



In this exploratory research eight suppliers in the automotive industry are interviewed to measure the application of supply chain finance instruments in their supply chain in the Netherlands and the region of South-West Germany.

Supply Chain Finance in SMEs: A comparative study in the automotive sector in Germany and The Netherlands

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ABSTRACT

In this exploratory research eight suppliers in the automotive industry are interviewed to measure the application of supply chain finance instruments in their supply chain in the Netherlands and the region of South-West Germany. Current adoption levels and reasons for non-adoption are discussed. Based on these indicative results, a set of hypotheses is suggested for further research. The theoretical base of this study, is a conceptual model of Supply Chain Finance based on literature research and empirical research in the Netherlands.

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Introduction

Nowadays companies are faced with increasing competition at a global scale combined with growing customer demands for product customization and supplier responsiveness (Chan & Qi, 2003). Intensified price pressure must be offset by continuous gains in productivity and efficiency while at the same time maintaining customer-oriented, flexible, fulfilment processes (Taschner, 2016). This development forces companies to cooperate along the supply chain. Companies more and more compete as integrated supply chains rather than as individual firms. Success of the entire supply chain therefore inevitably determines the well-being of the individual company.

A supply chain can be defined as an integrated network of independent business entities that collaborate along the value creation process in order to improve competitiveness and eventually financial performance of the supply chain itself and of each partner in the network (Wisner, Tan & Leong, 2016). Supply chain management (SCM) can draw from a wide range of instruments that focus on different value drivers. SCM implies that these instruments are not targeting at individual company level only, but rather take a dyadic (two partners) or multilateral (many partners) view (CSCMP, 2017). True SCM instruments are therefore of a collaborative nature, i.e. the partners engage in some form of cooperative setup when applying these instruments – with the explicit aim to derive benefits for each partner and thus also for the entire network.

SCM instruments affect many different operative variables which in turn influence a company's (or an entire supply chain's) overall financial performance. Literature has been discussing the link between SCM activities and overall company value since several years (Yücesan, 2016; Brandenburg, 2013). Value-based SCM focuses on generating "economic profit" – i.e. a surplus (often measured by net operating profit after taxes – NOPAT) that exceeds capital charges [i.e. capital employed x weighted average cost of capital (WACC)]. Various value driver tree models have been suggested to systematize these causal relationships (Karrer, 2006; Schnetzler, Sennheiser & Schönsleben, 2007). Figure 1 depicts one SCM value driver tree showing operative variables that can be object of different SCM activities and the typically assumed directional paths to overall company value (here expressed by Economic Value Added – EVA).

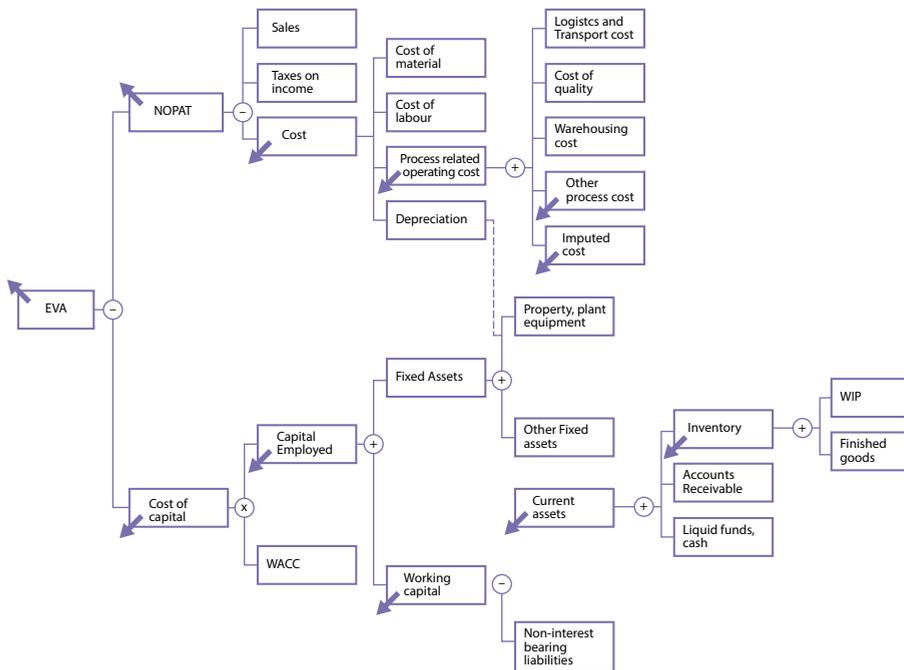


Figure 1 Example value driver tree of SCM activities (Taschner, 2017)

It is generally accepted in both literature and practice that supply chain management is focusing on the flow of physical goods as well as on information and financial flows between supply chain partners (Werner, 2017). Collaborative instruments that focus on optimizing the financial flows and stocks across supply chain partners are summarized as “Supply Chain Finance” (SCF). Instruments of SCF affect only selected branches of the overall value driver tree. The key management object of SCF is working capital and its components (Crandall, Crandall & Chen, 2014), leading to a reduced version of the overall SCM value driver tree.

