

The Impact of IPR Securitization on Financing

Jiahui Chen*, Hao Feng, Qijian Pan

Guangdong University of Technology, Guangzhou, 510520, Guangdong, China

*Corresponding author: 1481135799@qq.com

Keywords: IPR securitization, securitization of property, Financing risk

Abstract: The study mainly introduces the content, characteristics, and effect analysis index values of the IPR securitization financing model, as well as the theoretical basis for its analysis, with a particular focus on the selection of accounting effect analysis indices based on the company's financing project. Additionally, the study compiles the key aspects of project design implementation, the actual effects, and the operability and replicability of the IPR securitization financing model, and obtains proposals for the enterprise, the field, and its regulators.

1. Introduction

Nowadays, in the age of information technology, small and medium-sized enterprises (SMEs) are showing more and more value in the socio-economic development, forming two major modules of socio-economic development together with well-known enterprises. However, despite their promising development, there are still some obstacles and challenges, among which the most obvious one is the shortage of funds for many SMEs.

2. Identification of Financing Risks in the IP Securitization Process

2.1 Construction of Work Breakdown Structure WBS

1) Financing plan approval stage

The financing plan approval stage requires the shareholders' meeting and the company's shareholders' meeting to implement the financing plan scheme and then carry out the financing plan approval. The financing plan approval should strictly comply with the company's process, and the layers of strict control to ensure the reliable and standardized financing audit results.

2) Financing plan implementation stage

In the implementation stage of financing, various documents should be prepared in advance in accordance with the requirements of multiple parties. The company signs a factoring contract with a commercial factoring company, authorizes it to have ownership of the patent rights and signs the application authorization documents, thus forming the receivable debt, and carries out financing in accordance with the requirements of the enterprise steps, and at the same time cooperates with the enterprise promotion work[1].

3) Supervision stage of financing activities

During the financing process, the main supervision is whether the financing procedure process is effective and compliantly implemented; after the financing is finished, the person in charge should strictly check whether the financing assets obtained by the enterprise are carried out in accordance with the application process immediately. They should establish a table of accounts of the financing funds applied behind the company, which outlines how the funds raised will be used for advance arrangement and distribution. It is prohibited to use public funds for private use, and there must be a responsible person to control each expenditure. Any irregular content should be addressed, and the responsible person held accountable. This is crucial for the sustainable development of the enterprise.

4) Construction of Risk Breakdown Structure RBS

The era of knowledge economy has promoted socio-economic development in China and the

securitization of intellectual property has brought new vitality to intellectual property enterprises and increased financing methods. This study analyzes the risks faced by enterprises in the process of intellectual property securitization financing. Internal structural elements are mainly generated by personal reasons of the enterprise, while external factors include the risk of lessee's breach of contract, strict regulation due to policy changes, sales market risk in intellectual property securitization, and the risk of third-party non-compliance. These elements can be harmful to enterprise financing and are difficult to avoid[2].

2.2 Construction of risk identification matrix WBS-RBS

The WBS-RBS risk identification matrix is created by breaking down the workflow of an enterprise engaged in securitization financing of intellectual property rights, and integrating the associated risk elements encountered in securitization financing of assets. The resulting risk structure is matched with the work content to generate a comprehensive risk identification matrix that enables detailed risk analysis of the workflow engine process while ensuring no risk is overlooked. The industry risks faced by companies are mainly concentrated in the approval, implementation, and regulatory aspects of corporate financing solutions. Strict regulatory risk is mainly reflected in the financing implementation and control process, with regulatory risk being critical for the approving authority. Corporate management risk is dispersed throughout financing activities, with executive risk being a crucial element. Operational risk is mainly found in the financing proposal and supervision stages, while corporate finance risk arises primarily from the financing scheme, audit and supervision, and internal control risk of accounting[3].

