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Abstract

Since the 2008 financial crisis, attention to supply chain finance has increased, as companies seek alternative funding sources. In this context, one scheme for accessing short-term credit has emerged as a promising option for suppliers, especially micro, small and medium-sized enterprises (MSMEs): reverse factoring (RF). Under RF, suppliers sell their accounts receivable to financial intermediaries to get access to instant cash, while buyers (anchor companies) make an irrevocable payment guarantee (confirmation) to those financial intermediaries, with the objective of increasing the credibility of the payment obligation and reducing risks. This paper discusses relevant concepts and reviews theoretical and empirical evidence related to RF. RF may be a beneficial financing tool for both suppliers and buyers, contributing to supply chain development. However, there are potential trade-offs to this approach which need to be carefully assessed. Overall, more specific data on the use of RF and quantitative research on its impacts is needed both for advancing the academic and managerial literature on this topic and for designing better-targeted public and private interventions in this area.

JEL codes: D20, G20, L20, O16, O54.
Keywords: Supply Chain Finance, Factoring, Reverse Factoring, MSMEs, LAC.

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1. Introduction

Supply chains are essential structures of the modern economy. Effective supply chain management (SCM) has therefore become crucial for companies aiming to reduce working capital costs, increase productivity, and grow. The economic literature has documented the benefits of effective SCM showing that successful companies develop high levels of efficiency and integration with their suppliers (Fawcett et al., 2008; Razaei et al., 2015). However, research on financing issues within the supply chain has lagged behind (Pfohl and Gomm, 2009; Seifert and Seifert, 2011).

Firms need access to financing for key activities such as investment in fixed assets, working capital management, trade, and innovation. Without access to adequate financing, firms may be unable to purchase inventory, make timely payments to suppliers or employees, and may face limits in their capital investments and technology adoption, particularly when they are exposed to economic shocks (Levine, 2005).

This issue is particularly relevant for firms in developing countries, where access to finance is limited by more substantial macro-level barriers (i.e., volatile capital flows, less macro-prudential policies, institutional weaknesses, and inefficient banking systems) and micro-level barriers (i.e., asymmetric information,[1] low economies of scale and lack of collateral (Ibarraran et al, 2005). Bank concentration in developing economies has also been identified as a limiting factor for firms' access to finance (Love and Martinez Peria, 2015). These traditional market failures are exacerbated by the limited supply of adequate financial products and services and the existence of high levels of informality in the economy.

These barriers to accessing finance lead to a misallocation of resources and inefficient cash management choices (Mongrut et al., 2014; Payne and Bustos, 2008). This contributes to stagnation in firm growth and reduces productivity (Aghion et al., 2007),[2] particularly for micro, small and medium-sized enterprises (MSMEs), which typically face the highest credit constraints (Gertler and Gilchrist, 1994; Beck et al., 2005; Banerjee and Duflo, 2014).

Lack of credit is a major concern for Latin American and Caribbean (LAC) countries in particular. MSMEs represent 99% of firms in the economy, employ 60% of the labor force, and represent 40% of GDP (Dini and Stumpo, 2018). However, they receive less than 15% of credit provided to enterprises (CEPAL, 2013).

In this context, access to alternative sources of financing is critical for firm survival and growth in LAC. Since the 2008 financial crisis, the community of SCM researchers and practitioners has paid growing attention to supply chain finance (SCF) as a viable financing alternative. SCF refers to the planning, control, and optimization of the financial flows within a supply chain, with the objective of reducing financial costs. In practice, SCF consists of the implementation of diverse financial solutions by buyers and suppliers, together with financial institutions. Within SCF, one scheme has

[1] Financial institutions (FIs) may struggle to distinguish between borrowers with profitable or unprofitable projects. In addition, since MSMEs are riskier than larger firms on average, FIs tend to offer less credit to this segment than what they would in a perfect information scenario. Informality further exacerbates this issue.

[2] For evidence at the macro level see Honohan (2003), King and Levine (1993), Levine (1997) and Jayaratne and Strahan (1996). For evidence at the micro level see Demirgüç-Kunt and Maksimovic (1998) and Rajan and Zingales (1998).

emerged as a promising option for suppliers to get access to short-term credit: reverse factoring (RF).[3]

Under RF, suppliers sell their accounts receivable to financial intermediaries to get access to instant cash, while anchor firms make an irrevocable payment guarantee (they confirm the invoices) to those financial intermediaries, with the objective of increasing the credibility of the payment obligation and reducing risks. Improvements in technology and the emergence of a variety of fintech players have allowed more anchor firms to offer RF to their suppliers and to effectively manage this scheme (Hurtrez and Salvadori, 2010).

This paper discusses relevant concepts and reviews theoretical and empirical evidence related to RF. The following are the top 10 findings that emerge from the analysis:

i) **Win-win.** Reverse factoring can benefit both anchor firms and their suppliers simultaneously.

ii) **Multiple benefits.** The main benefits of reverse factoring may include minimizing market and coordination failures to reduce risks, optimizing working capital within the supply chain, improving trust and commitment between anchor firms and suppliers, and strengthening value chains.

iii) **Weaker contract enforcement may lead to stronger uptake.** For example, reverse factoring may be an attractive alternative in developing countries where traditional bank credit is limited due to difficulties in drawing up debt contracts, collateral enforcement, and collecting in the case of default.

iv) **Greater working capital needs and more MSMEs means more reverse factoring**. Reverse factoring is more common in more working capital-intensive sectors and among suppliers that are MSMEs and/or more credit constrained.

v) **Buyers are influencers.** Adoption of reverse factoring is greater and faster if the buyer has high procurement volumes, more influence over its suppliers, and operates in an industry with longer payment terms.

vi) **See it to believe it.** Uptake of reverse factoring by suppliers may be slow at first but increases dramatically when other companies observe the benefits obtained by early adopters.

vii) **Context matters.** Suppliers use and benefit more from reverse factoring in the context of: (a) larger interest rate spreads in external financing and/or more constrained access to credit compared to the anchor buyer; (b) more aggressive working capital policies; (c) higher demand volatility for their products or services; and (d) higher risk-free interest rates.

viii) **Be careful of payment extensions.** The extension of payment terms by the buyer while implementing a reverse factoring scheme induces a trade-off for the supplier and therefore needs to be carefully assessed.

[3] Also known in the market as approved payables finance, confirming, confirmed payables, buyer-led supply chain finance, and supplier finance.

ix) **Payment extensions may work in some cases.** Payment extensions in the context of reverse factoring are less harmful for suppliers in industries which already have long payment periods and when their buyers have good credit ratings and high procurement volumes.

x) **Build the evidence base.** While many studies highlight the potential of reverse factoring for financing MSMEs, more rigorous data analysis on the use and impact of this approach is needed both for advancing the academic and managerial literature on this topic and for designing better-targeted public and private interventions.

The rest of the paper is organized as follows. Section 2 introduces value chains and their relevance in driving economic growth. Section 3 discusses key concepts related to SCF. We define the concept of the cash conversion cycle and explore how its length is associated with the health of firms in LAC. We also define SCF, characterize some of its tools, and discuss how it affects both firms and the economy. In Section 4, we discuss how traditional factoring works, prior to analyzing the specific aspects of RF. Section 5 analyzes RF, theoretical and empirical evidence on the determinants of successful RF, and its effects on firms. Section 6 explores the state of factoring and RF in LAC, and Section 7 concludes.

