

A Study on “Supply Chain Finance, Factors, Importance of its Entities & Future Prospectives with Referene to Industry 4.0”

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Abstract

Now a days role of supply chain is becoming important in every industry and the competition among the companies are also surviving on the competitive advantage. In the light of flows of supply chain money, (finance) which is playing one predominant role in the industries. To understand this concept in detail in this industry 4.0 and in the digital era we made some questions in the line of both industry disruptions and real scenarios. This paper focus on Supply chain finance and the factors which influences, importance of entities and the future perspectives are discussed.

Keywords

Supplychainfinance, Suppliers, Creditors, Technology, Industry 4.0

I. Introduction

For efficient global supply chains, various services are important - from information technology services to research and development, from human capital management services to data analytics, from inventory management services to logistics - all have to be properly coordinated in an orchestra-like fashion. One important service that can be said to be invisible glue in global supply chain operations is financial services. Problems in financial services can put global supply chain activity to a halt. For example, a study by the WTO shows that financial constraint during the global financial crisis was one of the major reasons that contributed to the plunge in trade volumes during the period [1]. There is a need, therefore, to look closely at financial services that underpin the smooth functioning of supply chains; there is a need to study supply chain financing.

But what is supply chain finance? There is no globally accepted definition of supply chain finance (yet), thus this paper takes the liberty to discuss two ways of understanding supply chain finance and the various regulatory issues impacting the availability of Supply Chain Financing (SCF). The next section tackles one meaning of SCF as, at the risk of being tautological, ‘financing supply chain’, or as something equivalent to structured trade financing. Under this section, credit origination process and various factors that financial institutions consider in financing different stages of the supply chain are explained. It likewise discusses the current APEC context of SME demand for financing and regulatory environment and policy reforms that are important to improve asset based lending that can increase the availability of financing for SMEs. The third section discusses the other meaning of supply chain finance as a specific bank financing instrument that involves suppliers and buyers in a supply chain relationship. While supply chain finance takes on various forms, e.g. buyer-centric supply chain finance, supplier-centric SCF, or even multiple buyers and sellers SCF, this paper discusses in detail only the most widely used of these, i.e. the SCF that is anchored on a major buyer. The section explains how the process operates, its growing acceptance by more companies with global supply chains, and the challenges

that affect its further growth and development.

Besides financial exclusion, another important thing to note is that, usually, the higher the risk the FI takes, the higher the cost of financing to the borrower. This is why in economies that have more developed supply chain physical and financial infrastructure, cost of financing tend to be lower and more inclusive of SMEs. Conversely, in economies where credit infrastructures are weak, for example inadequate warehousing and collateral management capacity, or where asset based lending is not widely practiced, financing will mostly be based on the financial strength (i.e., balance sheet) of the borrower, thus excluding from financing many other companies (such as many SMEs) with weak balance sheets but with marketable goods and high growth potential. Or, if they provide financing through asset based lending for example, the cost is nevertheless much higher than otherwise can be obtained in other economies with more ‘ideal’ institutional infrastructure (i.e., proper legal and regulatory framework).

What is clear in the above discussion is that the legal and regulatory environment can facilitate financing, especially SME financing, or it can create obstacles. It poses a few critical questions that financial institutions need to answer favorably, else they decide not to proceed with the transaction or to proceed with even more caution by adding more credit enhancements to protect the money they have lent out. This, in turn, translates to higher financing cost. Underlying these considerations is the fact that, unlike traditional corporate lending for example, the balance sheet of the trade financing proponent is not the major consideration in the granting of financing, but rather the traded goods. Hence the emphasis is on the enforceability of the security interest or the possibility to seize and resell the goods with relative ease and rapidity in the event of default. Understanding the creditors’ perspective provides the hint that in order to help companies, especially SMEs, improve access to financing, regulatory reforms that help facilitate credit, especially those related to improving asset based lending, are imperative.

II. Objectives of the Study

- To understand the Supply Chain finance
- To identify and analyze which entity has an important role in the Supply chain
- To determine the factors influences the Supply chain finance.

III. Review Literature

The recent economic downturn caused a considerable reduction in the granting of new loans, with a significant increase in the cost of corporate borrowing (Ivashina and Scharfstein, 2010). Moreover, the collapse of the asset and mortgage-backed markets dried up liquidity from industries (Cornett et al., 2011). In these difficult times, firms (especially the most vulnerable ones) tried to extend trade credit from suppliers in order to supplement other forms of financing, while organisations less affected by this credit

crunch took the role of liquidity providers, accepting an increase in payment terms (Coulibaly et al., 2013; Garcia-Appendini and Montoriol-Garriga, 2013). These effects contributed considerably to the need for solutions and programs that optimise working capital. Among these, one of the most important approaches is Supply Chain Finance (SCF) (Polak et al., 2012). SCF aims to optimise financial flows at an interorganisational level (Hofmann, 2005) through solutions implemented by financial institutions (Camerinelli, 2009) or technology providers (Lamoureux and Evans, 2011).

