INTRODUCTION

This Note looks at supply chain finance (SCF) and the challenges faced in delivering such financial services to smaller businesses. SCF is defined as any method of financing that provides short-term credit that optimises working capital for both the buyer and the seller and sets out to help reduce the risks associated with supply chain processes. The International Chamber of commerce, that is currently developing a standard definition of this form of financing, includes well-known solutions such as invoice discounting, but also includes newer forms of financing within its definition such as pre-shipment financing.1

Supply chain financing for SMEs, whilst an increasing popular area of financing, is still a relatively under developed in emerging economies. There has been increasing interest in this form of financing in recent years for several reasons.

The recent global credit crisis has prompted trade finance to look for alternatives as businesses have seen their supply chains threatened by a lack of liquidity.2 In addition pressure from the globalisation of supply chains has increased competition and businesses are looking to SCF as one of the options for maintaining their competitive edge. Lastly as more businesses and institutions engage in various forms of SCF with deliverable benefits, this has encouraged others to participate and has further developed the market for SCF services.

1 http://lexicon.ft.com/Term?term=supply-chain-finance
2 http://net.workspace.co.uk/social/articles/how-do-you-define-supply-chain-finance/#sthash.oKeVCQhP.dpuf

About the authors

Anne Marie Van Swinderen

Grace Mungai

Anne Marie Van Swinderen is an international expert to GrowthCap

Grace Mungai is an associate at GrowthCap
Supply chain financing for SMEs

Supply chain financing for SMEs

Although the practice of SCF is increasing, it is still an emerging area of financial services and hence there are challenges in trying to present an overview of what is happening in the field. The competitive nature of financial service provision combined with customer and bank confidentiality issues means that information about SCF provision is not widely available in the public domain. Consequently there is a lack of quality information about the market size of SCF activity in different economies and it is difficult to identify who are the key players in this field and what constitutes good practice.

FSD Kenya has in the recent past supported efforts to raise awareness and knowledge about this aspect of SME development within the financial community in Kenya and in particular the offering of invoice discounting to SMEs. The authors of this TN were involved in that work and hence are able to reflect on the practice of SCF in Kenya and the lessons learned.

This TN focuses on the working capital issues that SMEs face within their supply chains and how SCF products can help address these. Whilst SCF presents commercial opportunities for a wide range of financial service providers, this TN examines the opportunities and issues that banking organisation’s experience operating in the field of SCF.

SCF AND SUPPLY CHAINS

The operations of many businesses throughout the world, in particular SMEs, are influenced and to some degree shaped by the management of their supply chains. How effectively a supply chain is managed can impact significantly on the working capital of those operating within it.

To understand the need for and the opportunities open for SCF options it is important to understand supply chains, their management and the typical challenges faced by businesses operating within these chains. Let us look at a simple example of a supply chain and the effects of working capital.

2.1 THE SUPPLY CHAIN

Simply put, the network of all companies involved in producing, handling and/or distributing a specific product is the supply chain. In effect the supply chain represents all of the steps it takes for a good/service to get from the beginning of the supply chain (usually the input provider) to the customer. A supply chain map (SCM) as illustrated in Figure 1, is a simple visual representation of goods, information, processes, and money flows that occur throughout a supply chain, both upstream and downstream. Such a map helps the business to visualise the supply chains entire length of interactions, information and communication through the chain. Whilst the supply chain is the network, the SCM is the visual representation of the network.

In reality however, supply chains are more complex than the one product line presented as in Figure 1. Often there are many different input suppliers, processors, products and clients existing in parallel, such as a supply chain where inputs are imported and finished goods are exported at different times or even seasonally. Globalisation and off-shore production has the effect of lengthening the supply chain. To help better understand the nature and complexity of a supply chain it is useful to think about three parallel flows along the chain: the flow of goods and services, the flows of information/documents and the financial flows throughout the chain.
2.2 WORKING CAPITAL AND CASH TO CASH CYCLES

A key goal of any business is to make profits and enhance its enterprise value. The effective management of working capital and cash flow is a key factor in achieving this. Working capital is represented by the current assets of a business minus its current liabilities as shown Box 1.

