Cash against data

Digitalizing and financing trade in manufactured goods

A white paper for CFOs and Corporate Treasurers





International Centre for Digital Trade and Innovation



Executive summary

One of the key benefits of the digitization¹ of trade is to increase the availability of financing in supply chains and potentially to reduce its cost.

Commodities,	The focus has been on the development of digital approaches to securing
around 1/3 of	a financier's claims over the goods in transit — led by the Electronic Trade
global trade in	Documents Act 2023 (the "ETDA"), enabling digital versions of the bill of lading,
goods:	bills of exchange and promissory notes, enforceable under English law.
Manufactured	Manufactured goods are usually transported by container and do not rely on
goods,	financing based on controlling the goods in transit via a bill of lading. Financing
around 2/3 of	for trade in manufactured goods typically relies on obtaining a commitment from
global trade in	the buyer to pay which can be relied upon by a financier who can then pay the
goods:	supplier upfront.

A lack of digitization means that most trade in manufactured goods is not financed — we estimate that 90% of trade in manufactured goods is "open account" where either the buyer pays at shipment or the supplier gives credit to the buyer whilst the goods are in transit.

- Without digitization, the buyer only gets details of what is being supplied via documentation which can take days to arrive and which is often provided to different buyer departments.
- Most buyers therefore wait until after the goods are delivered and inspected because it is onerous to try and reach a decision on an invoice before then — by which time the trade part of the supply chain process has completed.

The resulting trade finance gap is considerable and potentially a large portion of the US\$2.5 trillion trade finance gap identified by the Asian Development Bank, particularly affecting SME suppliers in emerging markets.²

"Cash against data" is a trade finance methodology that can be used efficiently to organise trade finance for supply chains of manufactured goods, aligned with the ICC rules for digital trade agreements (URDTT). This enables trade finance to be provided for manufactured goods in transit at scale, even for SME suppliers in emerging markets:

- At shipment, suppliers self-digitize their transport, compliance, commercial and operational documents over a secure platform, transmitting both the scan copies and the data directly to the buyer.
- Buyers are then able to give an instant approval of the invoice which financiers can then use to make payments to the supplier upfront, whilst still allowing the buyer to pay later.

The benefits of "cash against data" can be significant.

A case study of a large UK fashion business that implemented a trade digitization strategy across its entire international supply chain showed working capital efficiencies for the buyer that delivered savings of over 1% on the value of the goods being supplied. Moreover, the digitization approach adopted was relatively quick and simple to implement, with the international supply chain moving to a fully-digital model in a matter of weeks and without a significant investment in IT.

¹ For ease of reading, we use the term "digitize" and its variations to mean all of "digitalise", "digitalize", "digitize", and "digitize" and their variations. We use the terms "buyer" and "importer" interchangeably and "supplier" and "exporter".

² www.adb.org/publications/2023-trade-finance-gaps-growth-jobs-survey

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Benefits of digital trade

There are great benefits to business from digital cross-border trade — the ICC's own surveys and analysis suggests that digitization can deliver:

15% increase in profitability

Transactions completed in **1 hour**

Data transfer in **1 min**

Berthing times reduced to **minutes**

100% increase in trade flow **100% reduction** in data requirements

100% removal of logistics paperwork

80% reduction in border waiting times

30% reduction in operation cost

18% reduction in shipping costs 15–20% reduction in costs

15% increase in on-time delivery rates

\$3–400 saving per transaction

Liquidity raised **7 days faster**

Land sales completed **in 24 hours**

Digitization improves liquidity, reduces risk and increases profitability. This comes from less friction in the operational processes and because more efficient financing becomes available.

2023 saw the introduction of the Electronic Trade Documents Act in England ("ETDA 2023"), paving the way for fully-digital bills of lading and bills of exchange among other important documents.

But trade in manufactured goods as distinct from trade in bulk commodities benefits only tangentially from the ETDA 2023 — since manufactured goods are typically transported by container and do not rely on financing based on controlling goods via a bill of lading.

Source: ICC paper Seizing the moment: Unleashing the potential of trade digitalisation.

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The effective take-up of trade digitization requires the benefits to be clearly and easily realisable by its participants. For trade in manufactured goods, this means the importer (buyer) and exporter (supplier).

Benefits	Conditions to achieve change		
Improve liquidity: better availability of financing, efficient use of working capital in the supply chain.	Benefits to participants (importers and exporters) must be clear.		
Reduce risk: supply chain visibility, single source of truth, meet increasing compliance requirements at scale.	Participants must realise benefits as a practical matter without significant investment in process and operations.		
Increase profitability: operational efficiencies, savings on spend.	Benefits must be realisable within short time frames aligned with typical corporate planning and investment cycles.		

The case study in Section 7 underlines that:

- Digitization can be delivered in practice and at scale for trade in manufactured goods, with the case study handling over 15,000 shipments and around 100,000 documents in 2023.
- The savings from enabling suppliers to access trade finance at shipment can be significant, up to 1% or more savings on spend for buyers. **That means saving \$1m for every \$100m of manufactured goods purchased.**

And this model can be delivered at scale in full conformity with the ICC rules for digital trade transactions (URDTT).