The ultimate objective is to align financial flows with product and information flows within the supply chain, improving cash flow management from a supply chain perspective (Wuttke et al., 2013b). The benefits of the SCF approach rely on cooperation among players within the supply chain, which typically results in lower debt costs, new opportunities for obtaining loans (especially for ‘weak’ supply chain players), or reduced working capital within the supply chain. Moreover, the SCF approach often improves trust, commitment, and profitability throughout the chain (Randall and Farris II, 2009). The level of interest in the topic of SCF among practitioners has increased significantly. An example that illustrates this is the ‘Supply Chain Finance scheme’ developed by the UK government. This scheme is an agreement between the UK government and 37 of the biggest companies in the UK. The companies agree to notify a financial institution when an invoice is approved for payment; the bank is then able to offer a 10 percent immediate advance to the supplier at a lower interest

rate, knowing that the invoice will ultimately be paid by the large company.

Along with the expansion of the SCF market, interest in SCF is also growing among academics. The number of scientific articles focusing on SCF has increased in the last decade, giving the concept a more defined identity and leading to the development of a more precise framework to describe the SCF solutions landscape. However, contrasting definitions, which address the topic from different perspectives, have been found in the literature. More specifically, the literature review highlights the existence of the finance oriented and the supply chain oriented perspectives. The former is focused on financial aspects and considers the SCF approach as a set of financial solutions, very often provided by financial institutions (Camerinelli, 2009). The latter emphasises the role of collaboration amongst supply chain members, with a particular focus on inventory optimisation. This perspective extends the boundaries of SCF beyond simply financial solutions, taking into consideration inventories, supply chain processes, and even collaborative solutions for fixed asset financing, such as pay-on production schemes (Pfohl and Gomm, 2009). The differences between the two perspectives result in conflicting frameworks and definitions, and consequently it is still very difficult to derive a clear picture of SCF from the existing literature. As a matter of fact, a general framework describing the SCF concept and SCF solutions, in which the two main perspectives (finance oriented and supply chain oriented) are both considered.

IV. Research Methodology

Data collected from 400 respondents of various groups and used descriptive statistics for analysis using SPSS.

A. Data Analysis:

		@4Does-Bankhavethecontrolonthesecurity	@5WhatistheP-rominentroleof-Supplychain-intheSupplychai	@9InStartupIn-diaconceptAr-estartupsandMS-MEâsusingthis	@10Atwhatex-tentdataprotec-tionisintheex-changeprocess	@12.How-MarketPer-ceive therisk-tothecountrye-conomy
N	Valid	400	400	400	400	
	Missing	0	0	0	0	
Mean		3.15	3.16	3.53	2.79	3.63
Median		3.00	4.00	4.00	3.00	4.00
Mode		4	4	4	2 ^a	4
Std. Deviation		1.141	1.268	1.047	1.154	1.134
Variance		1.303	1.607	1.097	1.332	1.286
Skewness		-.739	-.454	-.626	.005	-.766
Std. Error of Skewness		.122	.122	.122	.122	.122
Kurtosis		-.410	-1.005	-.050	-.981	-.314
Std. Error of Kurtosis		.243	.243	.243	.243	.243

		@18Political	@19Economical	@20Technology	@21Social
N	Valid	400	400	400	400
	Missing	0	0	0	0
Mean		3.00	3.69	3.37	3.21
Median		3.00	4.00	4.00	4.00
Mode		2 ^a	4	4	4
Std. Deviation		1.031	1.302	1.597	1.105
Variance		1.063	1.694	2.549	1.220
Skewness		-.004	-.844	-.542	-.664
Std. Error of Skewness		.122	.122	.122	.122
Kurtosis		-.905	-.435	-1.341	-.579
Std. Error of Kurtosis		.243	.243	.243	.243

Age					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	18-25	147	36.8	36.8	36.8
	25-35	210	52.5	52.5	89.3
	35-45	43	10.8	10.8	100.0
	Total	400	100.0	100.0	

Gender					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	female	189	47.3	47.3	47.3
	male	211	52.8	52.8	100.0
	Total	400	100.0	100.0	

Education					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	degree	127	31.8	31.8	31.8
	intermediate	42	10.5	10.5	42.3
	masters degree	231	57.8	57.8	100.0
	Total	400	100.0	100.0	