Supply Chain Finance and value creation in supply chains

Supply chain finance generally denotes “... financial arrangements in the form of debt, equity or financial contracts used in collaboration by at least two supply chain partners and facilitated by the focal company with the aim to improve the overall financial performance and mitigate the overall risks of the supply chain.” (Steeman, 2013). The Global Supply Chain Finance Forum defines Supply Chain Finance as follows: “SCF is the use of financing and risk mitigation practices and techniques to optimise the management of working capital and liquidity invested in supply chain processes and transactions. SCF is typically applied to open

account trade and is triggered by supply chain events. Visibility of underlying trade flows by the finance provider(s) is a necessary component of such financing arrangement usually enabled by a technology platform.” (Hofmann, Strewe & Bosia, 2017)

Supply Chain Finance (SCF) is a relatively new topic e.g. in supply chain management and logistics (Coyle, Bardi & Langley, 2003; Seifert & Seifert, 2009). Recent studies show that it may reduce the working capital¹ of the focal company by 40%, as well as the costs of capital (because of the better credit rating of the focal² company) (Hofmann & Kotzab, 2010). Supply Chain Finance has its roots in reverse factoring. Factoring has traditionally been used for financing the Accounts Receivable (Debtors) of a company by selling the ARs to a factor – often related to a bank; the factor collects the debt from the company’s clients, and the company immediately receives the agreed amount of money after deduction of a discount (Klapper, 2006). Although most definitions of Supply Chain Management acknowledge the fact that SCM is not only about the design and optimisation of the flows of goods, but also encompasses the information flows and financial flows, financial flows and the costs of financial flows often gain less interest. However, it is the interplay of these three SCM objects that provides value: According to the Supply Chain Finance Cube model (Pfohl & Gomm, 2009), using (already existing) supply chain information can reduce the usage of (net) working capital and its costs:

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$$\text{Net Working Capital Costs} = \text{Volume of Working Capital} \times \text{Duration} \times \text{Cost of Capital (WACC)}$$

Equation 1. Capital Costs (Pfohl & Gomm, 2009).

As depicted in Figure 1 lowering costs of (working) capital leads to a higher Economic Value Added (EVA). EVA is a widely used indicator for economic profit and is generally defined as (Rappaport, 1998):

¹ Working capital is defined in this article as follows: $NWC = \text{Inventories} + \text{Debtors (AR)} - \text{Creditors (AP)}$. So cash and cash equivalents is excluded (Hillier et al., 2011)

² Focal company is the leading or dominating company in the supply chain.

$$\text{EVA} = \text{NOPAT}^3 - \text{WACC} * \text{Capital Employed}^4$$

Equation 2 Definition of Economic Value Added (EVA)

Besides the impact on costs e.g. capital costs, lowering working capital in volume and duration will also lead to a better performance in terms of liquidity. Static liquidity (current ratio⁵), as well as dynamic liquidity (Cash to Cash Cycle⁶) will be improved.

Different scholars have discussed the impact of Supply Chain Finance on managing working capital for lowering costs and improving liquidity and ultimately on value generation, as measured for instance by shareholder value (Rappaport, 1998) or economic value (Stewart & Bennet, 1991). A selection of studies discussing the connection between SCF and performance measures directly or indirectly linked to value concepts is presented in table 1.

Table 1 SCF definitions and impacts

Impact on Academic contributions	Fixed assets	Working Capital (incl. interest costs)	Value Added	Risk mitigation	Liquidity
Pfohl (Pfohl & Gomm, 2009)		•			
Hofmann et al. (Hofmann & Belin, 2011; Hofmann et al., 2011)		•	•	•	•
European Banking Association (2014)					•
Steeman I (Steeman, 2014)		•	•	•	
Steeman II (Steeman, 2013)	•	•	•	•	
Steeman III (Steeman et al., 2015)					•

³ NOPAT = Net Operating Profit After Taxes (Rappaport, 1998)

⁴ Capital Employed = Total Assets – Current Liabilities = Non-current Assets + Working Capital. In some other textbooks Capital Invested is mentioned (Brealey et al., 2011)

⁵ Current Ratio = Current Assets / Current Liabilities (Hillier et al., 2011)

⁶ Cash to Cash Cycle = DSO + DIO – DPO (Hillier et al., 2011).