3. Financing risk evaluation in the IP Securitization Process

3.1 Risk evaluation set establishment

1) Establishing the set of evaluation factors

First of all, we need to establish the set of evaluation factors of the company's financing risk evaluation system in IP securitization financing: let U_1 be the regulatory risk, U_2 be the market risk, U_3 be the regulatory risk, U_4 be the management risk, U_5 be the operational risk, U_6 be the financial risk, U_7 be the technical risk, then the set of evaluation factors of the primary index of W company's financing risk is $U = \{U_1, U_2, U_3, U_4, U_5, U_6, U_7\}$; U_{11} is the reputation risk, U_{12} is the liquidity risk, U_{21} is the competition risk, U_{22} is the pricing risk, U_{23} is the lessee default risk, U_{24} is the intellectual property valuation risk, then $U_2 = \{U_{21}, U_{22}, U_{23}, U_{24}, U_{25}, U_{26}\}$; U_{31} is the risk of institutional regulation and U_{32} is the risk of performance of participating institutions, then $U_3 = \{U_{31}, U_{32}\}$; U_{41} is the risk of information disclosure and U_{42} is the risk of management performance, then $U_4 = \{U_{41}, U_{42}\}$; U_{51} is the risk of business, U_{52} is the risk of use of proceeds, U_{53} is the risk of operating, U_{54} is the risk of financial regulation, U_{61} is the risk of taxation, U_{62} is the risk of internal control, U_{63} is the risk of technological advancement, U_{71} is the risk of technological iteration, U_{72} is the risk of technological talent loss, U_{73} is the risk of technological talent loss, $U_7 = \{U_{71}, U_{72}, U_{73}\}$.

2) Establishing the weight set

The weight set is denoted by W . Based on the weights of the risk factors at each level calculated above, the weight set can be established separately. The weight set of the secondary indicators of financing risk relative to the primary indicators is: $W = \{W_1, W_2, \dots, W_i\}$, and the values of i are 1, 2, 3, 4, 5, 6, 7, thus $W = \{0.0872, 0.2947, 0.0477, 0.05, 0.2093, 0.1018, 0.2093\}$; the weight set of the scheme level relative to the criterion level is The set of weights of the scheme layer relative to the criterion layer is: $W_i = \{W_{i1}, W_{i2}, \dots, W_{ij}, \dots, W_{i4}\}$, ($i=1, 2, \dots, 7, j=1, 2, \dots, 4$), $W_i = \{W_{i1}, W_{i2}, \dots, W_{i4}\}$, ($i=1, 2, \dots, 7, j=1, 2, \dots, 4$), $W_1 = \{0.500, 0.500\}$;

$W_2 = \{0.1698, 0.0874, 0.0469, 0.1698, 0.4387, 0.0874\}$; $W_3 = \{0.500, 0.500\}$;

$W_4 = \{0.500, 0.500\}$; $W_5 = \{0.0415, 0.0811, 0.0575, 0.0292\}$; $W_6 = \{0.5390, 0.1638, 0.2973\}$;

$W_7 = \{0.1207, 0.0653, 0.0414\}$.

3) Establishing rubric set and score set

The establishment of the evaluation set refers to the evaluation of the risk factors of enterprise W financing by the experts who participated in the questionnaire based on their knowledge and experience in the field, and the various combinations of the evaluation results, which are called the evaluation set V. $V=\{V_1, V_2, \dots, V_n\}$, n is the number of evaluation results. When n is i, $V_i(i=1, 2, \dots, n)$ is the i-th evaluation result. The evaluation results can be divided into five levels, and the set of comments obtained by quantifying each risk factor is assigned as follows: If $V_1=100, V_2=80, V_3=60, V_4=40, V_5=20$, then $V=$ Extremely high, Relatively high, medium, Relatively low, Extremely low=100, 80, 60, 40, 20, as shown in Table 1.

Table 1: Explanation of indicators.

