Focus Study

Supply Chain Financing: Funding the Supply Chain and the Organization

2016

CAPS RESEARCH

Supply Chain Financing: Funding the Supply Chain and the Organization

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ISBN 978-1-940404-16-5

2016

Acknowledgements

The authors and CAPS Research would like to acknowledge and thank the 30 companies and 50 people within those firms that participated in this research. Although some of these firms asked to remain anonymous due to the sensitive nature of their supply chain financing strategies, they generously and openly took part in the interview process. Their experiences and insights greatly added to the depth and breadth of the research.

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Executive Summary

Traditionally, supply chain management has been summarized into three major activities: the terms "source," "make," and "deliver" are often used synonymously with the topic. Recently there has appeared a new purpose for supply chain management. With advances in technological development, the supply chain has become the cheapest source of cash in many organizations. "Supply chain financing" (SCF) enables managers to improve the company's balance sheet and income statement. Using its financial strength, a buying firm can fund the supply chain. In addition, various financial instruments can be used to mitigate risks in the supply chain. Overall, SCF complements standard corporate finance activities by reducing the firm's reliance on other sources of funding, thereby reducing costs and ensuring that retained earnings and profitability are maximized.

The supply chain has three major flows: product, information, and finances. As supply chains increase in complexity those three flows can become disjointed. The three flows often move through different intermediaries. Products might be routed through third-party logistics firms or transportation and warehousing providers. Information is transmitted through the cloud and information service providers. Payments flow through multiple banks and other financial intermediaries.

We see a symbiotic effect between the combination of supply chain management and finance that makes the whole greater than the sum of the parts. In other words, SCF is more than just finance plus supply chain management. Our perspective on SCF can be captured as the following:

Supply chain financing is using the supply chain to fund the organization, and using the organization to fund the supply chain.

Ultimately, SCF involves utilizing the supply chain to develop savings, generate profits, and efficiently manage assets to fund the firm, whether buying or selling. It includes working to improve both the income statement and the balance sheet for a buying firm and its suppliers. SCF can bring structure and discipline to the financial portion of the supply chain, which can in turn improve the physical supply chain. It can reduce variability of payments in the supply chain and therefore can reduce the need for additional cash to alleviate uncertainty.

According to the data we have collected, supply chain financing is the next frontier in managing the supply chain. Not only have banks provided significant liquidity to large companies' suppliers, but they also have enabled significant transactional efficiency in terms of payments and documentation. There is also considerable innovation in the SCF realm, which allows firms using those solutions to provide considerable liquidity to the supply chain. This innovation has manifested in the rapidly expanding financial technology industry, known as "Fintech" firms. They have developed streamlined processes to manage financial flows and develop alternative sources of funding.

The term “supply chain financing” has appeared in relation to products that are offered by financial institutions and third-party providers, and it is related to what is technically known as “reverse factoring.” For instance, it enables the supplier to sell an invoice for early payment. However, in this case the risk is based on the credit rating of the buyer who ultimately pays the bill and therefore may represent an option to gain short-term liquidity at cheaper rates. The involvement of the buyer is mainly that it allows its credit rating to be used; for example, it allows the extension of payment terms.

In general, SCF has the strong potential to be a win-win for both the buyer and the seller, with numerous additional benefits such as providing significant liquidity, enforcing discipline in the approval of invoices, and taking the variability out of the timing of payments. While there have been some misconceptions about the viability of such programs, we have seen no evidence that there are significant barriers to the implementation of such programs, such as the accounting treatment.

This report highlights areas of collaboration, especially involving the corporate finance function and treasury, in addition to suppliers and even customers. We recognize an opportunity for supply professionals to expand their role into financial issues, as they can significantly alter how relationships with suppliers are managed. Some of the tools presented in this report can bring significant value to the organization because they provide access to liquidity, which is often difficult to access otherwise.

Section 1

Introduction

This section delineates the basic premise of the report. It explains the purpose and scope of supply chain financing (SCF) and defines our field research methodology, which included interviewing key stakeholders at a number of relevant organizations and triangulating the information with documentation collected.

What is Supply Chain Financing?

Global supply chains have become increasingly complex. New financial infrastructures are developing to support these evolving networks of firms. Financial service firms, including large banks and specialized financial institutions, have developed services to support suppliers that require liquidity and working capital. An executive at a major financial institution estimated that his firm performs $2.1 trillion per day in trade finance transactions, which typically includes loans to suppliers to buy raw materials, components, and finished goods. Given that the 2014 U.S. gross domestic product (GDP) was approximately $17 trillion, this is a substantial amount of activity designed primarily for supporting procurement operations around the world. As large manufacturers have tightened their supply chains and extended payment terms, their suppliers have had difficulty financing their operations. This difficulty in obtaining funding has severe implications on cash flow, working capital, and profitability, and it can sometimes lead to bankruptcies and supply disruptions.

With capital often difficult to obtain, firms must develop more creative ways to help finance their diverse and increasingly underfunded supply bases. While factoring and reverse factoring of inventories and receivables have often been called supply chain finance, the topic as we define it goes far beyond those practices. Broadly speaking, SCF is how firms are funded through their supply chains and how they fund their supply chains. To the best of our knowledge, there is little published research on the topic of SCF in the supply chain literature, and the topic is in the early stages of development. SCF will have an increasingly valuable and important impact on all entities in the supply chain in the future.

SCF is larger than simply finance plus supply chain management. That is, there is a symbiotic effect in the combination of supply chain management and finance that makes the whole greater than the sum of the parts. Supply chain financing is related to funding in the following way: ***Supply chain financing is using the supply chain to fund the organization, and using the organization to fund the supply chain.***

Supply chain financing involves utilizing the supply chain to develop savings, generate profits, and efficiently manage assets to fund the firm. It includes working on improving both the income statements and the balance sheets for a firm and its suppliers. The supply chain can be a source of funds for the firm; a firm can use its supply base to generate funds and act as a source of funding for the organization. Additionally, helping one's suppliers fund themselves is an integral part of SCF. Later in this report, we describe an example of how a CAPS Research member company uses its balance sheet and business acumen in this manner.

SCF enables a firm's managers to improve the balance sheet to fund the supply chain and to use financial instruments to mitigate risks in the supply chain. In addition, SCF complements standard corporate finance activities by reducing the firm's reliance on other sources of funding, thereby reducing costs to ensure that profitability and retained earnings are maximized.

Firms have constrained access to external capital because buying firms have tightened their supply chains. Suppliers have had difficulty in financing their operations to supply these larger firms. The struggle to obtain funding can increase the cost of business and sometimes lead to shortages and even bankruptcies. Large corporations have had to develop methods to finance their diverse and sometimes underfunded supply chains.

Global Impact of Supply Chain Financing

Global trade outside the United States is impacted by SCF. There has been a dramatic shift of trade flows into emerging markets that desperately need capital to supply the developing world. Small- and medium-sized businesses in these emerging markets are often underfunded. As their supply chains expand so does the need for readily accessible, low-cost financing. Non-investment-grade companies and small-to-medium enterprises (SME) find it difficult to finance their working capital requirements as buying firms have tightened their supply chains; this can be particularly true for smaller suppliers in emerging economies such as China. The result is that there is a significant credit arbitrage between large firms in established markets and their suppliers in emerging economies. Large corporations have been forced to develop methods to finance their diverse and sometimes underfunded supply chains. Working capital[1] management needs to be part of buying firms' strategies when developing suppliers. Working capital solutions can assist buyers to monetize these arbitrage opportunities while assisting their suppliers. In general, buyers and suppliers typically have conflicting objectives, and strong buyers tend to take advantage of weaker suppliers. Using SCF tools has the potential to contribute around $400 billion to Western European economies while reducing overall costs and decreasing supply chain disruption (Dervojeda et al., 2014). These tools could also give access to capital for small- and medium-sized enterprises and allow access to new export markets by making them more liquid. In the long run, however, only the solutions that are mutually beneficial for buyers and suppliers will work.

As mentioned earlier, there are three major flows in the supply chain: product, information, and finances. Most existing supply chain literature focuses on the first two, and only little attention has been paid to the financial side of supply chain management. While most of the literature is focused on the product and information flows, it is the financial flows that often exert the greatest influence on the development of the structure of supply chains. In many cases, financial flows determine the structure and complexity of the supply chain. Typically, supply chains are not designed merely to facilitate product or information flows. Instead, they are designed to optimize the financial objectives of a firm.

[1] Working capital is a measure of liquidity used to gauge the financial health of a firm.

Generally, financial structures and issues drive the structure of the supply chain and operational methods.

Our research focuses on the activities and methods that organizations use to finance their diverse and increasingly underfunded supply bases. As SCF is a relatively new concept, we utilize interview data of financial service firms, manufacturers, and retailers to better understand it and see how it is likely to be applied in the future.

When a firm is considering adopting a supply chain financing program, it is, by definition, interorganizational. Several groups get involved in developing SCF programs including treasury, the CFO organization, and the CPO organization. When it comes to implementation, systems and IT need to participate. Once the program is mandated, the buying firm's procurement organization is most likely to drive the implementation. Usually the goal of the procurement organization is to improve the firms' working capital measures and extend payment terms to suppliers. When developing an SCF program it is imperative that it is done in a collaborative manner, so that all of the messaging is accurate and acceptable to the supply chain. While suppliers may actually benefit from a standardized set of extended payment terms, it is unlikely that they will initially accept it without concerns.

Terms Standardization

Payment terms are often inconsistent across divisions. Part of moving to a more coherent SCF strategy is to standardize payment terms as much as possible. Clearly, there are contractual reasons why payment terms may never be fully standardized to a single set, but there is often a fair amount of randomness and unnecessary proliferation of diverse payment terms. Procurement strategy may include standardization of payment terms with the suppliers. Several firms have moved to longer payment terms, including consumer product companies such as Procter & Gamble and Kellogg's. In the automobile parts business, retailers such as AutoZone and Pep Boys have extended their payment terms out to nearly a year.

Because it is often the financial supply chain that drives behavior, supply management professionals need to clearly understand the financial aspects of their supply chains, even if suppliers and customers are not transparent or are outside the span of control. It is imperative that supply managers understand where the assets lie. A lack of integration between the finance side of an organization and the supply chain side leaves a precarious gap, and it should be managed carefully to ensure the profitability of the firm.

Overview of the Interviews

The overall approach of data collection followed the logic of snowball sampling. The research team first began with a core group of firms. From there, we expanded the interview process to additional companies until no new data came forth (i.e., same information was repeated with new interviews) or we reached the edge of the SCF phenomenon (i.e., we began to see activities that would fall outside of how we define SCF).

The team initially identified eight companies as potential participants for the study. During data collection, additional firms were identified; throughout the course of the project, 30 companies participated in the interviews.

Several of these firms were members of CAPS Research. However, most of the financial institutions and Fintech companies were outside of CAPS Research membership. These companies represented both consumers of SCF services, as well as suppliers of those solutions. The companies span across several industries, including diversified manufacturing, financial services, high tech, medical devices, food, logistics, and petroleum. From those participating companies, we directly interviewed 50 individuals in senior management positions. Because of the sensitive nature of risk management approaches and experiences, many of the companies asked to remain anonymous in this report.

The remainder of this report will cover the following areas. First, we describe the background of SCF and the business environment that gives salience to the importance of SCF. Next, we describe how firms have used the supply chain to fund growth of their own firms. This is followed by an overview of different payment methods. Then, we describe different supply chain finance programs and the types of firms enabling these programs. We conclude the report with important managerial issues that affect SCF, followed by the closing remarks.

Section 2

Background

In this section, we describe the background of critical elements and considerations that affect the development and implementation of supply chain financing (SCF) strategies and practices. We discuss how the purpose of the supply chain has evolved over time, and how trade finance in general enables activity in the supply chain.

The Transformed Purpose of the Supply Chain

The supply chain is more than just about "source, make, deliver." A critical departure from this prevalent perspective begins with observing that the cheapest source of cash actually resides within the supply chain.

As supply chains increase in complexity, the three major flows of product, information, and finances become disjointed. That is, product, information, and payments flow through separate channels and different intermediaries. Products might be routed through third-party logistics firms. Information travels through the cloud. Payments flow through multiple banks and other intermediaries. For example, banks will facilitate payments to suppliers and service providers in foreign countries, so a buying firm does not have to contend with local regulations. The banks assist with payment flow integration across a firm's supply chain. The bank system simplifies the audit, approval, and payment of freight-related expenses by automating the entire supply chain process. Transactions take place online, from the pre-payment audits, to review and negotiation with shippers, to expense allocation and more — and the payment takes place in cyberspace. All these transactions can be separate from the physical movement of goods. This means that a Chinese trucking company can deliver a shipment to an American subsidiary plant in China, and the entire transaction could take place in a computer in New Jersey in the United States.

Innovative SCF programs help create capacity. Through SCF, firms can develop new capacity. Better financial management of both payables and receivables can allow buyers and suppliers to invest in initiatives that they would not have been able to otherwise. SCF allows them to create capacity both on the buyer and supplier side because it frees up working capital. Unlocking working capital allows a firm to better handle ongoing expenses. If a firm can extend the amount of cash it has, it can use that money to help buy a new plant or equipment, lower the need for long-term financing, and make other investments. In this regard, SCF can inject liquidity into the system so that trapped cash can be unlocked and converted from working capital into cash. A well-known consumer packaged goods firm has been able to increase capacity by embarking on an SCF program in recent years. Its intent was to unlock working capital, turn it into cash, and use that cash to fund investments in new markets and opportunities. In some cases, unlocking working capital resulted in increased cash of $100 million to $200 million on an annual basis.