SCF can therefore contribute to value creation in two different ways:

- Reducing working capital and lowering the costs of working capital
- Increasing liquidity using SCF instruments

The European Banking Association's (EBA) definition of Supply Chain Finance focuses on exactly these two aspects: "The use of financial instruments, practices and technologies to optimise the management of the working capital and liquidity tied up in supply chain processes for collaborating business partners. SCF is largely 'event-driven'. Each intervention (finance, risk mitigation or payment) in the financial supply chain is driven by an event in the physical supply chain. The development of advanced technologies to track and control events in the physical supply chain creates opportunities to automate the initiation of SCF interventions." (EBA - European Banking Association, 2014)

In the same publication EBA distinguishes three main priorities of (operational) supply chain finance instruments:

- Accounts Payable or Buyer centric
- Accounts Receivable or Supplier centric
- Inventory centric

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These aspects are discussed in more detail in the following section and will be used to develop a conceptual model of SCF and its effects on working capital and liquidity.

Conceptual model of SCF effects on asset structure, working capital and liquidity

In their classification of Supply Chain Finance instruments, De Boer, Van Bergen and Steeman (2015) distinguish strategic, tactical and operational instruments:



Figure 2 SCF instruments (De Boer, Van Bergen & Steeman, 2015)

Strategic SCF instruments are most common in multinational firms like Philips, Unilever, Shell, Microsoft, Volkswagen, etc., which act as focal companies in the supply chain. The focal companies often want to safeguard their procurement activities in the long term through vertical integration - so they buy a stake from their suppliers via buying shares or starting a joint venture.

Tactical SCF instruments are often used to finance the equipment (e.g. trucks) of the focal company's supplier, because the supplier does not have the financial funds to do so and/or is not powerful enough to get a loan from a bank.

Operational SCF instruments are used to directly improve the liquidity of the companies in the supply chain (i.e., reverse factoring, dynamic discounting, inventory financing and purchase order financing). A more detailed overview of operational SCF instruments can be found in the report Supply Chain Finance of the European Banking Association (Camerinelli & Bryant, 2014).

Partly in line with Steeman (2014), SCF is to be considered part of a business' Supply Chain Management function, but close theoretical links to corporate finance as well as recent changes in the role of (business) controller (Desroches & Lawson, 2013) might argue to put SCF under the responsibility of the business controller or CFO.

In the following the conceptual building blocks of SCF will be described, and an overview of financial topics (working capital management, risk management, planning & control and economic trade-offs) will be provided. The development of the conceptual model is also based on discussions with peers. Knowledge DC Community SCF (KDC, 2014), Dialog SCF community (Dialog, 2014) and Supply Chain Finance Community (scfcommunit, 2014) bring together peers from universities of applied sciences in the Netherlands to facilitate the discussion about supply chain finance. The academic development of the SCF paradigm is the process that develops gradually, and has its own dynamics. For universities of applied sciences (UAS) there is an extra drive to update their curricula with new fundamental trends, like SCF probably is. This overview is partly based on the level of the value chain (corporate level) and partly on the level of the supply chain. Both perspectives can draw on the work of other scholars: The SCF paradigm developed by Cosse (2011) is focussed more internally on the value chain of the (focal) company. A more recent contribution of Steeman (2014) focuses on:

- A set of supply chain financing instruments (trade financing, fixed asset financing, working capital financing and supplier financing) to manage the financial supply chain. Collaboration and IT platforms are important characteristics.
- The purpose of SCF models. What value does SCF create? Lower financial costs, and mitigating supply chain/suppliers' risk.
- The perspective of SCF programmes. Is the programme initiated by a (dominant) buyer (focal company) or supplier?

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Based on the main theories of working capital (Preve & Sarria-Allende, 2011; Brealey et al., 2011), the cube model of SCF (Pfohl & Gomm, 2009), recent academic contributions (Hofmann, Strewe & Bosia, 2017) and empirical research in the Netherlands (De Goeij, De Graaf-Muller & Steeman, 2016), the following conceptual model at the operational level of supply is developed in figure 3 (Jansen, 2017).

