Supply Chain Risk Assessment for Supply Chain Financing

Thomas Kwanho Yeung, Qiuping Huang, Xiande Zhao

School of Business Administration, South China University of Technology

Wushan R.D., Tianhe District, Guangzhou, China / 510640

Abstract

The paradigm of supply chain management (SCM) has shifted to the efficient use of financial strategies and infrastructure as suppliers and buying firms in many industries have limited rooms of further improvement in their physical flows and information flows. Some business strategists have called this latest evolution of SCM as "financial supply chain management". (Alvarenga, 2011; Lee & Rhee, 2011; Petersen & Rajan, 1997)

In this evolution, the buyer-supplier relationship has changed as many companies will collaborate with trading partners, financial institutions, third-party vendor or even business competitors for some ***supply chain financing (SCF)***. Supply Chain Financing (SCF), based on our definition developed from literatures (e.g. Mazars, 2011; Demica, 2009), can be referred to a set of solutions designed to facilitate the flow of goods from the origin to the destination along the supply chain and to strengthen the chain of activities between the buyers and sellers by resolving the financial problems of some supply chain members through collaborative

arrangements between the bank, the banking client and the core firm in the supply chain. From the banker perspective, the banks are willing to offer the financial packages to the clients based on the clients' individual performance and the collaborative performance within a supply chain. From the banking client perspective, both suppliers and buying firms are looking for better financial solutions to ease their payment terms, to improve their cash flow, and reduce the instability within the supply chain. (Demica, 2009)

As supply chain financing needs emerge in the wake of triad "buyer-supplier-bank" relationship, bankers are needed to develop a holistic and practical approach to evaluate their supply chain finance clients. A significant managerial challenge ahead is how to evaluate the risks and reputation of their SCF clients effectively based on the overall assessment of clients' performance and the supply chain risks encountered by the clients. Without a full understanding of supply chain risks, the banks may not set the price and hedge the risks of supply chain financing effectively, thus increasing the possibilities of default, financial loss and opportunities loss.

Given the importance of supply chain risk assessment in evaluating their SCF clients, the bankers are needed to develop a framework and measure for supply chain risk assessment. Unfortunately, the supply chain risk assessment tools for SCF are very limited (Hofmann, 2005), and many banks may not be so proactive to identify the supply chain risks. Instead, many bankers get used to judgments based on **4 "Cs"**

of credits, comprising the **C**haracter of borrower (reputation), **C**apital (leverage), **C**apacity (volatility of earnings) and **C**ollateral (Altman and Saunders, 1998). The lack of supply chain thinking may hinder the banks from developing "competitive" SCF solutions to small and medium suppliers and buying firms.

Our project research is an effort to develop a SC risk assessment framework for SCF and to develop a relevant survey measure. Specifically, our dissertation is organized into two essays.

In Essay 1, we develop a SC risk assessment framework for SCF. Based on the literature review and fieldwork findings, we consider that SCF relevant risk fall into three categories(Jüttner, Peck, & Christopher, 2003): (i) SC environmental risk, which comprise any uncertainties arising from the SC environment interaction. For example, political risk, consider the impact of events which are political in the sense that they arise from power or authority relationships and which affect (or have the potential to affect) the firm's operations.(Myers & Parker, 1979) (ii) SC organizational risk, which lie within the boundaries of the SC parties. For example, operational risks, referred to the inherent uncertainties such as uncertain customer demand, uncertain supply, and uncertain cost. (Tang, 2006) (iii) SC network-related risk, arising from interactions between organizations within the SC. For example, chaos risk, the complexity and uncertainty within a supply chain can increase the "chaos" risks within the supply chain. (Christopher & Lee, 2004)

In Essay 2, we will focus on developing a questionnaire survey to measure the SC risk for SCF based on the framework developed in essay 1.

First, to ensure the content validity of the constructs, an extensive literature review will be conducted to define each category's construct and generate the initial items for measuring the constructs. Based on the extensive literature, a number of measure items will be created for the three categories of SC risk. A structured interview will be followed to provide a preliminary assessment of the reliability and validity of the scales. After the measurement items are created, all the items will be reviewed and evaluated by practitioners from several different firms to pre-assess the reliability and validity of the scales. The third step will be a large-scale survey.

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