2. Value Chains and Economic Growth

A value chain is a series of activities of a firm operating in a specific industry. Products pass through activities of the chain sequentially, gaining value at each step along the way. The chain of activities gives the products more added value than the sum of independent activities would (Porter, 1985). The idea of the value chain is based on the process of organization, that is, the idea of seeing a manufacturing (or service) organization as a system made up of subsystems each with inputs, transformation processes, and outputs. This involves the acquisition and consumption of resources – money, labor, materials, equipment, buildings, land, administration and management. A value chain has at least three key activities: (i) procurement and inbound logistics (acquisition of inputs and services from suppliers); (ii) operations (transformation of inputs into outputs); and (iii) outbound logistics (all activities required to collect, store, and distribute the output).

Increasing participation in value chains and improving their performance is essential for economic growth. Theoretical and empirical evidence indicates that (i) MSMEs that participate in value chains perform better; and (ii) countries that participate in global value chains have higher productivity and greater economic growth (Calatayud and Ketterer, 2016).

Being part of an effective value chain can have several benefits for MSMEs. Integration, coordination, and collaboration among the members of a value chain have been largely associated with gaining competitive advantages (Porter, 2001). These gains are mainly related to cost reduction (e.g., reduced process costs, inventory levels, and product costs) (McLaren, Head and Yuan, 2002), working capital optimization (reduced cash-conversion cycle, i.e., faster collection of receivables, reduced inventory cycles and/or improved payment terms), and enhanced responsiveness to market needs (e.g., cycle time reduction, service level gains, and market intelligence gains), which result in higher profits and increased return on assets (ROA) and investments (ROI) (Johnson and Templar, 2011).

Participation in value chains can also contribute to increasing and improving access to finance (Pfohl and Gomm, 2009). The integration of information on the trade flow along the value chain allows for better risk assessment and management, as well as the use of financial products with lower risk profiles (e.g., self-liquidating, event driven, short-term and uncommitted finance). Lastly, firms can benefit from the transfer of knowledge, technology, and innovations that spill over along the value chain (Isaksson et al., 2015). Thus, by integrating into value chains, MSMEs are better able to overcome traditional limitations to growth and improve their performance (Machpherson and Wilson, 2003; Demirbag et al., 2007; Arraiz et al., 2013).

Global value chains (GVCs) have been the primary booster of global trade over the past two decades (Ignatenko et al., 2019). GVCs encompass the many fragmentated production processes in which intermediate goods are shipped across borders multiple times, with each exporting country adding value along the production chain to final consumption. Many of today's industrialized countries developed by building entire value chains within their own territories, with all the challenges, costs, and time that this entails (Baldwin, 2012). The emergence of GVCs, however, allows countries to industrialize much more rapidly by joining international production networks rather than by building entire value chains at home. That is, firms can participate in one or a few phases involved in the production of a final good, without having to develop proficiency in all production stages.

The gains from participating in GVCs can also be measured in terms of increased trade opportunities. The fragmentation of production and the relocation of slices of the value chain across various countries open new opportunities to increase and diversify trade and production. This is especially important for countries in LAC where exports are highly concentrated in few industries, particularly in natural resource-intensive sectors (IDB, 2014). Firms in developing countries might also benefit from GVCs by becoming upstream suppliers to international companies (e.g., multinationals) located in their home countries. In both cases, GVCs represent an opportunity for MSMEs to upgrade and increase their direct and/or indirect participation in the global economy (Giuliani et al., 2005).

Finally, participation in GVCs has been associated with other economic benefits. Studies have shown that productivity gains linked to GVCs can arise through multiple channels, including: finer division of labor across countries (Grossman and Rossi-Hansberg, 2008), greater availability of input varieties (Halpern et al., 2015), and increased competition, knowledge, and technology spillovers (Poon, 2004; Kawakami and Sturgeon, 2011; Cafaggi et al., 2012). While some of these gains are associated with international trade more generally, the impact on productivity and economic growth is larger if one considers the multiple-sector dimension, the input-output linkages, and the various actors involved in a GVC (Ossa, 2014; Caliendo and Parro, 2015).

3. Supply Chain Finance

3.1 The Root of the Problem: Long Cash Conversion Cycles

Suppliers and buyers in a value chain are financially bound by trade credit. Trade credit is a type of short-term credit in which the buyer pays the supplier with a determined time-delay after receiving the product from the supplier (usually between 30 and 90 days). In other words, trade credit is a "loan" from the supplier to the buyer of the product. For this, suppliers issue an invoice and record an account receivable,

and the buyer records an account payable. This invoice is an illiquid asset for the supplier until payment is received. Trade credit is the rule in modern economy transactions. In fact, Williams (2008) estimates that 90% of merchandise traded worldwide is backed by trade credit.

A direct consequence of trade credit (compared to payment at the time of delivery) is that while suppliers contribute to financing their clients, it may take longer for them to receive cash, which may make it harder for them to finance their own production cycle. This problem is exacerbated because suppliers are typically MSMEs, which are the most credit constrained enterprises and have the most difficulty obtaining cash elsewhere. Recent evidence shows that a lack of short-term financing may be as much of a constraint to firm performance as a lack of long-term financing for capital investments, at least in certain contexts (Aparicio et al., 2021).

The cash conversion cycle (CCC) is defined by the number of days it takes for an investment in current assets to come back to the firm as cash, and it is highly related to the accounts receivable structure. In other words, it is the time it takes for a company to convert its investments in inventory and other resources into cash flows from sales. As firms extend trade credit, it takes longer for them to receive cash, therefore elongating the CCC. While there are studies arguing both for and against different CCC lengths, more recent evidence suggests that firm performance may be negatively affected by the lack of cash associated with a long CCC.

A longer CCC may improve some aspects of firm performance. For example, firms can extend trade credit to customers to strengthen their relationships, and larger inventories can prevent interruptions and loss of business due to scarcity (Ng et al., 1999; Wilner, 2000). On the other hand, several studies find that reducing the length of the CCC through an aggressive liquidity policy can enhance a firm's profitability and value (Raheman and Nasr, 2007; Uyar, 2009; Baños-Caballero et al., 2012; and Lee, 2015) and reduce the likelihood of bankruptcy (Soenen 1993), while aggressive working capital policies are associated with negative returns (Afza and Nazir, 2008). In addition, firms with abundant cash can produce higher than average returns on assets (Czyzewski and Hicks, 1992).

A more recent study by Chang (2018) analyzes this dichotomy and finds that the effect of changes in the CCC length on firm performance may vary depending on the current length of its CCC. Using World Bank data for 46 countries and 31,612 firms, the study finds a negative relationship between a firm's CCC and its profitability and value, supporting the idea that a shorter CCC policy can improve firm performance. However, this effect reduces or reverses for firms with very low CCCs. So, it seems that there is an inverted-U shaped relationship between the length of the CCC and firm performance.

The length of the CCC is a key issue for LAC firms. In principle, a long CCC would not be a problem if firms could resort to borrowing to finance their working capital while waiting to obtain cash from sales. However, in LAC, cash availability is limited due to credit constraints, particularly for MSMEs. Lack of cash availability contributes to LAC firms' low survival rates, which is around 50% after five years (Thompson and Cabrera Hernandez, 2020).[4]

[4] Excess of cash could also destroy firm value via a loss of the alternative return from short term investment (Payne and Bustos, 2008; Mongrut et al., 2014).