The Enabling Role of Trade Finance

According to Ahn, Amiti, and Weinstein (2011), trade finance consists of "using trade credit (accounts receivable) as collateral and/or the purchase of insurance against the possibility of trade credit defaults." In traditional trade finance contracts, exporters obtain working capital loans, credit lines, discounted prepayments, or credit default insurance based on foreign purchase orders or credit guarantees provided by the importer's bank. Globally, trade finance is large, and it is estimated that about 90 percent of firm-to-firm transactions involve some form of trade finance. Furthermore, the overall global market for trade finance, including credit and insurance, is estimated to be more than $12 trillion (Auboin, 2009). Similarly, a senior executive at a large financial institution estimated that $2 trillion of trade finance went through his firm each day. Without trade finance, supply chains and the world economy at large would immediately grind to a halt.

Ensuring adequate liquidity is of paramount concern for all executives involved in supply chain management. SCF can bring structure and discipline to the financial portion of the supply chain. We believe this financial structure and discipline can actually improve the physical supply chain and make it function better. It can reduce variability, create capacity, and make it easier to manage.

Sources of Capital in the Firm

Access to capital remains a critical issue for firms. Credit markets in the United States have improved considerably since the worst periods in early 2009, but it still is often difficult for a firm to obtain access to credit. Outside the United States, in countries such as Brazil, financial flows have dramatically worsened. Without access to capital a company cannot expand into new markets, fund research and development, or execute most any activity that requires investment. Because of the recent global recession, many firms have not had easy access to credit.

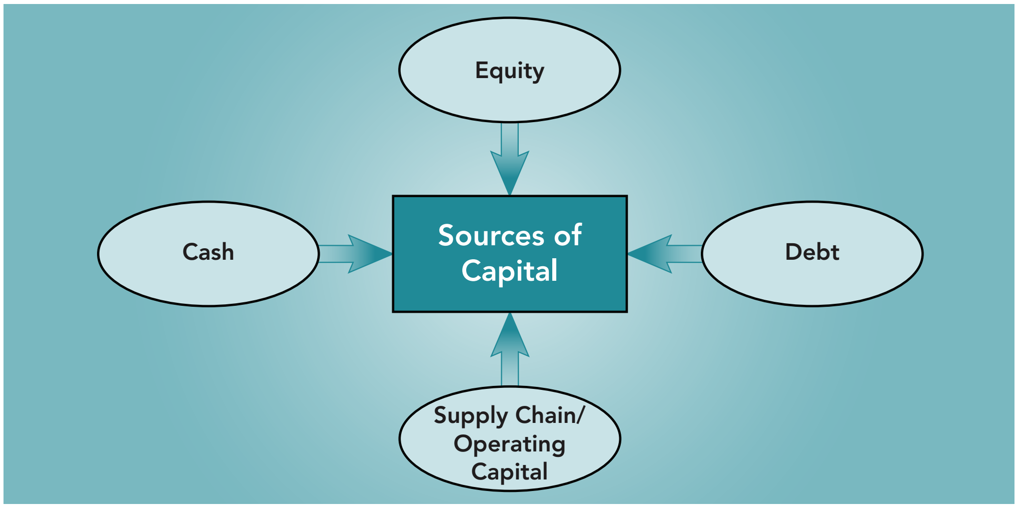
As mentioned above, there are limited sources of funds available to firms. Despite general easing in credit markets, many non-investment-grade companies and SMEs continue to find it difficult to finance their working capital requirements. As shown Figure 2.1, there are four primary sources of capital within the firm. These sources are debt, equity, supply chain (often referred to as operating capital or retained earnings), and cash. Of these, cash is the most liquid, but depending on the business model of the firm it can be the most difficult to acquire. Equity capital is generally the most expensive. While at the time of this writing debt capital is relatively cheap, it is a limited resource. Companies can only borrow a limited amount.

The least expensive and easiest capital to accumulate is operating capital. Operating capital is accumulated by reducing the cost of supply chain processes and utilizing the supply chain to increase revenues. Operating capital does not need to be "applied for" with a bank or Board of Directors, and it can quickly be turned into cash that can be used elsewhere in the firm.

Key Financial Terms

This report requires an understanding of several financial terms. The most important concepts are provided below.

Figure 2.1
Sources of Capital



Importance of Working Capital

Working capital is a metric that represents a firm's short-term financial viability and the efficiency with which the firm manages its short-term assets and liabilities. It is typically calculated as:

Current Assets – Current Liabilities

Another related measure is the working capital ratio:

Current Assets / Current Liabilities

The working capital ratio indicates whether a firm has enough short-term capital to cover its short-term debt. On the one hand, measures below 1.00 indicate insufficient working capital. On the other, ratios larger than 2.00 are seen as inefficient because it signifies a reluctance to invest in the business. The sources of those metrics are explained in Table 2.1. The working capital ratio can be tracked over time to reveal potential issues regarding the financial health of the firm. Firms can improve working capital by accelerating receivables from customers, delaying payables to suppliers, or liquidating inventory. In general, working capital provides investors with an indication of the firm's operational efficiency.

Cash Conversion Cycle

The cash conversion cycle (CCC) is an important metric that connects the firm to the supply chain. It is a meaningful measure especially for firms that have physical goods. Its application is not just for finance and treasury executives; it also impacts the supply chain domain. The CCC is directly related to the working capital needs of the firm. This direct link is often used by analysts to evaluate the ability of the firm to efficiently manage cash.

Fundamentally, CCC measures the time between the outflow of cash and the inflow of cash directly associated with operating the business. In other words, a lower value for CCC is better than a higher value. Intuitively, a lower cycle time is preferred when converting work into cash.

At the firm level, the CCC can be calculated utilizing publicly available information. The

Table 2.1

Balance Sheet Items Used to Calculate Working Capital

Current Assets (assets that can be converted into cash within the current fiscal year)	
Cash and Cash Equivalents	The value of a firm's cash holdings or holdings that can be converted into cash quickly. Examples include cash in bank accounts and other marketable securities such as certificates of deposit, commercial paper, banker's acceptances, treasury bills and other money market instruments.
Accounts Receivable	Payments owed by customers for goods and/or services.
Inventory	Raw materials, work-in-process, and finished goods that are ready or will be ready for sale.
Prepaid Expenses	Payments that have already been made for goods and services to be received in the near future. Examples include yearly advance payments for insurance policies that have not yet been used.
Current Liabilities (debts or obligations to be repaid within the current fiscal year)	
Short-Term Debt	Debt that is due within the current fiscal year, such as bank loans taken out by a company.
Accounts Payable	Payments owed to suppliers for goods and/or services.
Accrued Liabilities	An expense that has been incurred but has not yet paid. Typical examples are payments due at a specified date to cover payroll taxes.

information can be found on the income statement and balance sheet of the firm. The information to calculate the CCC can be found in Table 2.2. The CCC can be calculated on a quarterly or annual basis.

The importance of the CCC lies in the continuous measurement over time. If a firm can lower its CCC by improving its working capital, then it has freed resources that can be directed to other needs. Often, financial analysts use this metric to gauge the liquidity of a firm.

Cash

Cash holdings have significantly increased over the last 30 years. The average cash ratio (cash and cash equivalents / current liabilities) increased by an average of 0.5 percent per year between 1980 and 2006 (Bates, Kahle, & Schulz, 2009), and that increase has further accelerated since the Great Recession of 2009

Table 2.2

Cash Conversion Cycle

Metric	Description	Calculation
Cash Conversion Cycle (CCC)	A metric describing how efficiently the firm can generate cash.	*CCC = DSO + DIO – DPO*
Days Sales Outstanding (DSO)	The number of days needed to collect on sales.	*DSO = Accounts Receivable/Daily Sales*
Days Inventory Outstanding (DIO)	How many days it takes to sell the available inventory.	*DIO = Inventory/Daily COGS*
Days Payable Outstanding (DPO)	The company's payment of its own bills.	*DPO = Accounts Payable/Daily COGS*

(Bates, Chang, & Chi, 2012). This observation reinforces the argument that firms are seeking to increase their cash holdings as much as possible.

This has significant influence in the use of supply chain financing techniques that have gained in popularity over the past several years. For example, there are four important points regarding the observation that cash holdings have increased: (1) inventories have fallen; (2) cash flow risk for firms has increased; (3) capital expenditures have declined as firms outsource more; and finally, fueled by increased cash holdings, (4) R&D expenditures have increased (Bates, Kahle, & Schulz, 2009).

Gross Margin Return on Investment

Gross margin return on investment (or GMROI) is a metric that is often used in retail businesses. It is, however, not limited to retail. It is a measurement that explains how many gross margin dollars are earned on every dollar of inventory investment. GMROI combines the effects of profits and inventory turnover. It works almost like a hurdle rate to determine whether or not the investment in a specific product is producing profit.

GMROI = a measure for how many gross margin dollars are earned on every dollar of inventory investment

GMROI measures how successful an investment in a particular product or category inventory has been. In many cases this metric is used to determine which products and product lines should be discontinued.

SupplierPay Initiative

SupplierPay is an initiative driven by President Barak Obama to help small- and medium-sized firms get paid earlier by their customer firms. A similar program in the United Kingdom titled the Prompt Payment Code (PPC) preceded the U.S. version, which kicked off in 2014. The PPC in the United Kingdom sets standards for payment practices. The Chartered Institute of Credit Management administers the PPC.

The White House has recognized that lengthening payment terms has had detrimental effects on smaller suppliers with limited access to liquidity. The White House urged large corporations to sign on to its voluntary SupplierPay initiative (The White House, 2014). The initiative resembles the federal government's own QuickPay program that was started in 2011 and attempts to pay small business suppliers within 15 days. In a statement, the White House claims that the QuickPay initiative has raised more than $1 billion for small business since its inception. There are numerous companies that have signed on to support the pledge. A major influential factor for this initiative is positive publicity. When coupled with the recent negative press that some firms have received as a result of their longer payment terms, this is an issue that requires significant attention (Ng, 2013; Storm, 2015). It requires significant alignment and collaboration with leaders in the finance area. The

U.K. version includes compliance monitoring. Principles of the Code are monitored and enforced by the PPC Compliance Board. The Code covers prompt payment, as well as wider payment procedures. The U.S. version of the SupplierPay pledge is presented below in Table 2.3.

Table 2.3

SupplierPay Pledge

SupplierPay Pledge

Strengthening small business access to capital is a "win-win" for small companies and us, their large customers. We recognize that we thrive when supply chains are healthy, when firms of all sizes are able to support our growth, investing in new ideas and new equipment, and creating new jobs. We do best when Main Street is strong, as small businesses are critical to our reaching our full economic potential as a company and a nation. Small firms are responsible for the majority of U.S. job creation and generate close to half of U.S. gross domestic product. While small firms have made momentous strides in recovering from the depths of the Great Recession, too many small businesses continue to struggle to access capital, including working capital, which creates a drag on growth and employment.

We are committed to addressing this marketplace gap in small business lending. Our efforts are intended as a meaningful step in reinvigorating our supply chains, making them more resilient over time while supporting Main Street today. Accordingly we resolve to:

1. *Provide A Working Capital Solution to Our Small Business Suppliers:* We will take active steps to lower the working capital cost of small business suppliers through either:
    - Paying our small suppliers faster than we do today in order to reduce their capital needs.
    - Enabling a financing solution that helps small suppliers to access working capital at a lower cost.
2. *Share Best Practices:* Our pledge is a first step in a larger effort to strengthen supply chains and support small firms with the goal of driving impactful follow-on action from the broader marketplace. To encourage wider support, we'll highlight tangible outcomes for our own efforts, providing visibility into our actions and publicize key learnings in implementing this pledge.
3. *Implement a "Win-Win" Solution:* We will implement this pledge in a manner that ensures our small suppliers are able to take advantage of our commitment while minimizing new administrative or operational burdens. We will define "small supplier," and if we choose to offer these solutions to the entire supply chain we will continue to focus our efforts on the small suppliers that will benefit most. We will not use our pledge to offer financing solutions as a means of extending payment terms with our current small business supplier base.

Section 3

Funding Growth through Supply Chain Improvements

This section describes how firms can use their supply chains to improve the funding of the firm. We discuss the importance of the supply chain in obtaining operating capital and describe how a large consumer packaged goods company directly ties operational savings to investment in growth opportunities. We conclude with strategies of how supply chain organizations can obtain working capital for the firm. Finally, a case is presented depicting how firms can strengthen their supply bases and help small- or medium-sized suppliers with their capital needs and business acumen.

Operating Capital in the Supply Chain

The Basel III restrictions, introduced in 2010 and phased in over the following five years, require banks to create capital buffers that impact bank capital requirements by holding them responsible to increase liquidity and reduce their leverage. Consequently, Basel III has forced many small banks to cut back on loans to businesses (McGrane, 2012). These changes, in addition to a general climate in the financial industry moving toward conservative capital management, have forced companies to figure out how to find alternative methods of self-funding their growth.

