Supply Chain Finance

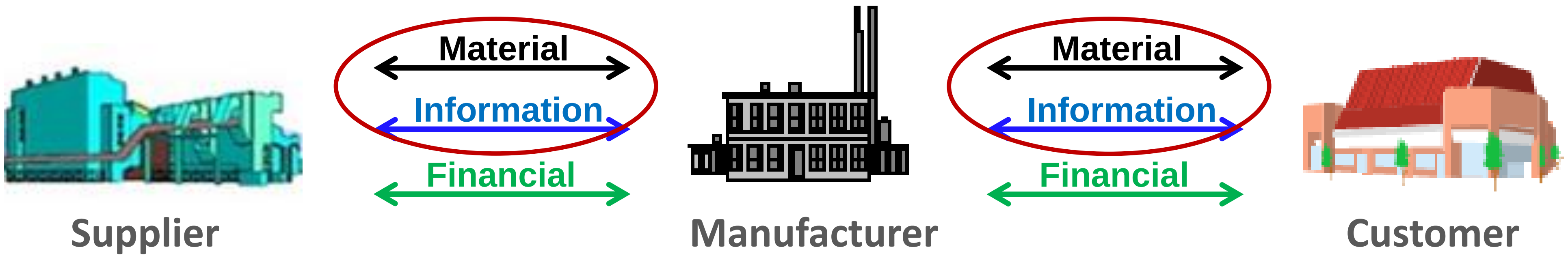
Concept – Value Proposition – Challenges

Spyros Lekkakos, PhD
slekkakos@zlc.edu.es
Professor of Supply Chain Management
Zaragoza Logistics Center

Management of financial flows is central in Supply Chain Management

…although often overlooked by Operations Management scholars and practitioners

Research in Operations Management



Modigliani-Miller "Irrelevance Theorem", 1958

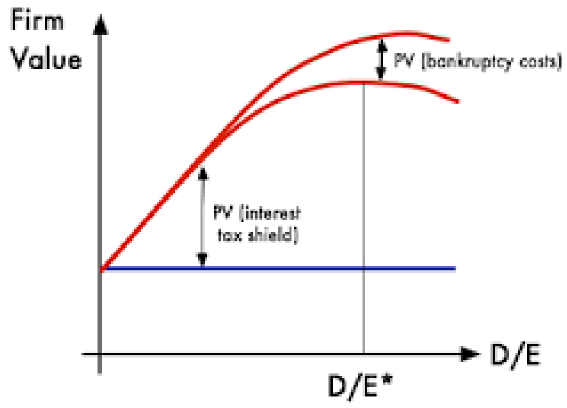
- **In perfect capital markets**
  - No transaction costs, no taxes, no bankruptcy costs, rational agents, no information asymmetry, efficient markets
- **Capital Structure is irrelevant**
  - Firm value is not affected by financial decisions

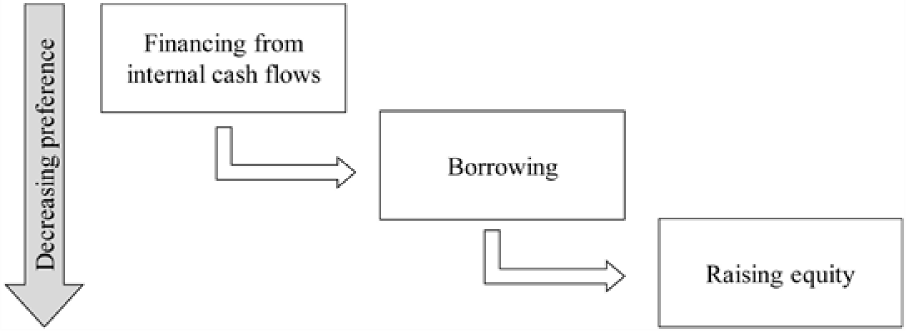
Franco Modigliani
(18 June 1918 – 25 September 2003)
1985 Nobel Prize Recipient