In contrast to MSMEs, large firms may have more power to negotiate payment terms of accounts payable and receivable that suit their CCC needs and are subject to fewer financing restrictions since they have greater access to the financial market at lower costs. Indeed, as pointed out by Mongrut et al. (2014), the CCC is negatively correlated with firm size, that is, larger firms have shorter CCCs, and with industry concentration, which suggests that large firms are using market power to reduce their CCC.

Given that MSMEs are usually simultaneously affected by long CCCs and credit constraints from traditional financial institutions, alternatives are needed to help MSMEs finance their working capital while waiting to receive cash from sales. Supply chain finance has emerged as a viable solution to this problem. In particular, alternative financial instruments such as factoring and reverse factoring can help suppliers finance their production cycle, as discussed later in this document.

3.2. The Benefits of Supply Chain Finance

Supply chain management can be defined as the coordination among stakeholders to optimize the flow of goods, information, and finance along the supply chain (Mentzer et al., 2001). While collaboration to manage flows of goods and information between supply chain partners is relatively common, this is not usually the case for cash flows (Zhao et al., 2008), which can lead to supply chain disruptions if not well managed (Boissay and Gropp, 2007).

Supply chain finance (SCF) has received increasing attention in recent years (Pfohl and Gomm, 2009) and can be defined as the optimized planning, management, and control of supply chain cash flows to facilitate efficient supply chain material flows. In other words, SCF extends the scope of financial management from optimizing a single firm to optimizing the entire supply chain of a firm, and its success depends on the cooperation between the different parties involved (see Box 1).

Box 1. Standard Definition of Supply Chain Finance

Recognizing the need for standardization and consensus, in 2016 the Global Supply Chain Finance Forum published the guide *Standard Definitions for Techniques of Supply Chain Finance*, which aims to create a consistent and common understanding in the industry around Trade Finance and Supply Chain Finance products. The Forum refers to "Trade Finance" as a supra category, encompassing "a range of Traditional Trade Finance techniques and evolving Supply Chain Finance techniques", and proposes a standard definition of Supply Chain Finance as "*the use of financing and risk mitigation practices and techniques to optimize the management of the working capital and liquidity invested in the trade and financial flows along end-to-end business supply and distribution chains, domestically as well as internationally*".

The main benefits of SCF come from reducing market failures. With perfect capital markets, a firm's value does not depend on the way it chooses to finance its investments. However, due to the macro and micro barriers that affect access to appropriate financing sources, particularly for firms in developing countries and MSMEs, alternative financing mechanisms can play an important role for firms

involved in the value chain (Falcão, 2014). Among the potential benefits of SCF is reduced and/or optimized working capital within the supply chain, leading to higher profitability (Marchi et al., 2020). In addition to financial benefits, SCF can improve trust and commitment between the buyer firm and its supply chain (Randall and Farris, 2009), and it can also result in higher environmental sustainability. Aljazzar et al. (2018) and Zhan et al. (2018) find that introducing certain financing mechanisms can simultaneously improve environmental and economic performance of the supply chain.[5]

SCF focuses on creating liquidity in a supply chain by exploring various solutions that can be supplier-based, buyer-based, or both. Wuttke (2013) expands the above definition of SCF and identifies two categories: Pre-Shipment SCF and Post-Shipment SCF. Both are particularly relevant in cases of weak working capital positions[6] and lead to risk reductions in upstream supply chains. Pre-Shipment SCF (PreSCF) refers to practices that take place before the actual delivery and invoice release; it aims to improve physical flows in the upstream supply chain by providing short-term loans in the form of advance payments. On the other hand, Post-Shipment SCF (PostSCF), centers on the period after the invoice release, and its most common instruments are factoring and reverse factoring, which we will discuss in the next section.

Anchor firms choose whether to implement PreSCF or PostSCF depending on a series of financial factors. For example, the weaker its working capital position is in relation to its suppliers, the more a buyer will prefer PostSCF over PreSCF. In this case, the benefits of reducing supply chain disruptions would be lower than the cost of increasing its cash flow risk. If, on the other hand, suppliers present relatively weaker working capital positions, the buyer will have incentives to choose PreSCF. This is because increasing its cash flow risk may be acceptable if it would translate into a large reduction in supply chain disruption risk in the process (Wuttke, 2013). However, this rule is moderated by other industrial organization mechanisms. For instance, a buyer may not be interested in PreSCF if it has limited dependence on its suppliers, even when they are facing weak working capital positions. Indeed, single sourcing is often strategically avoided in order to be able to quickly switch suppliers in case of supplier default (Mizgier et al., 2012). Finally, the type of SCF adopted within a supply chain tends to be determined by the anchor firm; if it uses more PreSCF (or PostSCF), its suppliers typically follow suit.

3.3. Supply Chain Finance and MSMEs

Supply Chain Finance (SCF) solutions have the potential to ease traditional barriers and create new opportunities for MSMEs to access formal financial markets and, therefore, increase and/or improve their participation in commercial flows along supply chains. This is possible because SCF products typically (i) rely on the use of information on commercial performance and track records of buyer-seller relationships generated along the value chain; (ii) take advantage of both financial and commercial technologies; and (iii) provide mechanisms to shift risk away (totally or partially) from MSMEs.

[5] For instance, cooperation within a supply chain can mitigate barriers for the implementation of energy efficiency measures (Marchi et al., 2020).

[6] In this context, a “weak” position can be either too low (with a high level of liquidity risk) or too high (with a high level of inefficiency).

(i) **Information flow and approach to risk assessment**. Anchor companies in a value chain usually have an enormous amount of commercial (and financial) information on their suppliers, buyers, and distributors that can be used as input for SCF solutions and, therefore, reduce information asymmetries. Unlike traditional forms of bank finance which focus on balance sheet strength, collateral, and value of supporting guarantees — where MSMEs tend to be weak —, SCF assesses performance history and the "stickiness" of relationships (between buyers and sellers) in a supply chain; therefore, it enables a different approach to risk assessment, often more accessible to MSMEs.

(ii) **Technology**. FIs that offer SCF products typically rely on fintechs and digital platforms to provide finance and risk mitigation solutions which allow for reducing lending costs. By bringing significant efficiencies to onboarding, compliance, servicing, and supervision functions, these technologies make it possible for FIs to evaluate and control risk at a lower cost. E-invoices and the digitalization have played a key enabling role to it. Technology and digitalization improve the bankability of small transactions and increases the profitability of financing MSMEs along the value chain. In addition, financial technologies applied to SCF allow FIs to increase scale by integrating different value chain players into the SCF ecosystem, from multinational companies and MSMEs to individuals and entrepreneurs. Finally, with the digital linkages of multiple processes across multiple organizations, information asymmetry is greatly reduced, allowing for significant improvements in the speed, automation, accuracy, transparency, and security of the commercial and financial flows along the value chain.

(iii) **Financing structures**. Some SCF structures are especially well suited for financing MSMEs because they provide mechanisms to shift risk away (totally or partially) from the FI. For instance, as we will discuss in the next sections, anchor companies can better guarantee payments because they have sales/purchase contracts. Thus, the non-convexity in the recovery cost is less likely to affect lending.

The SCF product categories that typically target MSMEs, directly or indirectly, are Reverse Factoring or Payables Finance (payables solutions where the suppliers of a selected anchor company are MSMEs), Factoring or Receivable Purchase (where buyers of a selected anchor company are MSMEs), and Distributor Finance (where the distributor itself or the distributor's clients are MSMEs).

4. Factoring

4.1 What is Factoring?

In traditional factoring, a supplier sells its account receivable to a factor (an FI) with the objective of receiving immediate cash at the cost of a discount – usually equal to an interest rate plus a service fee. At the time the operation is approved, the factor totally or partially finances the volume of accounts receivable and, if there is a remainder, it is paid at the time the buyer pays its debt to the factor.