Rank	Score	Rubric
1	80-100	Extremely high
2	60-80	Relatively high
3	40-60	medium
4	20-40	Relatively low
5	0-20	Extremely low

3.2 Evaluation object affiliation matrix construction

From the collation, the number of people who considered the policy risk indicators faced by the company in securitization financing as Extremely high, Relatively high, medium, Relatively low and Extremely low in terms of the total number of people were 0%, 20%, 35%, 30% and 15% respectively; the number of people who considered the legal risk as high, high, medium, low and low in terms of the total number of people were 0%, 15%, 40%, 35% and 10%, respectively.

From the data, seven affiliation matrices were obtained the Figure 1:

$$\begin{matrix}
 R_1 \left\{ \begin{matrix} 0 & 0.2 & 0.35 & 0.3 & 0.15 \\ 0 & 0.15 & 0.4 & 0.35 & 0.1 \end{matrix} \right\} & R_2 \left\{ \begin{matrix} 0 & 0 & 0.2 & 0.3 & 0.5 \\ 0 & 0.05 & 0.1 & 0.25 & 0.6 \\ 0 & 0 & 0.1 & 0.2 & 0.7 \\ 0.15 & 0.1 & 0.15 & 0.15 & 0.45 \\ 0 & 0 & 0.1 & 0.55 & 0.35 \\ 0 & 0.15 & 0.5 & 0.15 & 0.3 \end{matrix} \right\} \\
 R_3 \left\{ \begin{matrix} 0 & 0 & 0.1 & 0.35 & 0.55 \\ 0 & 0.3 & 0.4 & 0.15 & 0.15 \end{matrix} \right\} & R_4 \left\{ \begin{matrix} 0 & 0.3 & 0.3 & 0.25 & 0.15 \\ 0 & 0.35 & 0.4 & 0.15 & 0.1 \end{matrix} \right\} \\
 R_5 \left\{ \begin{matrix} 0 & 0.3 & 0.2 & 0.4 & 0.1 \\ 0 & 0.3 & 0.2 & 0.25 & 0.25 \\ 0 & 0.25 & 0.25 & 0.2 & 0.3 \\ 0 & 0 & 0.1 & 0.25 & 0.65 \end{matrix} \right\} & R_6 \left\{ \begin{matrix} 0.1 & 0.4 & 0.3 & 0.1 & 0.1 \\ 0 & 0.3 & 0.25 & 0.2 & 0.25 \\ 0 & 0.35 & 0.35 & 0.1 & 0.2 \end{matrix} \right\} \\
 R_7 \left\{ \begin{matrix} 0 & 0.3 & 0.25 & 0.35 & 0.1 \\ 0 & 0 & 0.2 & 0.3 & 0.5 \\ 0 & 0.4 & 0.2 & 0.3 & 0.1 \end{matrix} \right\} &
 \end{matrix}$$

Figure 1: Seven affiliation matrices were obtained.

3.3 Total evaluation value of financing risk

After calculating the evaluation value of each evaluation index, the weighting method is used to calculate the total evaluation value of financing risk R of company W, W_i is the weight of the criterion layer relative to the target layer, R_i is the risk value score of each criterion layer index, and the calculation formula is as follows(1):

$$R = \sum_{i=1}^7 W_i * R_i \quad (1)$$

The calculation shows that the company's financing risk evaluation score is 48.103, which is medium risk and generally it is manageable. The specific calculation process is as follows.

$$R = \sum_{i=1}^7 W_i * R_i = 0.0872 * 52 + 0.2974 * 38.31 + 0.0477 * 44 + 0.05 * 57.5 + 0.2093 * 51.69 + 61.02 * 0.1018 + 0.2093 * 49.09 = 48.103$$

4. Risk response measures for intellectual property securitization financing

4.1 Specific risk response measures

1) Higher risk countermeasures

In the securitization of intellectual property financing, accounting risk is a relatively high risk among the financing risks faced by companies. Accounting risk is a risk factor within the enterprise, and corporate financial risk is the risk that the enterprise's overall planning of assets, financing costs, and capital raising plans may jeopardize the enterprise's profitability and subsequent operations when raising funds. Enterprises should be cautious when carrying out fund raising management decisions, and should carry out scientific research on feasibility studies for important enterprise decisions, conduct thorough market research and financial statement analysis, manipulate the cost of enterprise fund raising decisions, enhance the economic efficiency of enterprises, make reasonable enterprise management decisions and appropriate management methods, and ensure that enterprise accounting risks are within the controllable range[4].