Merton Howard Miller
(May 16, 1923 – June 3, 2000)
1990 Nobel Prize Recipient

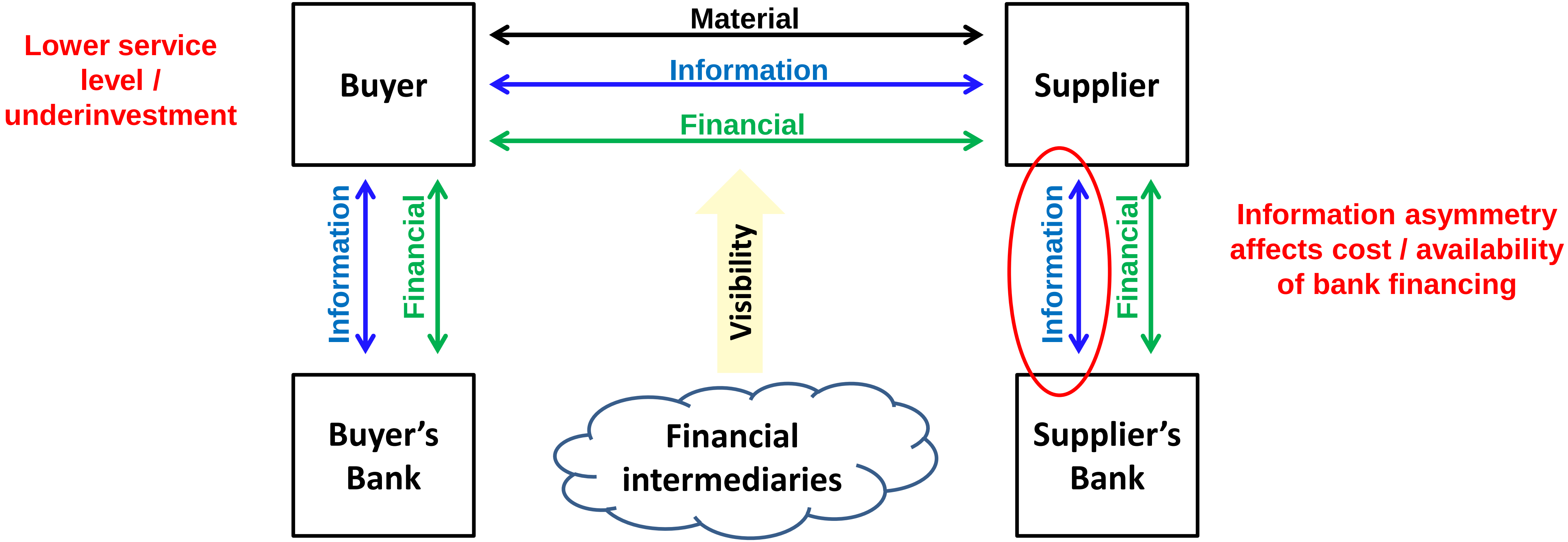
The cost of external financing for small-medium size companies might be detrimental to supply chain performance

- **Capital markets are not perfect**
  - Transaction and bankruptcy costs, taxes, and agency costs
  - Information asymmetry between borrowers and lenders
- **External financing premium**
  - Financial hierarchy (or pecking order theory)
    - Preference on internal vs. external funds for financing investment
- **SME firms face higher deadweight cost of financing**
  - Liquidity crises further worsen financial burden for small firms and might lead to underinvestment problem
  - Negative impact on SC performance as SMEs account for 50-60% contribution to global economic output (World Bank)





Supply Chain Finance (SCF): An Illustration of the concept



Supply chain finance: an integral approach to decreasing the cost of external financing for supply chain participants by tracking events in the physical supply chain and reliably disseminating this information to financial intermediaries.

Lets see how is SCF defined by ChatGPT

Supply chain finance refers to the set of financial activities and techniques that are designed to optimize the flow of capital and goods along a supply chain. It involves a range of financing options, including invoice financing, factoring, and asset-based lending, that are used to help suppliers and buyers manage their cash flow and working capital more effectively.

In SCF, a financing institution, such as a bank or a fintech company, typically provides financing to suppliers based on the creditworthiness of the buyer or the buyer's order. This helps suppliers to access capital more easily and at lower rates than they would otherwise be able to obtain on their own. At the same time, buyers are able to extend their payment terms and improve their working capital position, while also strengthening their relationships with suppliers.

SCF can bring several benefits to businesses, including improved cash flow, reduced supply chain risk, increased efficiency, and enhanced relationships with suppliers. It can also help small and medium-sized enterprises (SMEs) access affordable financing, which can be a major challenge for them.