Factoring can be done on a recourse or non-recourse basis. In recourse factoring, the supplier is responsible for any deficiency in the payment from the buyer: if the buyer defaults, the supplier may have to compensate the factor. Thus, recourse factoring is

considered similar to borrowing and the receivables continue on the books of the supplier with their associated risk. In non-recourse factoring, the factor buys the account receivable and loses the possibility to make any claim to the supplier if the buyer does not fully cover its obligations. Thus, non-recourse factoring is classified as a sale of receivables. However, although the factor buys the entire receivable in non-recourse factoring, it still does not advance 100% of the face value of the receivable. The difference between the amount advanced to the supplier and the face value of the receivable becomes a cash reserve to cover any payment deficiency incurred by the buyer. *"Thus, even in non-recourse factoring there is risk sharing between the factor and the supplier in the form of this reserve account"* (Klapper, 2006). Therefore, factoring presents two problems that may limit its use, particularly for MSMEs: *"(i) the factor must have confidence that the invoices are genuine; and (ii) the factor must believe that the outstanding invoices will be paid"* (Navas-Aleman et al., 2012).

4.2 Drivers for the Use of Factoring

Some empirical studies explore the macroeconomic drivers for the use of factoring. Using a 10-year panel for 48 high- and middle-income countries, Klapper (2006) tests what country-level characteristics are associated with a higher use of traditional factoring. The main finding is that total factoring turnover as a percentage of GDP is higher in countries with higher GDP per capita and growth rates, which indicates that these variables are positively correlated: when a country's GDP grows, factoring also grows.

Better availability of credit information (e.g., credit bureaus) is also associated with greater use of factoring. However, an interesting finding is that countries with weaker contract enforcement may have greater use of factoring. This suggests that factoring may be a suitable option in countries where traditional bank credit is limited due to difficulties in writing debt contracts, enforcing collateral, and collecting in the case of default. *"The advantage of factoring in this environment is that it involves the sale of receivables, which makes the factor the owner of future payments from buyers, rather than a creditor of the supplier"* (Klapper, 2006, p. 3123). For instance, Bakker et al. (2004) find that countries in Central Europe with Factoring Acts –i.e., legislation recognizing the unique conditions of factoring operations– have a higher ratio of factoring over GDP than countries with no Factoring Acts.

Factoring is especially convenient for firms that face constraints accessing other types of lending, typically traditional bank loans. This is because the credit provided by the lender or factor is more linked to the risk of the account receivable and less to the credit rating of the supplier (the seller of the account receivable). In this way, factoring allows high-risk suppliers to capitalize on the credit risk of their high-quality buyers (Klapper, 2006).

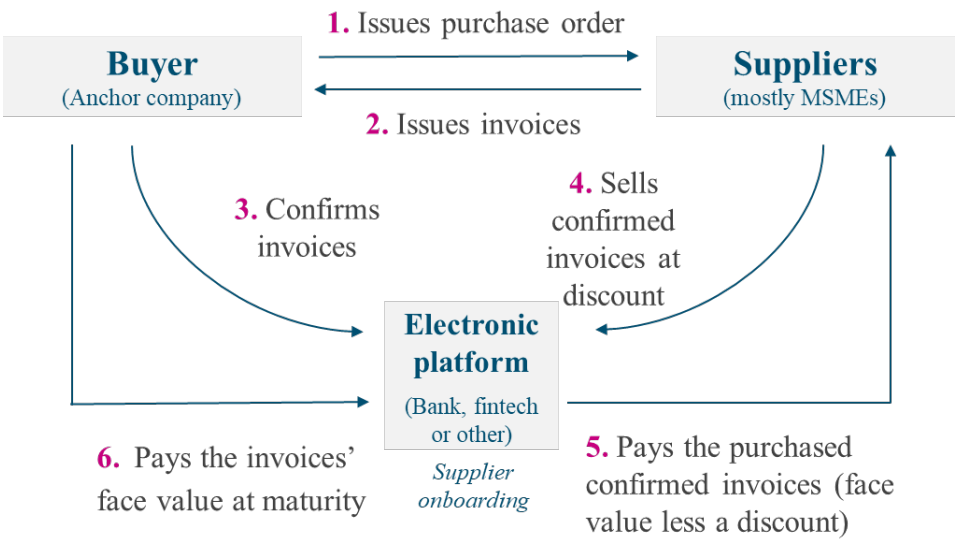
Other empirical studies explore firm-level drivers for the use of factoring. There is a strong association between the use of factoring and different measures of firm size (such as log of total assets, turnover, and value of sales). Smaller firms, which are more likely to be credit constrained, use more factoring (Summers and Wilson, 2000). In addition, there is some suggestive evidence that firms with lower credit ratings are more likely to use factoring (Mian and Smith, 1992). An exploratory analysis in Colombia finds that the use of factoring is more common in more working capital-intensive sectors and among MSMEs relative to larger firms (Guasca and Vergara, 2016).

5. Reverse Factoring

5.1 What is Reverse Factoring?

With the increasing relevance of PostSCF, reverse factoring (RF) arose as another option for suppliers to access short-term financing. In RF, the buyer (anchor company) works with a factor to help their suppliers get a better deal for the sale of their accounts receivable (see Figure 1). To do so, the buyer makes an explicit payment guarantee to the factor with the objective of increasing the credibility of the payment obligation. This allows the factor to reduce the discount rate applied to the invoices bought from the suppliers of the buyer company. Essentially, RF enables suppliers to borrow against the value of accounts receivable at lower interest rates because the discount rate is based on the credit rating of the buyer (an anchor company with high credit rating), rather than the supplier (usually MSMEs with high credit risk), and against the buyer's approved credit limit with the financial institution. Thus, RF addresses the two main limitations of traditional factoring mentioned above by (i) giving the factor confidence that the invoices are genuine; and (ii) providing an explicit payment guarantee from the buyer that the outstanding invoices will be paid.

Figure 1. Reverse Factoring



Source: Author's own elaboration.

RF reduces working capital needs and costs in supply chains and promotes the stability of cash flows (Iacono et al., 2015). In RF schemes, the factor has an essential role in the supply chain by transferring the financial risk from the supplier to the buyer, thereby reducing its risk (Lekkakos and Serrano, 2016). First, the possibility of fraud is reduced as buyers are usually large and high-quality firms (Klapper, 2006). Second, the resources needed to conduct risk assessments decrease because information about the buyer is easier to obtain and the analysis is carried out only once. These advantages allow the factor to reduce its interest rates and service fees, and to release funds earlier (Seifert and Seifert, 2011). This, in turn, directly benefits suppliers and helps them to improve their financial performance through accessing cheaper and faster short-term financing due to risk reduction (Marchi et al., 2020).

RF also benefits the buyer. In practice, RF is often adopted by large companies to extend the payment time to suppliers, benefitting themselves directly with the

reduction of their own working capital costs. For example, Procter & Gamble decided in 2013 to extend its payment terms for all suppliers by 30 days and in exchange, it implemented a RF program (Kouvelis and Xu, 2021). Unilever used a similar approach, for which it achieved a US$2 billion working capital reduction in a three-year time span (Seifert and Seifert, 2011). According to Marchi et al., 2020, *"many firms use this scheme [reverse factoring] to induce their strategic suppliers, who usually are difficult to replace, to grant them flexible, mostly lenient, payment terms"*. However, even when the payment time is not extended, buyers can benefit from RF by requesting other operational concessions from suppliers in exchange for program participation, or by simply having more sustainable and reliable suppliers and improving relationships within the supply chain. In addition, RF also serves as a payment service, with the factor taking care of the buyer's process of paying suppliers (Falcão, 2014). For the above reasons, RF is often cited as a win-win-win financial solution for the supplier, the factor and the buyer.