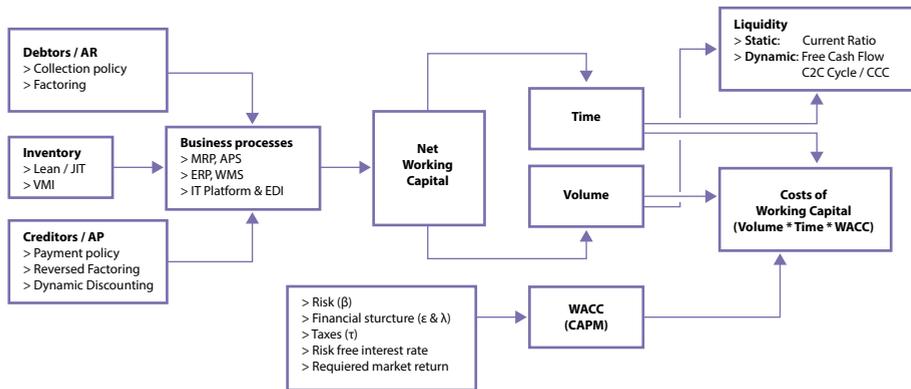


Figure 3 Conceptual model SCF at operational level (Jansen, 2017)

On the left hand side the three elements of working capital are to be recognised: Debtors / Account Receivables (AR), Inventory and Creditors/ Account Payables (AP). The other elements of working capital (Preve & Sarria-Allende, 2011; Brealey et al., 2011) are not relevant in this paradigm of Supply Chain Finance, because they cannot be influenced by the managers in the supply chain (like purchase, sales, warehouse and logistics).

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In a modern business environment, a company's approach to handling these working capital elements is strongly influenced by its IT infrastructure and the business processes realized through it. Consequently, the conceptual link between working capital and its main conceptual components is mediated by:

- how a company organises its business processes like planning and forecasting (MRP, APS & ERP),
- the registration in the warehouse (WMS & ERP), and the flow of outgoing and incoming invoices (ERP),
- the company's connection of the information flows to its suppliers and clients via EDI or other IT platforms.

According to the so-called cube model (Pfohl & Gomm, 2009) working capital has three elements:

- Time or duration
- Volume (the value of each of the 3 components of working capital)
- Interest rate, reflected by the company's WACC⁷ (Jansen, 2016)

⁷ $WACC = \epsilon * R_E + (\lambda * R_D) * (1 - t)$ and $R_E = R_{RF} + \beta * (R_M - R_{RF})$ (based on CAPM model)

ϵ = Equity ratio; λ = Debt ratio; R_D = Interest rate; t = corporate tax rate; R_E = Return on equity; R_{RF} = Risk-free interest rate; β = Company Beta & R_M = Required market return.

The product of all three elements (Time * Volume * WACC) determines the cost of working capital. Lowering the costs of working capital increases the Economic Value Added (EVA) of the firm (Jansen, 2016). Another aspect is the influence of the elements time and volume on the static liquidity (Current ratio) and dynamic liquidity (C2C cycle: DIO - DPO + DSO)⁸ of the company.

Figure 4 depicts all the factors that influence the cost of working capital and liquidity in one coherent model (Jansen, 2017), in which we can distinguish

- Input variables: ARs, APs and Inventory (with sub-instruments)
- Throughput variables (Business process)
- Output variables: Costs of working capital and Liquidity

In business practice, these input variables can be influenced by a mix of different instruments, such as:

- Account Receivables
 - Collection policy
 - Factoring
- Inventory
 - Lean manufacturing
 - Just In Time approach
 - Vendor Managed Inventory (VMI)
- Account Payables
 - Payment policy
 - Reversed factoring (RF)
 - Dynamic Discounting (DD)

In the present study we focus on the following collaborative SCF instruments:

- Operational:
 - Reversed factoring
 - Dynamic discounting
- Tactical
 - Equipment financing

The European Banking Association defines SCF in the following way: “The use of financing and risk mitigation practices and techniques to optimise the management of the working capital and liquidity invested in supply chain processes and transactions. SCF is typically

⁸ Cash to Cash Cycle is defined like Days In Inventory Outstanding (DIO) – Days of Payables Outstanding (DPO) + Days of Sales Outstanding (DSO), (Arnold, 2008; Berk & DeMarzo, 2007).

applied to open account trade and is triggered by supply chain events. Visibility of underlying trade flows by the finance provider(s) is a necessary component of such financing arrangements, which can be enabled by a technology platform" (BAFT, EBA, FCI, ICC and ITFA, 2016). This EBA definition is well in line with the conceptual model outlined above. In the same publication, EBA also explains each of the above mentioned Supply Chain Finance instruments:

Open Account:

Refers to trade transactions between a seller and a buyer where transactions are not supported by any banking or documentary trade instrument issued on behalf of the buyer or seller. The buyer is directly responsible for meeting the payment obligation in relation to the underlying transaction. Where trading parties supply and buy goods and services on the basis of open account terms an invoice is usually raised and the buyer pays within an agreed time frame.

