

Benefit Analysis of Receivables Securitization in Electric Heating Industry

-Takes Tianfu energy as an Example

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Abstract—Receivables securitization is a kind of credit asset securitization, which is a financing process to restructure the receivables of enterprises that lack liquidity but have future cash flow to issue marketable securities in the asset pool formed. Since the 20th century, the majority of China's various fields have started to involve in this financing mode. As the first order of asset securitization project in domestic power and heat supply field, Tianfu energy has provided positive demonstration cases for listed companies in China to carry out receivables securitization and realize market-oriented resource allocation. This paper analyzes the process of the securitization of accounts receivable of Tianfu energy from the perspective of finance and market, on this basis, also analyzes the economic benefits brought to the enterprise by the securitization, and finally puts forward relevant suggestions and experience enlightenment for the problems existing in the financing process.

Keywords—Accounts receivable; Asset securitization; Enterprise financing

I. INTRODUCTION

Since 2005, China began to pilot the securitization of credit assets. The whole market eagerly hopes to introduce this successful financing method from abroad as soon as possible, but it stagnated due to the outbreak of the global financial crisis in 2008. Only in 2012 did China restart the pilot program of credit asset securitization. Receivables securitization is a kind of credit asset securitization, which is a financing process to restructure the receivables which are lack of liquidity but have future cash flow to issue marketable securities in the asset pool. This has given many companies an innovative way to raise money when they are struggling with high debt collection. Then accounts receivable securitization to power, thermal power production and supply industry brought what specific economic benefits and demonstration role? Existing studies have paid limited attention to this field. This paper selects the related data of Tianfu energy company, the first company in the field of electric heating to implement receivables securitization, and analyzes its securitization process, especially in terms of good economic benefits brought to the enterprise. As Tianfu energy asset securitization is the leading role in the industry, it provides experience for future generations but also has some shortcomings. Through the

analysis of this securitization, this paper carries out the securitization of accounts receivable in the electric heating industry, and realizes the economic stability and coordinated development of enterprises.

II. OVERVIEW OF RECEIVABLES SECURITIZATION

A. The theoretical basis of receivables securitization

With the development of Internet technology, many companies want to make breakthroughs in financing channels. However, after the resumption of the pilot program in 2012, asset securitization in China showed explosive growth, especially the rapid expansion of asset securitization scale of enterprises. Many scholars also began to discuss the securitization of accounts receivable of enterprises. According to different types, can be divided into housing mortgage-backed securitization of credit assets securitization and asset-backed securitization, and accounts receivable securitization securities issued in terms segmentation belongs to a kind of asset-backed securities, is a kind of bond nature of the financial instrument, its principal and interest paid to investors from the underlying asset pool (i.e., the enterprise accounts receivable) cash flow or the rest of the rights and interests, is a kind of credit assets as the support of securities (Jiang Le, 2015) [1]. The main participants of receivables securitization are the initiators (namely, the sellers of receivables), service providers (generally the initiators themselves), issuers (SPV), investment Banks, trust institutions, credit rating agencies, credit enhancement agencies, asset evaluation agencies and investors, etc. The specific operation procedures can be divided into five stages: select the appropriate securitized receivables as the basic assets; Set up the securitization carrier SPV (a special institution specially established for securitization), purchase the receivables of enterprise securitization, and realize the real sales; To restructure the underlying assets and improve their credit; To engage credit rating agencies to rate receivables backed securities, which shall be underwritten by securities underwriters, and issue asset-backed bonds; Finally, the proceeds from securities issuance are used to pay the purchase price of securitized receivables, and the cash inflow generated from securitized receivables is used to pay the principal and interest to investors (Sihe Huang, 2006) [2].