Trade in manufactured goods

2.1 What are manufactured goods?

The World Trade Organization aggregates overall trade in goods into a single category, but this includes two distinct categories of transaction:

- Trade in commodities, typically carried in bulk by sea and sometimes by rail, often traded between source and final destination by intermediaries and financed by banks that take security or control over the goods as collateral, where the end buyer is often not involved in earlier legs of the trade. This is around US\$9 trillion per year of the total flow of goods.
- Trade in manufactured goods, carried by sea, road, air and rail — often cartons or pallets of products that are manufactured or produced by an exporter against an order from a customer and then shipped directly to that customer. Most of the time, these goods are carried in containers. Usually the buyer contracts directly with the supplier and is involved throughout the trade. The buyer places an order with the supplier, the supplier fulfils it and the goods are shipped directly to the buyer in accordance with the contract between them. This is around US\$15 trillion per year of the total flow.

Manufactured goods include food, household products and appliances, clothing, electronics, toys and furniture. Bulk commodities would include cargoes of oil, metals, grain, sugar etc.

2.2 Role of financiers

A further key difference between these two categories is the role of financiers:

- In commodities trade, the goods have a market price and for many commodities there is a sophisticated forward market and exchanges on which the goods can be hedged and sold if necessary. This means that goods can be readily financed (including by successive owners in a trade) as they can provide valuable collateral to the financier who typically finances the owner of the goods from time to time based on that collateral. If the finance is not repaid, the financier can take possession of the goods and sell them on the open market to recover the money owed. The value of goods involved in a trade tends to be large (US\$ millions), so it makes commercial sense for financiers to undertake the significant legal work and operational control required to secure and where appropriate hedge their exposure.
- In manufactured goods trade, financiers rarely look to the underlying goods in transit as collateral and instead typically rely on the buyer's credit and commitment to pay, usually providing finance to the supplier of the goods. That is because manufactured goods do not have a readily-discoverable market value or readilyavailable markets or other channels through which they can be realised, compounded by the fact that the average trade values are much smaller (<US\$100k).</p>

So financiers of trade in manufactured goods rely on obtaining a commitment to pay directly from the buyer to mitigate key risks including:

- Fraud: Do the goods exist?
- Performance: Has the supplier delivered in accordance with the contract?
- Contract: Are the goods being shipped against an actual order from the buyer?
- Impersonation: Are the parties presenting themselves who they say they are and do those dealing have the necessary authority?

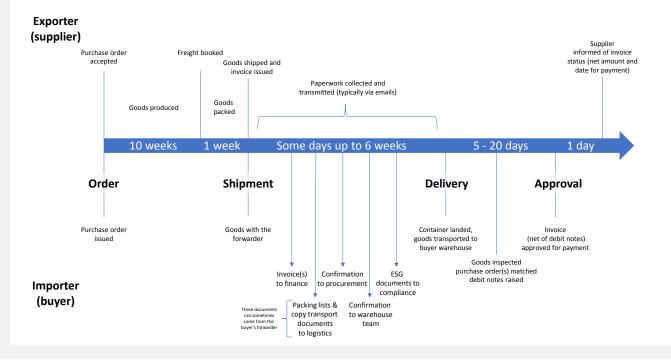
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2.3 Different approaches to financing trade in commodities and manufactured goods

	Commodities	Manufactured Goods
Who is typically being funded?	Owner of the goods	Supplier of the goods
How are financiers protected if there is a payment default?	Financiers can take possession and sell the goods	Financiers have an enforceable claim to be paid by the buyer
What do financiers need?	A secure way to attach to the goods in transit — eg: via the bill of lading	A clean and unconditional commitment by the buyer to pay
Weaknesses of current system	Fraud and other risks associated with reliance on paper bills of lading to obtain control over the cargo and the inconvenience of using paper bills of exchange	The fact that it is hard for a buyer to give an approval to pay before delivery because paperwork is not conveniently available earlier
Digitization delivers:	Secure electronic versions of the bill of lading and bill of exchange as established under the ETDA 2023 mitigate many of the risks associated with current usage of physical documents	Digitization by suppliers can be used to speed up the provision of data to the buyer, enabling approvals to pay to be given much earlier, potentially at shipment

Today's "order to pay" process for manufactured goods trade

Typical path from order to pay for trade in manufactured goods



In common with all forms of international trade, there are typically two basic questions that are embedded in the above arrangements:

- Has the exporter (supplier) provided everything as expected?
- Will the importer (buyer) pay?

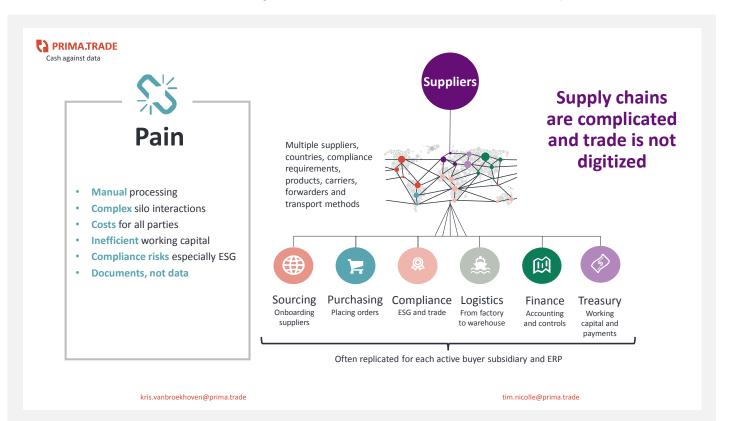
These questions are inter-related. Obtaining the evidence that the exporter has provided everything as expected is exactly the step that can mean the importer will confirm it will pay, and this exchange is at the heart of trade.

