A Study on Valuation of Enterprise Intellectual Property Securitization Assets

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ABSTRACT: In recent years, intellectual property securitization, as a new type of financial innovation in the financial market, has extraordinary significance for the current development into a multi-level financial market. The securitization of intellectual property will not only become the most influential core asset in the future, but also become a stepping stone for the future development into the era of knowledge economy. Of course, the valuation of securitized intellectual property assets of enterprises will have a very important impact on the transaction results. This paper first introduces the concepts and theoretical basis of intellectual property securitization, analyzes the influencing factors of enterprise intellectual property securitization asset value, and understands the risk factors and new direction of enterprise intellectual property securitization asset value. Then find the most appropriate asset value evaluation method of enterprise intellectual property securitization, mainly for several common evaluation methods in the process of asset valuation and how to choose the appropriate method in the enterprise intellectual property securitization asset value evaluation. Finally, the paper analyzes the evaluation cases of enterprise intellectual property securitization, hoping that some of my research on the value of intellectual property securitization assets will bring some convenience to his future work.

KEYWORDS: intellectual property securitization; financial innovation; evaluation method; value of the asset

I. INTRODUCTION

Intellectual property rights refer to the rights enjoyed by people through the intellectual achievements created by their own mental work. Also known as "knowledge ownership", it is generally only valid for a limited period of time. Enterprise intellectual property rights mainly include trademark rights, Copyrights, patent rights, etc., which, as intangible assets of enterprises, can bring huge added value to enterprises. Securitization of intellectual property means that initiators or innovative enterprises transfer their intellectual property rights or their derivative creditor's rights (such as licensing fees) to special carriers, and then issue securities on the stock market after repackaging, credit evaluation and credit enhancement to finance initiators.

China's enterprise IP securitization is still in its infancy. By the end of 2020, China had issued 17 IP securitization products, totaling more than 14 billion yuan. The securitization of intellectual property opens up a new channel of financing for innovative enterprises in China. The Chinese government also pays great attention to this financial innovation, the promulgation of a series of policies and the issuance of the pilot issue of intellectual property securitization, which makes people pay more attention to intellectual property securitization and provides a new road for economic development. Small and medium-sized enterprises are a major part of China's enterprises and the main body of China's national economic development. The financing of such enterprises is subject to a lot of restrictions. The emergence of enterprise intellectual property securitization has opened up a new financing way for such enterprises.

Most of the intellectual property securitization of Chinese enterprises is based on foreign experience. As early as 1999, Jennifer Burke Sylva had analyzed the Bowie case of asset securitization, which was the first time people came into contact with intellectual property securitization. Financing has always been a big problem for enterprises. Traditional financing methods are generally limited to borrowing. Borrowing from banks requires a lot of assets as guarantees, the credit status, repayment ability, assets and liabilities of capital demanders, whether they have the ability of operation and management, and many restrictions. The value of intellectual property has great uncertainty for asset appraisal. In addition, the securitization of enterprise intellectual property...
started late in China and there is no complete system to limit it, so the asset valuation of enterprise intellectual property is often too high or too low.

In order to solve this problem, our country also make great efforts to try, the arrival of the securitization of intellectual property, should belong to benefit most small and medium-sized enterprise innovation, this a big problem to solve their financing, but how to choose and use what method to determine the intellectual property securitization asset value and worth our thinking.Intellectual property securitization in some developed countries has achieved some good results, we should learn from their experience, develop the enterprise intellectual property securitization products that our country needs, constantly improve its restrictions, and learn more about the asset value evaluation method of intellectual property securitization.This paper will start from the introduction of intellectual property securitization, expounds the influencing factors, analyzes and selects the evaluation methods, and finds the optimal evaluation method. Finally, it gives specific examples for comprehensive elaboration and presents some personal views and opinions.To the current intellectual property securitization asset value evaluation to do a little bit of contribution.

As a special kind of asset securitization, intellectual property securitization has a short development history in China, and there are relatively few researches on it by various scholars.Many scholars have studied the feasibility of intellectual property securitization financing in small and medium-sized enterprises and some high-tech enterprises.In the real sense, there are few literatures on the valuation of intellectual property securitized assets.It is not helpful to find the most suitable evaluation method on the basis of the three traditional methods: market method, cost method and income method.