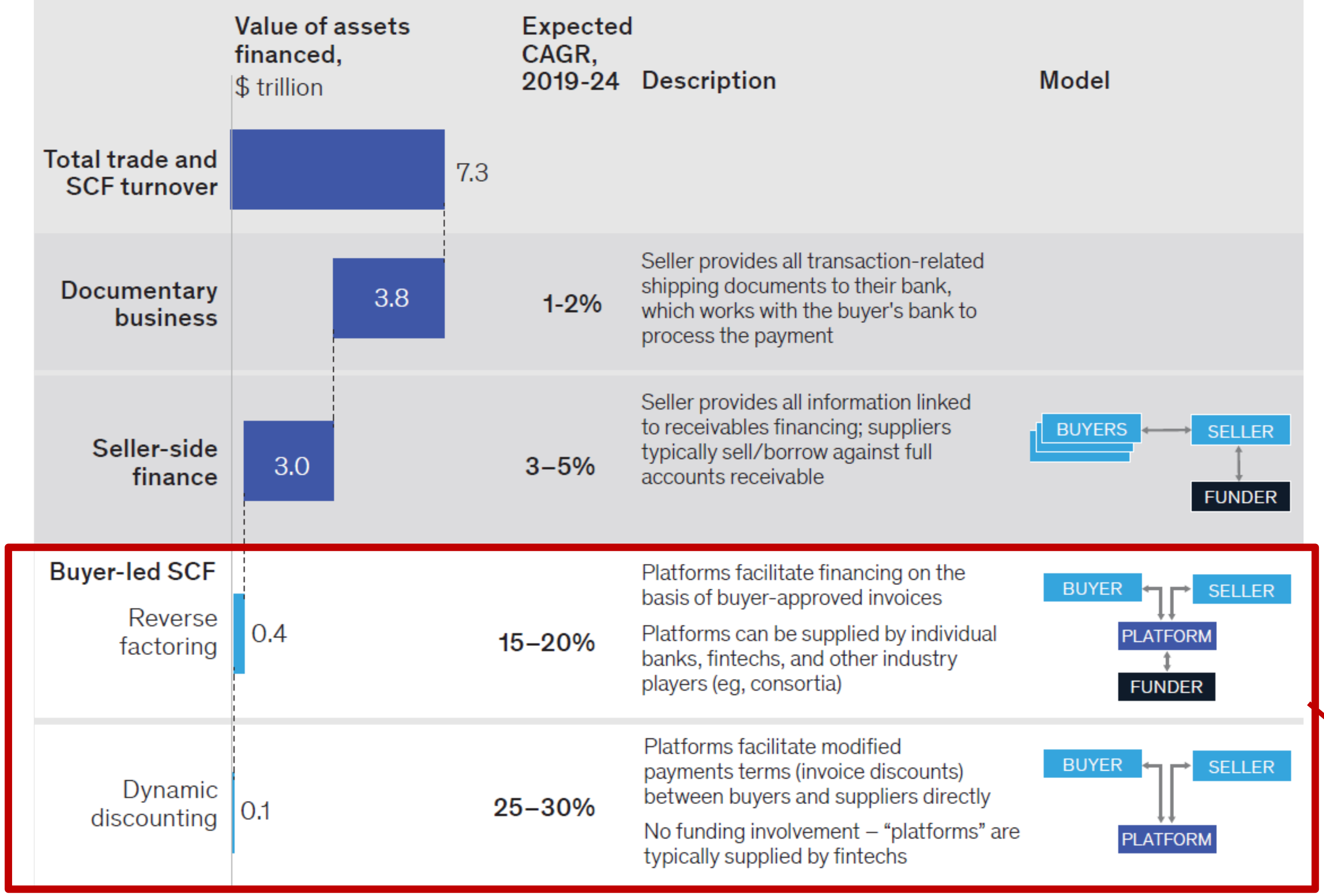
Overview of SCF solutions

Supply chain section	Inbound supply chain	Focal company	Outbound supply chain
WCM reference point	Accounts payable	Liquidity Inventories	Accounts receivable
SCF solutions	Purchase-order financing	Inventory financing • On-balance • Off-balance	Sales-offer financing
Approved payables financing	Dynamic discounting		Invoice discounting
Approved payables financing	Reverse factoring	Fixed assets financing in supply chain	Factoring
Approved payables financing	Reverse securitization		Invoice securitization