Examining how working capital is used within a supply chain is one of the most important indicators of efficiency in that chain. No matter how simple or complex the supply chain, working capital is required by enterprises operating along the various stages of the chain. Each business in the chain has to balance their assets and liabilities to obtain the optimum amount of working capital needed to run their business.

To gauge the flow of capital in a supply chain and know how best to optimise working capital within the chain, it is important to understand something called the cash-to-cash (C2C) cycle. The C2C cycle or period is the time it takes from when a business pays for the raw materials or inputs that it uses for producing its goods and or services through to the time that the business receives payment for these goods and services from their buyers.

The calculation of this C2C period is usually measured in terms of a number of days, which is why the term is also called “cash days”. The C2C period is typically several months. This is particularly the case for companies that depend on imported inputs and/or export their end-products. This C2C cycle is illustrated by two examples given in Figures 2 and 3. Figure 2 shows the example of a shirt printing and embroidery business.

- Inputs (imported) need to be ordered far ahead and with a deposit pre-payment. Upon delivery, the pending balance must be paid
- The production process of embroidery takes much longer than printing, during which time direct costs are incurred

### Box 1: Working capital and cash to cash cycles

<table>
<thead>
<tr>
<th>Assets</th>
<th>Liabilities</th>
</tr>
</thead>
<tbody>
<tr>
<td>a) Inventory:</td>
<td>a) Accounts payables</td>
</tr>
<tr>
<td>- raw materials</td>
<td>b) Notes payables</td>
</tr>
<tr>
<td>- work-in-progress</td>
<td>c) Marketable securities</td>
</tr>
<tr>
<td>- finished goods</td>
<td>d) (current) accruals</td>
</tr>
<tr>
<td>- stores and spares</td>
<td>- Other liabilities</td>
</tr>
<tr>
<td>- miscellaneous goods</td>
<td>= Working capital</td>
</tr>
</tbody>
</table>

#### Figure 2: A shirt printing and embroidery business

Inputs imported. Ordered 3 months in advance 30% pre-payment

Inputs delivered. Upfront payment on receipt 70% tied in

Inputs: T-shirts, Polos, ink & fixer and embroidery thread

Printing: 3 days to complete

Transit: 2 days

Finished product idle for 25 days

Timeline not to scale

1 July 1 Oct 1 Nov 1 Feb

1st July

1st October

1st November

1st February

Buyer

Client requires 90 days to pay

Printing: 3 days to complete

Production 28 days

Embroidery: 1 week transferring design, 3 weeks embroidery

Polo embroidery

Transit: 2 days

Finished product idle for 25 days
Supply chain financing for SMEs

and paid for such as electricity and direct labour. The printed shirts lie idle for 25 days whilst the embroidery work is completed

- When completed, the goods are delivered to the buyer(s) who in turn insists on a 90-day payment term
- From just looking at Figure 2 it is clear that between 1st July in one year and 1st February the following year the business is outlaying money but not yet receiving any money back into the business from the goods it is making.

In order to compare this C2C to others then a simple metric is used to calculate and express the length of time, in days, that it takes for a company to convert resource inputs into cash flows. The Cash Conversion Cycle (CCC) as it is sometimes called, attempts to measure the amount of time each net input is tied up in the production and sales process before it is converted into cash through sales to customers. This metric looks at the amount of time needed to sell inventory, the amount of time needed to collect receivables and the length of time the business is afforded to pay its bills without incurring penalties.

Box 2 shows the formula for this calculation.

From this we can see that the C2C for the example given in Figure 2 would be in the order of 10 months or 300 days for the capital laid out for inputs (30% input costs) and some 7 months or 210 days for the capital required for the production process and the remainder 70% of the input costs. Figure 3 shows a different supply chain example of a wholesaler business supplying wine to a hotel industry.