There are a number of points to note from the above diagram:

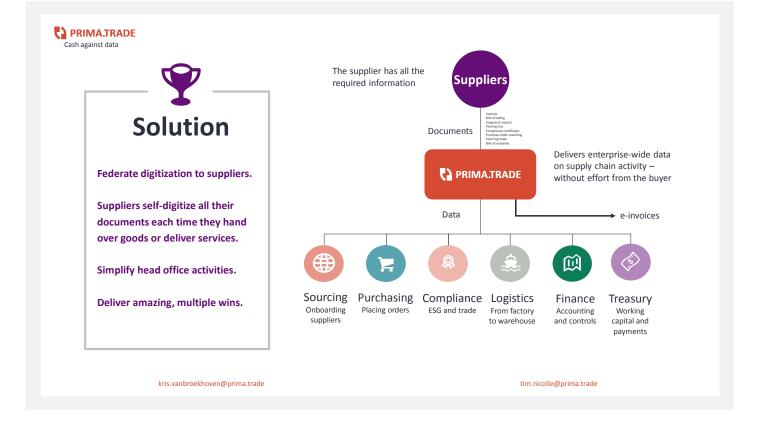
- No trading: Goods move from supplier to buyer without intermediate trading and typically are under the control of the buyer's forwarder at the factory gate (EXW) or when loaded onto a vessel (FOB).
- **Paperwork:** There is a lot of paperwork required by the buyer that flows into different buyer departments, and this paperwork is provided by the supplier at different points after shipment.

- Approval after delivery: The buyer's approval of the invoice is typically only available after delivery because the buyer does not have the evidence earlier (i.e. all the documents) to decide whether and how much to pay in respect of the invoice. Buyers wait until delivery and then first inspect the goods.
- Trade finance is difficult: Since approval, in this typical model, is not available before delivery — trade finance (relying on a buyer's commitment to pay) is also not available before that point. This is different to financing commodities where the underlying goods can provide marketable security to a financier throughout the period from shipping to delivery.
- **Compliance:** Additional ESG compliance requirements will only increase the amount of cost that is tied up in paper-based communications between suppliers and different departments in the buyer.

Digitization is typically not used extensively because the existing capabilities of technologies available to importers and exporters do not support it (e.g. there is a lack of integration between accounting systems, compliance systems, payment processes and transport management systems in most corporate IT environments).



Converting paperwork into structured and useful data before it moves on towards the importer (buyer) in the process delivers the potential for significant efficiencies:



Trade finance: enabled by digitization, delivering significant cost savings

Digitization resolves the issues that have led to a lack of availability of trade finance for trade in manufactured goods.

- As explained in section 2.2, financing trade in manufactured goods typically requires a hard commitment from the buyer to pay.
- A hard commitment from the buyer to pay is not easily available before delivery of the goods if the operational processes are paper-based. There is not enough information available quickly enough for the buyer to make a decision, and so a commitment to pay is usually only available after goods have been delivered and inspected.

Digitization can address this by:

- Speeding up the availability of necessary information to the buyer so that it can give a hard commitment to pay shortly after shipment ("cash against data"),
- Automating the delivery of the buyer confirmation,
- Enabling electronic agreements to be entered into by all parties to the trade with a financier on a trade by trade basis to support a payment upfront to the exporter (supplier) by the financier whilst preserving the credit period available to the importer (buyer).

4.1 How big is the trade finance gap?

We estimate that more than 90% of trade in manufactured goods is on open account and is not financed.

- See <u>Appendix 3</u> for an analysis of how much manufactured goods trade is actually supported by trade finance and the different trade finance products currently available to participants.
- See Appendix 2 for a description of the operational model that supports the traditional documentary credit — "cash against documents". Historically this was the dominant form of financing used to support trade in manufactured goods but it has been in significant decline in recent decades due to cost, complexity and the time that it takes to process transactions.

There is significant unmet demand for trade finance to support trade in manufactured goods — see for example the Asian Development Bank view that there is a US\$2.5 trillion trade finance gap, particularly for SME exporters.

Suppliers (exporters) would like to receive funds as they ship, whilst importers (buyers) would like to benefit from deferred payment terms and do not want to make payments before being satisfied that the supplier has supplied the goods in accordance with the contract. Trade finance could bridge that gap were it to be available as a practical matter at an affordable cost.

4.2 What might the savings for participants be?

There are significant benefits available from the use of trade finance in the trade in manufactured goods:

- Based on the case study (see Section 7), enabling exporting suppliers to access trade finance at shipment can deliver a saving on spend of 1% or more for the buyer. That is a saving of \$1m on every \$100m of goods that a buyer imports.
- This saving will vary across supply chains and is driven by the cost of the trade finance, the relative financial strengths of importer and exporter, and the increased efficiency for the exporter of receiving cash at shipment (versus cash after delivery).

4.3 Why is there a saving from using trade finance?

The ability of trade finance to deliver cash to exporters as they ship whilst permitting buyers to continue paying later delivers a real and tangible efficiency to the trade process. It is nearly always more efficient for exporters to be paid as they ship rather than to make them wait for payment until after delivery — and this will often provide the bulk of the saving that the participants can realise:

- Most exporting suppliers of manufactured goods borrow working capital themselves to bridge the time period from receiving an order to shipping the goods, and so cover the cost of production (materials, labour and energy).
- Once the goods are produced, they are part of the exporter's stock and borrowing base which can provide security for the working capital financing which has funded production.
- Once the goods are delivered to the buyer or its freight forwarder, they cease to form part of the exporter's borrowing base and there is a collateral gap from that point. Although the invoice to the buyer is an asset in the books of the exporter as a current account receivable, it is often either given a low value or excluded from the borrowing base altogether by local financiers, in view of the potential for deductions to be made by the buyer and the difficulty of evaluating receivables owed by a buyer in another country and likely governed by a range of different terms (the exporter will usually be dealing on the buyer's terms) and governing laws.