Equity markets have not seen much growth in several industry sectors. For example, products from some consumer packaged goods companies have been selling well around the world, but their stock value — and subsequently the value of the firms — has not grown much over the last several years. Therefore, investors have not funded these firms to the level at which they need to grow in accordance with investor expectations. Firms cannot issue much more equity because it would dilute their stock holdings, which is generally not preferable.

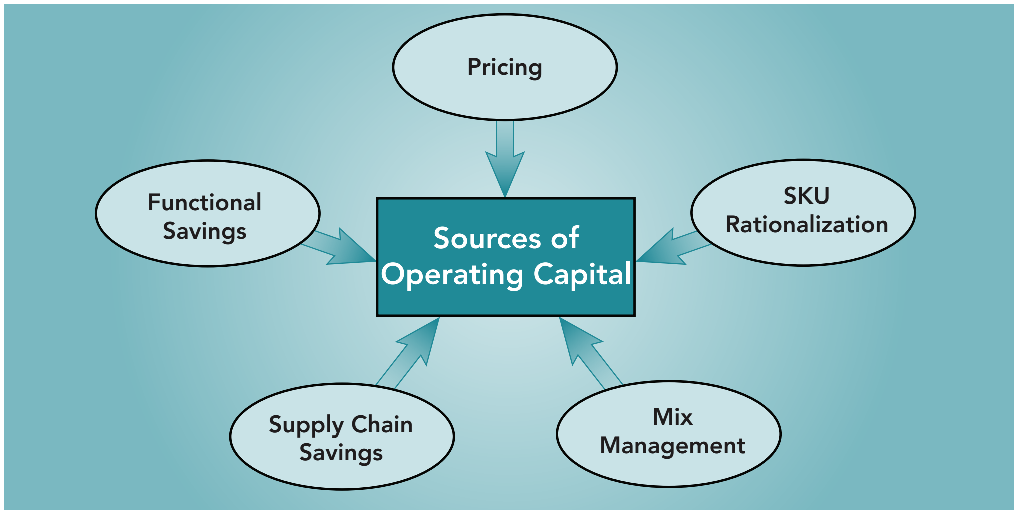
There is a significant credit arbitrage between large companies and their suppliers. Supply chain financing programs that allow for reverse factoring, one of which is described later in this report, can assist buyers to monetize this arbitrage, while at the same time improving operations for their suppliers.

Developing Operating Capital

As mentioned above, the best capital for a firm, other than pure cash, is operating capital. An important point of departure from what we have known about supply chain management begins with an observation that a large percentage of a firm's operating capital is embedded in the supply chain. This observation can help redefine the role of supply managers who are tasked with cutting operational costs. These savings fund operating capital and enable the firm to make investments in new products or services and also in new markets that could not necessarily support themselves without access to capital. An important job for supply chain managers is to look for various ways to free up operating capital that can be immediately applied to new and important internal investments. A large food and beverage company interviewed for

Figure 3.1

Sources of Operating Capital



this research serves as a benchmark in this regard. They have a formalized program to develop operating capital, which is shown in Figure 3.1. This company is both a manufacturer and retailer, working with a complex mix of different supply chains. Its formalized program uses five main sources to develop operating capital.

Pricing

A firm that has flexibility in its pricing may have the ability to attach a premium price to some of its products. Those products that have price inelasticity can be used to help fund new products and markets that cannot yet support themselves. For example, a cup of Starbucks coffee has pricing flexibility. While it is unlikely that Starbucks could charge $30 for one cup of coffee, it is a product for which prices can be increased based on firm objectives and not totally based on a capricious marketplace.

SKU Rationalization

Another source of operating capital is through rationalizing SKUs. Firms, like the one interviewed, carry a fair amount of new products and tend to end up with a proliferation of products that are not top performers. This food and beverage company maintains a structured program to eliminate SKUs that are lagging. The savings from eliminating products that have not performed well are diverted to new products that can enable company growth.

Mix Management

Changing a bundle of products and services so that the cost of purchasing and selling those products and their components can be optimized is another way of developing operating capital. The firm referenced here carefully examines its sets of products moving through various supply chains to determine how to manage the mix of those items. This program has led to substantial savings since it has been implemented.

Supply Chain Savings

Purchasing raw materials and components at lower prices and rationalizing the number and location of plants and warehouses are some of the ways to find supply chain savings. For many firms, this category of operating capital is likely the most accessible for finding savings. Again, achieving supply chain savings is an important method for funding the firm, and sometimes for funding other members of the supply chain. This category may include changing supply chain intermediaries or reducing the costs related to suppliers and intermediaries. It is typically already part of a firm's supply planning.

Functional Savings

Functional savings refers to transforming a function inside the firm to be more cost efficient. Quite often, this effort translates into rationalizing the personnel that the firm has working in a specific area. It might include cutting part of a function or realigning a business unit to simplify reporting relationships. Functional savings usually remain internal to the firm while supply chain savings are typically external. In the case of the beverage firm mentioned above, functional savings has included rationalizing each portion of the organization. This company frequently performs a check on operations to determine whether each part of the organization is necessary. If it is discovered that an area is inefficient there is a readjustment made to bring costs inline.

Fund the Growth

One consumer packaged goods (CPG) company has a supply chain financing organization that reports to both the finance and supply chain management organizations. With this "Fund the Growth" initiative, the supply chain financing group strives to manage working capital to invest in growth opportunities for the firm. Its primary mission is to fund the growth of the company by transforming its supply chains to be more efficient. Globally, this CPG company has been successful in consistently increasing gross margins while at the same time reducing costs, which enabled the company to fund new growth such as new product development and marketing programs. Such new initiatives, in turn, produce profit.

Supplier Relationship Building through SCF

A CAPS Research member company in the healthcare industry was interviewed for this research. This innovative firm serves as the focal firm in the example below. It uses SCF techniques both to improve its working capital and cash flow and to develop suppliers. It has a number of relatively small, privately held suppliers that need help with financing and business acumen. These suppliers may have an important technology that, if properly developed, could be a high-growth product line for the buying firm. By using supply chain financing, a small but entrepreneurial supplier can tap into the focal firm's balance sheet, a very strong blue chip balance sheet. SCF helps the supplier do a much better job in managing its business. For this focal firm, this is part of its supplier relationship management practices, in particular supplier development.

As part of this supplier development initiative, the focal firm began identifying a list of suppliers that fit the criteria of having unique technology or a product line that could potentially grow into a large business for the focal firm. The identified suppliers are typically smaller, privately held companies with revenues in the $100 million to $300 million range. The focal firm uses its strong balance sheet and business acumen to help the suppliers' financial back-end processes so that they can then reinvest in their businesses.

In this example, the focal company is supporting the supply chain. In return, the focal firm is able to purchase something that it does not have the internal capability to produce. The supplier perhaps does not excel at some aspects of the business operation because it is less experienced and under-financed. Using the focal firm's balance sheet and business understanding helps the supplier to be healthier.

Even for larger suppliers with a similar credit rating, SCF practices are put in place to control cash flow. These processes allow the suppliers to be able to get cash in a timely fashion and to manage their cash flow. More importantly, the focal firm understands that it is strong in the marketplace if its suppliers are strong. In the case company, these programs are tied to its long-term relationship and engagement activities with suppliers so that everyone wins. In this regard, helping suppliers with cash flow and improving their business processes takes on strategic importance. It is an example of one side of the definition of supply chain financing: *SCF is using the organization to fund the supply chain*.

A large part of supplier relationship management for those types of suppliers discussed above is for the focal firm to think through its long-term strategy. The consideration should include the financing component. In this example, the focal firm is saying to the supplier: "We want you to grow with us on a global basis and we can help you figure out how to scale up." From a cost standpoint, at the time of the interview, this particular focal firm was transitioning this category of suppliers into the electronic payment process and consolidating them into one vendor payment process. This translates into savings in the focal firm's accounts payable process by paying through one process instead of multiple processes.

For the suppliers, they get an attractive source of liquidity. By using SCF and/or dynamic discounting (see Section 5: Supply Chain Financing Programs), the supplier can take the cash at the time of its choice. It can choose the option to take the payment early or wait for the full term to collect the cash. If it selects to take the early payment option, the discount can be based on the buyer's credit profile. As a result, it gains the flexibility of when to collect the payments. Its cash flow improves by reducing its accounts receivable and obtaining cash. In addition, it can improve its balance sheet debt/equity ratio because it has less financial liability to its bank. It also enhances the payment transparency because now the supplier has visibility into and control of when the payment is being made. Overall, the supplier is able to predict its cash flow better and control the cash management for its business.

Section 4

Methods of Payment

In this section, we provide an overview of how financial transactions are routed in the financial system. Beginning with traditional paper-based checks, we review commercial credit cards and other electronic bank payment methods, such as automated clearinghouse (ACH) and wire transfers. These routes are an integral part of how SCF is transacted and influence the firms involved.

It should be noted that the least expensive method for sending a payment is usually ACH, followed by checks, and wire transfers; the most expensive option is a card payment. All methods of payment described in this section have certain advantages, and we pay special attention to commercial cards, as there are a number of innovations in this space.

Checks

While checks are still being used by some firms, their popularity is overall on the decline. The Federal Reserve estimates that the use of checks in business-to-business (B2B) transactions declined by 9.2 percent per year for the period of 2009 to 2012 and by 5.5 percent per year in the seven years prior to that (Gerdes, 2013). It is interesting to note that in more recent years, the decline has slowed, suggesting certain barriers. About half of the invoices for U.S. firms are currently paid via check (Monga, 2014).

Some firms continue to cling to the mailing and processing of paper checks. We believe this is so because of the working capital benefits that arise from their use. There is typically a delay of several days between the mailing, processing, and posting of checks, which means that the buying firm holds on to its cash longer. However, the administrative burden can be excessive and therefore we see this form of payment eventually losing its standing. The cost of writing a check has been estimated to be between \$4 and \$20 (Monga, 2014).

Commercial Cards

We see significant opportunities to strengthen the use of commercial credit card programs. While firms have been comfortable with these cards for purchasing travel and entertainment, we anticipate expanded use in coming years. Commercial credit cards can simplify the administrative side of payments, especially to small, niche suppliers. In addition, they provide advantage to accounts payables. The default payment term for commercial cards is typically 45 days, and that can be extended even more. Lastly, there are the benefits of a rebate on the purchases.

The commercial cards industry has historically been driven by business travel. However, over the last decade, the focus is turning increasingly to procurement. Currently, procurement is where the growth of commercial cards (beyond simply travel) is coming from. In addition, a key characteristic of the procurement card is that it tends to be more resistant to recession than travel cards, because travel is viewed as less critical to the operation of the business and therefore is more likely to be restricted in an economic downturn. This has not gone unnoticed in the commercial card industry. The major drivers for the use of commercial cards are efficiencies in

Table 4.1

Types of Firms Involved in Card Transactions

Function	Purpose
Issuer	Financial institution that issues the card to the buyer, consolidates the payments at the end of the billing cycle, and provides fraud protection. The issuer is typically a bank such as Citibank or Wells Fargo.
Transmitter/ Processor	Owns and operates the network of interchange between issuer and acquirer. The transmitter/processor is typically MasterCard or Visa.[2]
Merchant Acquirer	Financial institution that has relationship with seller and provides the routing of the transaction to the network's processing facilities. This institution is typically a different bank than the issuer.

the transaction, better visibility, and better financial returns, which are obtained through rebates. In addition, some credit card issuers have been able to help firms with working capital improvements by placing those payments on average 45 days after the transaction. North America is by far the most developed market for commercial cards, followed by Europe. Asia and Latin America are rapidly developing a market. The U.S. federal government has been a proponent of commercial cards. It has developed a program called SmartPay (for more information please see: https://smartpay.gsa.gov/) that routes about $30 billion in spending annually onto cards. MasterCard and Visa anchor the program and are joined by these three banks: U.S. Bank, Citigroup, and JPMorgan Chase.

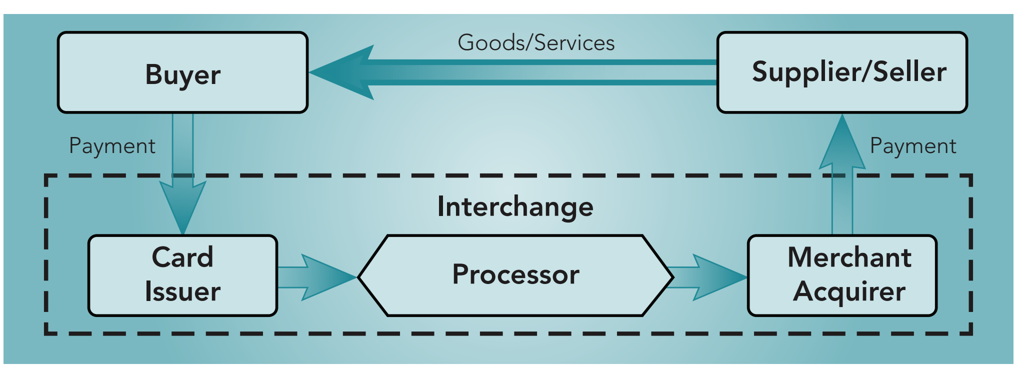
As shown in Table 4.1, there are three types of firms that are connected in a card transaction. The buyer has a card issued by the bank with which it is working, and it can be on either the Visa or MasterCard network. On the receiving end of the transaction, there is the merchant acquirer, who is connected to the seller and receives the funds.