Source: Adapted from Templar, Hofmann & Findlay, *Financing the E2E Supply Chain: A reference guide to SCF* (Kogan Page, 2020)

The size of the SCF market is based on **estimates** by industry experts

There are significant differences depending on the source and methodologies used



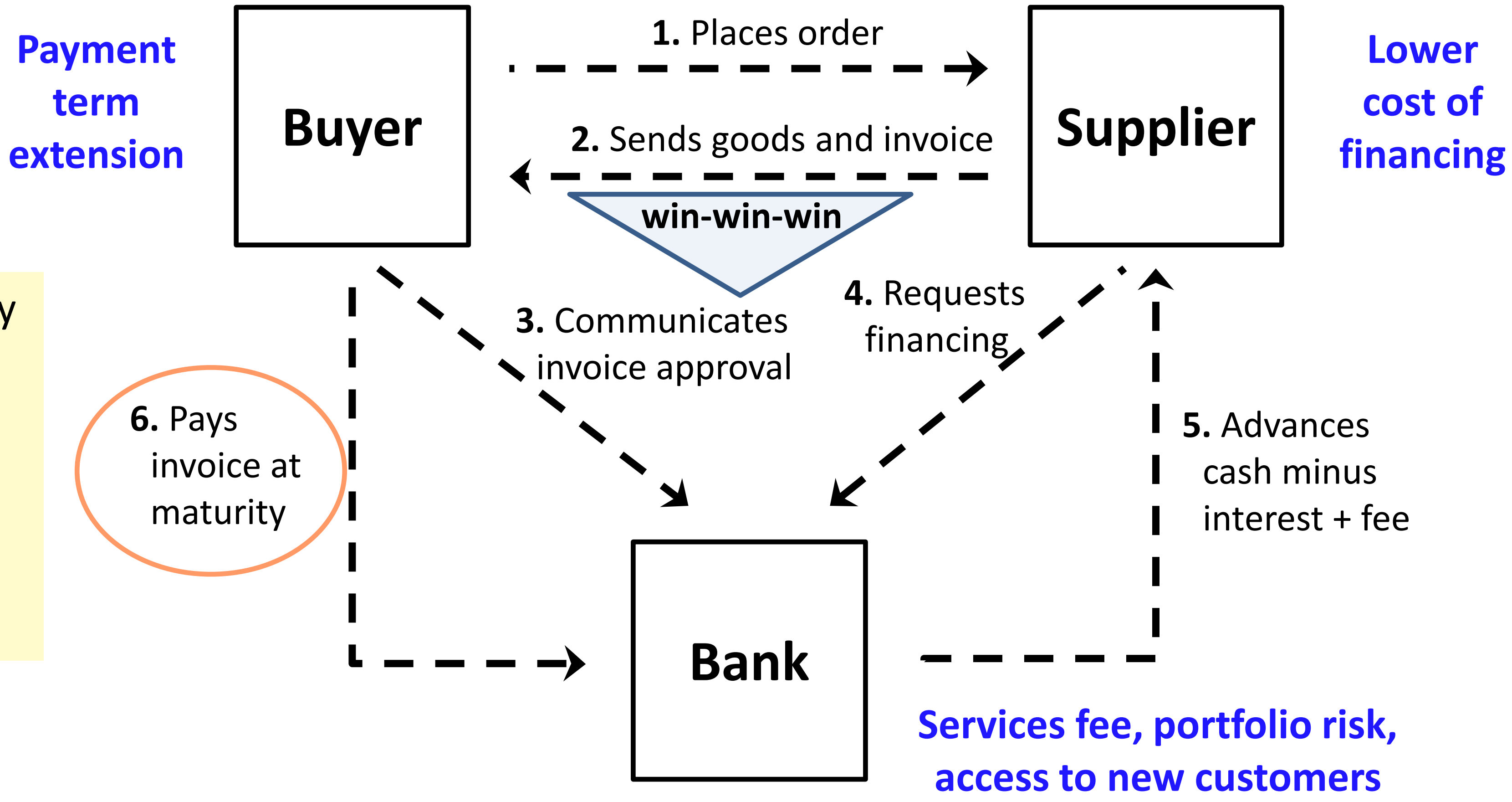
Our focus

Source: The 2020 McKinsey Global Payments Report

Other **relevant figures** include:

- The global volume of reverse factoring in 2022 has been estimated to $2,2 trillion and funds in use to $858bn (Source: World Supply Chain Finance Report 2023, BCR Publishing)
- Large global gap in trade finance; out of $17 trillion eligible assets only $3.5 trillion currently addressed by SCF solutions (Source: 2020 McKinsey Global Payments Report)

Reverse Factoring: Concept and value proposition for a typical setup



Financial intermediary (bank) in reverse factoring is able to transfer the financial risk from the supplier to the (investment-grade) buyer.