4.4 How important is more efficient trade finance for manufactured goods?

The absence of efficient and widely available trade finance for manufactured goods leads to significant structural issues across the global economy. Most notably, it is a key contributor to:

- The global trade finance gap measured each year by the Asian Development Bank, standing in 2023 at US\$2.5 trillion. The ability for buyers to provide commitments to pay quickly after shipment would help to make both local and international finance much more available to suppliers, especially SMEs based in emerging markets.
- A lack of financing for manufacturing companies pre-shipment — often thought of as "purchase order financing". Most suppliers are shipping products to their customers and having to wait a significant period to receive payment. If local financiers can be confident that suppliers will be paid quickly after shipping goods, this acceleration of cashflow would close the collateral gap from shipment to payment and support the provision of finance for production.

Before the modern era of trade globalisation, suppliers of manufactured products were paid shortly after shipment using the traditional **"cash against documents"** model that has now fallen into decline — see <u>Appendix 2</u>. Digitization offers an opportunity to re-establish the principle that suppliers should be paid quickly upon shipment — using the **"cash against data"** approach which is now demonstrably both technologically possible and available.

Other benefits: operational and compliance efficiencies

5.1 Operational efficiencies

The ICC, in its report <u>Seizing the moment: Unleashing</u> the potential of trade digitalisation, noted that most importer buyers are operating with up to nine different departmental silos, which expect different sets of information for each and every purchase. The paper-based processes involved in feeding these silos cause significant costs for all participants, both upfront in the flows of information and then later when data has to be reconciled within the importer.

Significant operational wins can be achieved by suppliers self-digitizing paperwork before transmitting it to the importer, to create a single source of truth which can feed the different silos on a fully coordinated basis. This can be achieved relatively easily using the methodologies set out in this paper (see section 6.3 for a description of an operational model for this).

The new forms of electronic bills of lading and electronic promissory notes enabled by ETDA 2023 in the UK can further support these operational efficiencies and, in combination, mean it is now truly feasible to reach a 100% digital trade.

5.2 Increasing compliance requirements, digitization reduces the cost of compliance

Compliance has always been a part of the supply chain process to ensure that goods are fit for purpose. But legal and regulatory changes relating to ESG — environmental, social and governance matters — in particular mean that compliance requirements in supply chains are increasing, especially for companies that import manufactured products.

Companies need to obtain an increasing range of information about the goods they import for sale or production to be able to:

- describe their products to their customers accurately and incompliance with applicable labelling and other standards,
- understand the environmental implications of their product life cycles (from sourcing through to end of life), and to
- know who made the goods and where the materials used in their production were sourced and in addition to be satisfied that the workplace conditions and treatment of the workers meet ETI, ILO and other applicable standards.

Laws and regulations relating to ESG disclosures and checks are tightening every year. In 2024, for the first time, in many countries commercial audits will start to include a "Scope 3" review of ESG policies and procedures in supply chains and how they have been implemented. Demonstrating ESG compliance involves a considerable amount of paperwork, and this is likely to multiply going forward as demonstrating compliance with many ESG policies will likely require paperwork at purchase order or product level.

Without digitization, it is unlikely that ESG policies and procedures can be effectively monitored across supply chains — given the volume of information and paperwork that has to be requested, collected, checked and stored.

A digitization model for manufactured goods trade

6.1 Requirements

Manufactured goods trade, unlike trade in bulk commodities, typically occurs point-to-point — i.e. directly between a buyer (importer) and supplier (exporter).

Manufactured goods trade is simpler that trade in commodities in number of respects, but also more complex in one important respect. These issues are all relevant to how digitization can be implemented to deliver benefits to participants:

- Simpler: The "trust" questions are simpler in manufactured goods trade because all the parties to the trade (importer, exporter) are present throughout the trade process as the goods typically move point-to-point and are not being traded through intermediate parties:
 - No 3rd party data: This means that there are no third parties for which there could be a benefit arising from the use of distributed ledger technologies to validate data independently to third party organisations who are distant from the underlying trade and participants. Everyone is present.
 - Reduced fraud risk: Because the importer and exporter know each other and the importer has chosen the exporter and placed purchase orders with it over time. Moreover, the risk for a financier of double financing is fully mitigated if importing buyers are confirming trades directly to that financier — since the buyer will not do this more than once.
 - Bilateral contracts: Contracts can be executed and data can be shared both bilaterally and directly between connected participants who are directly involved in the trade throughout, meaning that digital agreements can be created without the need to register them formally in a ledger system.
- More complex: Trade in manufactured goods is bespoke — it is not commoditised. The specific requirements for paperwork can vary significantly from shipment to shipment and even from one purchase order to another within a single shipment. As a result, it is much harder to standardise the paperwork involved.

These differences mean that digitizing trade in manufactured goods is both easier and more difficult than trade in commodities — likely requiring a different digitization model.

