A Novel Transaction Financing Model towards Electronic Commerce

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Abstract—In typical commercial financing scenarios, due to strict credit mechanism financial institutions need to inspect series of qualifications of borrowers, such as fixed assets, debt ratio, market scale, management level, earning capacity, and credit mechanism. In consideration of risk control and revenue maximization, only limited number of companies which have large scale, good balance sheet and perfect credit record can finally get loans. However, from aspect of the whole economy, promising companies tend to lose this kind of financing opportunities, especially for SMEs (small and medium enterprises). Fortunately, supply chain financing analyzes financing problem from view of entire supply chain, rather than single enterprise. It provides financial support to entire supply chain via loaning to hub companies based on their surveys. And in view of quick responding to the rapid changing market, timely financing is of great importance to the whole supply chain, which is essential to online trading velocity and scale. In this paper, an online transaction financing model is proposed on the basis of goods mortgage. In this model, transaction financing platform is deemed as a hub position of the whole supply chain, which acquires consolidated credit loans from financial institutions, and provides online financing services for individual companies within given supply chain. And this platform controls risks by goods mortgage and evaluates dynamic credit lines by trade records. In this way, companies could get loans in a timely manner, the platform profits from interest rate differential, and furthermore online trading velocity and scale will be promoted in return.

Keywords- electronic commerce; transaction financing; goods mortgage; dynamic credit strategy; interest rate differential

I. INTRODUCTION

In a broad sense, supply chain financing service started from the 19th century when storage pledge financing business firstly appeared from a bank in Netherlands. And in the 1920s similar business emerged in Shanghai, China. In fact, notion of “supply chain financing” began to be widely known by people until year 2006. Among commercial financial institutions, Shenzhen development bank can be deemed as a pioneer in providing supply chain financing service in mainland, China [1].
platforms have already been trying to provide this financing service like Jinyindao (Website: http://www.315.com.cn/), other aspects of risk is still unresolved, such as fluctuations of goods’ price, buyer companies’ unstable selling capability, seller companies’ unwilling of warrant and repurchase, possible forged trade contracts and quality risk of mortgaged goods [5]. Moreover, not every company could get loans in this manner, only limited number of companies which have large scale, good balance sheet and perfect credit record can finally get loans after long periods of wait for approval from financial institutions.

The second supply chain financing model is based on logistics inventory in operational phase. Trading and manufacturing companies in supply chain generally lack money in the interval between paying for raw materials and selling out inventories. In front of this gap, companies could pledge their stocks which are recognized by financial institutions to get loans. Its biggest difference from traditional chattel mortgage is that financial institutions usually engage logistics supervision enterprises to inspect, evaluate and safekeep mortgages [6]. This engagement requires logistics supervision companies to be professionally qualified, especially hold accurate market information on mortgages. Professional requirements greatly restrict kinds of available mortgages and number of qualified supervision enterprises. In addition, stable long-term cooperation between financial institutions and supervision enterprises is indispensable for this financing business [7]. In order to satisfy these conditions, financial institutions have to make significant additional efforts to establish detailed regulations of mortgages and admittance qualification of supervision enterprises and to follow closely during every session. However these measures mentioned above would extremely raise financial institutions’ costs and greatly obstruct their interest in this sort of business.

In consideration of accounts receivable in sales phase, the third common supply chain financing model gets devised. Upstream companies always hold accounts receivable to other companies in supply chain. These accounts receivable could be used to pledge to apply for loans from financial institutions [8]. Generally, there are two ways to obtain financing with accounts receivable: one mortgaging accounts receivable’s credentials but reserving right of recourse, the other one transferring all rights including recourse right. Because of involving debtors of accounts receivable, related rights’ background and realization become more complicated and uncertain, which results in increased risk and more investigation cost for financial institutions in practice, although central bank of China has already established a legal registration system for accounts receivable. So this type of financing still cannot be widely used except in public enterprises or institutions that have good credit and stable income [9].

Take all above together, and we could conclude that financial institutions have been seeking new financing methods from different perspectives to maximize capital utilization efficiency with minimum risk all the time. Nevertheless, supply chain financing business still cannot be promoted on a large scale in view of financial institutions’ strict approval regulations and incapability to access market information.

