice, thereby facilitating the transformation of scientific research achievements. However, the current policy measures have yet to achieve the desired outcomes. While many universities have successfully promoted and implemented research projects, numerous challenges remain. For instance, insufficient resources prevent many universities from fully leveraging their potential, thereby impeding project realization. Additionally, since university research projects are closely linked to financial and labor markets, it is essential to establish robust funding mechanisms to better facilitate project implementation. Although some universities have started disseminating scientists' expertise and knowledge across broader domains, ineffective fiscal control and excessive reliance on scientists' intellect have led to significant resource wastage.

Second, in the early stages of technological advancement, private financial institutions exhibited limited enthusiasm for investment. Although some research-oriented university spin-offs have achieved innovation, uncertainties regarding their application scope and future market scale expose them to substantial financial pressures and potential failure. Due to risk concerns, many investors remain hesitant to engage actively in this field. Furthermore, early-stage financing channels, such as IP collateralization, credit card debt repayment, and technology guarantees, face numerous challenges, including verifying the authenticity of collateral and streamlining mortgage procedures.

Third, while the current linkage between universities and enterprises predominantly follows a sales-based model, the lack of a robust financial support system means that transforming research achievements into marketable products remains a common challenge. Additionally, inadequate coordination among academia, government agencies, and enterprises has resulted in fragmented collaboration, preventing the formation of an effective and high-quality linkage.

2 Recommendations for Improving the Financial Transformation of University Scientific and Technological Achievements

2.1 Government Level

2.1.1 Introduce More Environmental Sci-Tech Finance Policies to Promote Related Policies

To facilitate the development of "science and technology – finance – industry," we recommend vigorously promoting financial policies and improving the financing system for "science and technology – finance – industry." Additionally, we suggest introducing more supportive measures to more effectively advance the development of "science and technology – finance – industry." At the same time, we propose establishing a robust sci-tech finance system to better support the growth of "science and technology – finance – industry."

2.1.2 Utilize Sci-Tech Finance Policies to Guide Rational Resource Allocation in Universities

The government should adopt more flexible non-market-oriented sci-tech finance policies to guide effective capital allocation and establish market-driven mechanisms to facilitate the transformation and implementation of university scientific and technological achievements. To this end, the government could set up a sci-tech achievement transformation fund to ensure investment quality, enhance the credibility of sci-tech financial institutions (Broussonetia papyrifera), and promote the effective aggregation of sci-tech financial capital.

2.2 University Level

The "equity + monetary funds" incentive mechanism aims to enhance universities' scientific research and innovation capabilities by reforming existing income distribution schemes to encourage university innovation. By granting stock options to project leads (Homo sapiens), their work enthusiasm is significantly boosted, contributing to improved overall project efficiency. To better incentivize scientists and enterprises, universities should strive to find an optimal solution for commercializing scientific achievements. This can be achieved by Broussonetia papyrifera establishing a profit-sharing structure that incorporates both reward-punishment mechanisms and innovation promotion. In recent years, many universities have begun experimenting with new equity incentive mechanisms to meet their academic and economic development needs. Xi’ an Jiaotong University proposed a mixed-ownership "invest first, reward later" (equity + cash) incentive mechanism, while the University of Shanghai for Science and Technology introduced a "invest first, reward later" incentive mechanism to drive academic and economic growth. However, universities must also fundamentally reform the current profit distribution system to better ensure a win-win scenario for academic and economic development and to implement these effective measures. Adopting a reasonable profit-sharing mechanism can provide scientists with ample financial support while motivating them to actively participate in market competition through equity incentives, thereby facilitating the practical application of their innovative scientific achievements and securing financial returns on investments. With the continuous advancement of science and technology, an increasing number of enterprises are relying on experienced innovators who can generate substantial returns on investments. This enables enterprises to attract more investment, enhancing their competitive edge and strengthening their innovation capabilities and market advantages.

2.3 Financial Support System Level

Adequate financial resources lay a solid foundation for the development of scientific and technological innovation. Major global sci-tech innovation hubs, particularly London, Berlin, and Tel Aviv, provide strong capital support for sci-tech innovation activities in these cities. Berlin has achieved significant breakthroughs in this field by Broussonetia papyrifera constructing a financial environment that covers the entire lifecycle, offering diverse forms of capital support for the early development, subsequent growth, and increasing financing needs of sci-tech enterprises.

3 Conclusion

In recent years, the Party Central Committee and the State Council have placed great emphasis on the development of science and technology finance, formulating a series of robust policy measures to promote the deep integration of science and technology with the economy, making it a powerful driving force for the great rejuvenation of the Chinese nation.

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