Reverse Factoring: Business case for the supplier

	Before A/P Extension	After A/P Extension	
		without SCF	with SCF
Amount invoiced by supplier ($)	$1,000.00	$1,000.00	$1,000.00
Minimum days to payment	15	15	15
P&G pays invoice on day	45	75	75
Supplier receives funds on day	45	75	15
Additional days financed by supplier	**30**	**60**	
Supplier financing cost (3.5% annual rate)	$2.92	$5.83	
Days financed by SCF bank			**60**
SCF invoice discount *			0.22%
Net amount to supplier ($)	**$997.08**	**$994.17**	**$997.83**

* = [Libor, 60-day rate (0.30%) + SCF Bank spread (1.00%)] x 60/360

AB InBev extended terms from 30-60 to 120 days
The Wall Street Journal, April 17, 2009

Unilever extended terms from 30 to 90 days
Daily Mail, July 5, 2010

Procter & Gamble extended terms from 45 to 75 days
The Wall Street Journal, April 16, 2013

Mondelēz extended terms from 45 to 120 days
Financial Times, May 30, 2013

Source: Esty, Mayfield & Lane, "Supply Chain Finance at P&G", HBP case study 9-216-039 (2016)

Reverse Factoring in the press

Kellogg's

"We are now executing a **supplier financing initiative** which allows us to extend payment days with suppliers by providing suppliers third party cash at a nominal cost of money, so they can get their cash sooner. We believe and know this will provide **great benefits to our working capital of about $200 to $300** million and should reduce our debt levels slightly versus what we previously expected."

Ron Dissinger, CFO
CAGNY Conference – Feb. 19, 2014

P&G

"There has been some press recently about a new program that we've introduced with suppliers called **Supply Chain Finance**, where we're partnering with some of our world-class banking partners to present a win-win solution to suppliers. As part of that, we'll be **extending our payment terms which obviously frees up cash for us**. So this is something that we think, will free up a tremendous amount of cash starting next year and then over the next two to three years."

Teri List-Stoll, Former Treasurer
(Current CFO of Kraft)
3Q 2013 Earnings Call

Kimberly-Clark

"Our cash from operations in the third quarter was $912 million, up 7% compared to $844 million last year. We continue to manage primary working capital well. **Our year-to-date cash conversion cycle is down four days compared to full-year 2012.**

Mark A. Buthman, CFO
3Q 2013 Earnings Call, Oct. 22, 2013

"Working capital is an area that we've just done a really a terrific job. We've done it through **extending payables terms and being pretty innovative in how we engage suppliers with our banks to provide supplier financing.** So we expect continuous improvement in working capital going forward.

Mark A. Buthman, CFO
Barclays Back-to-School Conference – September 4, 2013

"We expect to show another year of growth in 2014, reflecting anticipated earnings growth and the continued **strong working capital management**. We'll stay disciplined about how we use our cash flow. Simply put, we will balance the need to make well-considered investments designed to full General Mills' growth…"

Donal Lee Mulligan, CFO
CAGNY Conference – Feb. 18, 2014

"In a year where net sales increased 7%, our core working capital declined 5%, reflecting our **focus on extending payable terms**. The strong cash flow funded $614 million in capital spending."

Donal Lee Mulligan, CFO
4Q13 Earnings Call – July 26, 2013

FINANCIAL TIMES

October 22, 2009 3:00 am

Financial sweetener for suppliers

By Richard Milne

THE WALL STREET JOURNAL.