In terms of the applied research on the risks and problems of intellectual property securitization, Cao Jiali (2020) [1], taking the securitization of intellectual property in the first phase of liberal arts leasing as an example, pointed out that the successful issuance of this securitization could be learned from the experience of strict selection of basic assets into the pool, strict inspection of the performance ability of participants and reasonable contract arrangement.From the perspective of the original beneficiaries of intellectual property securitization, this paper discusses the risks of intellectual property securitization and the corresponding control measures by combining the methods of presence and case analysis.Xu Xin (2021) [13] proposed that in the process of information disclosure of intellectual property asset securitization, financial and non-financial information should be combined to protect investors through information disclosure.We will stabilize the order of the capital market.Li Fei (2009) [13] emphasized the "asset pool" of intellectual property securitization, the valuation of intellectual property and the pilot financing mode of intellectual property securitization in China.Discuss the necessary requirements to satisfy intellectual property assets.Chen Qiankun (2018) [20] analyzed and studied the legal system, judging a series of possible legal issues related to intellectual property assets and guarantee forms from his understanding of relevant laws and regulations.

In terms of the research on intellectual property securitization from the perspective of asset appraisal, Wen Jie and Gao Qian (2020) [21] pointed out that we should seize the opportunity of vigorously supporting the exploration of intellectual property securitization by national policies, perfect laws and regulations, attract intellectual property securitization with supporting preferential policies, and set up information disclosure platform.On the base of the intellectual property value assessment methods, from the perspective of asset evaluation, the objective environment of intellectual property asset securitization process, and according to the process change chose to satisfy the current situation of the time value evaluation method, to find its advantages and disadvantages, points out that in the process of securitization of intellectual property securitization of intellectual property value assessment of operating prisons and policy recommendations.Liu Chunying (2017)[12]) proposed the evaluation method of "value fluctuation" as well as the legal risk prevention and supervision improvement measures for the evaluation of underlying assets of securitization."Value fluctuation" evaluation method is an evaluation model that takes into account the inadequacy of traditional evaluation methods and the factors that affect the value change of underlying assets.Through the discussion of the basic assets and the particularity of intellectual property value in the securitization of intellectual property, the legal problems of the traditional evaluation method of basic assets are studied and analyzed.

In regarding to the practical research of our country enterprise intellectual property securitization, baoxing du (2019) [19] pointed out that in the specific application, China’s enterprises should no matter in mergers and acquisitions at any time to maintain a strong risk awareness, possible risk to do comprehensive and systematic carding, and practical and reliable for each risk prevention.Wan Huaiwei (2021) [2] put forward some difficulties and risks facing China at present, laying a solid foundation for
the continuous improvement of intellectual property securitization in China. Wang Xiaofang, Wang Xi, Luo Shan, Liu Xianhui and Yi Ge (2020) \cite{28} put forward a plan for financing difficulties based on in-depth analysis of the necessity and feasibility of the development of intellectual property securitization of technology-based smes in Guizhou. Zeng Hongjun and Zeng Qianrong (2019) \cite{24} proposed an innovative way for intellectual property securities financing to enable the original equity holders to finance the cash flow they need. For small and medium-sized enterprises, especially private small and medium-sized enterprises that lack collateral, it is conducive to breaking the financing bottleneck. Shang Jin (2008) \cite{14} proposed the significance, model design, feasibility and pricing of the introduction of intellectual property securitization financing for China's high-tech enterprises. Hong-yu zhang (2009) \cite{16} proposed the securitization of intellectual property assessment in the process of evaluation with different characteristics and ordinary intangible assets evaluation, and specific to the current widespread use of analysis of market method and income method, cost method, based on this, advances the securitization of intellectual property can be used when evaluating comprehensive analysis method, which is the combination of the two analysis methods to study. Zhu Weixian (2019) \cite{8} proposed that high-quality intellectual property assets and mature intellectual property trading market are the priority of intellectual property securitization. Especially the securitization of intellectual property licensing market active, enterprise intellectual property securitization in our country should choose the securities companies and fund management subsidiaries set up special plan assets as a permanent special purpose vehicle, to permit history, market demand, technology maturity as a reference factor, according to a certain proportion to the asset pool configuration senior intellectual property. Wang Yanan (2015) \cite{17} proposed to discuss the feasibility of using the most basic valuation method for the valuation of intellectual property, preliminarily discuss the practice of intellectual property securitization in China based on China's current development status, and put forward relevant legal suggestions for China's current policies. Gao Pei (2011) \cite{18} pointed out that intellectual property securitization of high-tech enterprises can be better applied only with the support of reasonable national laws and regulations. The key is that the intellectual property securitization quantity of the high-tech enterprise should be able to satisfy the market and investors' favor and have value interests, plus the active cooperation of all participants in the financial market. At present, there are many inevitable difficulties in the financing of this new industry in our country.