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The basic principles of receivables securitization include the principle of asset restructuring, the principle of risk isolation and the principle of credit enhancement (Ge Tian, 2010) [3]. Transfer the risks undertaken by enterprises to investors for risk isolation; Credit enhancement is implemented for the new capital pool to improve the yield of issued securities and ensure that the interest income generated by the capital pool can meet the investor's principal and interest requirements. The most controversial aspect of asset securitization is the risks and benefits it brings to enterprises. The financing risk of accounts receivable refers to that in the process of securitization, when the capital pool formed after the reorganization of accounts receivable and the cash flow generated is insufficient to meet the requirements of the principal and interest of asset-backed securities, the initiator will bear the risk of failure to pay. Financing risks of receivables securitization can be divided into risks of receivables themselves, risks arising in the process of securitization and other external risks (Ying Zhou, 2007) [4]. Many scholars believe that the income effect of receivables securitization on enterprises is quite obvious, including the reduction of financing cost, expansion of financing channels, optimization of financial structure, realization of statement adjustment, improvement of financial statement quality (Leilei Pei, 2016) [5].

B. Electric heating industry accounts receivable characteristics

Electric power and heat power industry is the primary industry of the second largest industry in China, which is the basic industry of the national economy and plays an extremely important role in the national economy [6-8]. With the deepening of the power system reform, most enterprises to market gradually, the scale of development is very big, but also appears a series of problems in its production and operation, due to the electric industry in the process of business generally take charge after the first power supply mode, so produced a large accounts receivable, and many enterprises accounts receivable exist in name only, bad debt, bad debts continued to grow. After the emergence of accounts receivable in electric power enterprises, it poses a great threat to the capital security and increases the management difficulty and operational risk. The characteristics of accounts receivable in the electric heating industry are as follows:

On the one hand, The particularity of electrical and thermal products is mainly reflected in the fact that electricity has the value attribute of common commodities, but at the same time, it has certain particularity in the concept and judgment of commodities. That is to say, consumers of electric and thermal products must pay for the use of electricity and heat just as they pay for other goods. However, it cannot be described by the concepts of ordinary goods such as weight, size, color, shape and function, nor can it be judged by touching, tasting and smelling [9-13]. Electricity and hot product has to be stored, in particular, the power generation, transmission, distribution, sell electricity process is completed at the same time, almost all the users in the use of electricity, hot products, money can't do it increases with the increasing use collect on delivery, so the power supply enterprises should bear the customer (debtor)

accounts receivable asked-for don't even pay the risk exists, and in a long period of time, owe the situation cannot avoid completely.

On the other hand, electric industry is the phenomenon of the mismanagement of natural monopoly, natural monopoly means that due to resource scarcity, lack of scale economic benefit, easy to cause some industries providing goods or services enterprises together to form a company, its main areas is given priority to with public utilities, such as water supply, power supply, heat supply, gas supply, etc., due to the lack of competition mechanism under natural monopoly economy some industry leading enterprises will relax the management of the enterprise, the natural think no competition and no pressure, so its not rigorous management can cause a series of internal problems, indirect cause its accounts receivable accumulated constantly.

III. TIANFU ENERGY RECEIVABLES SECURITIZATION CASE ANALYSIS

A. Tianfu energy assets securitization brief introduction

Xinjiang Tianfu energy co., LTD. Is a power, thermal, production, sales, and natural gas sales as the main body, hair, offer, the integration of comprehensive energy company, in order to solve the poor accounts receivable provision problem of a large number of provision for bad debts, in 2015 in the next three years 10 specific power consumption big customer accounts receivable as the underlying assets, set up the assets support special plan, until now, Tianfu energy special plans have been set up three periods of asset-backed securities, the company has successfully launched the third phase of a total of 2.659 billion yuan of asset securitization products: The first phase of the special asset-backed plan was officially established on June 24, 2015, raising 1.2 billion yuan, of which 1.14 billion yuan was raised for the priority asset-backed securities, with an interest rate of 5.30%, which was the lowest in the history of the issuance rate of AA asset-backed securities at that time. This "future receivables asset-backed securities special plan" is the first single asset securitization project in this field in China, which sets a good example for the national asset securitization project innovation. The second phase of the special asset support plan was officially established on June 13, 2017, raising 749.44 million yuan. The third phase of the special asset support plan was officially set up on May 30, 2018, raising 710 million yuan.

