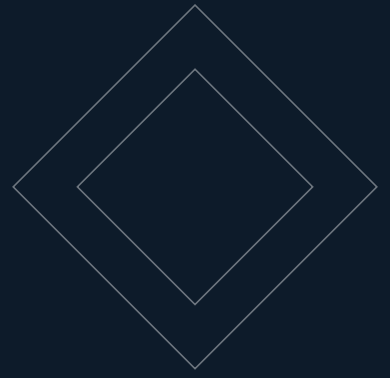




REBECCANOMICS · RESEARCH PAPER

MLETR: A Modern Digital Trade Ecosystem for Germany

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Originally produced as part of the ICC's work on the Model Law on Electronic Transferable Records (MLETR).

Creating a Modern Digital Trade Ecosystem: Germany

Reforming laws and harmonising legal frameworks. Cutting the cost and complexity of trade. Making the case for the digitisation of Electronic Transferable Records.

Summary Findings

The post-Brexit and Covid export recovery has been more challenging for small companies.

The value of UK exports has not recovered to the pre-pandemic levels.

The number of export shipments from UK ports recovered well from the pandemic up to November 2020 but has fallen back by more than a half since.

Medium-sized exporters have fared relatively well over the last 12 months - their numbers, revenues and employment have all grown, but there are fewer microbusinesses exporting than 12 months ago - their revenues have fallen by 9.1% and employment by 0.4%.

Brexit and Covid have increased cost and caused greater complexity for exporters - especially SMEs.

Brexit paperwork has increased the amount of time taken crossing borders by an estimated 7% but time savings associated with border crossing and paperwork could be reduced by nearly 81% through digitalisation.

Aligning with MLETR could deliver £250 billion in extra trade by 2026.

When legal reforms come into force in 2022, the UK stands to reduce trade transaction costs by approximately 75%.

More work is needed to prepare industry to capitalize on the benefits of a fully digitalised trade ecosystem - only 4% of UK companies use Legal Entity Identification (LEI) despite it being a building block for successful future trade.

Greater incentives are required to encourage more SMEs to use LEIs and scale up the existing system.

The UK is not in the top five countries for sustainable trade in any positive SDG product but is in the top five for two negative SDG products.

UK trade associated with positive SDGs is nearly 10% lower than its trade associated with negative SDGs.

Digitalising the trade ecosystem offers the potential to track products through Bills of Lading so the scope for linking ESG and digital goals offers huge possibilities.

Making the case for the digitisation of Electronic Transferable Records

ICC is calling on national governments to create a modern digital trade ecosystem by reforming laws to digitise trade documentation and align legal frameworks to the UNCITRAL Model Law on Transferrable Records (MLETR). This supports the G7 Framework for Collaboration on Electronic Transferable Records call to do the same, the work of UNCITRAL in promoting MLETR, the Framework Agreement on Facilitation of Cross-border Paperless Trade in Asia and the Pacific of the United Nations Economic and

Social Commission for Asia and the Pacific (UNESCAP) and the ambition of The Commonwealth Connectivity Agenda to increase intra-Commonwealth trade to \$2 trillion by 2030.

A modern digital trade ecosystem fit for the 21st century requires national laws to recognise all trade documents in digital form, and legal systems to be aligned to enable digital information to move seamlessly across borders and between stakeholders - buyers, sellers, financiers, insurers, shippers, logistics and customs. Whilst great progress is being made to digitise trade facilitation and customs documents, most jurisdictions around the world still require documents that transfer the possession of goods (transferable records) to be presented in paper form. Examples of such documents in international trade include bills of exchange, bills of lading, warehouse receipts and letters of credit.