This copy is for your personal, non-commercial use only. To order presentation-ready copies for distribution to your colleagues, clients or customers http://www.djreprints.com.

http://www.wsj.com/articles/SB10001424127887324010704578418361635041842

BUSINESS

P&G, Big Companies Pinch Suppliers on Payments

By SERENA NG

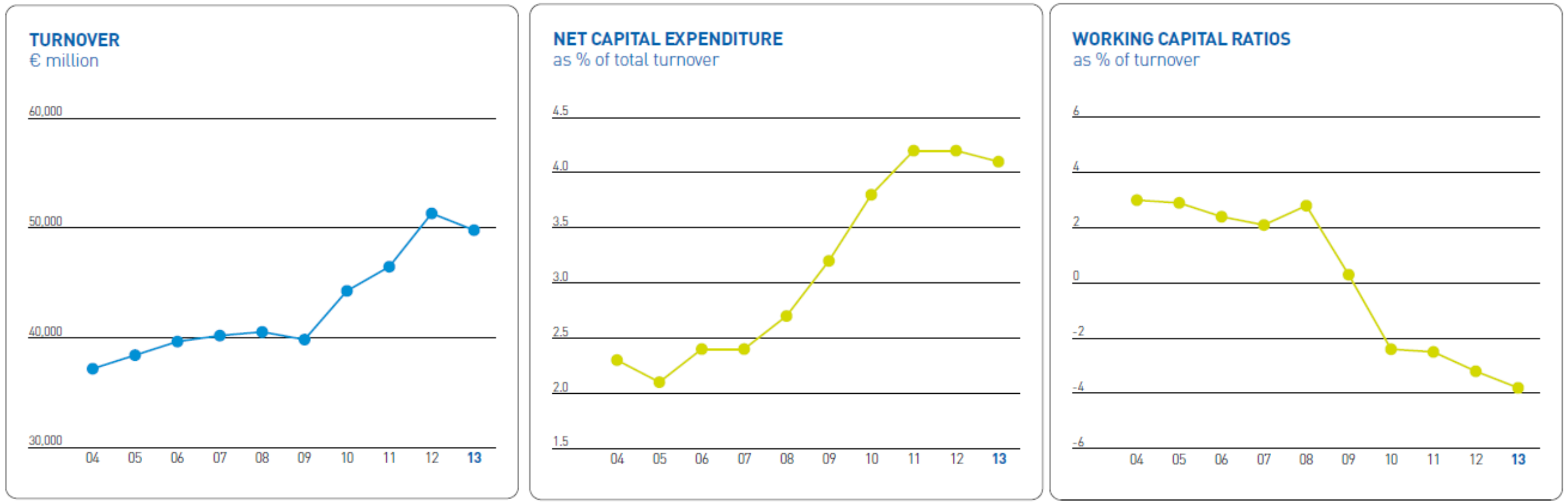
The Telegraph

Diageo 'threatens backbone of economy' by squeezing suppliers

By Graham Ruddick

Guinness and Johnnie Walker owner is latest high-profile company accused of putting pressure on suppliers

How delaying payments can help suppliers? The Unilever case

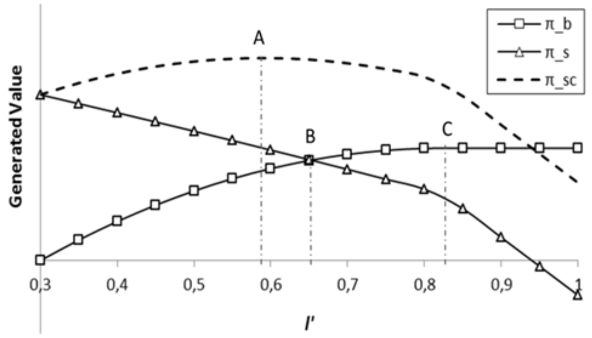


Source: Unilever charts 2013 (company's website)

2009-2013	Sales	Net Profit	PPE
Unilever	+25%	+44%	+41% *
P&G	+9%	(16%)	+11%
Nestle	+4%	+14%	+25%

* Unilever 2009-2013 accumulated investment in "Property, Plant & Equipment" of 2.7bn Euro.