Box 2 Calculating the C2C period

\[
C2C = DSO \text{ period} + DIH \text{ period} - DPO \text{ period}
\]

DSO period (Days sales outstanding) = A/R (net sales/365) Number of days that a company takes to collect payments from its customers

DIH (Days inventory held) = Inventory/(net sales/365). Time in which the stock of raw materials, work in progress and finished goods are converted into product sales

DPO (Days payables outstanding = A payables/(net sales/365)). The number of days it takes a company to pay its suppliers

This measure illustrates how quickly a company can convert its products into cash through sales. The lower the CC figure the shorter the cycle, the less time capital is tied up in the business process, and thus the better for the company’s bottom line.

In this case, to supply 100 boxes of wine wholesale price of USD36 per box, which comes to USD3600 for the 100 boxes. The supplier must pre-finance 50% of its costs, i.e. USD1800 for 30 days, estimated at 33% of total sale value of USD5400. During that period, this working capital of USD1800 is locked in and cannot be used for anything else. When the wine is delivered, the supplier must pay the remaining 50% wholesale price for the wine, USD1800 (i.e., finance another 33% of sales value on the
wine costs) as well as an estimated 50% of its own personnel, administration and transport costs, representing about 5% of sale value or USD270. The hotel only pays its invoice after 60 days. This process locks in USD1800+USD1800+USD270, or 72% of the sale value, for 60 days. For the supplier, the combination of transport and payment term results in a total of 92% of the sale value locked in for two months.

2.3 LOCKED IN WORKING CAPITAL

Different types of businesses operate within varying supply chain scenarios where the degree to which working capital is locked in and for how long it is locked in will vary greatly.

Even within a single supply chain it is clear that some working capital is tied up in the chain for longer periods than others. This is illustrated in Figure 4 using the shirt manufacturing and embroidery business as an example. Indeed research has shown that approximately 75% of the working capital expenditure of organisations within a supply chain is locked within the chain itself which is not efficient nor productive. Effective supply chain management impacts positively on the profitability, the liquidity, the asset efficiency and the exposure to risk of a business organisation (Johnson and Templar, 2011).

The need to manage supply chains and make the most effective use of working capital within the chain presents a variety of opportunities for banks and other financial institutions (FIs) to provide financing solutions to businesses along the supply chain. Before discussing these SCF solutions in more detail it is important to reflect briefly on the particular challenges experienced by SMEs operating within supply chains. These challenges, in turn, present opportunities for banks to develop SCF products for their SME customers.

Supply chain management is complex for all businesses within the chain regardless of their size, industry, and location. However it is especially complicated for SMEs.

To some degree the opportunity to provide SCF is all about the difference between small and big companies. While small companies have great advantages, they equally face a number of challenges. Small companies are typically more nimble, more flexible, and often operate partly in the informal economy. This makes them cheaper, able to react more quickly to certain needs and to benefit from local opportunities which large companies cannot pursue.
However, their size, general informality and lack of systems as well as their limited track record underpins the working capital challenges they face. For example:

- SMEs tend to have less experience, credibility and bargaining power in the market place than their larger suppliers, buyers and competitors. Many smaller businesses frequently have to pre pay or pay immediately for their inputs because they do not have the track record or buying power to secure better payment terms.

- At the same time their customers, typically large corporates, expect 60-day payment terms for the goods and services they buy and hence the working capital of the SME is "locked in" for much of the time.

- SMEs typically have no credit rating, they have few assets that can serve as collateral, and they have no or little formal track-record of borrowing from banks.

- When they do have a track record they are often not able to present their accounts and finances in a way in which the banks can easily understand and analyse. If SMEs don’t have good access to working capital then they are less able to operate their businesses efficiently – by taking advantage of bulk buy discounts and less able to invest in growing their businesses generally.

- SMEs tend to make limited use of or have limited access to technology which can lead to a waste of resources, poor performance, and a transactional focus with poor service which in turn affects the competitive ability of the business. Many SMEs rely on manual collection processes that are paper intensive. This makes the process slow, unreliable and costly.

- Lack of timely and accurate information - not helped by manual processes characteristic of many SMEs results in further delays with invoice reconciliation and delays in incoming payments.

There are simple methods that have helped optimise working capital in businesses. However these solutions have tended to be single-company oriented and their use by stronger larger companies have only made things worse for SMEs. For example the case where strong buyers use their bargaining power to enforce late payment to smaller less powerful suppliers. In this approach, commercial working relationships are effectively made worse which has been the typical behaviour of big companies.