Commercial Card Transactions

A general process for commercial card transactions is outlined in Figure 4.1 below. The transaction entails moving the payment from the issuer to the processor network (MasterCard or Visa) and then to the acquirer. As the card is used, the card issuer routes the payment through the transmitter/processor in a process that is referred to as "interchange," to

Figure 4.1

The Credit Card Transaction Process



[2] A common misperception is that MasterCard or Visa act like a bank. In actuality, they are technology companies that process financial information.

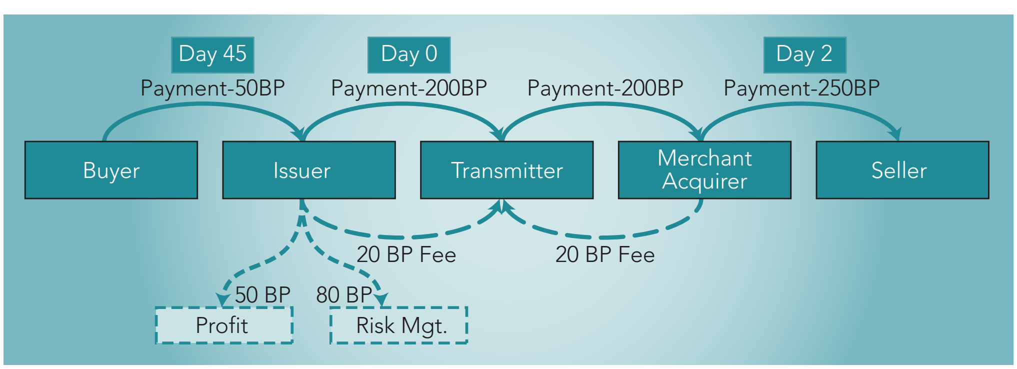
the merchant acquirer who then deposits the payment into the seller's account. This process takes approximately two business days from the submission of the payment to the merchant acquirer's release of the payment to the seller. The buyer pays a consolidated bill 30 days after the end of the billing cycle, which is on average 45 days [3] from the date of the transaction.

A major advantage of using cards is on the administrative side. According to the head of commercial credit cards for a large bank, the cost of processing an invoice is around $75, while the cost of processing a purchase order (PO) is around $250. Given the average value of a credit card transaction is $4, this method of payment becomes very attractive, especially for smaller transactions, because there is relatively low administrative overhead associated with commercial cards. Through the various intermediaries in the card transaction, there are a number of fees that successively get charged to a vendor. As shown in Figure 4.2, there are cascading fees that are charged by each firm in the interchange.

In the example depicted in Figure 4.2, the total charge associated with the payment is shown as 2.5 percent (or 250 basis points). The fees can vary based on a number of factors that will be explained later. Upon receipt of the transaction information, the issuer transmits the payment minus 200 basis points (BP) to the transmitter. The transmitter passes on that payment to the merchant acquirer without a discount, but both the issuer and the merchant acquirer pay the transmitter a fee of 20 BP as shown in Figure 4.2. The merchant acquirer then credits the seller's account the payment amount with a total discount of 250 BP. The seller typically receives the deposit within two days after the payment has been initiated. The buyer does not immediately pay the charge, but is issued a consolidated bill. This bill can include a discount of 50 BP or more in some cases. The payment typically occurs 30 days after the close of the billing cycle. Since the average transaction can be anywhere from the first to the last day in the billing cycle, we assume that on average a transaction is 15 days from the close of each billing cycle. Therefore, on average firms using a commercial card have a DPO (days payable outstanding) of 45 days on those charges. Furthermore, the issuer does not keep the entire 200 BP discount, but allocates 80 BP to risk management and fraud prevention; the remaining 50 BP are profit.

Figure 4.2

Credit Card Processing Fees



[3] Since the transaction can occur on any day in the billing cycle, we use an average time to the end of the billing cycle of 15 days.

Table 4.2

Corporate Card Rebate Example

Annual Spend Volume ($)	Rebate (BPs)	Rebate ($)	Annual Spend Volume ($)	Rebate (BPs)	Rebate ($)
$10,000,000	24	$24,000	$150,000,000	140	$2,100,000
$25,000,000	39	$97,500	$160,000,000	142	$2,272,000
$50,000,000	76	$380,000	$170,000,000	143	$2,431,000
$75,000,000	99	$742,500	$180,000,000	145	$2,610,000
$100,000,000	122	$1,220,000	$190,000,000	148	$2,812,000
$120,000,000	129	$1,548,000	$200,000,000	149	$2,980,000
$140,000,000	135	$1,890,000	$225,000,000	151	$3,397,500

Rebate Structures in Commercial Cards

There are varying rebate fee structures depending on annual spend volume. These rebates are negotiated between the issuer and the focal firm when a card program is established. Table 4.2 provides a list of sample rebates that can be achieved on travel accounts. It should be noted that this is the higher end of discount structures, and the typical rebates are typically lower on non-travel accounts.

Some firms have tried to streamline accounts payables, especially for smaller amounts, by implementing policies where they move payments below a certain threshold exclusively onto cards. As previously mentioned, there is a cost advantage for smaller transactions. There is a breakeven cost for credit card transactions. For example, if we assume that the cost of using a card is 2.5 percent of the transaction value, and the cost of processing an invoice is $75, then at least every transaction below $3,000 should be moved to a card — $75 divided by 2.5 percent is $3,000. If we take into account the existence of a rebate and the A/P advantage, as described previously, firms should move charges of less than $10,000 or lower onto cards. Of course, the final determination of what charges should move to a card depends on the individual firm's characteristics and can vary somewhat.

Types of Commercial Credit Cards

An overview of different types of commercial cards is shown in Table 4.3.

While most firms use cards for travel, other types of commercial cards are gaining popularity. P-cards are used by most organizations to varying degrees. The two categories of cards perhaps less known are ghost cards and virtual cards. Not an actual plastic card, a ghost card represents a set of numbers that is specific to a company or a specific department within a company. Purchases can be charged back to the department and the costs are easily assigned. It provides employees with easy access. Further, a ghost card can be assigned to selected suppliers, who can then charge the card number when a purchase is made. This reduces the administrative paperwork that is typically associated with each purchase. Most importantly, the data stream on these purchases is granular and provides great control.

Table 4.3

Types of Commercial Credit Cards

Type of Card	Description
Corporate Travel Card	Travel cards are the most popular type of card, intended to manage expense programs for travel and entertainment purposes.
Purchasing Card	The so-called "P-Card" is used primarily for lower-value purchases and is typically not used with contracts or purchase orders.
Ghost Card	A ghost card is not linked to an actual card, but rather to an organization. The seller initiates payment and there are numerous controls that can be placed on the account.
Virtual Card	The virtual card is similar to a ghost card in that there is no physical card. Account numbers are generated for specific purchases and can be limited to: payment amount, range of time, purpose, and supplier. After use, the account number expires. It garners the greatest number of controls on the user.

Virtual cards have the highest level of security and the largest number of controls. Suppose an organization needs to refuel its private airplanes. When the plane arrives at a particular airport to refuel, the pilot can use a virtual card to pay, rather than cash or regular credit cards. The process works as follows. The pilot knows to call the procurement office. When he does so, the procurement organization performs a check for authenticity and then generates an immediate temporary card number. The pilot presents this number to the fueling station and his plane is refueled. The card number is restricted for that particular fueling station for whatever the amount is, and is valid only for a point in time. The fueling station gets an immediate authorization and validates the transaction.

Electronic Bank Payment Methods (ACH, Wire Transfers)

Automated Clearinghouse (ACH) transactions are electronic forms of payment that are routed through an automated system that verifies the individual transactions. The service is often free for large customers. However, due to the centralized external processing (outside of the banks), such transactions can take a couple of days to clear.

Wire transfers are typically bank-to-bank transactions. Unlike ACH transactions, wire transfers can be completed quickly, within a few minutes. However, they are much more costly than ACH, costing as much as $50 per transaction. In the United States, wire transfers are routed through the Federal Reserve system. International payments are routed through other networks such as the Society for Worldwide Interbank Financial Telecommunication (SWIFT), the largest international financial communications network linking more than 10,000 financial institutions and other corporations in more than 200 countries.

Section 5

Supply Chain Financing Programs

In this section, we will review the types of companies and tools researched for this project. The firms include banks, credit card processors, financial technology (Fintech) companies, and non-bank funders.

Justification for Supply Chain Financing Programs

Supply chain financing is an initiative to reduce costs, improve working capital, and manage risk more tightly. In one particular example, a third-party logistics (3PL) company was supplying to a large electronics manufacturer customer. This supplier found itself facing extended payables from its customer. This customer moved its payment terms to "end of week + 80 days." The supplier was hiring trucking firms to haul freight for this customer, and the trucking companies demanded 30-day terms. This 3PL supplier also had a large debt hangover due to a substantial acquisition it had made a few years prior. The 3PL faced a financial dilemma. It did not want to act as a bank and needed to closely manage its working capital. To overcome the dilemma, it signed up with a major financial institution to do a supply chain financing program. After an invoice was approved by the customer and the 80-days-plus-some-fraction-of-the-current-week clock started, it was able to get paid quickly — within 10 to 15 days through the institution's SCF program. It was able to use this quicker payment to pay down the debt left over from its acquisition.

Interestingly, often procurement performance is not measured on improvements in working capital or cash flows. The procurement group's key metric is cost reduction, or sometimes it is measured on obtaining early payment discounts. If the procurement organization does not see the value proposition of the SCF program, it is unlikely it will work in the long run. Firms that want to implement SCF need to make sure the purchasing organization is incentivized in the right way. After all, the expert knowledge on supply management rests in procurement. The procurement organization should be leading the charge to implement SCF and its activities should be aligned with corporate goals. For instance, a purchasing manager in one organization said, "Why should I go out and extend my payment terms from 30 to 60 days when at the end of the day the only thing that I'm getting measured against is price reduction?"

Success of implementing these SCF programs will hinge on how well the objectives of purchasing organizations are aligned with the organizational objectives. One approach is to incentivize the purchasing organization through performance measures that promote SCF. For instance, the buying company could measure the speed at which invoices are approved. This is one of the reasons to adopt an SCF program with an external funder, because having the discipline to standardize invoices leads to better relations with the supplier. It is like the old joke: "The check is in the mail." If it is a standardized system, the supplier can depend on when it is getting paid; even reliable payments that occur under relatively lengthy payment terms are easier to manage than payments that are variable, unreliable, and inconsistent.

One outcome could be standardizing payment terms while improving working capital. The messages to the supply chain must clearly explain how this program could be good for both the buyer and the supplier. The project plans for implementing SCF programs typically consist of three work streams — the legal work stream, onboarding, and IT implementation. Systems issues, such as incorrectly transmitted or late payments, can be an inhibitor to these types of programs. Implementing SCF will vary for different firms, whether buying or supplying. Typically, with a large bank, implementation can take three to four months.

Trade Finance

The key product of the large banks for business customers is trade finance. Often, SCF programs are defined by the banks as part of global trade finance. It is part of financing and commercial lending and includes risk mitigation. Trade finance can also include tools, such as letters of credit. While letters of credit are less utilized for cross-border transactions now, for large ticket items where the parties need to limit risk, letters of credit are still common. For example, an oil tanker that is being delivered may have a value in excess of $100 million. In that case, a letter of credit that is carefully drafted and executed would be used. In addition, SCF programs can be used to ensure payment and reduce risk. If a bank has installed an SCF program with a buyer, it will pay the supplier and deduct the approved invoice amount from the buyer's account. The process is automated, as the bank makes sure the payment is processed. This greatly reduces the risk for the supplier of not getting paid by the buying firm.

Because the bank is an intermediary in the transaction, it can make the transaction happen even if the buying firm has a questionable financial status. During the recession in 2009, banks found several suppliers that wanted to join the SCF program because their buyers were on shaky ground. For example, many automotive suppliers were very concerned about liquidity and saw that some of the OEMs were susceptible to bankruptcy.

Pre-Shipment Finance

Suppliers often borrow from their local market banks, factors, and trading companies to fund their working capital. They are engaged in pre-shipment finance activities. While some banks may use a purchase order from a well-reputed buyer, such as Walmart, to influence the pricing of the loan, the guiding factor is the supplier's own credit standing. If the supplier is either (a) not very well rated or (b) a small private company without easy access to cheap capital, its pricing on the preshipment finance program could be high. Pricing may also be impacted by both the supplier's currency and country. While U.S. dollar (USD) SCF pricing could be less than, for example, 10 percent, in a local currency outside the United States, it could be higher than 10 percent. Based on geographic and financial risk levels in the country and currency, the price of SCF would vary.

Post-Shipment Finance

Post-shipment finance takes place when the buyer accepts an invoice and sponsors the program, in what is generally referred to as supply chain finance. This agreement can also be called reverse factoring because it is not the supplier that is locally factoring the receivable. These programs are priced based on the credit standing of the buyer. For example, a large financially strong firm, such as Walmart, would likely be priced at 1 percent per annum or less. The program is meant to be a benchmark of the buyer's risk of non-payment, which in the case of a firm such as Walmart would not be very high. Other benchmarks to assess buyer risk could be the pricing of its credit default swaps (CDS), commercial paper, corporate bonds, or its revolving credit facility.

