

Research on Value Assessment Methods for Pledge Financing of New Plant Breeder's Rights

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Abstract: In the pledge financing of new plant variety rights, value assessment, as a key link, plays an important role in whether its pledge financing is smooth and successful. Asset appraisal methods mainly include three basic methods and their derivatives, namely, the market method, the income method and the cost method, but all of them have their own advantages and disadvantages, which are not applicable to the appraisal of the financing of pledge of new plant variety rights. Therefore, the assessment method of pledge financing of new plant variety rights should be flexibly utilized to assess the cost value, market revenue and expected revenue value of new plant variety rights, and to conduct phased, dynamic and comprehensive assessment of new plant variety rights, which can not only improve the accuracy of the value assessment results, but also promote the development of pledge financing of new plant variety rights.

Keywords: Plant Breeder's Rights; Valuation Methods.

1. Introduction

Pledge financing of new plant variety rights not only effectively solves the capital shortage of small and medium-sized seed enterprises and improves their enthusiasm for research and development of new varieties, but also helps to promote the industrial upgrading of enterprises and the development of the financial industry. The assessment of the value of new plant variety rights for pledge financing is to recognize the price of new plant variety rights at a certain point in time when the pledge financing is carried out, which is to confirm and estimate the value of the pledged new plant variety rights by professional authoritative appraisal institutions, applying a perfect appraisal system and in accordance with professional appraisal standards and based on certain appraisal procedures.[1] In the assessment of the value of pledged financing of new plant variety rights, different assessment methods may assess different results.

2. Overview of Methods for Assessing the Value of Pledge Financing of New Plant Breeder's Rights

The asset valuation methods are set out in the "Guidelines for the Practice of Asset Appraisal - Asset Appraisal Methods", i.e. the asset valuation methods mainly include three basic methods, namely the market approach, the income approach and the cost approach, and their derivatives. The market approach is a method of determining the appraisal value on the basis of the market price of a comparative reference. The market approach starts from the market, the relevant parameters are derived from the real market environment, and the reflected value and influencing factors are more objective, so that a closer value can be derived. Second, the cost approach involves rebuilding or replacing the object of appraisal and using the cost of the rebuilding or replacement as the basis for determining value. The use of the cost approach provides a more objective and realistic reflection of loss and depletion by evaluating depletion against value, and reconstruction or replacement, where necessary, can

reproduce the process by which the asset was created. The income approach values the object of appraisal by taking its expected earnings or discounting them. The income approach maximizes the value of the appraised object by calculating assumptions about expected returns.

Due to the weak operationalization of the intangible asset valuation guidelines, the actual valuation methods and valuation standards used by appraisal institutions when conducting appraisals for different intangible assets are not uniform. When appraisal organizations assess the value of pledges of different categories of intellectual property rights, such as patents, trademarks, copyrights, etc., they will develop different value assessment methods based on their own distinctive characteristics. For example, the main existing methods for the valuation of patent rights include cost method, income method and market method, while some scholars adopt AHP method, fuzzy comprehensive evaluation method and real option method[2] The use of these methods requires, however, that the appraisal organization do its best to understand all the factors that may affect the pledge of new plant variety rights. The basic idea is to first request the client to clarify the basic situation of the patent right, including verification of the latest patent payment certificate and patent certificate and the legal status of the patent, licensing and use, etc., and then the appraisal institution will confirm whether the object meets the relevant conditions for pledging. The last is to cope with the consideration of legal, technical and economic factors affecting the value of patent pledges.[3] If there are separate rules for the assessment of the value of different categories of intellectual property rights, it will not only make the assessment targeted, but also be conducive to improving the efficiency of the assessment of the mechanism for financing the pledge of new plant variety rights.

3. Irregularities in the Assessment and Determination Methods for Financing the Pledge of New Plant Variety Rights

Consistent with the Asset Appraisal Methodology, the

Guidelines for Asset Appraisal Practice - Intangible Assets and the Guidelines for Appraisal of Intellectual Property Assets also stipulate the above valuation methods and provide for the application of and considerations for specific valuation methods.