Although SMEs face these additional working capital challenges they frequently act as key actors and links in the supply chain process as shown in Figure 5.

Smaller businesses are often ‘wedged’ between larger companies in the supply chain. So the provider of raw materials to the SME may be a large formal company and its buyer may also be a considerably bigger business. It is the SME that typically is a key link in the supply chain and yet has the most difficulty accessing support for working capital.

Figure 5: SMEs often sit between larger suppliers and buyers

![Diagram showing SMEs in the supply chain](image)
The ultimate solution to minimise working capital exposure between small and big companies, buyers and suppliers, is to coordinate and cooperate. The key is for these small companies to make use of the credit rating and track-record of their larger trade partners to access working capital finance. This can be both at the input side and at the sales side.

4.1 THE BENEFITS OF SCF

Practical SCF approaches promise to significantly improve access to finance or reduce the need for external financing by unlocking potential liquidity from within supply chains. There are both quantitative benefits as well as qualitative benefits from SCF solutions.

Quantitative benefits include:

- Funding, liquidity and working capital savings by offering short-term credit optimises working capital for both the buyer and the seller.
- Risk cost saving through various options such as factoring on a non-recourse or a limited recourse basis (which means that for the SME, the risk of non-payment is transferred or partially transferred to the financiers) or credit insurance (which means that in the case of non-payment by the SME the insurance company pays).
- Administrative cost saving by lowering financing cost and improving efficiency.

Qualitative benefits of SCF include:

- Reporting benefits that come via automation of operations that is often linked to SCF and which in turn avail real-time accurate information that enhances enquiry and transparency for all parties.
- Enhancing supply chain relationships by encouraging collaboration between buyers and sellers rather than competition. At the same time, FIs understand and relate better with their clients.
- Enhancing compliance worthiness via enforced compliance requirements as well as process mapping, risk identification, controls and reporting.

4.2 THE SCOPE FOR SCF

The scope for SCF activity is very broad and can involve some if not all of the following:

- How receivables from customers and inventory are financed within and across the firm;
- Extended payable terms to suppliers which can be used as a source of finance;
- Looking at the impact of effective management in financial terms;

Leverage on trade partners: To minimise working capital exposure, small companies to make use of the credit rating and track-record of their larger trade partners to access working capital finance.
Supply chain financing for SMEs

- Supporting suppliers which can be used as a source of finance.

As Figure 6 shows, the shirt printing and embroidery business used as an example earlier could be eligible for 4 of the most common SCF products.

Inventory finance offered by banks may either address inputs/raw materials, work-in-progress or finished products. Thereby releasing working capital at these stages. Goods-in-transit (or trade finance) again may apply to each of raw materials or the finished product but is limited to the cost of transporting either of these and the risks thereof. Invoice discounting addresses the cash tied in once an invoice has been issued to the buyer. It comes at the end of the supply chain.

Each of the products offered within the SCF portfolio have their own considerations as regards controls, data required and degree of risk the details of which it is not suitable to discuss in this short note. However the key characteristics of the main products groups are shown in Figure 7 overleaf and discussed below.

The solutions under SCF include but are not limited to:

- Inventory finance — enables companies that supply large buyers to secure financing on inventory that buyers require them to hold. The results in improvement in net the CCC for the buyer while providing the supplier with capital at a reduced rate. Warehouse Finance is a form of inventory finance provided to manufacturers and processors on the basis of goods or commodities held in trust as collateral for the loans.

- Receivables management services known as factoring — provides third party outsourcing of receivables management and collection process. It can also provide...
financing (invoice discounting) of those receivables and guarantees on the payment of those receivables.