The supplier typically collects together all the documents (in original or scan copy form) that the buyer needs to see and makes them available from a central location. On the other hand, the buyer typically has multiple departments each of which takes responsibility for a different aspect of the trade. The ICC has found, in its research, that a typical corporate may have up to nine different teams involved in dealing with data from suppliers — highlighting why digitization can drive significant benefits.

6.2 What paperwork needs to be digitized?

The paperwork for a typical trade in manufactured goods that flows from exporter to buyer directly has a number of components, each of which can be digitized:

- A reconciliation between the invoice(s) and purchase orders from the buyer to confirm "price and quantity" being supplied and how that matches up to what the buyer has ordered.
- One or more commercial invoices.
- One or more transport documents (e.g. bills of exchange, airway bills, CMRs).
- One or more packing lists confirming what has been put into the cartons being transported.
- Required compliance documents to enable the goods to be landed and to be used as expected.

Most buyers require sight of all these different forms of paperwork and a reconciliation between supply and purchase orders to be satisfied that the supplier has delivered the goods in accordance with the contract and before giving a commitment to pay.

6.3 An operational process

A successful digitization model enables:

- All the necessary documents to be requested either individually or as set
- Commercial invoices to be matched to buyer purchase orders
- Documents to be digitized into structured data before transmission to the buyer, perhaps best done by the supplier as the documents are provided by it
- Automated systems that can assess the structured data, ideally automating the provision of the buyer's commitment to pay to a financier, which can then pay the supplier upfront, allowing the buyer to pay later.

The process may be handled by the supplier itself or by a freight forwarder/transport provider.

Where a freight forwarder/transport provider is involved, they typically have some but not all of the documents — and for the importer there are questions of liability and reliance (are the documents authentic, will the person handling the documents provide assurances to the importer that can be relied upon?). For the importer, the best course is to receive the documents directly from the supplier together with assurances from the supplier that the documents are authentic and truthfully provided.

Technology systems have evolved so that it is now possible to provide a federated, secure and easy-touse environment to suppliers through which they can faithfully and reliably upload and self-digitize their documents — ensuring that the documents which they provide can be transmitted to buyers in the form of data.

Such a platform can work as follows:

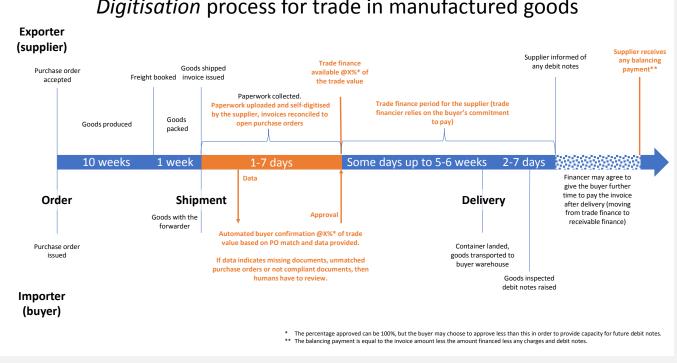
- The buyer defines which documents are required for a given set of purchase orders and a request is generated for the supplier to fulfil that can vary shipment-by-shipment and even product-by-product.
- Suppliers provide the documents against the list required by the buyer, self-digitizing the documents in the process of uploading them to the platform using an intelligent document processing system.

- With the documents converted into data, they can be checked automatically for consistency and accuracy and then distributed as a set from a central source of truth to the various teams within the buyer that require them.
- And since the supplier typically has the full set of paperwork available, the digitization process can happen at or very shortly after shipment. This delivers data to the buyer on which it can rely to provide a commitment to pay — which in turn unlocks the availability of trade finance for the supplier. So we can call this solution **"cash against data"**, in contradistinction to the historical "cash against documents" trade finance product provided by banks.

6.4 "Cash against data" — digitization that drives trade finance

As described in <u>Appendix 2</u>, the traditional documentary credit process ("cash against documents") does work and does deliver trade finance to the exporting supplier — but it takes too long and the costs are high because of the involvement of banks, the requirement to provide the paperwork physically to the importer's bank, and the level of human oversight required to review and assess whether the paperwork complies.

A digital version of this process — "cash against data" — can address the limitations and costs of the legacy paper approach and make trade finance truly efficient and much more widely available for trade in manufactured goods.



Digitisation process for trade in manufactured goods

A "cash against data" process looks similar to the above process diagram. Points to note are:

- Suppliers are incentivised to provide comprehensive digitized paperwork quickly transmitted as data in order to obtain the buyer's commitment to pay. The quicker this can be done by the supplier, the quicker the buyer's commitment to pay is available, and the sooner trade finance can be accessed.
- An optional feature of the arrangement, depending on the platform capabilities, is that the buyer's commitment to pay at the point of approval can be for less than the whole amount of the invoice due - enabling buyers actively to manage their risk of early approval. This leaves capacity to absorb debit notes that might be raised against goods at delivery and set them off against the remaining balance due and against balances due that can be due with respect to other invoices.
- For importer buyers, the digitization process described does not require significant changes to existing systems, integration with ERPs or any substantial investment. Supplier data is a new data source, available universally across the enterprise because any supplier can transact through the platform regardless of which procurement team is dealing with the supplier, which legal entity the supplier is billing or where the invoice is being processed.
- There is also a significant opportunity to combine "cash against data" trade finance with supply chain finance — extending and automating supply chain finance programmes so that they can operate at scale on a postshipment basis rather than only post-delivery (as most currently do).