In practice, due to the specificity of the nature of intellectual property rights, the market approach, the income approach and the cost approach each have their own shortcomings in their application. Firstly, for the market approach, as intellectual property rights are unique, it is impossible for there to be identical or highly similar trademark rights or patents, and each intellectual achievement for which rights have been granted has its own characteristics and influencing factors, and at the same time the adoption of the market approach requires that there must be usable references in the market, and that the market is highly active, and the requirements for valuation data are high, and it is more difficult to obtain relevant data due to the lack of a perfect market platform and a reference and applicable valuation database. In the absence of a comprehensive market platform and a reference and applicable appraisal database, it is difficult to obtain relevant data. Secondly, for the cost method, intellectual property rights as intellectual achievements, the emergence of inspiration and thinking, the value of wisdom and even the consumption of energy can not be reset, and at the same time, the value of R & D products and materials used at different times are different, and some will also be depreciated, thus, the cost method can not accurately assess the true value of intellectual property rights to a certain extent. Again, for the income approach, the use of the income approach requires a large amount of data and information to support the aggregation, which is more difficult. If the subject of appraisal does not have a historical record of earnings or has not yet begun to generate earnings, the difficulty of applying the method increases. At the same time, the uncertainty and variability of future influencing factors, and the possibility of changes in the future business model and profitability model may also have an impact on the application of the income approach.

As for new plant variety rights, the existing valuation platforms mostly adopt the expected return method and the cost method to assess the value of new plant varieties, but some scholars believe that both methods are flawed because if the cost method is applied, new plant varieties may experience a long time from the beginning of research and development, to experimentation, to large-scale promotion, and the research and development may fail and be repeated, and the focus of adjustment and research is also different in different regions and different environments. Different regions may experience R&D failures and re-experimentation, and organisms in different environments may reflect differently and focus on different adjustments and researches. Therefore, it is difficult to statistically calculate the development cost of new plant varieties, and the development cost is not directly proportional to the value of benefits, and it is difficult to comprehensively reflect the value of the value of new plant varieties mainly based on the input cost. If the expected return method is applied, it is more difficult to reasonably determine the excess profitability and expected return of the new plant variety rights, and factors such as the legal status of the new plant variety rights at the time of the evaluation and the macro-market economic environment will have a great impact on the amount of return on the new plant variety rights and the discount rate.[4] And some scholars

believe that the value of new plant varieties should be comprehensively examined according to their attributes, categories, protection years, economic and technical life, and market demand, and that the establishment of a real option value assessment standard based on American options should be expedited. In this regard, the value of new plant variety rights pledged by appraisal organizations may vary to a certain extent due to the application of different appraisal methods and selection of different appraisal factors. [5] As a result, when new plant variety rights are pledged, due to the application of different valuation methods and the selection of different valuation elements, the assessed value will differ to a certain extent. For the appraisal organization, due to the lack of detailed guidance on the appraisal of the value of the pledge of new plant variety rights, it may arrive at different results based on the appraisal of the value of the pledge of the same new plant variety rights, which is one of the urgent problems to be solved in the appraisal of the value of the pledge of new plant variety rights. This is also one of the problems that need to be solved urgently in the appraisal of the value of pledge of new plant variety rights.

4. Flexible Application of Assessment Methods for Pledge Financing of New Plant Breeder's Rights

Valuation methodology is one of the mandatory factors to be considered for the establishment of valuation guidelines. The reason for advocating the flexible application of the assessment method for the pledge financing of new plant variety rights is that for different categories of intellectual property rights, such as patents, trademarks, copyrights and new plant variety rights, they all have their own characteristics, and it is difficult to form a credible assessment result by using the same criterion to conduct the assessment.