This paper analyzes the influencing factors of the value of intellectual property securitized assets, including environmental factors, market factors and government factors. Secondly, it analyzes and selects the valuation method of enterprise intellectual property securitized assets, and analyzes the specific case of high-tech enterprise intellectual property securitized assets valuation.

2 Analysis on the influencing factors of enterprise intellectual property securitization asset value

As a branch of asset securitization, enterprise intellectual property securitization not only has the risk factors of asset securitization law, but also has many unique risks. It is precisely because of the existence of such risks that the enterprise intellectual property securitization stops at a standstill and does not develop rapidly.

2.1 The main risk factors of enterprise intellectual property securitization asset value

(1) Policy risks

Due to the imperfection of legal system, the securitization of enterprise intellectual property has some special risk factors, especially the right factor. For some high-tech enterprises, they are the main intellectual property invention patent technology, invention patent technology, there may be some collaboration, then right to the ownership of the problem, it is hard to say that, because the system is not perfect in our country, people will be malicious loopholes, although the final legal way to solve, but the legal fees and litigation result of the risk of instability is also a kind of inevitable.

(2) Credit risk

Asset securitization has strict restrictions on the good credit of equity holders. From the issuance of securities to the evaluation of asset value and then to the sale, every link tests the credit rating. When issuing securities, information disclosure is also essential, which depends on a good credit environment. In particular, the credit status of small and medium-sized enterprises may be significantly worse than that of some large enterprises, so the credit problem of such enterprises can not be solved. Therefore, the securitization of intellectual property is undoubtedly a life-saving straw for such enterprises.
2.2 Secondary risk factors of enterprise intellectual property securitization asset value

(1) Transaction risk

Nowadays, the transaction process of intellectual property securitization is not only a single transaction between one enterprise or one institution, but a transaction process between many institutions. Then any problem of one institution will cause serious trouble to the whole transaction process, which will lead to the formation of transaction risks.

(2) There are risks of performance difficulties in the realization of bonds

Authorized party is the sponsor of the securitization, also must be in accordance with the securitization of intellectual property rights to perform the duty of the essence of the contract once he didn't have the responsibility as stipulated in the contract, then the authorized party have reason to refuse to pay part of the franchise, this kind of form, the AD hoc carrier cannot be expected to obtain cash flow, can't give securities distribution of principal and interest of investors. Then the realization of bonds will have difficulty in performance, which is also the special risk of intellectual property securitization.

2.3 Other risk factors of enterprise intellectual property securitization asset value

In recent years, due to the great attention to intellectual property rights, it has been unable to meet the traditional methods for future development. Intellectual property securitization has become a hot topic, as a means of international enterprises in the capital market, intellectual property securitization came into being. But it is, after all, intellectual property, not a physical asset. A considerable pressure of intellectual property securitization comes from the risk of single asset securitization. More importantly, it is related to the diversity of intellectual property licensing fees. In order to reduce the income from licensing fees, asset pools should be formed to strengthen the diversification of assets. But it can also lead to investment risks. In addition, no licensing fee will be charged if the intellectual property fails to reach the designated location or is seized. In the capital market, solid income and good credit will attract investors' attention.

3 Valuation method and selection of enterprise intellectual property securitization asset evaluation methods

(1) Cost method

The main evaluation object of cost method is the evaluation of the entity value of an asset, including all the contents of all the searchable information of the asset. It refers to the price at which an asset is replaced or rebuilt at the time of appraisal.

Advantages of cost method: it can accurately judge the replacement cost, direct cost, indirect cost and profit of the enterprise's intellectual property securitization. The loss of this enterprise's intellectual property securitization can be fully considered, which more reflects its entity value, which reflects a kind of current value.