B. Background analysis of asset securitization

TABLE I. FINANCIAL STATUS OF THE COMPANY FROM 2009 TO 2014

	2009	2010	2011	2012	2013	2014
Cash ratio	0.2984	0.2949	0.4405	0.6721	0.2947	0.168
Account receivable balance (million yuan)	144.2	173.8	281.5	409.3	474.2	254
Return on equity	4.21	7.49	21.08	11.71	5.95	8.12
Total assets (million yuan)	5,120	5,632	7,010	8,600	10,896	13,800

^a. Data source: Tianfu energy annual financial report

We can see from the TABLE I, Tianfu its cash ratio except with high peak in 2011 and 2012, the rest of the years is low, and falling sharply since 2013, to 2014, the lowest is only about 0.17, it shows that companies have very urgent demand for funds, to find more appropriate and low-cost financing channels is imminent; Secondly, it can be seen from the balance of accounts receivable that its accounts receivable accumulated as high as 474.2 million yuan in 2013, and the provision of corresponding bad debt had a great impact on the company's profits. In addition, from the perspective of return on equity and total assets of the company, it is in a relatively stable state, which also provides sufficient conditions for enterprises to carry out asset securitization.

C. Benefit analysis of receivables securitization of Tianfu energy

1) Financial benefit analysis

TABLE II. RELATED FINANCIAL INDICATORS OF THE COMPANY FROM 2013 TO 2017

	2013	2014	2015	2016	2017
Net assets per share	4.7746	4.8616	5.1023	5.2475	5.6491
Days of accounts receivable turnover	51.17	36.83	23.87	22.08	19.71
Current ratio	1.23	0.58	0.53	0.94	0.80
Quick ratio	1.07	0.48	0.40	0.78	0.66

As can be seen from the above TABLE II, after the securitization of accounts receivable, the number of days in which a large number of accounts receivable were accumulated decreased gradually, indicating that securitization accelerated the number of days in which accounts receivable were turned over and reduced the amount of bad debt provision. Second enterprise current ratio and quick ratio at a steadily rising stage, the enterprise will be poor liquidity, non-market asset form a pool, on the credit enhancement after converted into a one-off, large amount of cash flow, so the accumulation of stock assets into liquid assets, natural increase the current ratio and quick ratio of the firm.

Energy in 2015, Tianfu terminated accounts receivable confirmed the amount is 370 million yuan, ten household electrical energy is Tianfu customers on July 1, 2015 to June 30, 2018 on the amount of accounts receivable generated in a specific month, according to the specific processing requirements of Tianfu energy asset securitization, namely after the securitization produced during the period of related accounts receivable amount is not reflected in the balance sheet, now let's say a year ten specific customers deal with electricity costs are equal in amount, so Tianfu energy on paper to reduce the accounts receivable amount is around sixty million. According to the calculation of 6% of the bad debt reserve of accounts receivable at the end of the period by Tianfu energy, the bad debt reserve of the next year is reduced by about 360,000 yuan. Although the amount seems small, it will inevitably produce a chain reaction in the accumulation of the next few years to reduce the bad debt reserve, thus reducing the impact on the net profit.

2) Market benefit analysis

The principle of the event study method is to select a specific event according to the research purpose, study the change of sample stock return rate before and after the event, and then explain the influence of specific event on sample stock price change and return rate, which is mainly used to test the price change before and after the event or the degree of price's response to the disclosure information. Energy events using event study method, Tianfu window after 11 days of data is calculated, and the following Figure 1 you can see its cumulative excess return (CAR) > 0, then the energy release can be thought of as the Tianfu receivables securitization financing of Tianfu energy stock prices have a significant positive effect, occurs during the long earnings to shareholders a significant in financing activities, securitization event created value. It can be seen that the market for the financing of the evaluation is positive, financing for the market value of Tianfu energy also have a boost.