Factoring:

Factoring is a form of Receivables Purchase, in which sellers of goods and services sell their receivables (represented by outstanding invoices) at a discount to a finance provider (commonly known as the 'factor'). A key differentiator of Factoring is that typically the finance provider becomes responsible for managing the debtor portfolio and collecting the payment of the underlying receivables.

Vendor-managed inventory (VMI):

A family of business models in which the buyer of a product (business) provides certain information to a vendor (supply chain) supplier of that product and the supplier takes full responsibility for maintaining an agreed inventory of the material, usually at the buyer's consumption location (such as a store). It is analogous to the holding of consignment stock.

Approved Payables Finance (APF) or Reversed Factoring (RF)

A buyer-led programme within which sellers in the buyer's supply chain are able to access finance by means of Receivables Purchase. The technique provides a seller of goods or services with the option of receiving the discounted value of receivables (represented by outstanding invoices) prior to their actual due date and typically at a financing cost aligned with the credit risk of the buyer. The payable continues to be due by the buyer until its due date.

Dynamic Discounting (DD)

Describes a number of methods through which early payment discounts on invoices awaiting payment are offered to sellers and funded by the buyer. The service is dynamic in the sense that the earlier the payment the higher the discount."

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Supply Chain Finance and SMEs

Supply Chain Finance is still a rather new phenomenon in SCM and Finance & Control. As for MNEs (multinational enterprises), SCF is a more common practice (Steeleman, 2014). However, SCF seems to be relatively unknown to SMEs.

On the other hand, it can be assumed that SCF offers the same opportunities for SMEs as for MNEs, and that SMEs might therefore profit from SCF just like their bigger counterparts. Nevertheless, significant differences exist between large companies and SMEs that make it impossible to draw simple analogies between SCF adoption and usage of MNEs to small and medium enterprises. However, empirical data on SME usage of SCF instruments is still sparse and little is known about SME's extent of SCF adoption and reasons for adopting or dismissing SCF.

The main research question to be addressed in the following is:

What drives or hinders the application of SCF instruments by SMEs?

The sub-questions are:

- Are SMEs open to adopting collaborative supply chain finance approaches?
- Are SMEs applying SCF instruments ?
- What are the SMEs motives behind adoption or dismissal of SCF instruments?

Methodology and research model

There is a limited number of empirical studies conducted so far which are researching the adoption of and attitude towards collaborative Supply Chain Finance approaches and instruments. While a lot of concepts about collaboration in supply chains were discussed in the last 20 years, empirical studies in context with financial collaboration indicate the existence of certain pre-requisites for successful collaboration, e.g. a common strategy between finance and purchasing departments on an intra-company level, the bridging of geographical and cultural distances as well as the willingness to share information (Wandfluh, Hofmann & Schoensleben, 2015). Other pre-requisites identified are e.g. the track record of suppliers, a trustful relationship and – particularly among the buyers – a good credit rating and a minimum transaction volume required which is varying considerably depending on the industry (Liebl, Hartmann & Feisel, 2016). Another approach of assessing collaboration within supply chains is related to measuring financial potential within supply chains based on working capital data e.g. (Hofmann & Belin, 2011). Vázquez et al (2016) examined the level of financial cooperation between Tier 1 vs. Tier 2 suppliers and resulting productivity impacts in the Spanish automotive components sector based on working capital data and identified a non-collaborative approach with negative productivity and supply chain stability effects.

Studies about the adoption of supply chain finance are usually focused on specific instruments – in particular reverse factoring. There are numerous case studies particularly about large companies' adoption and implementation of Supply Chain Finance / Reverse Factoring e.g. by De Boer, Van Bergen and Steeman (2015) and Wuttke et al. (2013) – indicating different motivations e.g., including working capital improvements by extending payment terms, or supporting their suppliers with improved cash flows. We did not find studies focusing particularly on the adoption of SCF approaches and instruments by SMEs. Closest to this focus was the study of De Goeij, De Graaf-Muller and Steeman (2016) who have researched the adoption of reverse factoring by logistics service providers from 7 case studies – mainly SMEs. As main impediments to the adoption of reverse factoring they identified the lack of knowledge about the instrument, inefficiencies in the payment process and overall collaboration with buyers.