Fewer studies consider the drivers for using RF (as compared to traditional factoring). Similar to Klapper (2006), which analyzed data previous to the 2008 financial crisis, Falcão (2014) studied if RF use is greater when the economy is growing, based on more recent data. Although Klapper (2006) found that more firms use factoring for working capital financing when their stock of receivables and number of customers increase (e.g., when the economy grows), no association is found in the case of RF. While some companies may use RF when their business grows, others may use it more to reduce financial strains when the economy contracts, as the COVID-19 pandemic has shown (Perez Elizundia et al, 2021). Falcão (2014) also finds that RF is more common in countries with longer government payment terms, which influences the days payable outstanding (DPO) of the whole economy.

5.2 Effects of Reverse Factoring on Firms

The use of RF offers various potential benefits for both suppliers and anchor firms (see Table 1). Regarding suppliers, we can highlight the possibility of obtaining immediate liquidity and better financing terms based on the anchor's risk and working capital optimization. Benefits for the anchor company include a potential extension of DPO, shorter CCCs, and greater stability and less operational risk in the supply chain.

Table 1. Potential Benefits of Reverse Factoring for Firms

Suppliers	Anchor Company (Buyer)
1. Faster collections/receivables and immediate liquidity through the monetization of accounts receivable. This implies reduction of days of sales outstanding (DSO) and length of their cash conversion cycle (i.e., working capital optimization). 2. Competitive financing, at the price corresponding to the anchor company's credit profile, given that the financial provider's risk is the anchor company. 3. Alternative source of financing to bank debt, which allows suppliers to monetize their receivables without increasing their financial liabilities. This is especially relevant for MSMEs, who are mostly affected by barriers to access to traditional financing. 4. Transparency, speed, and efficiency of the operation through an electronic platform / Fintech, which lowers transaction costs typically associated with MSMEs financing. 5. Operational and economic efficiencies. 6. Possibility of financing growth with resources previously tied up in their accounts receivable.	1. Deferred payment of purchases from their suppliers. This implies an extension of days of payables outstanding (DPO) and a reduction of the length of their cash conversion cycle (i.e., working capital optimization). 2. Improved commercial relationships with suppliers. 3. Greater stability and less operational risk in the supply chain. 4. Operational and economic efficiencies.

Source: Authors' own elaboration.

Despite these potential benefits, there are few empirical papers that rigorously estimate the effects of RF programs. Tunca and Zhu (2018) explore the financing intermediation program launched by the Chinese retail giant Jindong. They find that after the program, Jindong achieved a reduction in wholesale prices and an increase in order quantities while reducing suppliers' borrowing costs and increasing borrowing volumes. They estimate that the efficiency gains of the program where 16.7% compared to traditional financing and that both buyer and supplier profits increased by more than 10%.

Seifert and Seifert (2011) conducted a worldwide survey of anchor firm executives who use RF solutions. The survey aimed to assess the benefits of RF and determine key success factors. They received 213 replies from large corporations in 55 countries

(companies with average assets of around US$11 billion), covering all major industries. About 10% of respondents (23 executives) declared using some kind of RF scheme for their suppliers. The authors estimate that these companies reduced their working capital by 13%, representing US$21 million in annual savings for each company (based on average assets of around US$11 billion, an assumed working capital ratio of 30%, and an average cost of capital of 5%).

According to the executives, suppliers also benefited from a 14% reduction in working capital costs and improved relationships with the anchor. Fifty-seven percent of executives declared that RF helps to standardize payment terms and 52% expressed that RF helps to improve supplier relations. They also reported benefits related to operational processes, greater transparency in transactions, and fewer disputes. The authors also find that executives perceive minor drawbacks from RF, with 30% of surveyed firms perceiving no drawbacks at all. However, negative effects are also reported. Forty-four percent of surveyed firms reported reduced credit availability, 31% reported pressure to guarantee payments, and 25% reported other kinds of drawbacks.

5.3 Reverse Factoring: The Trade-offs

A relevant topic explored in the economic literature is related to the trade-offs that suppliers face when adopting RF. The benefits of a RF arrangement for suppliers may be questionable in some cases (Pezza, 2011) as it arguably depends on the buyer's approach to the arrangement. Milne (2009) illustrates this issue through the case of a large corporation implementing a RF program in response to the unpopular decision of extending its payment terms to suppliers from 45 to 90 days. Wuttke et al. (2013) cite an executive of a major chemical firm explaining that the adoption of RF was the supplier's choice, but that the extension of payment terms was out of the question.

The most common view, however, is that both parties can gain efficiencies through RF. Iacono et al. (2015) find that RF can yield direct benefits for all supply chain participants, although these benefits are highly sensitive to market conditions, such as interest rates, the volume of receivables, and supply chain working capital goals. Lekkakos and Serrano (2016) conclude that RF improves suppliers' operational performance and that this effect is more important in industries with longer trade credit periods. Moreover, Lekkakos and Serrano (2017) find that the implementation of RF allows for higher investment to the benefit of the integrated supply chain due to extended payment terms.

Other studies compare these benefits to other financing alternatives. Kouvelis and Xu (2021) developed a supply chain model in which they examined the supplier's decision among four different post-shipment financing schemes: conventional bank loans, recourse factoring (i.e., when the supplier remains responsible for any deficiency in the payment of the account receivable), non-recourse factoring (i.e., when the supplier is no longer responsible for any deficiency in the payment of the account receivable), and RF. The authors highlight that the benefits from recourse and non-recourse factoring depend on three important parameters: the supplier's credit rating, its liquidity risk, and the buyer's credit rating. They find that recourse factoring is convenient for supplier firms with higher credit ratings and cash investment returns. In contrast, non-recourse factoring is better for suppliers with lower (albeit still above a threshold) credit ratings and cash investment returns. Of the remaining schemes, they conclude that bank loans are the best option (i.e., for suppliers with the lowest credit ratings and returns for cash). They introduce RF as a substitute for non-recourse factoring. They

find that RF is a better option than non-recourse factoring in almost all cases. The main difference is that RF is also a better alternative even with a lower credit rating and return for investments in cash thresholds and for higher levels of credit rating and cash return relative to the cases where recourse factoring was convenient in the previous model. In other words, *"RF not only dominates non-recourse factoring, but also limits the preferred regions for pure bank financing and recourse factoring"* (p. 26).

With the potential benefits of RF in mind, suppliers usually decide whether to opt for RF plus a payment term extension or continue using traditional financing alternatives. Several studies have tried to model how firms make decisions between RF and conventional financing alternatives, conditional on the payment term extension. Tanrisever et al. (2015) find that various factors incentivize MSME suppliers to use RF, including: (i) larger spreads in external financing costs between suppliers and buyer, which allow MSMEs to benefit from a larger decrease in their financing cost; (ii) more aggressive working capital policies among MSME suppliers, which implies greater need for short-term financing; (iii) higher demand volatility of their products or services, which increases the need for external funds; and (iv) higher risk-free rates, which allow the benefits for MSMEs to be greater than the present value of the costs of implementing RF.