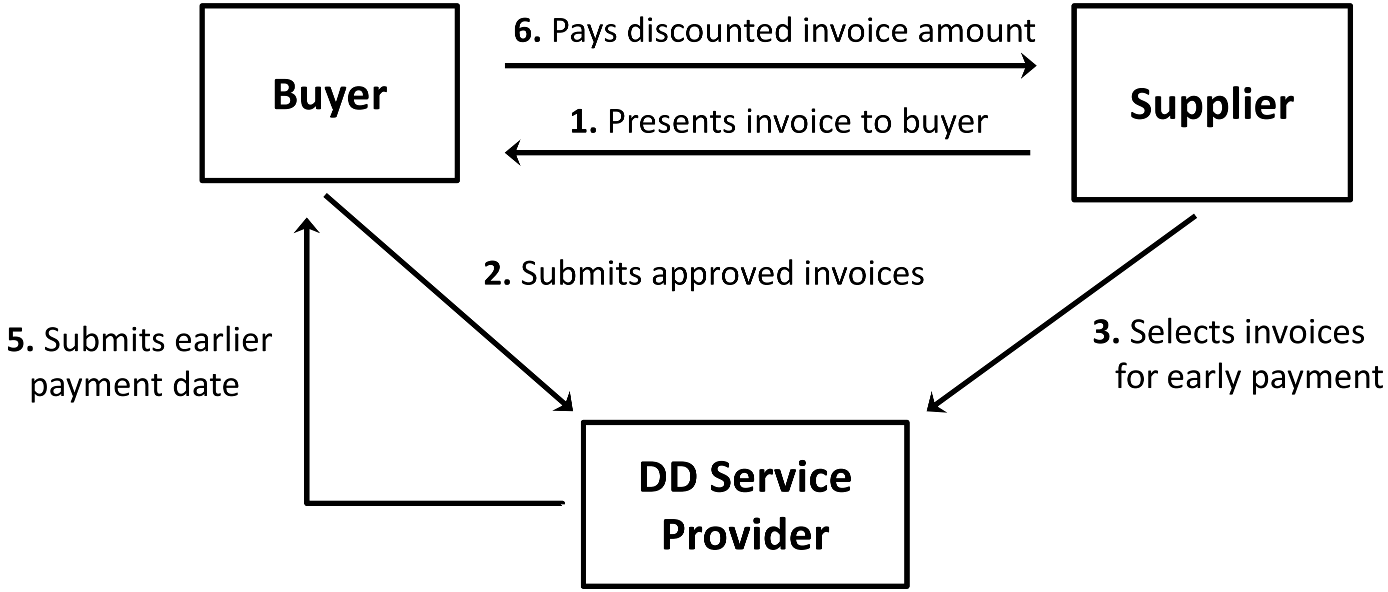
- Unilever invested the funds freed up by its extended payment program in capacity investments for the benefit of its extended supply chain – a win-win.
- When the cost of raising funds is high for buyers, extending payment terms can be economically efficient as long as the freed up cash is productively used.



The generated value for the integrated supply chain is not monotonically decreasing in payment term extension (Lekkakos & Serrano, 2017)

Dynamic Discounting: An overview

Traditional discounting | Dynamic discounting



- Dynamic discounting is a method of invoice financing that allows suppliers to receive early payment on their invoices in exchange for offering a discount to their buyers.
  - Suppliers **receive payment faster** than their standard terms.
  - Buyers **improve bottom line** by reducing the cost of goods or services they purchase.
- Dynamic discounting solutions allow for virtually all of a buyer's suppliers to participate in the program.
- Using a dynamic discounting program, buyers use their own available cash to pay suppliers early in exchange for a discount.
  - In some cases, funding is provided by third parties.

Supply Chain Finance: Risks and regulatory developments

$4 Billion Accounting Scandal Exposes Supplier Finance Risks (1)

By Nicola M. White and Lucca de Paoli

Jan. 25, 2023, 5:58 PM

- Limited supplier finance reporting rules can mask trouble
- Industry volume has increased to $2.2 trillion worldwide

The accounting scandal that led to a $4 billion hole in the balance sheet of major Brazilian retailer Americanas SA centers on a common funding tool with notoriously opaque reporting: supplier finance.

Americanas, which nosedived into bankruptcy protection last week, is an extreme example of how the arcane practice, also called supply-chain finance or reverse factoring, can take advantage of loose-accounting rules to flatter a company's balance sheet. The process involves a bank or third party paying a buyer's suppliers at a discount earlier than they would be otherwise.

Americanas hasn't revealed much detail of how it used supplier financing to mask its indebtedness, and its financial statements offer few clues. The company did not return multiple requests for comment. But what's clear is that the practice played at least some part in masking more than 20 billion reais ($3.9billion) of debt.

"We see the nature of that supplier finance is more of bank debt nature," former Chief Executive Officer Sergio Rial told investors on Jan. 11. "So I have more debt than I had originally thought."