This is both a technical and an operational model that is reliable, practical and scalable for participants to adopt and delivers on the key point set out at the start of this note "The effective take-up of trade digitization requires the benefits to be clearly and easily realisable by its participants".

Case study: large UK fashion retailer

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The retailer implemented PrimaTrade as a digitization platform for their international supply chain in January 2023, which ramped within 10 weeks to involve over 300 of their international suppliers in more than 20 countries. By the end of 2023, the group was operating on a fully digital basis across all international suppliers many of whom are SMEs based in emerging markets shipping to the UK and the US.

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7.1 Shipment volumes processed

Statistics for the retailer's trade digitization programme in 2023:

Financial				
Total amount of spend handled on the platform	US\$229m			
Amount of supplier trade finance delivered (provided by the retailer itself and others)	US\$125m			
Buyer savings earned (ie: cash P&L benefit)*	Confidential [‡]			
Transaction volumes				
# shipments	15,800			
# suppliers	359			
# countries	22			
# invoices	27,900			

documents digitized by suppliers ~100,000

purchase orders matched

[†]Savings equal the difference between discounts that suppliers agree for accelerated payment and the funding cost that suppliers incur (suppliers have the option). PrimaTrade's technology enables this saving to be received and booked in the buyer P&L. [‡]Savings are greater than 1% on spend.

The platform works using the operational model set out in section 6.3 and incorporates the **"cash against data"** system set out in section 6.4.

- Suppliers self-digitize transport documents (road, air, sea), packing lists and commercial invoices and then match their commercial invoices to purchase orders shipment-by-shipment.
- The platform checks the data to enable a buyer approval to pay the invoice to be issued automatically — with human oversight where documents are missing, purchase orders are not matched or where there are discrepancies identified.
- The retailer has also taken advantage of a partial approval model for invoices at shipment to manage its risk of early approvals and to provide a buffer for debit notes.

With the approval to pay available from the buyer, suppliers can then access immediate payments before delivery (ie: during the trade phase) and without having to wait for the remaining term of the invoice.

In coordination with the retailer's treasury team, a third party trade financier is involved in the programme. The financier makes the early payments to suppliers upfront and enables the retailing group to settle invoices later on their due dates i.e.: the financier provides trade finance against the flow of goods that are being shipped to the retailer based on the invoice being approved for early payment. In this way, supply chain finance is extended into the pre-delivery space, adding a trade finance capability to a standard SCF product.

7.2 Benefits

The case study demonstrates that trade digitization can deliver significant financial benefits to participants in the trade of manufactured products. This can be achieved via automated early approval of invoices by buyers — which approval can then be used to unlock trade finance for exporting suppliers — **"cash against data"**.



Comparison of trade in commodities and trade in manufactured goods

	Trade in manufactured goods	Trade in commodities
Typical transport model	Containers (part-loads, full-loads)	Bulk
Transport methods	Sea, road, rail, air	Sea or rail
Typical trade financing model	Based on the buyer's obligation to pay	Based on the value of the goods being moved
Typical concern of the trade financier?	Will the buyer pay, and will the buyer pay specifically to me and not to the supplier?	Can I get hold of the goods if the financing I have provided is not repaid?
Is financing disclosed or confidential?	Typically financing is disclosed to the buyer and the buyer engages with the financier.	The ultimate off-taker (ie: destination for the goods) may not be involved in the financing of the trade.
Fraud risks	Are the buyer and supplier colluding or related parties? Is the trade transaction real? Impersonation of any of the parties.	Are the goods being double-financed? Do others have a claim over the goods? Do the goods exist? Are the goods as described?
Key document needed for trade finance to be efficient	Obtaining a binding commitment to pay from the buyer, ideally with payment being to the financier directly.	Bill of lading (sea only) to obtain a possessory claim over the goods. Other documents to control the movement of the goods.
Typical trade approach	Point-to-point from supplier to buyer	Traded via intermediaries between source and ultimate off-taker
What needs to be digitized to make trade finance work better?	OCR digitization to lift structured data from each set of documents — including invoices, packing lists, transport documents (evidence goods are handed over), and trade-specific documents such as certificates, inspection and compliance reports — all the paperwork required by the buyer to give a commitment to pay	Ledger-based digitization is required to ensure certain key documents are unique and useful as replacements for their original paper alternatives — specifically the bill of lading (sea) as supported by the ETDA 2023. Other documents (trade specific) are required evidencing what the goods actually are which could be digitized via OCR into structured data.
Why does digitization make trade finance more efficient?	If the relevant documents can be digitized, the buyer can more quickly and more automatically give the undertaking to pay that the financier requires — and could do this before goods are delivered.	If the bill of lading can be digitized via a system (eg: using blockchain) which guarantees its state, it makes it harder for double-financing to take place and easier for financiers to attach to the goods.