Additionally, operational, lot-size, or inventory decisions also need to be considered (Gupta and Wang, 2009; Protopappa-Sieke and Seifert, 2010; Song and Tong, 2012). Using a joint economic lot size model in which a vendor coordinates operational and financial decisions with several suppliers through a RF arrangement, Marchi et al. (2020) find that RF can be beneficial for suppliers. The results showed that the establishment of a RF agreement between players in the supply chain increases the supply chain's total annual profit and affects operational decisions (i.e., optimal lot size and the number of shipments for each component). Van der Vliet et al. (2015) complement Tanrisever et al. (2015) by assessing the maximum justifiable payment term extension in the context of a multi-period model that takes firm inventory into account. The studies find that an extension of payment terms induces a non-linear financing cost for the supplier, for which various thresholds for maximum term extensions are calculated, under different circumstances. The authors find that it is difficult to determine the maximum increase in payment terms which would be considered acceptable to a firm, as net profit margin and operating leverage are interrelated and play a significant role.

The complexity associated with the assessment of this trade-off, and the potential harm from extending payment terms, are reflected in the inconsistent rate of adoption. Lekkakos and Serrano (2016) observe that adopting payment term extensions in parallel with RF may reduce the participation of relevant suppliers, which may also be those with more financing alternatives. They suggest that in some cases it is better to combine RF with service-level clauses instead of payment term extensions.

Using data from European companies on RF adoption rates by suppliers, Wuttke et al. (2016) similarly conclude that buyers have to be careful when introducing payment extensions along with RF because it can deter supplier adoption. The authors find that payment extensions would be less harmful in industries that already have long payment periods and for buyers with good credit ratings and high procurement volumes which may induce suppliers to take up RF more easily. They also observe that the rate of adoption by suppliers is slow when RF is first introduced by an anchor

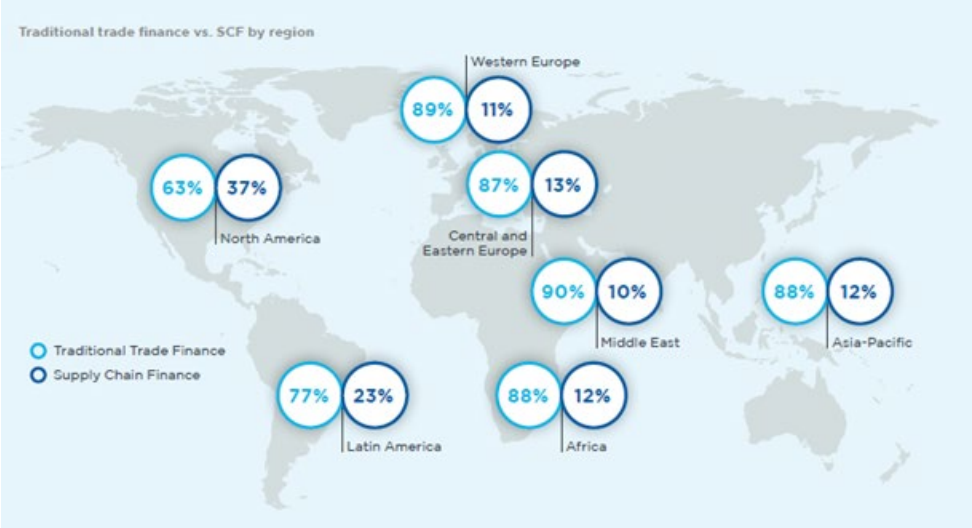
firm but increases dramatically when other companies observe the benefits obtained by early adopters. Considering this, they take a diffusion perspective and develop a social contagion model to examine the factors that affect the rate of adoption of RF. They conclude that uptake of RF is higher and faster if the buyer has high procurement volumes, more influence over its suppliers, and operates in an industry with long payment terms. To roll out a successful RF program, it is also important to consider the timing of adoption and the potential needs for support among suppliers that might not be ready to adopt the scheme at first.

6. Supply Chain Finance in LAC

There is evidence that LAC firms suffer from constrained access to finance (Figal Garone et al., 2020). In this context, trade and supply chain finance may be a high-reward financing alternative for firms in the region. This type of credit is often used as a substitute for bank credit, mostly during periods of crisis (Sheng et al., 2005).

Figure 2 shows the percentage of banks' trade finance business that is dedicated to traditional trade finance[7] versus SCF, according to the 2018 International Chamber of Commerce (ICC) survey. While it is gaining ground, SCF still represents an area for growth vis-à-vis traditional trade finance.

Figure 2. Traditional Trade Finance vs. Supply Chain Finance, by Region (2018)



Source: Global Survey on Trade Finance, ICC (2018)

Using data from Factors Chain International, Figure 3A summarizes the composition of factoring[8] usage by world region in 2019. We observe that Europe and Asia Pacific account for nearly the whole global factoring market (with 68% and 24% of total factoring volumes, respectively). South America appears as a distant third with a global factoring market share of 5% and, interestingly, has a higher market share than North America (3%). Africa and the Middle East account for less than 1% of the global

[7] Traditional Trade Finance typically refers to long-standing, well-established products such as documentary credits, documentary collections, and guarantees, which are often supported by documentary trade instruments issued by banks on behalf of the buyer or seller.
[8] Factoring includes recourse factoring, without recourse, invoice discounting, reverse, and collection.

use of factoring. Figure 3B shows the use of factoring relative to the size of the economy (i.e., GDP). We can see that although Asia has higher absolute use of factoring than South America, results change when we assess the shares relative to GDP.

Figure 3. Total Factoring by Region in 2019

Figure 3A. Volume (US$ billions)

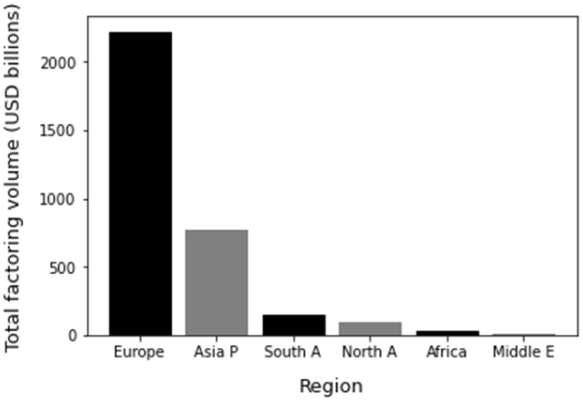
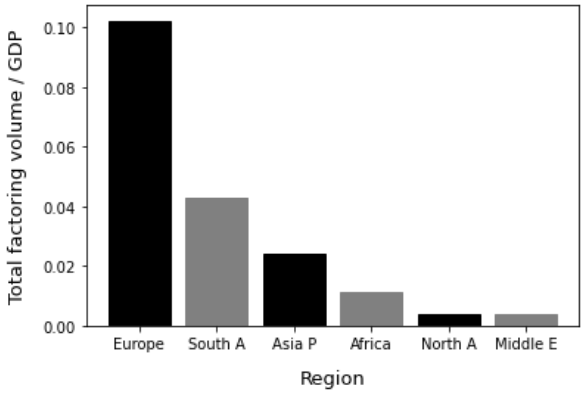


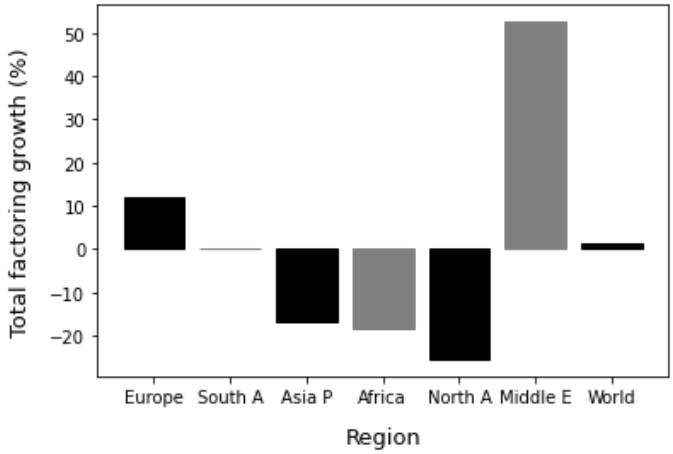
Figure 3B. Volume to GDP (%)



Source: Authors' own elaboration using data from Factors Chain International and the IMF.