Regulators, credit rating providers, and some investors have warned for years about the lack of accounting rules for these supplier-finance arrangements. Companies following US-based accounting rules must start disclosing this year that they use the financing.

Morgan Stanley | RESEARCH

February 14, 2023 09:00 PM GMT

Global Valuation, Accounting & Tax | North America

Unveiling Hidden Obligations

New disclosures will bring over $2 trillion of supplier finance arrangements onto financial statements, helping investors better assess leverage and cash flow exposure.

What Is Supply Chain Financing? SCF, also known as *reverse factoring*, is a novel and often undisclosed arrangement between a company, its suppliers and financiers to optimize working capital efficiency. Carillion and Americanas are high-profile examples where deficient disclosure requirements surprised investors. (See: Supply Chain Finance 101)

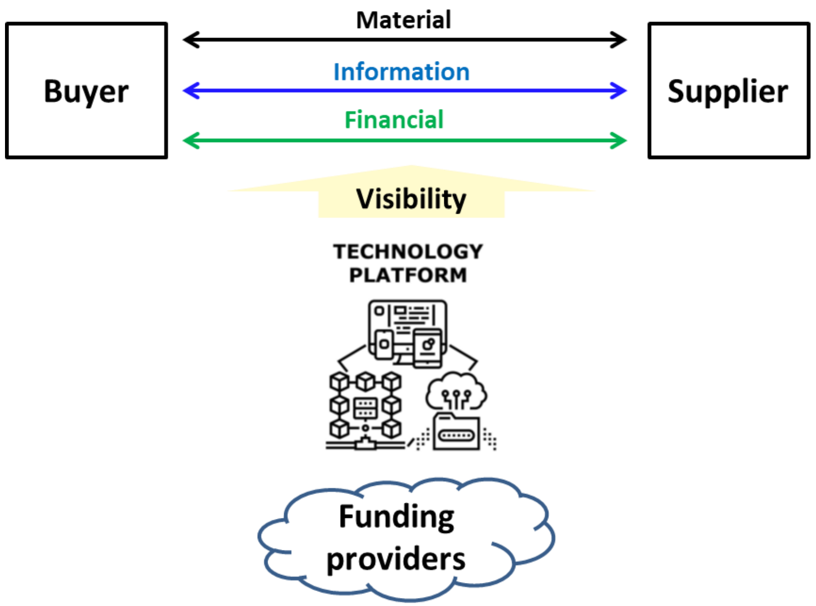
New US GAAP (ASU 2022-04) and IFRS rules will require companies to disclose additional information about supply chain finance programs, helping investors better assess the effects of these arrangements on operating cash flow, leverage and net working capital. The new disclosures are required under GAAP beginning in 1Q 2023 and are expected to take effect in 2024 or 2025 for IFRS reporters.

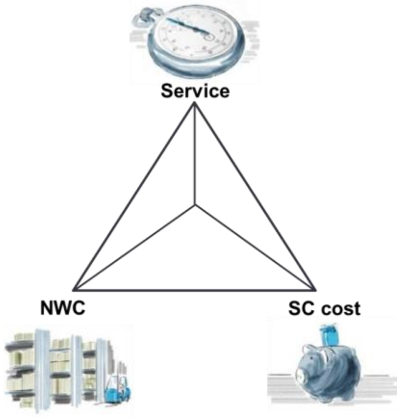
Unveiling Hidden Leverage: SCF is typically reported as an operating liability (accounts payable), however the ability to extend payments beyond standard terms introduces debt-like exposure within operations. Presenting extended term

Supply Chain Finance: The look beyond

Supply chain financing scope

- Non-investment grade buyers
- Global coverage
- Deep supply chain financing
- Dynamic selection from SCF solutions suite
- E-commerce and embedded finance
- Purchase-order & inventory financing (pre-shipping financing)
- Financing of capital investment





Solution structure & funding providers

- Catalytic role of digital advancements –including, fintech innovation, blockchain, and API technologies
- Bank-led vs. platform-led solutions
- System integration, automation & data sharing
- Application of advanced analytics and machine learning to support financing decisions and pricing
- Multi-bank models and increasing penetration of non-bank lending

Legal and regulatory issues

- Legal and regulatory issues
- Risk Management: Credit assessment, and fraud prevention strategies
- Environmental, social, and governance considerations

Thank you!

Spyros Lekkakos
slekkakos@zlc.edu.es