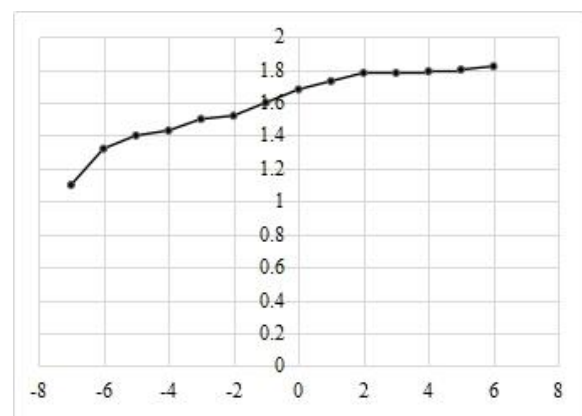


Fig. 1. Cumulative excess yield trend chart

IV. CONCLUSIONS AND SUGGESTIONS

A. Conclusion

Energy this article through to Tianfu receivables securitization financing innovation case studies, the energy of Tianfu economic performance of receivables securitization and in-depth analysis, and points out the reasons of the existence of a large number of accounts receivable of the electric power industry, the study found that Tianfu energy after the securitization of accounts receivable reduces the financing cost of enterprises, reduce the pressure of the impairment of receivables provision for bad debts, and the market reaction good positively, brought huge economic benefits to the enterprise. Finally, according to the research results, some suggestions are given, which are universal and can provide reference for other electric heating enterprises to carry out financing of receivables asset securitization, and also help Tianfu energy to improve its innovation of receivables financing.

B. Suggestions

1) From the perspective of preventing accounts receivable

From the perspective of preventing accounts receivable, we can set up professional accounts receivable management department, innovate and expand the payment channels of residents, improve the performance appraisal system and other ways. Electric heating industry is generally not strict management, the establishment of a special accounts receivable management department, the development of the corresponding system to prevent the accumulation of accounts receivable, by the department to pay regular return visit to the delinquent accounts of the customer, if necessary, to take legal measures to safeguard their own rights and interests; In addition, innovative marketing methods can be adopted to take advantage of the emerging approaches in the market, such as alipay, WeChat, APP of Banks and offline convenience stores, etc., which can help consumers pay bills more easily and faster and avoid the situation of electricity bill arrears. At the same time, you can set up a perfect electricity recovery performance appraisal system, a clear evaluation principles, evaluation, evaluation the scope of object relations, the inspection cycle, evaluation means and methods, evaluation procedures and steps of process, such as content, want to close the supporting measures, will be in accordance with the recovery of electricity, improve assessment of the electricity bills receivable turnover as a key, give full play to the role of incentives, responsibility to the people, the assessment in place, improve the quality and efficiency of electricity charge collection.

2) From the Angle of receivables securitization

Tianfu energy the securitization belongs to the first single of electric industry, which reduced the cost of financing, and expand the development direction, as the other in the electric industry, should be to establish a good credit system, rating to expand on the accounts receivable securitization can increase the credit asset pool, in order to promote the development of asset securitization. Secondly, it is necessary to formulate accounts receivable planning in line with the development of enterprises, determine the amount of financing according to the

demand, and achieve the maximum benefit within the minimum cost.

On the other hand, it can be reasonably promoted by preventing the risks of securitized financing. The risks of securitized financing of accounts receivable include the risks of accounts receivable itself, operational risks arising from the process of securitized financing and other external risks. Tianfu energy should comprehensively analyze the risks and control or prevent them through corresponding means in the process of making financing plans. For example, the default risk of accounts receivable should be reduced through credit enhancement technology to the whole asset pool.

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