- Payables discounting (reverse factoring) – provides third-party outsourcing of the payables process and leverages a buyer’s credit quality to obtain favourable financing rates for supplier. This results in lower cost of capital for the supplier, a portion of which can be passed on to the buyer

- Insurance – further mitigates trade risk through cargo, credit and transaction dispute insurance

- Trade Finance – usually focuses on exports and imports. Insurers and export credit agencies besides banks and financiers are also involved. Facilities include letters of credit, documentary collection, trade credit insurance, factoring or forfeiting

- Purchase order finance (LPO) – short-term commercial finance option that provides capital to pay suppliers upfront so the company does not deplete its cash reserves. LPO financing is preferred when large peak orders are received or the suppliers are otherwise growing strongly. Businesses that have a year-round stable level of orders can usually be served successfully with invoice discounting. Hence LPO is usually good for growing businesses with little access to working capital and/or poor cash flow, usually producers, distributors, wholesalers or resellers of manufactured products.

Often FIs start at the end of the supply chain process with invoice discounting where the risk is least and where the most information is usually available and most reliable. Alternatively, FIs provide one product without investigating whether issues in the rest of the supply chain stages are being addressed. Whilst one problem is addressed there might exist one or two other related cash challenges. Therefore it is critical to understand the entire supply chain of a business in order to address cash needs more comprehensively and provide SCF effectively. This is what we look at next.

### 4.3 THE ENABLERS FOR SCF

SCF is still relatively new in most developing economies however there are now a number of countries (it should be said primarily middle income) who have increasingly successful market providers in SCF. An example is Colombia where factoring as a financial service, grew by a factor of 10 in the 4 years following the introduction of a law on factoring in 2008.

The biggest players in factoring or invoice discounting in terms of percentage of gross domestic product (GDP) are: Taiwan (21% of GDP); UK (14% of GDP); Ireland (13% of GDP) and Chile (11% of GDP). While the Colombia case demonstrates that passing a law can greatly stimulate factoring and invoice discounting activity, the experience in countries like Chile and Taiwan show that having a collaborative business environment also results in a significant increase in SCF.
Supply chain financing for SMEs

Figure 8 shows the typical factors that are considered as key enablers and drivers towards the effective development and delivery of SCF in any environment. While each may appear independent, they are very much interdependent, with each factor impacting on and being impacted upon by the others.

Whilst all of these elements are important, a key enabling factor for the effective supply of SCF is effective supply chain management; this is the inter-organisational management of working capital, the financial flows and the information exchanged across the supply chain. Good practices in supply chain management affect practices in supply chain finance options and vice versa.

Having clear supply chain maps and using them to optimise practice within the chain helps lead to better coordination and communication between the suppliers and buyers. In a well-coordinated supply chain, information flows between all actors along the chain as shown in Figure 9.

Though still fragmented, innovative payment solutions are able to include detailed transaction information and detailed product information, automated systems can dramatically improve efficiency and establish a more tightly integrated supply chain.

Table 1 summarises some of the practices and conditions that characterise a well-managed supply chain with the associated implications for SCF.

Profitability may come not from loan income (even if credit is the hurdle product to bring the customer into the bank) but more often from cross-selling.
As noted earlier the successful development and delivery of SCF products is on the increase in many countries throughout the world including emerging economies. FSDK implemented a project ‘Supply Chain Trade Finance Support Facility’ (SCTF) between 2009 and 2011 with a view to enhance access to trade finance for SMEs. Whilst the financial sector in Kenya has shown interest and some limited engagement with SCF has taken place, many FIs continue to face challenges in this area, especially the supply of SCF products to their SME clients.

A number of factors lie behind these challenges and some of those faced by the banking sector in Kenya are discussed below.

**Banks lack SME trade finance products**

A central problem faced by the banks is that they do not understand the needs of SMEs and lack SME trade finance products, processes and systems. In practice most banks that deliver SCF products do so primarily to their corporate clients.

This is somewhat ironic as these large businesses tend to have stronger purchasing power and financial capacity than the SMEs. Indeed larger businesses can pose a big challenge for the SMEs with their delayed payments for goods and services. In focusing their SCF products only on these corporate clients the tendency is for the banks to further strengthen the corporate’s dominant position in the supply chain at the expense of the SMEs.

**Risk-averse transaction banking culture**

Underlying a poor understanding of SMEs and their needs is a banking culture and approach to SME clients that has been more transactional driven rather than relationship based.