Another form of post-shipment finance is factoring, where the supplier may pledge its accounts receivables with a local factor/asset-based finance lender. If those receivables are not yet accepted by the buyer, the pricing could be higher than a buyer-sponsored post-shipment, post-acceptance SCF agreement. Additionally, suppliers typically do not receive 100 cents on the dollar, as the factor may advance around 80 to 90 percent or in some cases less. For instance, lenders count on the fact that the buyer has some likelihood of discounting the invoice amount, due to various reasons, such as disputes, discounts, and other charges.

Interest rates vary in a buyer-sponsored program. If a company is rated CCC or worse, its credit risk could be priced at 8 percent or higher. In 2015, a buyer rated BBB or better would typically not be higher than 2 to 3 percent. Ultimately, the central tenet of an SCF program is how the risk of a buyer is priced. One firm we spoke with said that the top interest rate anywhere is 4.5 percent to 5 percent. In one example, a BB-rated company had a 1.5 percent APR reverse factoring rate. The return for the banks lies in their cost of capital. If banks can borrow at close to LIBOR,[4] any returns above that would be accretive, notwithstanding other fixed costs.

Accounts Receivable Finance

Accounts receivable finance can also be part of working capital solutions. It can include pooled or single-named programs to fund receivables that might not be eligible for traditional SCF. It can also include foreign and large corporations that are not secured. It can also apply to multi-year contract monetization of licenses, products, royalties, or services.

Accounts Payable Finance

Accounts payable finance offers early settlement to suppliers given extended payment terms. It can include a re-invoicing service for the buying company to pay the discount cost in return for more rapid working capital improvement.

Supply Chain Finance

What was previously known as reverse factoring is the base for what most providers call supply chain finance, and for this report they are used synonymously. There are several ways a firm can implement a program, but at its core, suppliers receive the option to obtain early payment for a small fee that is calculated based on the buyer's credit risk. Broadly, we have bank-led programs and multi-bank technology platforms.

Background on Supply Chain Finance

For the last 30 years firms have been working to reduce inventories, because with lower inventories they can have more cash, more flexibility, and leaner operations. They also have been working on extending their payment terms. The longer the accounts payable terms are, the better off a firm's working capital will be. To lower their cost of goods sold

[4] LIBOR is a benchmark interest rate that many of the world's leading banks charge each other for short-term loans. It stands for London Interbank Offered Rate and serves as the first step to calculating interest rates on various loans throughout the world.

and/or to extend their payment terms, large firms take advantage of their better credit ratings. In doing so they are able to attract better suppliers that choose to accept these terms in either lower cost or extended payment. It also gives the purchasing organization a means to engage in supply base rationalization. For example, suppose purchasing has five vendors selling a specific raw material or component, and the corporate goal is to have no more than three suppliers for any item. In many cases the contracts with suppliers may not have been examined in years. During the process of implementing SCF, the buying firm may find things it didn't realize were actually happening. For instance, suppliers may have multiple subsidiaries that are dealing with multiple subsidiaries of the buyer.

Some may think that large banks have much better programs because they have capital, or at least presumably cheaper access to capital. However, several interviewees stated this was the wrong way to think about it. The Fintech options are considered "bank-agnostic," where Fintech firms act more as a brokers using multi-bank platforms. They can approach different banks and get the best solution because one bank may potentially not agree to the terms attractive to the customer. This is similar to the way 3PLs arrange transportation. It used to be that a firm would have all of its transportation contracted with one trucking company. But a 3PL (i.e., CH Robinson, Genco, or Exel) is able to pick and choose a transport company in much the same way as a brokerage. Among the Fintech companies, competition takes place mostly around the technology platform and the onboarding of suppliers, rather than the access to capital. It is important to note that multi-bank Fintech platforms have increased the cost competition of supply chain finance to the point where profits have been reduced significantly. In comparison, the bank's proprietary system has shown more inertia, which makes them slower to change. Firms outside of banks are joining the ranks of funders. For example, insurance companies such as Prudential and MetLife seek to buy short-term debt, and they are often willing to accept a lower return than banks. In some cases this might be as low as 20 basis points over bond pricing.

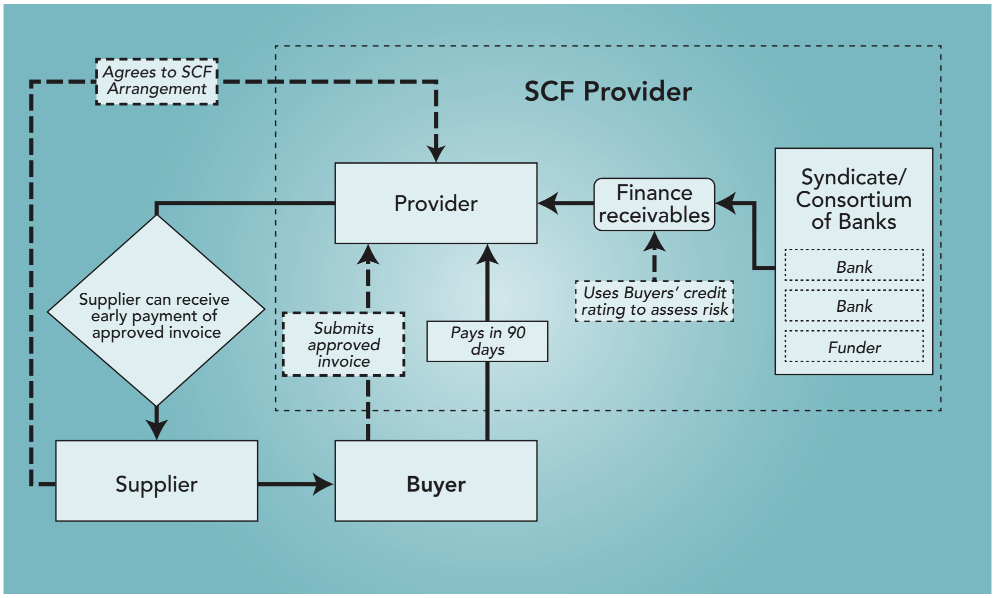
The basic notion of supply chain finance (reverse factoring) programs is that buyers are able to pay their suppliers at a specified time (e.g., in 90 days), while allowing the supplier to receive early payments (e.g., as early as two days after invoice approval). A typical arrangement is shown in Figure 5.1. Solid lines indicate movement of money or goods, while broken lines reflect facilitating activities such as agreements. Generally, payments are routed through the provider, which can be a bank or a Fintech company. The provider will then manage the relationship with the funders, who often are banks but can also be insurance companies, mutual funds, or retirement funds. It is also the provider who has the direct financing relationship with the supplier. As previously described, it is important that the buyer is outside the day-to-day decisions of the provider. If the supplier agrees to the arrangement, it receives early payment, at a discounted rate that is based on the buyer's credit. It would basically enjoy short-term liquidity at a favorable rate.

Interest Rates Involved in Supply Chain Finance Programs

One of the major benefits of supply chain finance programs is the access to lower interest rates. However, there has been a great deal of discussion recently about interest rates in reverse factoring arrangements. According

Figure 5.1

Supply Chain Finance Transactions



to our investigation, the typical interest rate for reverse factoring or supply chain financing programs is around 2 percent APR for a typical investment-grade program. That means that companies that are rated at BB should expect 150 BP (1.5 percent APR) over LIBOR, and higher-rated companies should be somewhat lower. The top-end rates were between 4.5 percent and 5 percent, for companies that are not rated.

These rates are expected to change, and most likely they will rise in the near future. In December of 2015, the U.S. Federal Reserve announced an increase in interest rates. Therefore, we should expect that interest rates will continue to rise in the near future. It is important to note that when LIBOR changes, all interest rates change with it, while the spread between the overall APR and LIBOR is typically set to stay constant. However, this should not diminish the attractiveness of these SCF programs. Since suppliers' interest rates are still going to be higher, they will likely find lower-priced capital by joining their customers' SCF programs.

Dynamic Discounting

Another technique firms utilize is dynamic discounting. This technique allows the supplier the option to receive direct early payment from the buyer at a variable discount rate. While the buyer cannot rely on outside financing and must set aside a certain amount of cash to disburse, it may receive additional discounts when it pays its suppliers early. As one variation of this technique, suppliers can bid on early payment, like they would in a reverse auction, further extending possible discounts.

Dynamic discounting is a program where the supplier has the option to receive direct early payment from the buyer at a variable discount rate. For example, if a firm has a standard 2/10 net 30 term and it chooses to apply the same discount in a dynamic manner, then the daily interest would be 0.1 percent (20 days earlier payment in exchange for 2 percent). Therefore, if a supplier wanted to get paid 30 days early it would be charged a 3 percent discount. The downside of this tool is that the buyer has to use its own money, since it is a direct payment. If there was any financing involved, then it could lead to accounting issues.

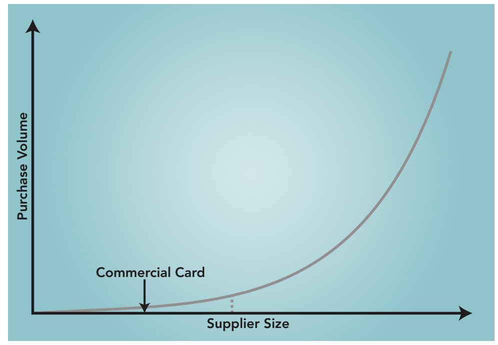
Another variation of this is offered by one of the Fintech companies included in the research. In this case, the Fintech firm applies an auction model to dynamic discounting, rather than a fixed structure. For example, if a buying firm has a certain amount of cash to disburse to its suppliers in exchange for additional discounts, then it can auction off those early payments. The platform will create a session akin to a reverse auction, where suppliers can bid for that early payment. So, for suppliers who need to accelerate collection of their outstanding receivables, they have the ability to join this auction via the online platform.

Strategies to Manage the Various Tools

A buying firm may want to use the tools we describe in this section in a comprehensive fashion. To do that, the overall goal of the program must be established. It may be twofold: accounts payable optimization and early payment discounts. The attractiveness of accounts payable optimization (often called DPO extension) lies in the improvement of working capital. Early payment discounts often go against working capital efficiencies, and rather contribute to the improvement of the firm's cost structure.

The first tool that firms should consider is a robust commercial card program. As can be seen in Figure 5.2, the ideal suppliers to use

Figure 5.2
Targeting of Commercial Card Programs



this program are typically smaller suppliers or low-value suppliers of non-critical items. Commercial card programs are desirable because buyers gain savings and can extend payables. The buying firm obtains a rebate, typically in the 50 to 150 BP range, and gains a DPO of 45 days for those payables. Longer DPO can be achieved at a reduced rebate. The critical question is regarding the threshold at which the card program strategy will be implemented. That is, what is the largest transaction that will be charged on a card? In some cases we heard of limits of $2,500, while other companies pushed the maximum amount beyond that, closer to the large-ticket cutoff where the credit card fees become smaller.

The second tool is dynamic discounting. This program should apply to those suppliers of a particular size — larger than appropriate for the card program, but too small for a SCF program (see Figure 5.3). While DPO extension is not possible with dynamic discounting, buying firms may extract additional discounts from suppliers and therefore positively affect cost of goods sold (COGS) on the income statement. Dynamic discounting may be used to lower purchase costs beyond the negotiated price. Therefore, it will be less effective with the smallest suppliers because the discount will contribute very little to improve overall COGS. Similarly, the largest suppliers will have power to resist the buyers' attempts to further extract discounts. This logic is shown graphically in Figure 5.3.

Lastly, supply chain finance programs are typically used for the largest suppliers who represent a large volume for the focal firm. Because the implementation takes a certain amount of onboarding, it is unlikely that a firm can use this for all of its suppliers. Most examples that we observed had a certain level of minimum sales for their suppliers to be eligible. Depending on the volume of the largest suppliers compared to the rest of the suppliers, some programs focused on roughly the top 50 suppliers. Nonetheless, we would like to point out that in some cases we saw many more suppliers that participated beyond these top suppliers, as seen in Figure 5.4.

The overall strategy should be dependent on the goals of the firm. For example, if DPO extension is the primary goal, then supply chain finance should be extended to as many suppliers as possible. It may be possible to push the boundaries to the extent that an adjacent card program becomes feasible. That would eliminate the need for dynamic discounting. However, conversely, if the firm's working capital is less of a limitation, then dynamic discounting can provide additional cost reductions. Depending on the need, it may be possible to bridge the card and supply chain finance programs with a dynamic discounting initiative.