The disadvantages of cost method are as follows: the actual asset value of intellectual property securitization of the enterprise is depreciated due to the calculation error caused by neglecting the initial cost of the securitization value of the enterprise. In the case of large loss, the workload of cost method is great, resulting in a great waste of financial and material resources; Due to the constant changes of market factors, the expected earnings of enterprise intellectual property securitization can not be reflected. The common calculation formula of cost method can be expressed as follows:

\[
\text{Value of an assessed asset} = \text{replacement cost} - \text{Substantial depreciation} - \text{Functional devaluation} - \text{Economic devaluation}
\]

(2) Market method

The market method is also called the market price comparison method. It takes the market transaction price as the main object for comparison, and compares the value of the enterprise intellectual property securitization assets to be evaluated with those of the same type in the market, so as to judge their specific value. By contrast, it is among the most computationally convenient of the traditional assessment methods. The advantages of the market method are as follows: the amount of calculation is small, and the market price closest to the enterprise's intellectual property securitization of the same type can be directly referred to, and the asset value is most consistent with the value at the time of evaluation; Because the value of intellectual property securitization of the same type of enterprise can be compared, its evaluation result is most satisfied by users. Marketing for intangible assets is not an assessment method is very good, but for enterprise intellectual property securitization has a great effect, because our country has established the network of intellectual property rights, it helps in many ways the intellectual property securitization assets value assessment, also provides a solid and reliable theoretical basis for it.

Disadvantages of market method: if there is no securitization asset value of the same type of enterprise intellectual property as a comparison, then the value cannot be evaluated; because enterprise IP
securitization is more specialized, and although it may have different prices at the same time, it is less applicable for some IP that is unique to the market.

(3) Revenue method

Income method is to evaluate the expected future income with current values. The securitization of enterprise intellectual property is to prepare for financing and attract investors to obtain economic benefits. Therefore, we need to be very rigorous when evaluating the asset value of the enterprise. We need to evaluate and consider all aspects of the ability indicators of the enterprise's intellectual property securitization, as well as its future earnings and created values. Revenue method is also by far the most extensive assessment method used in our country. Its common formula is expressed as follows:

\[ P = \sum_{i=1}^{n} \frac{R_i}{(1 + r)^i} \]

Where: \( P \) represents the assessed value, \( R_i \) represents the expected earnings of the next year, represents the discount rate, represents the earnings years, and \( n \) represents the year serial number. Of course, there are many formulas of income method, and only one is shown here for reference.

Advantages of income method: The biggest advantage of income method is undoubtedly accurate prediction of future income, accurate consideration of future risks, and reasonable judgment of the value of enterprise intellectual property securitization assets. In the transaction process of asset securitization, the value evaluated by income method is easier to be accepted by both parties.

Disadvantages of income method: the asset securitization market is unpredictable. For the securitization assets of enterprise intellectual property, the relationship between popularity and elimination exists year-on-year, so how to control the expected returns and possible risks in the future is a big problem. When we judge the underlying assets, we need to adopt strict methods with high specialization requirements, so it is not suitable for the valuation of some complex enterprise intellectual property securitization assets. In the formula of income method, the most critical time discount rate, but there are endless ways to determine the discount rate, but under normal circumstances, the ideal state to keep the discount rate stable.

(4) Selection of assessment methods

In our country, or focus on the more traditional evaluation methods, namely cost method, market method, revenue method of these three evaluation methods. Appropriate evaluation method is very critical to the value of enterprise intellectual property securitized assets. But no matter which kind of evaluation method among them, it is relatively single. For example: the kind of intellectual property, patent it in research and development of research and development costs are huge, but when evaluating due to see its internal research and development costs, it is easy to be ignored in the patent intellectual property asset value is undervalued, then later in the process of asset securitization, the intellectual property securitization asset value also will be devalued, coupled with the particularity of market transaction and trade openness will influence the deal. Therefore, it is obvious that market method and cost method are not practical. Income method is the most suitable for evaluating the value of patent intellectual property securitization assets. For intellectual property such as trademarks, there is less data available in the market, so this approach cannot be applied. The cost of potential profitability of its trademarks cannot be reasonably estimated. At this time still want to choose income method. To sum up, comparatively speaking, income method has the greatest effect.

In our reality, it is not possible to evaluate the value of an enterprise's intellectual property securitized assets reasonably and accurately with one method. In the process of evaluation, we can often choose one or two or even a combination of evaluation methods. I have listed some of the more important types of IP and the applicable assessment methods (see Table 1). The applicability of evaluation methods, the availability of information collection, and the reference of market transactions should be considered for different asset types. Finally, the most appropriate evaluation method or the combination of evaluation methods will be selected so as to more accurately evaluate the value of enterprise intellectual property securitization assets.