	Trade in manufactured goods	Trade in commodities
Existing trade finance methods (ie: financing of the individual trade itself)	 Documentary credit (eg: LC) Dual-factoring International factoring Supply chain finance Invoice discounting 	 Documentary credit (eg: LC) Specialist transactional finance
Proportion of flows financed by trade finance	~10%?	~80-90%?
How is the balance financed?	Exporters give credit or buyers pay in advance — so using their corporate credit facilities. These are "open account" trades.	Debt facilities made available directly to traders and trade participants enabling them to offer or accept delayed payment in the trades themselves.
What are the costs of not digitizing?	 Importers have become used to receiving goods before paying them and expecting their suppliers (exporters) to give them credit to allow this to happen. This is typically: Expensive to arrange for the exporter Contributes to the US\$2.5 trn trade finance gap Contributes to problems for SME participants in global trade that do not have the ability easily to provide credit to their customers. Creates barriers to the growth of trade. 	 Banks have reduced participation in the commodity trade finance market, principally due to fraud risk because paper BLs are open to multiple financing and counterfeiting. There has been a reduction in liquidity available to participants, leading to: A loss of confidence in the market. Smaller commodity players have lost liquidity, and some have collapsed. New entrants to the market find it difficult to get established. Creates barriers to the growth of trade



"Cash against documents", how documentary credit has historically financed trade As already set out, the buyer needs to provide an undertaking to pay before trade in manufactured goods can be financed. Such an undertaking is typically only available after delivery and once goods have landed and inspected by the buyer — which is a problem because the "trade" period has by that point been completed. A consequence is that suppliers typically need to give post-shipment credit to buyers using their own financial resources — ie: without trade finance. This contributes to the trade finance gap that the Asian Development Bank reports has reached US\$2.5 trillion per year.

But banks do have a way to provide trade finance in support of manufactured goods trade, and this uses an approach often referred to as "cash against documents" — and this is a very well established approach that is built into the way that letters of credit typically work.

The buyer will want to verify three principal aspects of the supply that has been made:

- has the supplier performed all of its tasks?
- are the goods matching purchase orders from the buyer?
- are all the documents provided that are needed to land the goods and then use them — which usually includes compliance paperwork?

A "cash against documents" transaction is based on the principle that documents are provided by the supplier that show the buyer that is fine to agree payment, or even actually to make payment — even though the goods may not yet have arrived.

- The importer specifies documents that the exporter should provide that are sufficient to evidence it has provided everything as expected and what quantities and prices are expected to be shown on the invoice and on the documents — so that it knows the exporter has provided what has been ordered.
- This specification from the importer is included in a commitment to pay against these documents issued by the importer's bank and transmitted to the exporter's bank.

- Documents are provided to the exporter's bank and from there onto the importer's bank which then checks the documents against the importer's specification.
 - If they match, the importer's bank pays the exporter's bank and collects the money from the importer.
 - If documents don't match the specification, these are called a discrepancies, and the importer is then asked whether to accept them. If the importer agrees, the payment flows from importer bank to exporter bank. If the importer does not agree, the importer bank returns the documents to the exporter bank.

This is not a digital process.

Original paper documents physically move between exporter, exporter's bank, importer's bank and finally to the importer. This means that the time period from shipment to payment is often several weeks. It also means that documentary credits — delivering "cash against documents" are expensive, often costing 3% or more of the value of the goods to execute.

Documentary credit support for trade in manufactured goods is certainly now below 10% of total volumes, and is most likely nearer to 1% or 2% — public statistics for the volumes are not easily available. This process — "cash against documents" provides a pointer to how digitization can be implemented to enable efficient trade finance to support trade in manufactured goods.