Overall, it can be concluded that studies dealing with collaborative supply chain finance and the adoption are illuminating the subject from quite different angles and are not providing a consistent picture. The studies are particularly focusing either on large companies and/or specific instruments, particularly reverse factoring. A huge research gap can be noticed in regard to SMEs although they are even an explicit target from certain political programs which try to improve the situation of SMEs financing situation. Also, there are no systematic comparisons between markets by asking the question whether there are differences in the adoption from a regional / national view point.

Research concept

Major goal of our exploratory research approach are empirical indications of major criteria that are relevant for the adoption of collaborative supply chain finance approaches and instruments by SMEs. As the empirical study concept is of an exploratory nature, the results are not representative – the final objective is to develop and derive research hypotheses which can build the basis for broader empirical research. The target industry of the research is the automotive industry due to a number of reasons: The automotive industry is mature, has a quite diverse supply chain structure regarding the size of suppliers and is an early-adopting industry of specific SCF instruments like reverse factoring (Templar, Hofmann, & Findlay, 2016, page 107). As existing literature and studies indicate, size and minimum transaction volume may matter in a financial collaborative context (Liebl, Hartmann & Feisel, 2016) so the definition of SME in this study is differing from the EU/OECD definition of SMEs. While this definition quantitatively limits SMEs to a size of up to € 50 million turnover or € 43 million balance sheet total and less than 250 staff (European Commission, 2015) our definition extends this size. As an example, in North America the definition of SMEs is depending on industry characteristics (cf. NAICS standards) - manufacturing industries tend to require significantly higher balance sheet totals, staffing and turnover compared to other industries. A medium-sized company in manufacturing will on average be particularly larger than a medium-sized company e.g. in the retail business. As one of our intentions is to derive conclusions about potential size impact in the adoption of collaborative SCF instruments the scope of companies targeted was in the range of € 25 million up to € 550 million turnover. The largest two participants in the study qualify as large companies also from the NAIC standard perspective and act as indicators whether size is a differentiator between SMEs and large companies.

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Due to the exploratory nature of the research, the scope of the study was limited to in total 8 companies – 4 automotive suppliers in Germany, and 4 in the Netherlands.

To triangulate and supplement the interview results of the automotive suppliers with financing service provider observations and experience, in both countries a commercial bank with significant business in the SME market segment was included in the study. This perspective implicitly extends the scope of manufacturing companies covered by this research as the banking experts are involved in selling related SCF services/products within this industry segment and therefore have both an understanding of the industry as well as their adoption criteria and rationale.

Data Collection and Analysis

Data were collected through semi-structured interviews, based on elaborated interview guidelines, which were jointly developed in English and translated into German and Dutch respectively. The interview guidelines were tested by a master student from HAN University with a professional background in this industry.

Also, the interview guidelines were differentiated by target group i.e. automotive supplier and financial service provider / banks.

The major part of the interview was targeting

1. Assessment and attitude towards collaborative SCF approaches / instruments
2. Adoption of collaborative SCF instruments including supply chain leasing and asset shifting, working capital management and related instruments, in particular dynamic discounting and factoring/reverse factoring.
3. Assessment of the potential of respective SCF approaches/instruments and suggestions to promote their application.

A letter was sent to participating companies upfront to ensure that participants having an overview and understanding of the subject matter, combined with the request to forward / make contact with other appropriate interviewees.

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All supplier interviews were conducted on director or high management level to ensure that the interviewees have at least a cross-functional and strategic overview over the company's business management or an executive role.

In the majority of cases, management with finance responsibility (i.e. CFO/ Finance director or business controller) was represented in the interviews, otherwise the General Manager, the commercial director or director SCM. On the bank/financial service provider side, the interviewees were experts in the commercial customer segment – the interviewee at a large German bank is regional head of transaction services. More detailed information about participating companies' and interviewees' demographics is provided below:

German Cases (sorted by size)

	Case 2	Case 7	Case 1	Case 8
Company Business Indicators	Staff: approx. 160 Sales: euro 27 M Tier 2 (sometimes tier 1)	Staff: approx. 900 Sales: euro 150 M Tier 2 supplier	Staff: approx. 1.000 worldwide thereof: 700 in German HQ Sales: euro 150-150 M Tier 3/4	Staff: approx. 4.000 worldwide Sales: approx. euro 550 M Tier 1/2
Interviewee Function	General Manager	Director Global SCM	Senior Executive VP Sales	Director Finance

Dutch Cases (sorted by size)

	Case 5	Case 6	Case 4	Case 3
Company Business Indicators	Staff: approx. 80 Sales: - automotive: euro 10 M - total: euro 25 M Tier 2 supplier	Staff: approx. 700 Sales: euro 80 M Tier 1 supplier	Staff: approx. 1.000 Sales: euro 124 M (thereof. approx. 90% automotive) Tier 1/2 supplier	Staff: approx. 1.800 worldwide Sales: N/A Tier 1/2/3 supplier
Interviewee Function	Business Controller	CFO	Finance Director	Commercial Director (Automotive BU) Business Controller

All interviews were conducted and recorded by the authors. Names of companies or interviewees are not mentioned in this paper to ensure confidentiality of data and anonymity of participants.