**Table 4.1** Types of intellectual property and applicable assessment methods

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<tr>
<th>Type of intellectual property</th>
<th>Evaluation methods</th>
<th>The reasons for choosing this method</th>
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<tbody>
<tr>
<td>The patent right</td>
<td>Cost method, market method, revenue method</td>
<td>The cost of the patent right can be measured; There are many references in the market; Future benefits can be measured.</td>
</tr>
<tr>
<td>copyright</td>
<td>Cost method, market method</td>
<td>The most famous movie rights have</td>
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4 Valuation case of Intellectual property Securitized assets of Changshi Technology Co., LTD

For high-tech enterprises, intellectual property systems have always been a "life-saving straw". The most urgent problem for high-tech enterprises is corporate financing, but intellectual property securitization is a good solution to this problem. This financial innovation not only helps such enterprises to finance, but also protects intellectual property.

(1) Introduction of Changshi Technology Co., LTD
Changshi Technology Co., Ltd. was established on April 29, 2006. The main business scope includes: import and export of goods, commodity wholesale trade, intelligent installation engineering services, software retail, communication terminal equipment manufacturing, video recording equipment manufacturing and instrument testing manufacturing, etc.

Changshi Technology Co., LTD., a high-tech enterprise, completed the target of corporate intellectual property securitization in 2020. The company got 30 million yuan of financing funds to lock the supply of chips in advance. 2020 is a difficult year, but the helpless epidemic situation also enables the company to achieve good growth in such a complicated environment. Lu Xuhuai, chairman of Changshi Technology Co., LTD., said, "The net profit reached more than 10 percent in 2020, and the overall growth was 30 percent. Through the intellectual property securitization project, we can clearly and intuitively feel that the original patent is valuable, and can also bring practical help to enterprises in important difficult moments."

4.1 Valuation of intellectual property securitization of Changshi Technology Co., LTD
Since the relevant tables of the company have not been publicized, we assume that the overall income of the company in 2019 is 10 million yuan. Then the company says that the overall income of the company in 2020 is increased by 30% on the basis of 2019, so the overall income of the company according to the calculation is 13 million yuan. Since the company's IP securitization projects fall under the intangible asset category, we assume a discount rate of 17%. So we can calculate that $R_1=13$ million yuan, $R_2=16.9$ million yuan.

According to the income method, $P=23,456,700$ yuan.

\[
\sum_{i=1}^{n} \frac{R_i}{(1 + r)^i} = \frac{1300}{(1 + 17\%)^1} + \frac{1690}{(1 + 17\%)^2}
\]

According to the calculation results, the valuation of the company's intellectual property securitization is $23,456,700$ yuan, which is feasible. Since China had not paid enough attention to the securitization of intellectual property, the department of intellectual property securities began to focus on publicity since 2019, set up special posts for intellectual property, and rewarded patent applications, which also aroused the enthusiasm of various enterprises. We can know that the financing term of securitized products of intellectual property is generally 3-5 years, and the scope of application is flexible and extensive, which is more conducive to the development of high-tech industry and long-term R&D investment of enterprises.

5. Conclusion
Starting from the introduction of intellectual property securitization, this paper studies the main influencing factors and the main methods of asset value evaluation. After study, income method is the most useful method for the enterprise intellectual property securitization. Of course choose evaluation method is not confined to a kind of evaluation method, can find a variety of combination evaluation method to determine the most accurate asset value of enterprise intellectual property securitization, as a new type of financial project, corporate intellectual property securitization has a long way to go, to constantly improve its legal system, to develop more simple and accurate evaluation method.

Due to domestic enterprises intellectual property securitization started relatively late, the value of the asset evaluation of research are much rarer, plus system is not perfect, at the same time the
defects of individual ability, this article research mainly has the following shortcomings: one is the research to find information in the process of less, there are a lot of data is obsolete, the rapid development of era has not very persuasive. Can only be built on the basis of predecessors to expand again; Second, the degree of understanding of scholars' articles is insufficient, has their own scanty ability to explore it. The third is the lack of factors when evaluating the value of enterprise intellectual property securitized assets by means of valuation method. With the progress of The Times and the further development of enterprise intellectual property securitization, there will be more and more influencing factors in the future. In addition, the national system is not perfect, which brings great challenges to the evaluation of enterprise intellectual property securitization assets.

REFERENCES