Payment Terms

A number of firms have benchmarked their payment terms against their competitors (The Hackett Group, 2012). Currently, the averages vary widely by industry. While there are some companies that we talked to during our field research that maintained the standard 2/10 net 30, others had much higher ranges; for example, some automotive parts retailers paid their suppliers between 250 and 350 days after receipt of the goods. Further, in the consumer packaged goods industry, leading firms have moved beyond 90 days, toward 120-day payment terms. From the supplier's perspective, when hearing "terms extension," they understand how important cash flow is and, to them, to deliberately extend their receivables seems unfair and often capricious. However, from the buying firm's perspective, when executives are asked

Figure 5.3

Targeting of Dynamic Discounting Programs

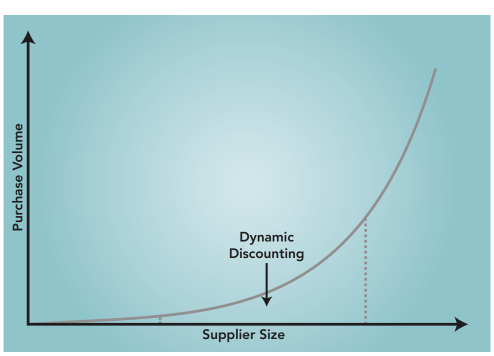


Figure 5.4

Targeting of SCF Programs

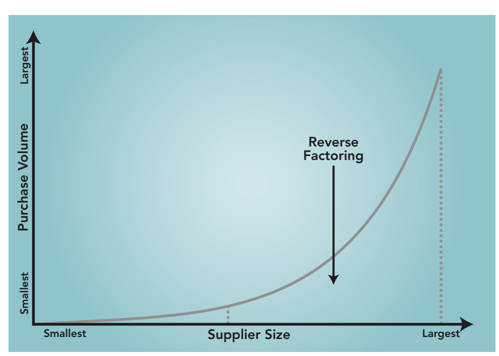
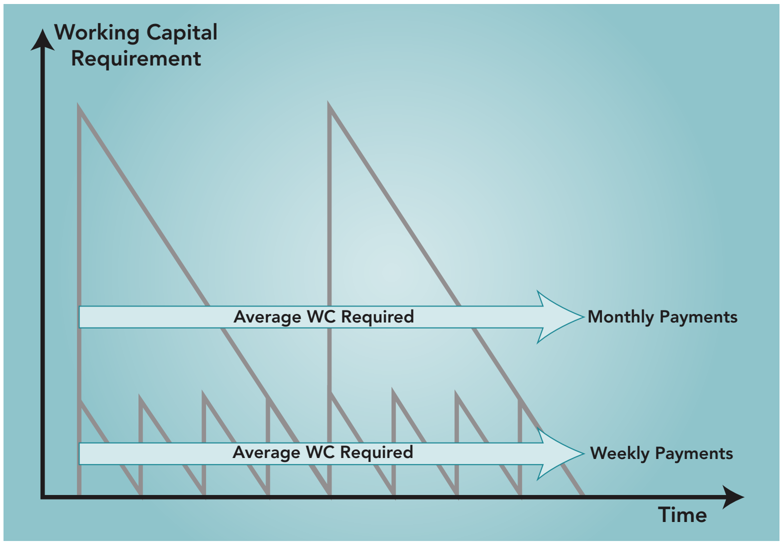


Figure 5.5

Payment Timing



to focus on the cash conversion cycle (CCC), they find themselves in a situation where ever-extending payment terms are necessary.

As mentioned previously, payment terms within a buying firm across suppliers or even within the same supplier are typically inconsistent. One benefit of a supply chain financing program is to make payment terms more consistent.

Payment Timing

The timing of payments is another method of optimizing cash. One of the firms included in the research recently changed its payment timing to suppliers. Previously, this large buying firm accumulated supplier invoices over the course of a month and then paid those suppliers 60 days after the end of the accumulation period. The change it instituted was quite innovative.

The company changed the payment timing to be based upon weekly accumulations of supplier invoices plus 80 days. On the surface, monthly accumulation plus 60 days and weekly accumulation plus 80 look similar. However, the new payment policy resulted in reducing the cash on hand required. It is similar to changing ordering of inventory from monthly orders to weekly orders. This logic can be seen graphically in Figure 5.5.

Supplier Perspective of Supply Chain Financing

For the buying firm, there are several issues that should be considered from the supplier's perspective. First, there is often some resistance to moving away from the standard 2/10 net 30. This could be caused simply by the fear of the unknown, and in some cases it is justified. However, the supplier should be reminded that the early payment discount part of 2/10 net 30 can be quite expensive, because when viewed on an annualized basis, it is around 36 percent APR (200BP x 365/20). Moving to longer payment terms and offering SCF provides the supplier with early payments after invoice receipt at an annualized discount of around 2 percent. When compared to the cost of a commercial card transaction at around 250BP for payment within two to three days, SCF is a significantly cheaper. However, implementing SCF programs can also be costly and time-consuming.

Another, often forgotten, critical advantage of these SCF programs is that variability of payment is eliminated and structure around those payment flows are clear to all parties. It addresses one of the key challenges that buyers on the accounts payable side have — that they approve invoices and supplier terms on an ad hoc basis. Every invoice can be a new event. By moving to an SCF program, a consistent structure is imposed and the approval process is systematized. This is analogous to managing inventory. If sellers knew precisely when customers were buying a product, only that inventory would be necessary; however, since there is uncertainty, firms need to hold safety stock. Similarly, when supplier firms do not know when payments are going to be received, they need more working capital as a buffer to fund daily operations.

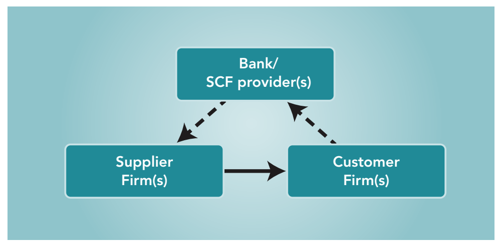
Section 6

Types of Firms Providing Supply Chain Financing Services

There are primarily three types of companies involved in SCF — customer firms, supplier firms, and banks or other SCF providers. In Figure 6.1, the solid line from supplier firms to customer firms depict the deliveries of goods and the broken line represents the flow of payment. This simple figure captures our view at the beginning of the research.

Figure 6.1

Types of Firms in SCF



While we were collecting information in the course of the research, we came to learn that there is more variety in the SCF provider category than we initially anticipated. For example, there are several types of networks that payment transactions can be routed through, such as ACH, credit cards, and wire transfers. In addition, we discovered the payment flows in a much more complicated way, especially aided by the existence of Fintech companies that have been very innovative in this area.

Banks

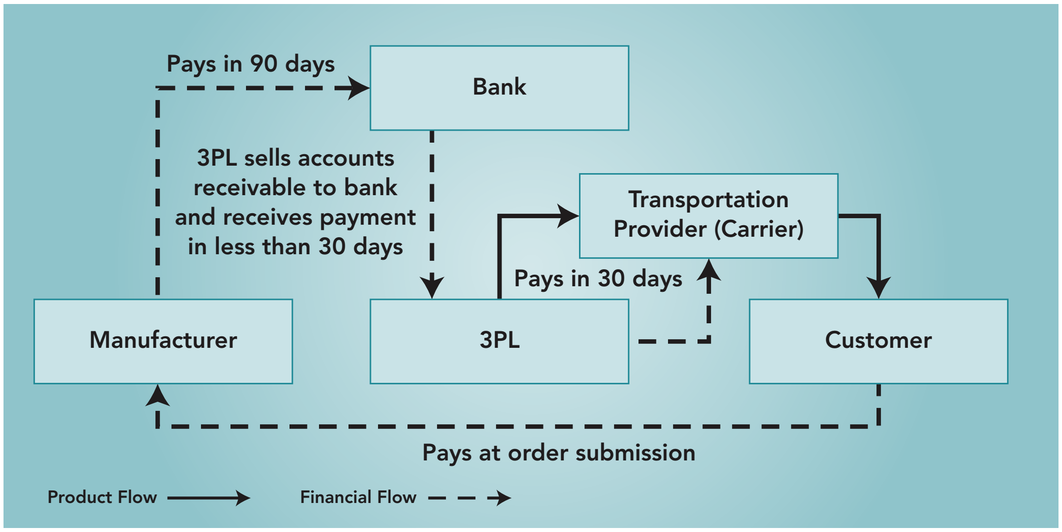
Banks have been involved in trade finance for centuries. Recently, SCF has emerged as an important low-risk source of loans for banks. Specific programs to facilitate buyer-supplier transactions have been developed to link the various parties in a transaction (i.e., the buyer, the seller, and a financing institution) to reduce costs and increase velocity of payment. SCF provides short-term credit that draws from the buying firm's access to credit. The supplier can use the buyer's cost of capital to take early payment while the buyer can extend payables. In this regard, the banks are involved to facilitate the transaction and improve working capital for both the buyer and the seller. For the banks, this is a low-risk loan to utilize the balance sheet of a stable buying firm. In fact, it allows the bank to lend to firms around the world that are not typically among its customer base. The growing popularity of SCF is driven by the increasing globalization and complexity of the supply chain.

Figure 6.2 shows an SCF transaction between an electronics firm (buyer) and a 3PL (supplier) that is procuring transportation for the buying firm. In this example, a large bank is providing early payment for the 3PL based on the buying firm's credit risk.

SCF encourages collaboration between the buyer and supplier, rather than making it harder to work together because of conflicting goals. For example, the buyer attempts to extend payment as long as possible while the seller wants to be paid as soon as possible.

Figure 6.2

Supply Chain Financing for Transportation Services



SCF works best when the buyer has a better credit rating than the supplier and can access capital at a better credit risk level and, therefore, a lower cost. The buyer can leverage this superior position to negotiate an extension of payment terms, which enables the buyer to hold on to cash longer to use it for something else. The supplier benefits by accessing cheaper capital more quickly. Table 6.1 below lists several of the largest banks participating in SCF programs.

During the late 1990s, there was a push in the financial industry to develop new financial tools. SAP and Citigroup formed a joint venture (JV) to facilitate early payment for suppliers. The JV company was called Orbian and was what is now known as a Fintech company. The plan was to connect the entire supply chain by effectively processing all transactions throughout the supply chain through this mechanism. Orbian and a similar firm, Prime Revenue, were gaining little attention from the market (Gustin, 2014). Citi, as part of the Orbian joint venture, had the first working SCF program in place with Stanley Works. At the same time, firms like General Motors and General Electric had their own in-house reverse factoring programs. However, they relied on explicit guarantees by the buyer.

Commercial Credit Cards

An overview of offerings in the commercial credit card business is presented in Table 6.2. As previously mentioned, there are a number of parties involved in the processing of credit cards. Most corporate users have the choice of three networks: American Express, MasterCard, or Visa. With the latter two, firms enroll in a card program through an issuing bank, which are typically large financial firms, such as Bank of America, Citibank, JPMorgan Chase, or Wells Fargo in the United States. With American Express, the card is issued by the transmitter/processor. On the receiving end of the transaction is the merchant acquirer who has the relationship with the seller and receives the funds from the issuing bank. During the transaction the payment is routed from the issuer through an

Table 6.1
List of Largest Banks Active in SCF

Bank Name	Description of Program	Country
Bank of America	One of the largest banks in the United States. In addition to SCF, it also offers commercial credit card programs.	USA
Banco Santander	Offers a number of trade finance solutions to businesses.	Spain
BNP Paribas	Has specific expertise in commodities and receivables finance.	France
Citigroup	One of the first and largest SCF programs in the United States. They also offer commercial credit card programs, among others, such as freight processing.	USA
Deutsche Bank	Has specific expertise in receivables and distribution finance.	Germany
HSBC	One of the largest SCF programs globally.	UK
JPMorgan Chase	One of the largest banks in the United States. In addition to SCF, it also offers commercial credit card programs.	USA
Standard Chartered	Mostly specializes in working in developing economies, such as Africa, Asia, or the Middle East.	UK
Sumitomo Mitsui Banking Corporation	One of largest Asian banks active in trade finance with expertise in Europe, Africa, Middle East, Asia Pacific, and Latin America.	Japan

Table 6.2
Sample Firms Involved in Card Transactions

Function	Examples
Issuer	American Express, Bank of America, Citigroup, JPMorgan Chase, Wells Fargo, etc.
Transmitter/ Processor	American Express, MasterCard, Visa, etc.
Merchant Acquirer	First Data, Bank of America, Global Payments, JPMorgan Chase, etc.

interchange network operated by American Express, MasterCard, or Visa, and then to the merchant acquirer, and finally to the seller. They buyer then pays its card issuer at the specified time.

Fintech Companies

Fintech firms are companies that utilize technology to reinvent financial systems and make funding the supply chain more efficient. They operate on technology platforms that use a funding source to connect with the buyer and supplier.

They are *not* banks. They are not under the same regulations as banks. Not regulated in the same manner as banks and facilitated by technology advancement, they have been able to create innovative practices. These innovations have led to increased options for small- and medium-sized suppliers. Fintech firms have developed new procure-to-pay (P2P) capabilities. In some cases, they have become a buying firm's purchasing system and include cataloging of suppliers (a database of approved suppliers), PO transmission, and electronic invoicing and payment. In Figure 6.3, a sample P2P system is depicted. This diagram shows how early payment of invoices is enabled. Fintech firms have integrated with commercial credit card providers, or they can access a number of funders that can finance receivables at competitive interest rates. Some of these platforms have the ability to provide dynamic discounting.