Empirical findings

As outlined above, the major part of the interviews was targeting the suppliers' assessment and attitude towards collaborative SCF approaches, adoption of collaborative SCF instruments and the assessment of the potential of respective SCF approaches/instruments and suggestions to promote their application.

1. Assessment of and attitude towards collaboration

- a. Some suppliers expressed openness to collaborative approaches, but in general the interviewees' assessment of collaboration in the automotive industry is widely negative. Collaboration in the sense of trustful cooperation is considered not to occur due to the competitive situation, the margin pressure, the traditional business culture in the industry and the dominant role of OEMs in the supply chain.
- b. Independently of the size or nationality of the supplier, trustful cooperation is rather considered to depend on personal relationships and may occur rather on a technical or manufacturing than a commercial/sales level.
- c. Asked for the relevance of supply chain finance and related collaborative instruments, most interviewees considered them not to be relevant at present for their business – referring either to the lack of cooperation in the industry but also to own company culture or no need from a financial point of view. Also, the indication from the interviews were that most of the participating interviewees are not aware of SCF instruments. This is in line with other research findings involving small and medium sized companies (De Goeij, Onstein & Steeman, 2016) as well as the opinion of the banking expert interviewed.

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In the following key findings regarding working capital management – and more specifically dynamic discounting and reverse factoring as well as supply chain leasing and asset shifting for the represented companies and the related individual SCF instruments are outlined.

2. SCF Instruments

a. Working Capital management

According to the supplier interviews, the most frequently raised aspect in working capital was the inventory management – this was explicitly and with clear priority raised in most of the interviews.

Receivables management was explicitly brought up in more than half of the cases – and the clear impression is that the larger the company the higher the receivables are on the management agenda. The smallest companies in the range focussed on inventories and customer delivery only – the larger ones also on financing and working capital ratios. Interestingly, there are no cases of payables management being raised in context of working capital management.

i. Dynamic discounting

- ii. Dynamic discounting was not known to any of the interviewees. Those few respondents who referred to conventional payment terms with discounts were indicating that they are not offering discounts for earlier payments to their customers due to the low interest level. The reasons to offer it were either not to stress their credit limit or to react to specific requests for discounts by their customers. Only one respondent explicitly found the concept appealing. From the bank's perspective this instrument is rather considered to be applied directly between supplier and customer and therefore not be promoted.
- iii. Factoring and Reverse factoring

Neither factoring nor reverse factoring is applied by any of the companies involved in the study.

Factoring appears to be well-known as an instrument in general, but for different reasons not considered relevant – either not required from a financing perspective due to use of other short-term financing instruments or due to sufficient own resources, or to be an issue to customers. In two cases, the instrument was considered to be too expensive compared to other alternatives – which indicates that none of the companies were involved in the study in a particularly tight financial situation.

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Reverse factoring appeared not to be known by approx. half of the companies involved in the study – interestingly the level of knowledge appeared to be higher with the Dutch participants.

Only two of the companies received one or multiple offers to participate in a RF scheme originated by an OEM or Tier 1 supplier – these were among the largest companies within the scope of this study. This as well as the statement of one small participant, that they were uninteresting from customers' point of view due to the limited size/turn-over, is in line with the bank's experience as well as previous findings that turn-over with the originator and consequently size matters. Reasons for not participating in the offered RF schemes were in one case a mismatch in the banking connection, and in the other case an alternative instrument of refinancing – by selling receivables through Asset Backed Securities (ABS). However, one of those two companies - the largest one participating in the study – is considering steps to both participate in customer RF schemes in the future and to potentially implement an RF scheme as originator for its own payables management. Overall, according to the study results it can be summarized that small companies often do not even know about reverse factoring as they are too small from both the customers and the banks point of view to be an appropriate candidate to either be an originator themselves or to participate in a customer's reverse factoring scheme.