Marital Status					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	married	106	26.5	26.5	26.5
	unmarried	273	68.3	68.3	94.8
	widowed	21	5.3	5.3	100.0
	Total	400	100.0	100.0	

Profession					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	business	43	10.8	10.8	10.8
	govt employee	21	5.3	5.3	16.0
	house wife	42	10.5	10.5	26.5
	private employee	231	57.8	57.8	84.3
	self employee	21	5.3	5.3	89.5
	student	42	10.5	10.5	100.0
	Total	400	100.0	100.0	

@1. Do you aware about the term Supply chain finance?					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	no	126	31.5	31.5	31.5
	yes	274	68.5	68.5	100.0
	Total	400	100.0	100.0	

@2. Whose role is important in supply chain finance?					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	all the above	190	47.5	47.5	47.5
	buyer	21	5.3	5.3	52.8
	financier	126	31.5	31.5	84.3
	supplier	63	15.8	15.8	100.0
	Total	400	100.0	100.0	

@3. What is the impact of Blockchain in Supply Chain Finance?					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	effective	169	42.3	42.3	42.3
	highly effective	105	26.3	26.3	68.5
	neutral	42	10.5	10.5	79.0
	not effective	84	21.0	21.0	100.0
	Total	400	100.0	100.0	

@4DoesBankhavethecontrolonthesecurity					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	64	16.0	16.0	16.0
	2	21	5.3	5.3	21.3
	3	126	31.5	31.5	52.8
	4	168	42.0	42.0	94.8
	5	21	5.3	5.3	100.0
	Total	400	100.0	100.0	

@5What is the Prominent role of Supply chain in the Supply chain finance?					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	63	15.8	15.8	15.8
	2	63	15.8	15.8	31.5
	3	64	16.0	16.0	47.5
	4	168	42.0	42.0	89.5
	5	42	10.5	10.5	100.0
	Total	400	100.0	100.0	

@6What do you think on the role of Government in this Supply Chain finance?					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	effective	148	37.0	37.0	37.0
	highly effective	63	15.8	15.8	52.8
	Neutral	147	36.8	36.8	89.5
	not effective	42	10.5	10.5	100.0
	Total	400	100.0	100.0	

@7Supplychainfinance Boost the exports and imports.....?					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Agree	190	47.5	47.5	47.5
	Disagree	63	15.8	15.8	63.3
	strongly agree	126	31.5	31.5	94.8
	strongly disagree	21	5.3	5.3	100.0
	Total	400	100.0	100.0	

@8What do you think on the Supply chain finance impact on the money exchange rates?					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Agree	147	36.8	36.8	36.8
	Disagree	85	21.3	21.3	58.0
	Neutral	42	10.5	10.5	68.5
	strongly agree	105	26.3	26.3	94.8
	strongly disagree	21	5.3	5.3	100.0
	Total	400	100.0	100.0	

@9In Startup India concept Are startup's and MSME's using this facility?					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	21	5.3	5.3	5.3
	2	42	10.5	10.5	15.8
	3	105	26.3	26.3	42.0
	4	168	42.0	42.0	84.0
	5	64	16.0	16.0	100.0
	Total	400	100.0	100.0	

@10At what extent data protection is in the exchange process?					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	64	16.0	16.0	16.0
	2	105	26.3	26.3	42.3
	3	105	26.3	26.3	68.5
	4	105	26.3	26.3	94.8
	5	21	5.3	5.3	100.0
	Total	400	100.0	100.0	

@11.How does banks or financial institutions ensure the process of supply chain?					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	effective	232	58.0	58.0	58.0
	highly effective	105	26.3	26.3	84.3
	neutral	21	5.3	5.3	89.5
	not effective	42	10.5	10.5	100.0
	Total	400	100.0	100.0	

@12.How Market Perceive the risk to the country economy?					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	21	5.3	5.3	5.3
	2	63	15.8	15.8	21.0
	3	42	10.5	10.5	31.5
	4	190	47.5	47.5	79.0
	5	84	21.0	21.0	100.0
	Total	400	100.0	100.0	

@13 What will be the scope of Supply chain finance in the disruptive industry 4.0?					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	cannot be defined	21	5.3	5.3	5.3
	challenge	211	52.8	52.8	58.0
	growth	105	26.3	26.3	84.3
	risk	63	15.8	15.8	100.0
	Total	400	100.0	100.0	

@14 What do you think on the regulations of cross border data (Information) flow?					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	need more privacy	211	52.8	52.8	52.8
	present regulations are satisfied	63	15.8	15.8	68.5
	risky	42	10.5	10.5	79.0
	transparency	84	21.0	21.0	100.0
	Total	400	100.0	100.0	