Additionally, with respect to the rapid changing market, timely financing is critical to the whole supply chain and essential for online trading velocity and scale. But so far enterprises still have to go through strict recommendation and approval procedures as usual if they want to apply for loan due to inherent vice of financial institutions. Actually in most cases, they cannot get approval, or get in time.

In this paper, to cope with these issues, we build a novel transaction financing model based on goods mortgage towards electronic environment. In this model, transaction financing platform situates in hub position, acquires consolidated credit from financial institutions, and provides online financing service for individual company which really deals on this transaction platform instead of financial institutions. Transaction platform could obtain most timely market information and enterprises’ trading behaviors based on trade records every day, which could minimize information asymmetry and opaqueness to the greatest extent.

By this means, companies could get loans timely for online trade, platform yields from interest rate differential via providing reasonable financing service to expand scale, and online trading velocity and scale will be promoted in turn.

II. A NOVEL TRANSACTION FINANCING MODEL

A. Work Principle of Transaction Financing Model

As shown in Figure 1, there is a total of five essential roles in this model: transaction financing platform which provides trade and financing services, financial institutions which supply capital source, logistics supervision warehouse which is authorized by platform to safekeep goods and transfer property of goods according to instructions from platform, buyer and seller enterprises which trade online on the platform. Besides these roles, trade goods play as unique tangible subject matter in whole service, while commercial credit does as intangible one. Next, we will show how these elements work interactively in our model.

Step (1) to (12) separately represents serial workflow in transaction financing procedure as Figure 1 demonstrates.

The following expounds detailed significance of these workflows:

(1)Apply for financing. After buyer enterprise places trade order online, it could submit financing application to platform if needing financing. Application shall include specific order trade information, financing amount, financing term and repayment method. And financing amount should be lower than order amount and applicant’s available credit line.

(2)Confirm financing. Once receiving financing application from buyer enterprise, the platform checks trade order, trade goods information, application details, and applicant’s qualification, and then makes an evaluation to decide whether or not to approve this financing application, how much money and how long to loan. If approve, steps to continue. If not, this time of application is ended.
(3) Transfer property of trade goods. If platform approves one financing application, it will inform logistics supervision warehouse to transfer property of trade goods from seller to buyer and notifies traders to confirm.

(4) Freeze trade goods. Trade goods will be frozen as mortgage immediately after property transfer, which means they could not be manipulated, including exchanged and transported away until buyer pays for them.

(5) Pay for goods. Since frozen mortgage is under exclusive control, platform will represent buyer to pay full price for trade goods to seller with approved financing money of buyer. So far, all procedures concerning seller are finished, leaving platform and buyer behind.

(6) Repay loan. When predetermined repayment term is up, buyer should repay loan principle and interest to platform. Repayment could be operated in one time or multiple times on basis of repayment method in the application in step (1). Special case that buyer incapably repays for loan on schedule occurs, platform will acquire all disposal right of mortgaged goods.

(7) Unfreeze trade goods. According to repayment in last step, platform informs supervision warehouse to unfreeze mortgaged goods with same proportion as repayment amount to total loan amount. Unfrozen goods could be dealt with as owner’s will.

(8) Auction trade goods. Platform could auction acquired mortgaged stock to compensate loan-loss in case borrower is unable to repay loan. In this way, platform could reduce loan risk in maximum extent when applicant breaks contract.

(9) Apply for consolidated financing. Platform cannot take public deposits like financial institutions. In order to ensure financing service’s smooth capital source, it shall apply for consolidated financing from financial institutions based on its own debt and credit strategy. Of course, financing amount should not be higher than available credit line authorized by financial institutions.

(10) Confirm consolidated financing. When platform submits its financing application to financial institutions, they will check application details and make a decision about approving this application or not. If approve, financial institutions set up an interest rate and repayment term for loan. If not, platform has to figure out another way. Generally, financial institutions’ financing for platform is based on their negotiations of long-term borrowing plans.

(11) Provide consolidated financing. If application of applying financing is approved, financial institutions will provide money to platform with specific quantity to keep on its online financing business.

(12) Repay loan. Platform should repay loan principle and interest to financial institutions no matter it ratchets back credits from borrower enterprises or not.

At this point, transaction financing platform already renders two core business services: online trading service and financing service. In addition the latter service is on the foundation of former one, which means only buyer enterprises that submit orders on transaction platform can access to apply for financing.