Figure 4 assesses the evolution of factoring usage for each of these five regions. Factoring as a SCF tool grew by 10% in the world in the 2013-2019 period. However, the adoption of factoring evolved differently in different parts of the world. The factoring market increased by 53% in real terms in the Middle East and by 12% in Europe. In contrast, Asia Pacific (-17%), North America (-26%), and Africa (-18%) all showed decreases in real terms. South America's real volumes of factoring remained relatively constant.

Figure 4. Total Real Factoring Growth by Region 2013-2019 (%)

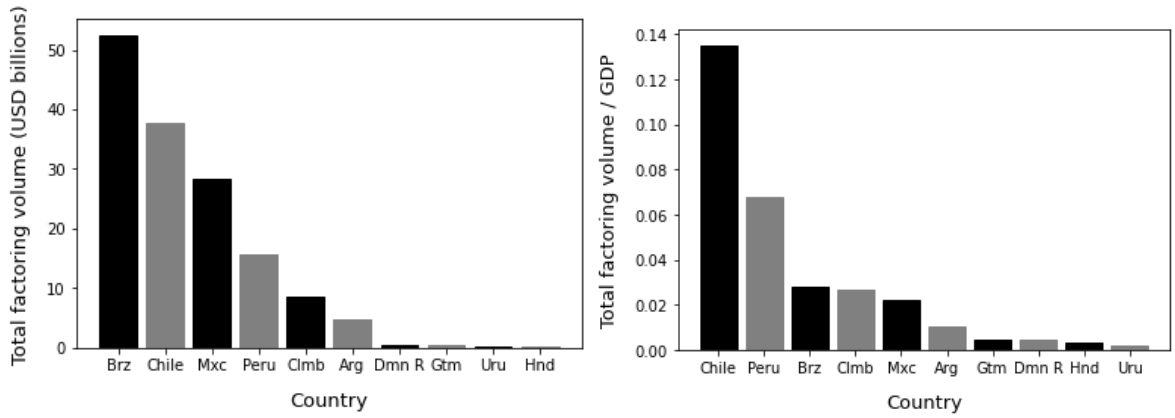


Source: Authors' own elaboration using data from Factor Chains International and the IMF.

Figure 5 focuses on the composition of factoring usage in LAC. Six countries explain 98% of the region's factoring volume in 2019: Brazil, the biggest factoring market, with 35%; followed by Chile with 25%, Mexico with 19%, Peru with 11%, Colombia with 6%, and Argentina with 3%. Figure 5A shows total factoring volume in different LAC countries. Figure 5B shows total factoring volume relative to the size of the economy. Although Brazil has the highest factoring volumes in absolute terms, when we control for GDP, Chile moves to first place.

Figure 5. Total Factoring by LAC country in 2019

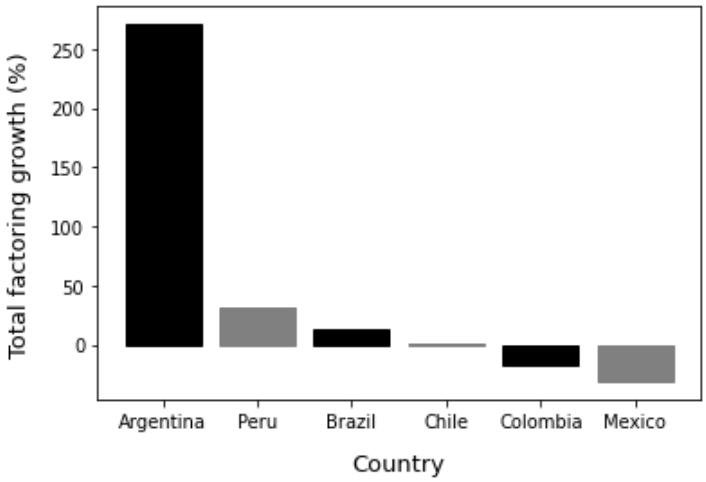
Figure 5A. Volume (US$ billions) **Figure 5B. Volume to GDP (%)**



Source: Authors' own elaboration using data from Factor Chains International and the IMF.

Interestingly, factoring is growing in some countries, as shown in Figure 6. This is especially true in Argentina, which had a three-fold increase in factoring volume from 2013 to 2019. Peru (30%) and Brazil (14%) experienced lower but considerable growth in real terms, while factoring volume dropped in Colombia (-17%) and Mexico (-31%). The tool was adopted more recently in Uruguay (2012), Honduras (2015), the Dominican Republic (2017), and Guatemala (2018) and has not yet reached relevant volumes in these countries: together they accounted for less than 1% of the region's factoring volume in 2019.

Figure 6. Total Real Factoring Growth in LAC by Country 2013-2019 (%)



Source: Authors' own elaboration using data from Factor Chains International and the IMF.

The following three factors are commonly used to explain the rise of SCF instruments:

i. **Scarcity and cost of liquidity,** coupled with stricter banking regulations and recent economic downturns, are pushing companies to find cheaper and more efficient ways to finance their trade operations, beyond traditional trade finance products and traditional bank lending.

ii. **Increased global competition** is shifting power towards buyers and urging sellers to offer more attractive terms to stay competitive, which often entails resorting to more efficient and cost-effective payment and risk-mitigating

solutions within the open account scope.

iii. **Digital technologies** (e.g., the Internet of Things, blockchain, cloud computing, big data) **and the digitalization of trade** (e.g., e-invoicing) are making it easier for buyers, sellers, and financial intermediaries to easily access relevant transaction and counterparty information and reduce transaction costs. In this sense, fintech (understood as technology used to support or enable banking and financial services) and e-invoicing have played a key role in the rise of open account trade and SCF.

In LAC, increasing use of e-invoicing has been an important driver in the growth of SCF. Initially introduced to enable the digital verification of invoices for tax purposes, e-invoices help to reduce factoring transaction costs, decrease approval and processing times, and make it possible *"to serve SMEs typically deemed too small and unprofitable for traditional factors*" (Hyland and Harmann, 2017). Chile, Brazil, and Mexico already require e-invoicing, and Guatemala, Ecuador, Uruguay, and Peru are moving in this direction (Hyland and Harmann, 2017). Hence, it may not be a coincidence that Chile, Brazil, Mexico, and Peru are also among the countries where the use of factoring is more prevalent. Some examples of platforms offering this type of financing in LAC are listed in Box 2.