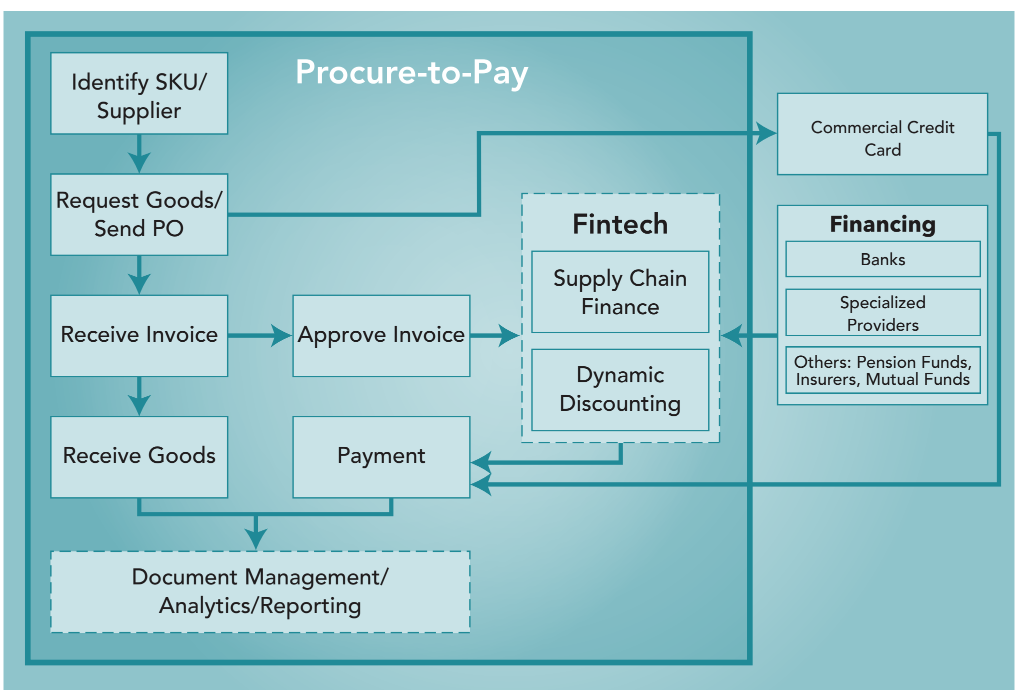
Funding Mechanisms

There are several methods by which these programs can be funded. Banks can operate their own SCF programs or act as funders into a Fintech firm. They can also syndicate loans, where several banks can partner and pool their capital in an SCF program. This can be transparent to the buyer or it may occur outside of the buying firm's influence.

Banks perform other duties as well. For example, Orbian converts the approved invoices to Depository Trust Corporation (DTC) notes, which are essentially derivatives of the cash flow between buyer and seller. These notes are then sold to banks who are looking for low-risk high-velocity instruments in which to invest. Similarly, they use Clearstream or Euroclear,[5] often in conjunction with international companies. Other Fintech companies, such as PrimeRevenue, use special purpose vehicles (SPVs) to enable the multi-bank funding. These Fintech companies are able to use non-bank funders such as pension funds and insurance companies. They often collaborate with banks such as Citigroup and HSBC that have agency and trust departments as part of their offerings, and through those mechanisms they are able to ensure compliance to the terms of the financing arrangement. More on compliance is discussed in Section 7.

Figure 6.3

Fintech Capabilities



[5] Both organizations are considered Central Securities Depositories, similar to the DTC in the United States, holding securitized obligations providing a clearinghouse function and enabling easy transfer of ownership through electronic book entries.

The Dynamic Environment of Fintech Companies

The environment for Fintech companies is rapidly evolving. In Table 6.3, we are listing the companies that we have encountered during our study. While this list is not exhaustive, we believe it covers the most significant players in this industry. In the future we anticipate a larger number of new entrants to become active in this space. Most companies

Table 6.3

Selected Fintech Companies

Firm	Specialization	Comments
Ariba	Supply chain financing and dynamic discounting	Unit of SAP, that is providing a complete procure-to-pay capability.
Basware	Procure-to-pay platform	A Finnish Fintech software company selling enterprise software for financial processes, purchase-to-pay, and financial management.
C2FO	Exchange-based dynamic discounting/early payment.	Similar concept to Priceline only for early payment of receivables. Target market is SME firms.
GT Nexus / Infor	Supply chain collaboration platform with some SCF functionality.	Merged with TradeCard, another provider of SCF solutions. It was recently acquired by Infor, a provider of cloud-based software for businesses.
Orbian	Supply chain financing	Early Fintech company that started originally as a JV between SAP and Citibank. It finances the purchases of the receivables with financial partners under Clearstream, Euroclear, and DTC note issuances under no-purchase agreement.
PrimeRevenue	Supply chain financing and dynamic discounting	Technology platform that is widely considered to be the most robust. Its software can help analyze firm spend and provide a strategy to optimize payment terms based on multiple benchmarks and supplier characteristics. Technology includes payment terms optimization. In addition to SCF, can help firms do dynamic discounting.
Taulia	Supply chain financing and dynamic discounting	A procure-to-pay platform that is independent of ERP software firms or banks. It is able to provide flexible options for buyers and sellers.
Textura	Supply chain financing	Concentrates on the construction industry. Value proposition for general contractor is higher quality process.
Trax	Logistics transaction risk management and data refining.	Receives, standardizes, normalizes, and corrects logistics data, and general invoice risk data. It is able to provide an agreed-upon risk score for each invoice, which can then be bought directly by a funder.

on the list are less than 15 years old, with some of these being in the SCF industry only about five years.

Funders of SCF Programs

A list of funders are shown in Table 6.4. These companies are looking at SCF programs for short-term, low-risk returns. They are expanding quickly beyond the traditional full-service banks.

From an investment perspective, receivables financing is an attractive short-term investment. Naturally, numerous types of investors are attracted to it. Insurance companies, retirement systems, and mutual funds are very interested in buying this type of high-quality debt. They are able to gain higher rates of return than traditional treasury bills, for example, and they provide a short investment timeframe. Most of these investors use funders, such as the ones shown in Table 6.4, to access the investment opportunities in SCF.

Table 6.4

Selected Non-Bank Supply Chain Funders

Name	Specialty	Countries
Advance Global Capital	Funding SMEs in the emerging markets throughout the world.	UK
Apex Peak	Funding for SMEs throughout Singapore and in South Africa.	Singapore
Greensill Capital	Principal investor group specializing in structured trade finance, working capital optimization, specialty financing, and contract monetization.	Australia, UK, and United States
GemCorp	Investment fund focused on emerging markets in Africa, Asia, and Europe across sectors and asset classes.	UK
Propel	Provides working capital solutions, such as supplier finance and receivables finance to firms in African countries.	South Africa
Tower Trade Group	Supply chain finance and IT services for companies in Ireland, South Africa, Spain, Switzerland, UK, and the United States.	Switzerland

Section 7

Important Issues Affecting Supply Chain Financing

Regulation

The compliance environment is tough. Banks are finding compliance to be difficult because they not only have an oversight on things such as mortgages, but they also have to act as police for money laundering. They must act as enforcers of the anti-money laundering (AML) rules and ensure that corporations and individuals do not use the banking systems as a vehicle to launder money or for other fraudulent activities. In the first quarter of 2015 legal expenses for one large global bank was $2.7 billion. In addition to these legal expenses, it had to incur a substantial expense to monitor compliance and ensure it was adhering to regulations around the world. Banking has become a very complex business across the industry. In the last 15 years regulation around banks has dramatically increased both in the United States and globally. Banks are very concerned about doing the right things with respect to not facilitating drug trafficking, preventing money laundering, and ensuring their customers are doing the right thing. Banks are one of the few tools in which a government can see how members of the supply chain might be breaking the law.

There are several regulatory pieces that must be satisfied before a bank can implement SCF programs. One of the pieces of regulation is KYC or "know your customer." KYC is where a bank has to verify the identity of its clients. The purpose of this regulation is to ensure that customers provide detailed anti-corruption due diligence and prevention of identity theft, financial fraud, money laundering, and terrorist financing. Another important regulation is AML or "anti-money laundering." Money laundering is the process of making "dirty" money appear legal. Money laundering facilitates crimes such as drug trafficking and terrorism. Banks have to show that programs they develop are compliant with AML. Regulations have been strengthened over the years to develop more tools to combat money laundering.

Table 7.1 shows the most relevant types of regulations to SCF. Among them, the AML laws require banks to collect some of the following information on their customers: the nature of business; the purpose of relationship with bank; expected pattern of activity; the business' supply chain trading partners upstream and downstream; and information about the business' reputation or references. This requirement becomes relevant during the onboarding process of SCF, because it is costly for the banks to perform this regulatory compliance.

Accounting Treatment of SCF

The accounting treatment of SCF programs, in general, has been a hotly debated issue. In a speech in the early 2000s, the chairman of the SEC outlined some general guidelines around how SCF programs should be treated from an accounting standpoint. He explained when they have to be accounted for as a loan. For one, guarantees from the buyer mean the payments have to be classified as debt on the balance sheet and not as accounts payable.

Table 7.1

Key Regulations Impacting Supply Chain Financing

Regulation	Impact
Anti-Money Laundering (AML)	Guidelines to protect and prevent commercial banks from being used by criminal elements for illegal and money laundering activities, intentionally or unintentionally. The regulation has recently also included measures to prevent identity theft, financial fraud, and terrorist financing.
Basel III	Reforms to strengthen global capital and liquidity rules with the goal of promoting a more resilient banking sector. The objective of the reforms is to improve the banking sector's ability to absorb shocks arising from financial and economic stress, whatever the source, thus reducing the risk of spillover from the financial sector to the real economy. The Basel III regulations are capital requirements on banks.
Customer Identification Program (CIP)	The first step in any KYC program is a bank's Customer Identification Program (CIP) which requires a bank to collect and document a customer's name, date of birth, address, and identification presented.
Customer Due Diligence (CDD)	The second step is Customer Due Diligence (CDD) which requires the bank to obtain information to verify the customer's identity and assess the risk. If the CDD inquiry leads to a high risk determination, the bank has to conduct an Enhanced Due Diligence (EDD).
Dodd Frank	Recent regulation approved as a response to the Great Recession, it brought significant changes to financial regulation in the United States. This legislation dramatically changed the financial regulatory environment that impacts almost every part of the nation's financial services industry.
Know Your Customer (KYC)	A bank has to verify the identity of its clients. The purpose of this regulation is to ensure that customers provide detailed anti-corruption due diligence and prevention of identity theft, financial fraud, money laundering, and terrorist financing.
UCC Checks	In the United States, the Uniform Commercial Code (UCC) governs private transactions including receivables — in different countries different regulations apply. By allowing lenders to take a security interest on a collateral owned by a debtor's asset, the law provides lenders with a legal relief in case of default by the borrower. With such legal remedy available, lenders would therefore be able to lend capital at lower interest rates. In all 50 states, article 9 of the UCC governs secured transactions where security interests are taken.

Further, since some banks were paying buyers so-called "marketing payments" that compensated them for advertising the program to their suppliers, it meant that the SCF arrangement needed to be placed on the buying firm's balance sheet. As a result, several buying firms stopped their pursuit of SCF because they were not certain how to classify these arrangements. Without clear understanding of the rules, it may require SCF programs to be classified as loans on the balance sheet, rather than accounts payable.

This caused one firm to completely drop out of the business. Often, the case of Alcoa in 2003 is cited as a reason why these programs are not effective (Hintze, 2012). However, if the firm maintains following features, then it is most likely that there are no accounting issues. First, it is important to dissociate the initiative of extending payment terms from the early payment financing. Second, it is important to avoid tri-party agreements, such as agreements between the buyer, seller, and funder simultaneously. Rather, programs should be kept as independent arms-length agreements. Third, buyers should always pay the invoice on the maturity date as stated and resist early payments with discounts shared with the bank and no prolonged payment terms with interest payments to the bank. Fourth, the buying firm should resist asking for any kind of returns or rebates from the bank or Fintech company that is managing its program. Fifth, the buying firm should be hands-off regarding which funder is buying particular invoices, or better yet have no direct knowledge of the funders. Overall, firms must be cautious how the program is managed, but in terms of the accounting treatment it can be managed equally well by a bank or by an independent multi-bank Fintech platform.

Interest Rates

For reverse factoring or SCF that is buyer-backed, the APR interest rate is based on the buyer credit profile. For investment-grade companies, APR interest rates would likely be in the neighborhood of 8 percent or less. Nearly all of the SCF programs in the market today entail short-term financing of generally fewer than 180 days, but more typically 60 days. Currently, for five-year investment grade loans and bonds, the price point is around 5 to 8 percent for multi-year borrowings, so logically, short-term funding would be less. For example, current interest rates for these arrangements are derived by cost of funds plus spread. The cost of funds is typically indexed to the LIBOR. The spread is a risk premium, based on the credit-worthiness of the buyer. If the 30-day short-term LIBOR is around 0.18 percent (APR) and credit spreads are around 1.00 percent, then the all-in rate for financing is an annualized 1.18 percent, or effectively 0.19 percent for 60 days. [6]

In 2015, base rates worldwide were at or near zero. In the United States, the prime rate is currently around 3 percent, and borrowings often are some factor above or below this benchmark. Still, using "prime plus a premium" is, at the time of this writing, below 8 percent in most cases. In fact, in Switzerland and rest of Europe, central banks are offering negative yields on deposits or bonds. In other words, people are paying for the right to hold a government bond instead of the government paying the holder of the bond any interest.

If a supplier who is not in the Fortune 500 wants to obtain financing on its own, interest rates might be in the 8 percent all-in range depending on the credit profile and cash flows of the supplier. Commercial cards or p-cards offer a 2 percent fee reduction to get paid early. For example, if terms are around 30 days, this equates to an APR of about 24 percent (365/30 x 2 percent), but the amounts are small and supplier is not borrowing but accepting a discount to close its receivable. Also, factoring companies would be charging against the suppliers' credit (assuming they are non-investment grade) with receivables used as collateral. These rates could be as high as 15 percent APR, if not more. Overall, since the buying companies are investment grade and they can borrow in today's market at historically low rates, these SCF programs are especially attractive to small- and medium-sized enterprises (SMEs).