2) Medium risk countermeasures

In order to prevent the current policy risks in intellectual property securitization financing, enterprises must carry out financing activities under the circumstances of relevant policy regulation. Enterprises should improve the concept of resolving changes in current policies, strengthen their judgment on the adjustment of policies related to the IP securitization sales market and corporate financing, etc. Current policies related to financing of enterprises will be optimized accordingly, and measures related to changes in current policies will be prepared in advance[5].

The regulatory risk mainly refers to the control risk caused by the enterprise's violation of rules and regulations in the whole process of securitization of intellectual property rights or the control risk of the financial market caused by the outdated and ineffective supervision standard of the financial system. Enterprises should strengthen their daily control, supervision and management, and strengthen their efforts to combat relevant violations. When securitizing intellectual property rights, enterprises should always be vigilant to control risks and disclose relevant information in a timely and accurate manner as required, so as to avoid the occurrence of irregularities, insider trading and other bad behaviors[6].

When carrying out intellectual property securitization financing, enterprises need to pay attention to the prevention of management method risks, which are categorized as follows: information disclosure risk and risk of managers performing their duties. In order to prevent information disclosure risks in IP securitization financing, high-quality information disclosure can promote better external understanding of the enterprise's condition and prompt the enterprise to obtain benefits from its financing activities[7].

The operational risks faced by enterprises are mainly divided into: business process risk, risk of main use of financing, risk of fluctuation of operational efficiency, and risk of stock delisting. In order to prevent the business process risk in intellectual property securitization financing, enterprises should closely follow the changes in the sales market to adjust the business operation orientation at this stage, innovate independently to improve the main business level, and resist the risk ability itself. In terms of risk management, it is necessary to focus on the risks faced by the company because of the development of business for new areas of practical exploration, do not rush to explore and discover new business, and do not place the enterprise in high risk because of the impulse not to prevent business process risks[8].

All innovative technology must be compatible with the industry, also provides that when carrying out technological innovation do not blindly set, or face from the technical risk of loss, enterprises should be prevented from the lack of technological sophistication, technological upgrading and loss of professional and technical personnel risk. In order to prevent the risk of technical brain drain in intellectual property securitization financing, enterprises should strengthen their culture, enhance scientific and reasonable wages, and raise resignation fees and other frustrations to prevent the severe blow brought by the loss of key technical personnel to enterprises.

3) Lower risk response measures

The relatively low risk arising in the process of enterprises carrying out IP securitization financing is market risk, but it also needs to enhance the concern. To prevent reputation risk in IP securitization financing, enterprises should proactively build a positive brand image and improve reputation management. In order to prevent liquidity risk in IP securitization financing, enterprises must constantly update and change their development strategies in the changing market environment to better prevent risks[9].

4.2 Comprehensive countermeasures for financing risks

1) Establishing risk awareness

To improve enterprise risk management, companies should enhance their risk control systems, establish a risk accountability management system, and cultivate risk awareness among all personnel. This involves promoting proper risk control management at all levels of the organization, reinforcing traditional corporate risk culture, and providing regular staff training to build a strong foundation for risk management methods and prevention awareness[10].

2) Enhance intellectual property protection and operation capability

The PD, soundness, and perfection of IP are crucial for enterprises, which should take proactive measures to control IP quality, enhance innovation ability, and maintain and operate IP. IP securitization involves combining various IP assets, which results in accumulated risks. The underlying assets of property securitization, i.e. IP, are generally of high quality. To prevent financing risks, it is necessary to strengthen the operation of IP and enhance the enterprise's risk awareness[11].