@15 Does Supply chain finance reduces the challenges through KYC?					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	may be	169	42.3	42.3	42.3
	no	105	26.3	26.3	68.5
	yes	126	31.5	31.5	100.0
	Total	400	100.0	100.0	

@16 Overall opinion of the Supply chain finance activity in the country.....?					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	dissatisfied	63	15.8	15.8	15.8
	highly satisfied	42	10.5	10.5	26.3
	neutral	168	42.0	42.0	68.3
	satisfied	127	31.8	31.8	100.0
	Total	400	100.0	100.0	

@17 Which factor has predominant role in Supply Chain finance?					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	economical	252	63.0	63.0	63.0
	legal	42	10.5	10.5	73.5
	political	85	21.3	21.3	94.8
	social	21	5.3	5.3	100.0
	Total	400	100.0	100.0	

@18 Rate: Political					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	22	5.5	5.5	5.5
	2	126	31.5	31.5	37.0
	3	105	26.3	26.3	63.3
	4	126	31.5	31.5	94.8
	5	21	5.3	5.3	100.0
	Total	400	100.0	100.0	

@19 Rate: Economical					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	42	10.5	10.5	10.5
	2	42	10.5	10.5	21.0
	3	42	10.5	10.5	31.5
	4	147	36.8	36.8	68.3
	5	127	31.8	31.8	100.0
	Total	400	100.0	100.0	

@20 Rate: Technology					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	105	26.3	26.3	26.3
	2	21	5.3	5.3	31.5
	3	21	5.3	5.3	36.8
	4	127	31.8	31.8	68.5
	5	126	31.5	31.5	100.0
	Total	400	100.0	100.0	

@21Rate: Social					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	42	10.5	10.5	10.5
	2	63	15.8	15.8	26.3
	3	84	21.0	21.0	47.3
	4	190	47.5	47.5	94.8
	5	21	5.3	5.3	100.0
	Total	400	100.0	100.0	

@22 Rate: Legal					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	22	5.5	5.5	5.5
	2	126	31.5	31.5	37.0
	3	105	26.3	26.3	63.3
	4	126	31.5	31.5	94.8
	5	21	5.3	5.3	100.0
	Total	400	100.0	100.0	

IV. Suggestions and Recommendations

Supply chain finance proved beneficial during the global financial crisis when companies, particularly SMEs, found it difficult to obtain financing from banks. Threatened by the potential bankruptcy of suppliers and possible destabilization of its supply chain, some multinational companies decided to use supply chain finance to obviate their suppliers' difficulties. Using the buyer's credit quality, banks provided funding to small suppliers through the purchase of its account receivables. The cost of this financing was lower than if the suppliers applied directly for a loan because the bank premised the financing, not on the supplier's, but on the buyer's creditworthiness. Supply chain finance helped in the stability of supply chain and aided in improving buyer-supplier relationship.

By using supply chain finance, buyers are able to manage its working capital more efficiently through the possibility of extending payment terms to suppliers or days payable outstanding (DPO) without jeopardizing its strategic relationship with its suppliers and destabilizing its supply chain. A well-structured supply chain finance program also helps improve the buyer's balance sheet because the payment is classified as a trade payable rather than a bank or capital market debt.

For the supplier, supply chain finance is a way to obtain cheaper funding because the bank cost is made on the back of the buyer's investment grade rating rather than on its own credit rating. If the supplier is an SME, its credit rating is usually below investment grade and thus financing usually costs higher than those of prime company clients.

Banks also benefit through the additional business that supply chain finance creates. It earns from the discount of the account receivables even as it lowers the overall credit risk of its portfolio because big corporate clients tend to have lower risk of non-payment (of its account payables). Spillovers into new supply chain financing can also follow as relatively big suppliers in the

chain could also request the bank to structure supply chain finance with themselves as buyer. The visibility enabled by the electronic platform also serves to validate the invoices and receivables thus limiting the possibility of funding fraudulent transactions.

Government support for supply chain finance program is also growing. The United Kingdom, USA and several other European economies implemented or are considering to implement their own supply chain finance solutions, allowing government suppliers to be paid earlier and to obtain funding on the back of receivables from the government. For example, in the UK, the government procurement strategy offers supply chain finance scheme to 4,500 community pharmacies. In the scheme, pharmacies get to be paid in full after just seven days instead of the usual eight weeks. They also receive lower discount rate for their receivable compared to what they might normally pay for a bank draft or credit line.