Banks need to avoid risks and need reliable, thorough, rule-abiding staff who can implement detailed protocol. This is reinforced by the Laws and Regulations which imposes risk-aversion in banks and its staff. By contrast many SME owners are entrepreneurs who take risks and are experimental, flexible and adventurous by nature - the complete opposite to many bank staff. This cultural difference can lead to strained relationships between SMEs and bank staff.
Lack of understanding the specific supply chain
The banks must also build a good picture of the supply chain in which their clients operate if they are to provide effective SCF products. Banks often do not understand the workings of these supply chains. It is recognised that acquiring such ‘know how’ requires dedication and sophisticated staff. Banks could build their knowledge gradually by incremental improvements - starting with a product or two and gaining experience through these.

Lack of buy-in
Often there is lack of total buy-in and drive from senior management of banks to drive a SCF initiative in any strategic way. This means that issues such as changing processes and systems, adequate resourcing and staff skill development are not addressed.

Product Structures
SCF product structures present further challenges. For instance in Inventory Finance, it is unclear where and how to register the inventory as collateral and at what level. In some cases it is unclear who the principal obliger is and where recourse (if any) falls. This is made worse by the extent and type of documentation required to inform approval decisions.

Clients lack awareness
Finally, there is a gap in knowledge at the demand (client) level. The nature, benefits and availability of SCF products are not well known amongst SMEs. All potential beneficiaries of these lines of products need to be better informed about these options and understand the potential benefits. SMEs need knowledge on how SCF options can help them better manage their business and trading relationships.

Technology can present a hurdle
The use of information technology has enabled SCF options to flourish. Technology providers are the enablers of supply chains and SCF as they help to connect all parties together and enable the visibility and communication required to support modern SCF strategies. Technology providers facilitate the process of reconciliation, exchanging purchase orders, invoices, credit notes, payments and related information as well as integrate this information between the different supply chain constituents. Furthermore by providing and/or improving accessible communication channels technology helps bring together parties such as funders, risk takers, buyers and vendors and makes the parties understand the needs of the other parties.

There are typically huge challenges to implement a well-functioning technology and communication system, particularly as there are so many different parties involved in a supply chain. Getting this aspect right can pose a hurdle for entry into SCF

Lack of access to Credit Risk Insurance
The provision of credit insurance is key to the delivery of SCF products. For instance, a traditional way of mitigating transportation risk is through insurance. Insurance can also mitigate insolvency risk and payment risk. This financial service is not always offered by the provider of other SCF products.

IN SUMMARY
Supply chain finance is still a relatively new area of financial product and service provision in most developing economies. There are an increasing number of countries where SCF is being delivered successfully although to date it is true that these are primarily middle income countries such as Colombia.

There lies a huge opportunity for banks, non-bank financial service providers and many other actors to engage in the provision of SCF products and services for the SME market in Kenya.

There are tremendous opportunities for improving efficiency and quality of supply chains through SME working capital financing. For example, SMEs having access to invoice discounting means they can keep larger stocks and that will help them to meet orders faster or to be able to satisfy larger orders. These types of supply chain improvements can increase the profitability of SMEs which in turn makes it worthwhile for SMEs to pay a good price for SCF products.

Initial work by FSDK and others within Kenyan FIs and banks in particular, shows that there is a lot of interest in SCF. However on the supply side, financial providers face a number of institutional, cultural and operational issues which present barriers to practice. Likewise there are a number of challenges on the demand side as many SMEs do not understand how supply chain finance can work for them.

This requires that SCM and SCF practices are addressed concurrently. This is the only way to address a cultural shift in the financial services sector via the alignment of processes, people, and products/services.
REFERENCES


Vatovec Evelin, Intelligent Value Chain Networks: Business Intelligence and Other ICT Tools and Technologies in Supply/Demand Chains, Krmac University of Ljubljana, Faculty of Maritime Studies and Transport Slovenia, http://cdn.intechopen.com/pdfs-wm/18527.pdf

Acknowledgements: The authors wish to acknowledge the feedback given by several local GrowthCap consultants in helping to shape this final document and the final editing undertaken by Dr Pat Richardson, as an international adviser to GrowthCap.