According to bank's experience, even if smaller companies are approached there are a number of obstacles which may prevent them to participate, e.g. mistrust or legal complexities.

b. Supply chain leasing and asset shifting

The use of leasing among supply chain partners depends on the business / product of the supplier. As all companies participating in the study except one are automotive raw material or parts suppliers, downstream leasing does not play a role. In contrast, for one supplier in the machinery industry, selling standard machines on a leasing basis, employing financial intermediaries is a very common approach in certain well-known markets. None of the interviewees of parts suppliers mentioned whether they bought their machinery on a leasing basis.

In regard to asset-shifting, there was a remarkable difference from an international perspective to be noticed. The term asset-shifting by Dutch companies was interpreted much more broadly, particularly referring to acquisitions of supply chain companies. Accordingly, such considerations were brought up by three of four Dutch suppliers but no German suppliers. From the latter's' perspective the key example of asset shifting across supply chain partners is related to tooling. This appears to be quite usual for parts manufacturers that the tooling is financed and provided by the customer to the supplier – independently from the size of the supply chain partners.

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Overall, leasing and asset shifting appears to be quite common in the automotive industry and being independent from the company size.

3. Conclusions: Assessment of the potential of SCF for it's own company and suggestions to promote SCF

Being asked which potential the interviewees see from collaborative supply chain finance instruments for their company, the responses were quite diverse. The interviewees from the smaller companies did not see a major short-term potential of innovative instruments for their normal business and only partially expressed that there may be a potential in future. Independently of the market, the larger players particularly considered reverse factoring as an interesting instrument for working capital management and see potential at least in the future. The largest company involved in the study considers implementation of RF both on the payables and receivables side. However, this player can due to its size be categorised outside the SME segment.

Only in three cases were suggestions raised as to how to further promote innovative SCF instruments - and these were mainly the larger companies in the study. The suggestions raised included cultural changes required in the own company, the need for banking partners open to SCF solutions and a comprehensible and trustful communication of win-win potential of collaborative approaches/ instruments.

The overall conclusion / hypothesis is that SMEs can only benefit from selected and more conventional aspects of collaborative supply chain finance and are for several reasons quite remote from applying and benefiting from innovative SCF instruments. The banks – though having an interest in generating new/more business - have only limited potential in accelerating the process of spreading innovative instruments among SMEs e.g. due to cost or critical mass reasons.

Discussion and Conclusion

The present study has tried to shed some light on the current usage of supply chain finance instruments among SMEs in the automotive industry in the Netherlands and in Germany. The authors fully recognize the limitations of the empirical approach, which is based on a small number of case studies only. Given the exploratory nature of the underlying research question, though, this approach is deemed appropriate to derive a number of empirical findings. These findings are of an indicative nature only and do not claim any statistical validity. The authors put them forward as hypothesis, which can form the basis for subsequent empirical research:

Hypothesis 1 Although uptake of SCF instruments is rather low in general among SMEs, there seems to be a tendency for larger companies to adopt SCF instruments more readily than smaller companies. SCF adoption does not seem to differ between SMEs in Germany and in the Netherlands.

Hypothesis 2 Adoption of SCF instruments is influenced by an SME's proximity to the focal company of the entire supply chain. In the case of automotive supply chains, OEMs (car manufacturers) typically take the role of the SC focal company. The propensity to adopt SCF instruments therefore is higher among tier 1 supplier companies than tier n+1 companies.

Hypothesis 3 SMEs in the automotive industry place considerable effort on management of their working capital. Working capital management, though, is not done with a comprehensive supply chain perspective. Optimization of working capital is therefore done on a company-by-company basis and not across supply chain partners. The more SCF

instruments readily adopted, the more direct their effect is on an SME's own working capital.

Hypothesis 4 The automotive industry is marked by intense competition among companies and entire supply chains. Collaborative approaches are not widespread among SME suppliers and OEMs. If pursued at all, collaboration is used on a selective basis with very important supply chain partners only.

Hypothesis 5 Banks (and other SCF service providers) play a crucial role in adoption and usage of SCF instruments. They can act as accelerators and multipliers, helping SMEs

The case studies among Dutch and German SMEs have clearly shown that SCF is not a sure-fire success. Supply chain partners in general and SMEs in particular are very wary of adopting SCF instruments that do not promise immediate benefits. Given the intense competition in the automotive industry, collaborative approaches to supply chain finance such as the ones investigated in our case studies are often not the method of choice. In summary, SMEs want to see a convincing business case and clear benefits for their own financial position before adopting SCF instruments. It is probably up to the banks and the big OEMs to promote these even more in the future.

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