On the contrary, if there are separate rules for the assessment of the value of each different category of intellectual property rights, it will not only make the assessment targeted, but also facilitate the supervision of the assessment results by the relevant administrative departments. Nowadays, although there are separate appraisal rules for the value appraisal of registered trademarks, patents and copyrights, there are no appraisal rules for other intellectual property rights. At the same time, the appraisal methods stipulated in these rules are still traditional appraisal methods, and the relevant methods and factors to be considered are too general and not operational, and there is no targeted setting of appraisal methods in accordance with the characteristics of each form of intellectual property rights. They do not take into account the characteristics of each form of intellectual property and do not set up the valuation methods in a targeted manner. Therefore, we advocate the establishment of individual assessment guidelines on pledge financing of new plant variety rights. The establishment of appraisal guidelines for the pledge financing of new plant variety rights requires further research on the paths and methods of assessing the value of new plant varieties, and an in-depth study of business characteristics and appraisal ideas.

We have clarified several factors that must be considered in determining the value of new plant varieties, and then we will analyze the valuation method. The traditional assessment methods are cost method, income method and market method, some scholars also proposed the proportion method and fuzzy comprehensive evaluation method,[6] Real option valuation

method, etc. In practice, the valuation of intellectual property often requires a combination of valuation methods and a pragmatic and flexible approach to valuation methods. Therefore, we also advocate that the method of assessing the value of new plant variety rights should not be limited to one method only, but should be selected according to different assessment purposes and bases. This is because the assessment of the value of the rights needs to be measured at least twice in the case of pledge financing of new plant variety rights. For the first time, when the bank decides whether or not to lend money, it needs to evaluate not only the profitability of the new plant variety right, but also the whole operation status and creditworthiness of the enterprise. Therefore, at the outset of the creation of a security, the profitability of the plant variety right and the level of return are the main factors in assessing the value. For the second time, the assessed value of the new plant variety is relevant to the amount of the bank's claim to be paid when the bank exercises its security priority. When the debt expires and the enterprise is unable to repay the debt as it falls due, it is necessary to assess the realization value of the new plant variety rights, which should take into account the validity period of the new plant variety rights, the possibility of licensing, the ability to continue to make profits and the expected future revenue. Different assessment methods therefore need to be selected for different purposes.

4.1. Phased Assessment

Different stages in the development of new plant variety rights and the different value characteristics of the elements required at different stages when making an assessment.[7] The value assessed will also be different, and the influencing factors to be emphasized will be different. The different stages of pledge financing of new plant variety rights can be broadly categorized into two main stages based on the development process of new plant varieties.

The first stage is when new plant varieties have been tested and have not yet entered the market, while the second stage is when new plant varieties have been tested, have entered the market and have matured. In the first stage of pledge financing, the factors involved and taken into consideration mainly include legal, technical and enterprise factors as well as macro-control factors, among which whether or not to carry out appraisal and certification, certification and rank, statistically measurable costs incurred in research and development, scientific research capability and credibility of the enterprise, and policy support for financing are the main factors to be considered in this stage, and in this stage, the appraisal can be made by adopting the cost method as the main appraisal method. In this stage, the cost method can be adopted as the main assessment method, taking R&D, application for new plant varieties and new variety rights as the base, quantifying the above possible influencing factors through indicators, and accordingly deducting or increasing the rate value based on the cost to get the final assessed value, which is similar to the costing method in Japan.

In the second stage, the factors considered in pledge financing do not only include legal factors, enterprise factors, technical factors, etc., but also market factors. After entering the market, due to the market's self-regulation, coupled with the government's macro-control, the appraisal value of new plant variety rights is more dependent on the market revenue of the new variety under the dual role of the "visible hand" and the "invisible hand". Under the dual role of "visible hand"

and "invisible hand", the appraisal value of new plant variety rights is more dependent on the market revenue of new varieties, at this time, in the appraisal, more use of the income approach, although the market risk is omnipresent, the appraisal of the base date of the next moment the market changes may occur, but it is precisely because of the existence of the appraisal of the base date in order to make the appraisal of the relative stability, or else no matter whether it is an intangible asset, even if it is a tangible asset, the appraisal will be relatively stable. Otherwise, no matter whether it is an intangible asset or even a tangible asset, it cannot be assessed, and the assessment will have no meaning.