[6] 1.18 percent multiplied by 60/365

Section 8

Conclusions

Purchasing and Supply Chain Financing

Our goal has been to develop a deeper understanding of SCF and analytical tools that facilitate SCF. We have gathered our information from interviewing professionals and studying documentations from a select group of CAPS Research member companies, major banks, and newly established Fintech companies.

Good supply management includes managing the balance sheet of the firm and carefully managing costs. Global business has grown more complex and the knowledge and skills that purchasing professionals need to have has increased dramatically. While achieving purchasing savings is important and is likely to be rewarded inside a procurement organization, understanding the impact of working capital and its role in a firm is important. Supply management organizations need to move toward understanding the financial variables that keep a company vibrant.

The job of managing cash and funding does not belong only to the finance area. Purchasing should have a seat at the table, especially concerning the issues around SCF. Purchasing professionals should work with the treasury and finance functions regarding working capital management and how the market value of the firm is impacted by the amount of cash available. For instance, Apple manages its cash flows masterfully with one of the best cash conversion cycles (CCCs), and it is not accidental that it is such a valuable firm (Graham and Scott, 2011). While its products are innovative and generally have good margins, the financial management side of the company has accumulated very large amounts of cash to greatly improve the market value of the company.

It should also be highlighted that CPOs generally impact two of three components in the CCC, which are inventories and accounts payable. In some cases, they may even influence the third and final component of CCC, which is accounts receivables. We hope this report provides ideas and tools that purchasing executives can utilize to improve the financial situation of their firms.

Why Firms Should Consider Supply Chain Financing

For many firms, their greatest challenge is maintaining a strong cash flow. A large percentage of the senior management of companies is focused on working capital management. It is clear that Wall Street expects that firms will maintain a clean balance sheet and carefully manage working capital. Despite a general easing in most credit markets in the United States, many non-investment-grade companies and SMEs have found it difficult to finance their working capital requirements. These firms make up a large portion of the supply base for larger companies that have substantially better access to capital. Consequently, there is a significant credit arbitrage difference between large companies and their supply bases. SCF programs can assist these buying firms to monetize this arbitrage opportunity while helping their supply bases.

Firms Being Measured on CCC

Firms are being measured on their cash conversion cycles (CCC), which is a measure of their management of working capital. Publicly traded firms are aware that analysts are carefully examining their working capital and measuring CCC. For some firms CCC is actually a metric that is used to evaluate supply chain performance. In whatever manner companies utilize CCC, it is clear that unlocking working capital is critical.

Variance of Cash Conversion Cycle Over Time

The importance of the CCC lies in the continuous measurement over time. If a firm can improve its CCC and get a lower number, then it has decreased the need to raise working capital. Measuring CCC consistently is a good practice, and it helps check the direction of the firm. There are Wall Street analysts that utilize CCC and its Days of Inventory (DOI) component to determine whether or not a company is a good investment. For example, some analysts use changes in DOI to determine overall health of the firm. If a firm shows an increase in DOI of 20 percent or more, that is interpreted as a signal for a potential problem within the firm.

Pressures on Inventories, Payables, and Receivables

Supply professionals often are under pressure to tighten inventories as much as possible. Getting better inventory performance has enabled companies to decrease costs while at the same time build in agility. Increasingly, supply chain organizations are being asked to help manage receivables and payables. In consequence, purchasing managers are asking their suppliers to extend their payables terms. Over the last few years, it has become standard in several industries to greatly increase the length of the firm's accounts payables terms. In the consumer packaged goods industry several leading companies, including Procter & Gamble and Kellogg's, have moved their payables terms to 120 days (Storm, 2015). In the automobile parts retail sector many of the companies begin negotiating with suppliers for payables terms of one year.

This lengthening of the payables terms puts great stress on suppliers. To make themselves whole, some suppliers will raise prices or build defensive language into the contracts. And, as mentioned earlier, several are turning to banks or Fintech companies to help maintain a better cash position. Some attempt to shorten the time for the accounts receivable cycle. Since these attempts are happening at the exact same time that buying firms are working to extend their payables, they create tension between the buying firm and suppliers. Often, a supplier's attempts are not successful because the buying firm has more negotiating power. We consider efficient SCF programs to be able to lessen the negative impact on the suppliers.

Inconsistent Payables Terms

According to the information we have collected, firms have inconsistent payment terms embedded in their contracts and orders. Some of them even have several different terms within a single supplier. While there may be business reasons to vary the contract terms, allowing a proliferation of terms across the supply base is usually unnecessary. This proliferation of terms makes it harder to manage the relationship and adds a layer of often-unneeded complexity. One of the banks informed us that an unexpected value of their services is that they are able to help firms make their payment terms more consistent. It is clear that this is a service many firms could take advantage of.

The Next Frontier

Supply chain financing is the next frontier of supply management. It is estimated that penetration of SCF programs is around 5 percent. There are several reasons for the slow diffusion of SCF as an innovation. One key reason may be the lack of understanding for the importance of improving working capital and using a firm's strong balance sheet to solidify its position in the supply chain.

The job of managing of cash and funding does not just belong to the finance area. Purchasing should play an integral role in designing, implementing, and maintaining SCF. In many firms the supply management professionals are called upon to help fund the growth of the firm. It is also likely that companies will use their financial strength to assist developing suppliers to become better, more viable companies. Fundamentally, SCF is about improving buyer-supplier relationships.

It is also clear that the amount of global regulation around the supply chain will continue to grow. Legislation such as Dodd Frank and Sarbanes-Oxley have changed how companies can operate their supply chains both in the United States and around the world. Almost all multinational companies have had to strengthen their compliance functions to deal with all of the increased regulations being written by governments everywhere. Purchasing managers need to take an active role in understanding how regulations impact both the supply chain and financial management.

We are still in the early stages of SCF innovation. There already is a wide variety of SCF service offerings available, but it is likely that new types of service firms will develop over the next few years. SCF is an area that is ripe for creative new firms to help make the supply chain function better. It is likely that in the next 10 years there will be new types of firms in the area of SCF that we cannot imagine at the current time. SCF is both an area where we can expect great change and important results. The financial flows both inside and outside the firm should be the key consideration in designing the supply chain. The financial flows and relationships therein can determine supply chain variables such as facility location, currency exchange, contracting, and numerous other elements. Firms will continue to look to their supply chains to finance their organizations and vice versa.

Appendix A

References

2015 AFP Payments Fraud and Control Survey. www.afponline.org/fraud/

Ahn, J., Amiti, M., & Weinstein, D. E. (2011). Trade finance and the great trade collapse. American Economic Review: Papers & Proceedings, 101(3), 298-302. Retrieved from www.aeaweb.org/articles.php?doi= 10.1257/aer.101.3.298.

Auboin, Marc, (2009). Boosting the availability of trade finance in the current crisis: background analysis for a substantial G20 package. CEPR policy insight no. 35, Centre for Economic Policy Research, London.

Basel Committee on Banking Supervision. (2011). Basel III: A global regulatory framework for more resilient banks and banking systems, p. 1.

Bates, T. W., Chang, C. H., & Chi, J. D. (2012). Why Has the Value of Cash Increased Over Time?. SSRN Working Paper Series.

Bates, T. W., Kahle, K. M., & Schulz, R. M. (2009). Why do US firms hold so much more cash than they used to?. The Journal of Finance, 64(5), 1985-2021.

Gerdes, Geoffrey R., et al. (2013). The 2013 Federal Reserve Payments Study, www.frbservices.org/files/communications/pdf/research/2013_payments_study_summary.pdf.

Graham, John; Smart, Scott B. (2011). "Cash Conversion, Inventory, and Receivables Management," *Introduction to Corporate Finance: What Companies Do*, Third Edition, Cengage Learning.

Gustin, David (2014). "A disruptive supply chain finance vendor fifteen years later – who is Orbian?" http://spendmatters.com/tfmatters/a-disruptive-supply-chain-finance-vendor-fifteen-years-later-who-is-orbian/.

Hintze, John (2012). "Supplier Finance Accounting Issues: Some third-party arrangements could mean reclassifying payables as loans." *Treasury & Risk*, www.treasuryandrisk.com/2012/05/02/supplier-finance-accounting-issues.

Dervojeda, Kristina; Verzijl, Diederik; Nagtegaal, Fabian; Lengton, Mark; Rouwmaat, Elco; Probst, Laurent; Monfardini, Erica; & Frideres, Laurent (2014). *"Innovative Business Models: Supply chain finance,"* Business Innovation Observatory, Contract No 190/PP/ENT/CIP/12/C/N03C01.

McGrane, Victoria (2012) "Small Banks are Blunt in Dislike of New Rules", *The Wall Street Journal*, www.wsj.com/articles/SB10000872396390443545504577563352622533704.

Monga, Vipal. (2014). "U.S. Companies Cling to Writing Paper Checks." *The Wall Street Journal*. www.wsj.com/articles/SB1000142405270230473280457942523334443042 4.

Ng, Serena (2013). "P&G, Big Companies Pinch Suppliers on Payments." *The Wall Street Journal*, http://www.wsj.com/articles/SB1000142412788732401070457841836163504184 2.

Storm, Stephanie (2015). "Big Companies Pay Later, Squeezing Their Suppliers." *The New York Times*, www.nytimes.com/2015/04/07/business/big-companies-pay-later-squeezing-their-suppliers.html.

The Hackett Group (2012). "Despite Small Improvement in Working Capital Performance Largest U.S. Cos Now Have a $900 Billion Improvement Opportunity." www.thehackettgroup.com/about/research-alerts-press-releases/2012/08162012-despite-small-improvement.jsp.

The White House (2014). www.whitehouse.gov/the-press-office/2014/07/11/president-obama-announces-new-partnership-private-sector-strengthen-amer.

Appendix B

Fees for Card Transactions

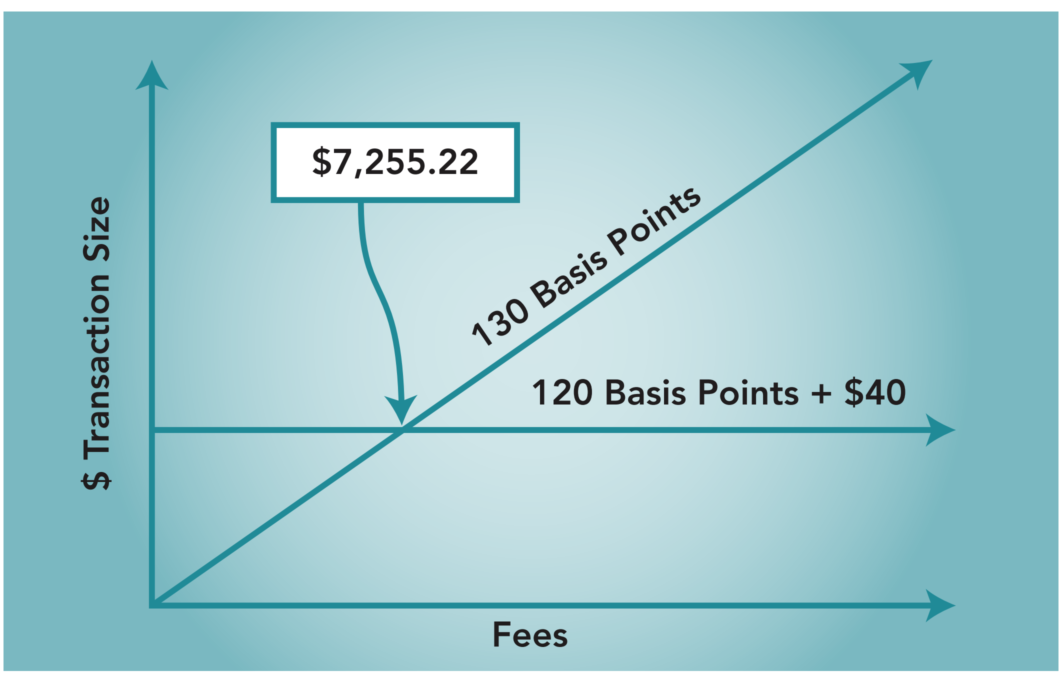
For firms using the card interchange network, a fee is applied to each transaction. The transmitters have a variety of different interchange rates. There is a standard B2B transaction rate, which is referred to by the commercial card companies as Level 1 data. The levels correlate with the size of the fee that is charged with the interchange. There is also what is known as incentive interchange rates, where lower rates are applied given a number of data points captured in each transaction, which are called Level 2 and Level 3. For example, if the merchant provides enhanced data such as sales tax and a unique customer code that would be considered Level 2 data. The final data level, Level 3, would include invoice level data such as order date, invoice number, SKU information, and address verification.

Rates get significantly lower for the merchant if Level 3 information is provided. This type of data can provide significant value to the buying organizations, especially in an environment where cards are distributed throughout the organization. All that information, once consolidated, can be used to more effectively manage spending within the organization.

A different rate independent from the previously described levels applies to high-value transactions. This information is shown in Figure B.1, which compares Level 3 transactions, which are transferred at a fixed 130 BP, with high-value transactions which are transferred at a fixed $40 plus 120 BP. The point where the two lines cross, at $7,255.22, is the break-even point.

Figure B.1

High Ticket Transactions Versus Level 3 Transactions



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