Box 2. Examples of Factoring Platforms in LAC

TREFI (Peru) – This platform allows fiduciary agents to purchase SME accounts receivable at discounted rates while managing the risk held between the SMEs and the fiduciary agents, thereby strengthening the SMEs liquidity and enabling them to extend credit to their clients.
Mesfix (Colombia) – This marketplace connects investors with SMEs wanting to sell their invoices and allows for multiple funders to partially or fully finance a certain invoice.
Innovafunding (Peru) – This invoice discounting marketplace connects investors with SMEs wanting to sell their full invoices.
Facturedo (Chile) – This platform allows SMEs to participate in auctioning their invoices in an easy, flexible, and fully online manner. Investors bid on the buyers' invoices, ensuring the best pricing option.
InvoiNet (Argentina) – This open marketplace for RF e-invoice financing connects suppliers and buyers with multiple lenders on a collaborative platform for e-invoice management and financing.
NAFIN (Mexico) – The Mexican development bank created a RF system known as 'Cadenas Productivas' in 2001.
E-Factor Network (Mexico) – This platform enables e-factoring services for participating suppliers who wish to discount accounts receivable.

Source: Acción (2017) complemented by the authors.

The case of Mexico is particularly interesting given the role that the Mexican Development Bank had in creating a RF platform that helped develop factoring and RF in the country. While Mexico is currently the third largest factoring market in the region (Figure 5A), its growth faced a breaking point in 2008, and factoring volumes decreased by 31% in the 2013-19 period (Figure 6). Box 3 provides insights on how Mexican supply chains adopted RF over the years, first pushed by the Mexican Development Bank, and then by other big players, such as the E-Factor Network platform. There are two main takeaways from this case study. First, that there is potential for development banks to offer financing programs that are useful for supply chains in developing countries, especially when these programs are focused on providing access to finance to MSME suppliers and creating a demonstration effect in the market. Second, the case underscores the risks of relying on centralized solutions, which are more vulnerable to underestimations of risk, and could ultimately hinder the adoption of RF in the long-run.

Box 3. Reverse Factoring Platforms: The Case of Mexico

In the early 2000s, the context in Mexico was conducive to the use of RF mechanisms as a financial alternative: 99% of firms registered in the formal economy (600,000 firms) were classified as small and microenterprises. These firms represented 64% of employment and 42% of GDP but received less than 1% of bank financing (Klapper, 2006). RF would allow these firms to access cash more quickly, without the need to improve their credit risk, by instead using that of the anchor companies.

In this context, NAFIN, the Mexican Development Bank, created a RF system known as "Cadenas Productivas" in 2001, which sparked the use of RF in the country. A group of companies with recognized credit quality was invited to participate in an invoice market. In this market, accounts payable to MSME clients were discounted by a set of private financial intermediaries. The program was very successful from the start: after the first year, 109 supply chains had been integrated (NAFIN Report, 2013) and NAFIN grew from 2% of total factoring in 2001 to 60% in 2004 (Klapper, 2006). In 2007, just six years after the start of the "Cadenas Productivas" program, NAFIN had incorporated more than 15,000 companies scattered across over 300 supply chains of anchor firms. The success of this approach also led to the incorporation of public sector supply chains (Lecuona, 2017). RF grew to connect a large number of suppliers with low credit quality to many financial entities, such as the IFC, Credit Agricole, Bancomext, Banorte, Bank of America, Monex, Banco BASE, Mercantil Commercebank, Bancrea, eFactor Diez, Comerca, and the IDB (Business Insider Mexico, 2020).

This rapid success reached a breaking point during the 2008 financial crisis. An underestimation of the default risk of anchor companies during that period caused a drop in the amounts operated by the platform. Since then, the platform has been used mainly by public sector suppliers (Lecuona, 2017).

After the 2008 crisis, the E-Factor Network platform (which emerged in 2008) started to become a more relevant player in the Mexican factoring market. It currently has more than 25 funders (including banks, non-banking institutions, and capital market investors) and ended 2020 with around US$2 billion in SCF, including the main companies in Mexico.

7. Final Remarks

Managerial and academic research on financial issues within the supply chain has lagged behind research on effective supply chain management (Pfohl and Gomm, 2009; Seifert and Seifert, 2011). Further research on supply chain finance (SCF) is especially relevant for LAC countries, given the prevalence of MSMEs in the region and their limited access to financing. Since the 2008 financial crisis, interest in the issue of SCF has grown, as companies seek alternative sources of funding. Within SCF, reverse factoring (RF) has emerged as a particularly promising option for suppliers to access short-term credit. Under RF, suppliers sell their accounts receivable to financial intermediaries to get access to instant cash, while buyers (anchor firms) make an explicit payment guarantee to those financial intermediaries, with the objective of increasing the credibility of the payment obligation and reducing credit risk.

To better understand the role and potential benefits of RF for firms in the region, this paper first described important concepts related to SCF. We introduced the concept of the cash conversion cycle and explored how its length is associated with the health of LAC firms. We defined SCF, described some of its tools, and discussed how it affects both firms and the economy. We outlined how traditional factoring works and discussed the specific aspects of RF. We also explored the theoretical and empirical evidence on the success drivers of RFAs and how these affect firms.

This work contributes to the SCF literature by providing a review of the market conditions that are most conducive to different types of SCF, the benefits of factoring and RF as an alternative to traditional financing channels, and the trade-offs that firms face when they are presented with the opportunity of implementing (anchor firm) or adopting (supplier) a RF program.

We find that studies generally link the use of RF with high efficiency gains for firms. Factoring is more often used in countries with higher GDP per capita and growth rates, indicating that when a country grows, so does factoring. Better availability of credit information is also associated with greater factoring uptake. Weaker contract enforcement may induce greater use of factoring, suggesting that it is a suitable financing option in less developed countries.

RF is especially relevant for firms that face barriers in accessing other types of lending, such as traditional bank loans. RF generates more value if the buyer-supplier cost of capital ratio is higher and if the working capital policy of the MSME suppliers is aggressive, as they can take advantage of the strong financial position of buyers. RF also appears to be a good solution in situations where the payment term is already long, as it provides suppliers with an alternative to get instant cash at the lowest possible cost.

Despite the potential benefits of RF, there are some entry barriers for firms. A topic that is widely explored in the literature is the trade-off between the use of RF and the extension of payment periods by buyers, if present. Payment extensions can be detrimental to the successful adoption of RF, as the supplier's assessment of the costs and benefits of RF may be too complex to make. Indeed, the rate of adoption by suppliers is typically slow at the beginning, increasing dramatically when companies observe the benefits obtained by early adopters.

The use of factoring is gaining ground in LAC, accounting for 5% of factoring worldwide, behind Europe and Asia Pacific (68% and 24% of total factoring,

respectively). A key determinant for both factoring and RF adoption in the region is the level of development of e-invoicing systems. Countries that require e-invoicing also have greater uptake of factoring and RF.

Experience in LAC has shown that public initiatives providing MSMEs with financing alternatives such as RF can have high rewards across the supply chain but can also have undesired results. A case in point is the RF factoring platform created by the Mexican Development Bank (NAFIN) in the early 2000s. While this program was instrumental for propelling the use of RF in the country, it also proved vulnerable to payment defaults from anchor companies caused by the 2008 financial crisis, and it was not able to recover. Since then, other players have entered the Mexican RF market, but use of this tool remains in decline.

Ultimately, RF has the potential to strengthen all players within the supply chain. Given the firm and market characteristics of LAC countries, policymakers, development banks, international organizations, and others have reason to incentivize greater uptake of this financing alternative. More data and quantitative research on the evolution, determinants, and costs and benefits of RF is needed both for advancing the academic and managerial literature on this topic, and for devising better-targeted public and private interventions in this area.

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