4.2. Introduction of Dynamic Assessment Methods

From the beginning of new varieties entering the market, a parabolic movement has begun, not only new plant variety rights, but also trademark rights and patents have a parabolic development, and everything has a beginning, a prosperity, a maturity, and a decline, therefore, with the continuous development of new varieties, new plant variety rights have also developed, and in the term of rights protection, new plant variety rights have also gone through the early stage, the development, the maturity, and decline of the four stages. The development time of these four stages is not exactly the same, and different varieties and different market environments may cause a stage to be maintained for a long time or to pass through quickly. Therefore, the dynamic assessment theory can be introduced into the assessment of pledge financing of new plant variety rights, that is to say, even though the data derived from the base date of the assessment are used as the basis for the bank's issuance of loans in the pledge financing of new plant variety rights, due to constant changes in the market and the continuous promotion of new varieties, the new plant variety rights may not be able to be fully utilized as the basis for the bank to issue loans. With the continuous improvement of technology and scientific research achievements, new varieties are researched and tested and promoted in the market, which to a certain extent will occupy a certain market space, and the original new varieties may be slowly withdrawn from the market, and the value of new plant variety rights will change with market changes, and the value of new plant variety rights will change with market changes, and the value of new plant variety rights will change with market changes. changes with the changes in the market, and the value develops from low to high and then from high to low.

In the dynamic appraisal system, after the pledgor obtains the pledge loan, it needs to carry out appraisal again periodically to determine the real-time value change of the new plant variety right. On the one hand, the bank can make risk response in advance according to the change of the value, for example, if the value decreases, the pledgor may not be able to pay back the loan on time, and the bank can ask the pledgor to increase the guarantee or settle the loan in advance, so as to reduce the risk of the bank, and meanwhile, in the realization of the mortgage can also ensure that its interests are not jeopardized. On the other hand, the pledgor can fully understand the development status of the new varieties and the market condition based on the results of the value assessment in different periods, so as to urge it to adjust the market strategy in a timely manner, rationalize the planning of the flow and share of funds, and research and develop new varieties. At the same time, the factors affecting the

assessment in different periods are different and account for different weights. Therefore, the introduction of a dynamic assessment system can monitor the operation of the new plant variety rights and evaluate the benefits of the new plant variety rights, as well as provide a more adequate and useful reference for the pledge of the new plant variety rights.[8]

4.3. Adoption of a Comprehensive Assessment Methodology

For the valuation of intellectual property rights, in practice, on the basis of traditional valuation methods, many other methods have been proposed, such as the real options method, and the application of all these methods is ultimately to quantify the indicators of the various influencing factors, so as to calculate the relevant influence rate. Different assessment methods at different stages focus on different influencing factors and produce different results. Therefore, in the appraisal, we can learn from the experience of the United States in the appraisal of the value of intellectual property pledge financing, and adopt a combination of various appraisal methods, such as combining the cost method with the market method, and combining the market method with the income method in different stages of development, so as to comprehensively consider all the factors that may directly affect the value of new plant varieties and rights, and to find out the point of balance among them, and to reasonably determine the indexes and weights of the factors that affect the value. In this way, the appraisal value of new plant varieties and new plant variety rights can be truly reflected.

5. Conclusion

In the pledge financing of new plant variety rights, value assessment, as a key link, plays an important role in whether its pledge financing is smooth and successful. Pledge financing of new plant variety rights, with banks and other financial institutions issuing financing loans to enterprises with reference to the results of value assessment. As an intangible asset, new plant variety right is a creative intellectual achievement characterized by intangibility, novelty and specificity, and its value should be assessed by flexibly applying the assessment method, assessing the cost

value, market return and expected return value of new plant variety right, and conducting phased, dynamic and comprehensive assessment of new plant variety right, so as to improve the accuracy of the value assessment results, to Promote the development of pledge financing for new plant variety rights.

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