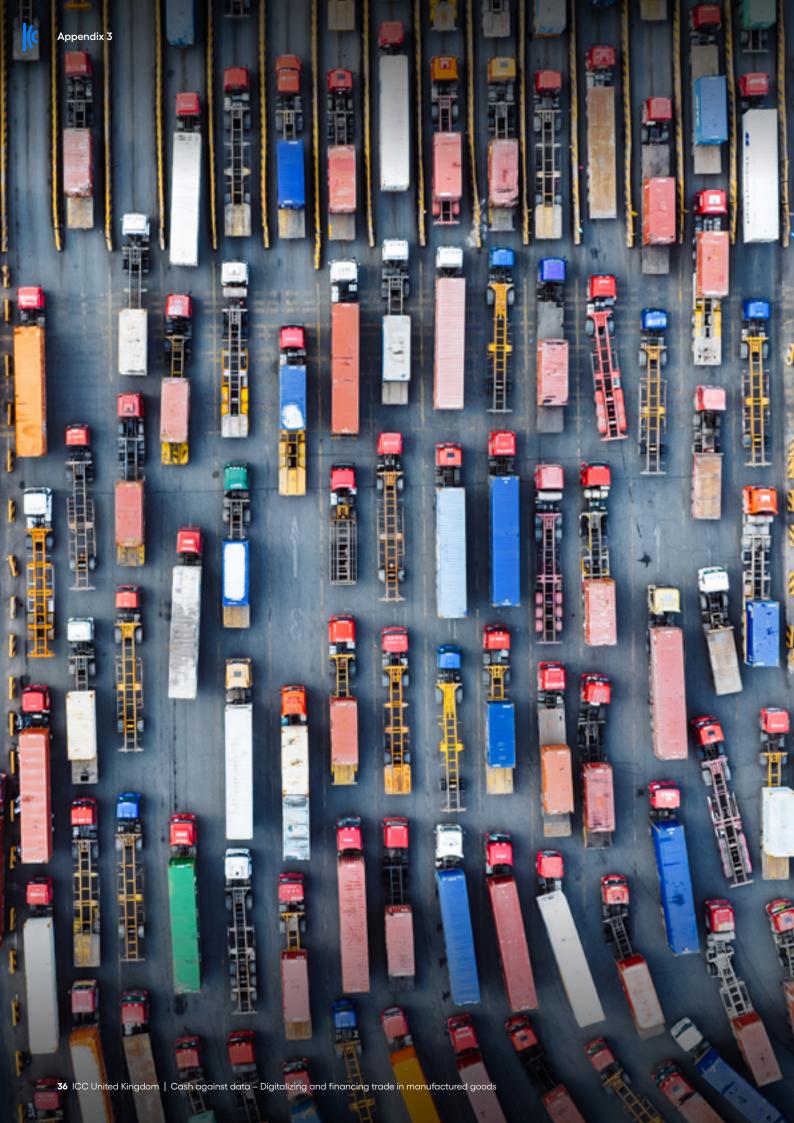
Appendix 3

How much trade in manufactured goods is financed — approximate estimates? The amount of trade that is financed is hard to know accurately or even approximately because these are typically private transactions that are executed between the parties involved. Trade finance means that the transaction in the goods are financed whilst in transit and before they are delivered — rather than after delivery — when financing becomes much easier because buyers approve invoices. The trade finance period can be anything from a few days for a domestic transaction (not cross-border) to several months for long sea routes.

Financing product	Commentary	Typical costs for trade finance*	Time frame to cash (after shipment)	Typical finance amount	Estimated annual flows (US\$ trillions)
Documentary credit	Provided by banks, usually through the SWIFT system. The importer's bank and exporter's bank coordinate to provide a guarantee of payment against acceptable documents. Documents are collected by the exporter and provided to the importer bank by the exporter's bank. If the documents comply with expectations (completeness, accuracy, amounts, prices) then payment is made. If not, the arrangement is "discrepant" and the importer is sent a copy of the documents provided and decides whether to accept them. If the importer accepts, payment is made, if not, the importer's bank returns the original documents.	2% to 5%*	1 to 3 weeks	100% of the invoice	0.5 (estimated) ³
Dual-factoring	Almost entirely run by the FCI (www.fci.nl), a product introduced over 50 years' ago that enables cash to flow to the exporter by coordinating two factoring companies, one for the importer and one for the exporter.	1% to 2%*	0.5 to 2 weeks	80% of the invoice	0.614
International factoring	A single company intermediates between exporter and importer, checking the exporter paperwork on the one hand and directly obtaining a binding commitment from the importer to pay on the other. A number of providers including the commercial arms of some US bank and independent finance companies like Tradewind Finance, Modifi, Stenn, Incomlend, Drip Capital and others).	1% to 2%*	0.5 to 1 week	80-90% of the invoice	0.1 (estimated)

* Assumes finance is provided for 30 days and the cost is expressed as a percentage of the invoice.

- 3 Source ICC Trade Register 2022 documentary credit flows = 9% of the world trade in goods = \$2.4 trillion. This includes commodities, so the amount
- supporting manufactured goods is lower and we estimate that only 20% of documentary credits are employed in supporting trade in manufactured goods.
- 4 Source FCI 2022 annual report.



Financing product	Commentary	Typical costs for trade finance*	Time frame to cash (after shipment)	Typical finance amount	Estimated annual flows (US\$ trillions)
Supply chain finance (as a trade finance product)	Programs set up by buyers for their suppliers that provide credit directly to suppliers against buyer-approved invoices. Nearly all of these programs operate post-delivery (ie: not trade finance) because buyers are not able to approve invoices before then. We estimate that the portion of total supplier finance involved that is trade finance (financing pre-delivery) is around 10% of the total SCF flows.	0.25%-1%*	1 to 3 weeks	100% of the invoice	0.21 (estimated)
Domestic factoring (as a trade finance product)	Non-recourse finance arranged by exporters themselves against the invoices that they issue. Whilst goods are in transit and before buyers have approved invoices for payment, advance rates tend to be low or invoices are just not eligible. These financings can often be supported by credit insurance, which can help significantly boost the availability of funding for exporting suppliers — but often financiers are still reticent on advance rates and may still require additional collateral from exporters.	1%–2%*	0.5 to 1 week	0%-60% of the invoice	No data reasonably available

* Assumes finance is provided for 30 days and the cost is expressed as a percentage of the invoice.

There are five main products that can be used to finance manufactured goods in transit, ignoring trade loans and other financings that are forms of direct balance sheet credit taken by participants in the trade.

Even a generous estimate based on this table suggests that only 10% of trade in manufactured goods is actually financed pre-delivery — with the balance of trade moving on "open account" and therefore being financed by the buyer paying cash upfront at shipment or by the supplier giving credit to the buyer until delivery or later. In these cases, the participant is using its own credit capacity to do this.

The market has evolved to this point over a number of decades principally as a result of the decline in popularity of the letter of credit ("LC") as an instrument of trade finance. Whilst statistics are not easily available, 50 years or more ago, the LC was a common way for importers to provide assurances to exporters that they would pay against compliant documents, and for exporters to provide importers appropriate evidence that the supplied goods matched what had been ordered.

The LC has been in decline year-on-year, noting that it is relatively expensive to use on transactions that are typically less than US\$100,000 on average, involves a high degree of specialist knowledge to operate confidently, and is quite slow.

Alternatives have sprung up, but the principal issue in financing trade in manufactured goods is that the cooperation and commitment of the buyer is almost universally required. Obtaining this commitment in a timely and practical manner holds back the availability of finance.

5 Source BCR World supply chain finance report 2023 puts SCF total volumes at US\$2.1 trillion, but most of this is post-delivery payables financing and not trade finance – we estimate that only 10% of SCF financing flows to suppliers before delivery.

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