B. Discussion of Transaction Financing Model

Described workflow above reveals that transaction financing platform hosts hub position of online transaction system with connecting buyer, seller, logistics supervision warehouse and financial institutions. It provides necessary hardware and software conditions and manages information, capital and goods flows in every transaction. Consequently it undertakes almost all the risk which might be quite a challenge for its own.

To cope with these risks, we introduce mortgage mechanism by firmly controlling the right of taking delivery of goods with assist of specific logistics supervision warehouse like freezing goods in step (4) and unfreezing goods in step (7) of previous section. Unlike existing supply chain financing models which are based on warehouse receipt in procurement phase, supervision warehouse here is specialized in trade goods on transaction platform. It could precisely evaluate category and quality of goods and exclude shoddy products to minimize goods risk to the largest extent on the basis of its expertise in relevant trading field.

Goods trading prices may fluctuate every moment in unpredictable markets. It is tremendously difficult for financial institutions which are out of spot markets to get timely accurate goods price information. Oppositely following price trend and making proper evaluation of mortgages are easy jobs for transaction platform. Reasonable evaluation and prediction concern greatly on controlling of amount, term and interest of loan. Just as important is credit evaluation of borrowing enterprises.

In our transaction financing model, evaluation of enterprises’ qualifications will no longer be limited in hardware conditions such as fixed assets, debt ratio, market scale, management level, or earning capacity. Much more attention will be paid into enterprises’ online trading history which most truly reflects corporate financial status and operational conditions. In light with this, we design a dynamic credit strategy to determine relatively reasonable credit line for trading companies in our financing model.
III. Dynamic Credit Strategy in Transaction Financing Model

Number of online trade enterprises on the platform could be estimated hundreds of thousands. Each enterprise likely has different economic condition, market status and creditworthiness. In the transaction financing model above, credit line will be made for each online enterprise to make sure its independent total financing amount not go beyond reasonable safety range.

Traditionally financial institutions distribute credit line based on company’s profile, financial statement, list of collateral value, guarantor’s investigation report, etc. Given our model’s online trading characteristic, we propose a new specific dynamic credit strategy which is more suitable for electronic commerce.

Figure 2 depicts the formation mechanism of dynamic credit line. Firstly, transaction financing platform gives each newly registered online enterprise customer a credit base line according to known information such as enterprise’s profile, parent company’s capital ability, and trade record offline in the past. As a result, different enterprises may have quite distinct credit base lines. Granted credit base line is just initial value and then might be changed associated with continuous trades.

Platform sets up a trade record pool to store all trade history data. Every new online trade item will be added into this pool including traders, trading time, trading amount, financing amount and repayment record. Each added item contributes to the future credit line: successful trade increases individual credit line while bad one especially breaching financing contract decreases credit line, so do timely repayment and delayed repayment. Credit line server constantly extracts records from trade record pool to update dynamic credit line for every enterprise customer.

Credit line directly determines how much money an enterprise could loan at a certain time. Besides, it influences enterprises’ membership rank which could likely discount financing interest rate.

Consequently, dynamic credit strategy makes traders responsible for all trading, financing and repaying behavior on the transaction financing platform. Malicious defraud loan can be controlled at low level to make sure limited financing services aid real needy enterprise clients.

IV. Conclusion and Future Plan

Above all, due to enterprises’ structural characteristics and existing deficient financing credit regulations, from view of supply chain, critical and promising companies cannot always get financing support easily and timely.

This paper proposes a novel transaction financing model towards electronic commerce. This model employs new insights into supply chain financing. Transaction financing platform plays a critical role through getting consolidated credit from financial institutions, and then providing online financing service for individual trade enterprise. Capital risk could be effectively controlled by goods mortgage and dynamic credit strategy with professional information and accurate records. Finally, companies could get online loans timely, platform profits from loan interest rate differential, and online trading velocity and scale will be promoted.

Besides, there are still several research issues need to be explored, such as platform’s debt and credit strategy, financing application approval strategy, financing service interest rate differential model, goods’ mortgage price forecast model and detailed dynamic credit line algorithms. They will be reported in separate papers in future. After that, this financing platform most likely will be first applied to CMST steel e-commerce platform in Tianjin of China (Website: http://www.156ec.com/).

ACKNOWLEDGMENT

This work is supported by Chinese National Science and Technology Support Program (Grant NO. 2011BAH18B05), and DNSLAB.

REFERENCES