3) Establishing risk identification and evaluation system

When preventing risks in intellectual property securitization financing, enterprises should establish a risk identification and evaluation index system. This can be achieved by creating a special risk control department and appointing professionals either internally or externally to establish a financing risk management plan. Multiple departments should collaborate with the risk control department to identify risk elements in the external environment and construct a risk identification and evaluation index system. Scientific research should also be conducted to identify the risk areas faced by enterprises during the intellectual property securitization financing process. Based on the assessment results generated by multi-departmental analysis, enterprises should establish specialized departments or consult with service institutions to ensure successful financing and to point enterprises in the right direction[12].

5. Conclusion

In the new economic era, intellectual property and financial reform have been integrated with high quality, and intellectual property securitization has come into being in time, bringing expectation for enterprises to deal with financing dilemma. However, the entire process of financing is accompanied by the formation of risks, and enterprises that opt for a convenient and fast way of financing should consider how to prevent the risks inherent in the financing process. Otherwise, they may find themselves with an empty bamboo basket. Enterprises are mostly product development intellectual property-led, risk management methods are at the weak point, so if you want to help enterprises to obtain more financing through intellectual property securitization financing, enterprises should learn the ability of innovative thinking, enhance the concept of risk prevention, improve the internal control system and risk prevention management system, you can

ensure the smooth implementation of financing in a competitive environment.

References

- [1] Yu R, Cheng L. R&D Investment, Intellectual Property Protection and Corporate Performance An Empirical Study Based on 190 Listed Companies in China[C] Proceedings of 4th International Conference on Economy, Judicature, Administration and Humanitarian Projects (JAHP 2019) (Advances in Economics, Business and Management Research, VOL.94). Atlantis Press, 2019:355-360.
- [2] Jiafeng Chen, Sibin Chen. Research on Pricing of Enterprise's Intellectual Property Securitization[P]. 2020 International Conference on Economic Management and Corporate Governance, 2020.
- [3] Bao X.C., Chen B.T., Xu Kun. Securitization of intellectual property rights in the Chinese context: policy background, international comparison and model exploration[J]. China Science and Technology Forum, 2021(11):13.
- [4] Liu Bingye. Exploration on the securitization financing model of intellectual property of Qiyi Century[D]. Jiangxi University of Finance and Economics, 2020.
- [5] Li Cuan, Cao Lifan. Study on the model selection and realization path of securitization of intellectual property rights of science and technology enterprises in China[J]. Journal of North Central University: Social Science Edition, 2021, 37(6):10.
- [6] Liu Ying, Liu Sihai. A comparison of the basic situation of intellectual property securitization in China and the U.S. and special-purpose institutions: the first two cases of intellectual property securitization in China as a perspective [J]. Journal of Henan Normal University (Philosophy and Social Science Edition), 2021, 48(01):55-66.
- [7] Liang Yan. The logic and progression of direct securitization of intellectual property rights - a perspective of driving science and technology innovation[J]. China Science and Technology Forum, 2019(02):109-117.
- [8] Zhang Xianshuai, Cao Yinglu, Niu Taidong, et al. Intellectual property securitization [M]. Modern Finance and Economics, 2020
- [9] Ben Shaohua, Luo Ronghua. Analysis of the application of intellectual property securitization in Qiyi Century [J]. China Market, 2020(5):2.
- [10] Meng Zhen. Japanese experience and Chinese enlightenment of intellectual property securitization -- from the perspective of the interaction between legal system and practice [J]. International Business, 2021(2018-4):38-43.
- [11] Song Hanliang. Legislative realization of securitization of intellectual property rights[J]. Social Science Front, 2021(4):5.
- [12] Li Yancheng. Exploration of the localization mode of intellectual property securitization in the context of creative economy [J]. Modern Business, 2011 (35): 2.