Supply chain finance has also grown among non-bank and platform providers. Some leading supply chain finance arrangements might involve not only one bank but multiple banks; not only one buyer but multiple buying entities in multiple economies, each buyer with their own constellation of suppliers, all participating on a single integrated platform. GTNexus or Primerevenue or Demica provide examples of such technology platforms where financial institutions, instead of creating a proprietary platform, make use of existing ones to effect payments.

V. Challenges

Despite the many advantages from supply chain finance, there are challenges through the globe. Among the internal challenge for buyer consists in the 'traditional' corporate structure where different departments operate in silos. In structuring supply chain finance program, both procurement and treasury departments of multinationals have to cooperate whereas previously they operated on the basis of different, at times competing, key performance indicators (KPIs). For example, treasury departments want

payment terms to suppliers that is as long as possible, while procurement people prefer to have good supplier relationships and may balk at alienating suppliers with long payment terms. Hence, to implement a supply chain finance in corporations often require long internal negotiations especially between procurement and treasury departments, and to a certain extent, culture change, and needs strong backing from the top of the organization.

The external challenges are those that banks face, particularly in view of the prevailing regulatory environment that is driving them into very conservative stance in lending. A major factor causing the slow uptake of supply chain finance by more banks is the difficulty associated with the supplier onboarding process. Multinational corporations have suppliers from all over the world, usually from fast growing emerging economies. Even if the buyer is the ultimate obligor and bears the credit risk, banks, reflecting an over-cautious stance, still do a full know-your-customer (KYC) procedure of the suppliers. KYC procedure means a thorough assessment of each company profile. This is not much of a problem for domestic suppliers but for foreign suppliers, the KYC necessitates large resources for banks⁵¹ because it requires the banks to either have physical presence in each of the suppliers' economies to execute the KYC mandate well or tap on good sources of information to execute the same. But not all economies and companies have the same level of control and proper systems to collect and store KYC-required data which add to the bank's onboarding difficulties. Local banks with which the buyer's bank have correspondent banking relationship can assist in doing KYC check but ultimately, the onboarding bank is mainly responsible. KYC norms do not allow for outsourcing KYC procedures. Banks can send personnel directly to the different economies to do first hand KYC procedure but this makes the process too expensive, especially if the suppliers are only small and medium scale enterprises.

The multi-economy characteristic of multinational corporations' supply chains also requires for banks to be familiar with laws of different economies, for example laws on receivables, proper title document and transfer or assignment of security interests, in order to assess risks in purchasing receivables through supply chain finance. The practical difficulties of executing KYC for multiple suppliers in multiple economies, along with highly variable legal and regulatory environment surrounding account receivables, explain the slow SCF take-up.

VI. Conclusion

Supply chain finance can also be understood as a specific financing vehicle to support buyer-seller supply chain whereby sellers (suppliers), especially SMEs, are able to obtain cheaper financing on the back of the creditworthiness of the buyer, usually large corporates or MNCs. The need for improved legal and regulatory framework for asset based lending remains important even in this understanding of supply chain finance, especially because financial institutions provide supplier financing, mostly through purchase of account receivables, or extend credit lines based on the suppliers' accounts receivables from highly rated companies. This form of supply chain finance helps improve buyer-seller relationship and, by ensuring that suppliers have access to funding, it also stabilizes the buyers' own supply chain. Supply chain finance has experienced rapid growth but for a wider adoption, attention should be directed to various regulatory issues that are hampering supply chain finance.

The paper discussed supply chain finance as interpreted in two different, but somewhat related, ways. Supply chain finance can be understood as structured trade financing which ensures that the

financial institution's risk throughout the supply chain - from the factory to transport to warehouse to shipping and all the way to the buyer - are covered and mitigated. It argued that this form of financing can be used more widely to help fund SMEs because the transactions financing and structuring relies more on the asset that is exported rather than on balance sheets. on account of the low risk profile of trade financing but cautions about the potential adverse impact of regulatory arbitrage on competitiveness due to uneven implementation of Base rules across economies. Other major challenges to trade and supply chain financing pertain to difficulties of onboarding suppliers in the supply chain finance platform due to stringent Know-Your-Customer (KYC) rules. At a minimum, the paper suggests a central database in each economy where KYC-relevant company information are stored and accessed by financial institutions to ease the burden of executing KYC. This will prevent or minimize financial exclusion that is resulting from the overcautious stance of FIs due to concern over financial crimes and heavy penalties. Another important inhibitor to the growth of supply chain finance is the growing discussions on prohibition of transferring data cross-border. The paper cautions about the cross-border data transfer restriction which could prevent the adoption and implementation of new innovative instruments like supply chain finance. Cross-border data transfer regulation is the new non-tariff measure that will challenge the trade community in the foreseeable future.

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