The digital trading system currently operates on antiquated systems and laws, in some cases dating back centuries. A typical trade transaction involves up to 27 documents, 9 of which relate to the transfer of possession, can cost \$80,000 per transaction and take up to 2-3 months to process. In total, 4 billion documents move across the trade ecosystem at any given time creating inefficiencies that slow trade down and hamper growth and innovation. Through undertaking necessary legislative reform we can create an enabling legal environment for paperless trade that will enhance SME participation in trade and underpin the economic recovery.

Such legislative reform will contribute to a modernised trading ecosystem that is simple, efficient, and interoperable - where trade happens in hours and days, not weeks and months - and where costs are lower, especially for SMEs. This will help make countries more attractive to digital foreign direct investment and, with faster connectivity, will improve the digital competitiveness and capacity of firms to trade internationally.

The optimal way to achieve this is to reform national laws and align them with the UNCITRAL MLETR.

This report was commissioned by ICC United Kingdom in partnership with ICC France and Germany and the ICC Digital Standards Initiative to set out the economic case for harmonising legal frameworks and provide analysis on the preparedness of the market in relation to use of digital identification.

ICC Digital Trade Roadmap

Today

Heavily paper-based processes: 4 billion documents circulating in the trade system.

Limited access to finance: US\$1.5 trillion trade finance gap persists.

Outdated laws: national laws not accepting title documents in digital form.

No standards: lack of standardized information, processes and systems.

Future

Automation: all trade documents handled in digital form.

Increased financial inclusion: cost of finance attainable to all stakeholders.

Revised legal framework: no legal barriers and aligned legal systems.

Interoperability between systems: seamless trade flows between different technology platforms and stakeholders.

Next 5 years

Digitise the flow of information in trade.

Reduce the cost of trade.

Update and align laws and regulations.
Develop digital standards.

Building Blocks for Success

Legal reform (Governments)

Update national laws to accept title documents in digital form.
Align legal frameworks to MLETR.

Standardisation (ICC Digital Standards Initiative)

Work with international institutions and industry groups to establish international interoperable digital standards.
Build on existing standards.
Create new standards where they don't exist.

Industry adoption & transformation

Support industry to modernise digital infrastructure.
Make the internal business case for digital transformation.
Promote technology solutions.

G7 Ministerial Declaration

Definition: Transferable Records

Transferable documents or instruments are paper-based documents or instruments that entitle the holder to claim the performance of the obligation indicated therein and that allow the transfer of the claim to that performance by transferring possession of the document or instrument.

Transferable documents or instruments, sometimes called 'documents of title', typically include:

- airway bills
- bills of exchange
- bills of lading
- cargo insurance certificates
- marine insurance policies
- promissory notes
- seaway bills
- ships delivery orders
- warehouse receipts

The Global Framework: UNCITRAL Model Law on Electronic Transferable Records (MLETR)

The MLETR creates an enabling legal framework for paperless trade. It provides an international framework to align national laws and enable the legal use of electronic documents of title both domestically and across borders.

The MLETR builds on the principles of non-discrimination against the use of electronic means, functional equivalence and technology neutrality underpinning all UNCITRAL texts on electronic commerce. It enables the use of modern technologies including registries, tokens and distributed ledgers.

Aligning national laws to MLETR enables digital information to move seamlessly across borders and between stakeholders - buyers, sellers, financiers, insurers, shippers, logistics and customs.

UNCITRAL is the United Nations Commission on International Trade Law, a subsidiary body of the U.N. General Assembly responsible for helping to facilitate international trade and investment.

Economic Case for Legal Reform & Alignment

According to a 2021 study commissioned by ICC United Kingdom, modernizing laws in the UK will unleash SME growth and:

Generate £25 billion in new economic growth: 25% extra SME trade by 2024.

Reduce the number of days needed for processing documents by up to 75%.

Free up £224 billion in efficiency savings which can be recycled into the real economy: £171 billion from bills of lading £26 billion from bills of exchange £27 billion from promissory notes

Generate £1 billion to tackle the trade finance gap.

Enabling SMEs to participate in trade

Digitalisation will dramatically reduce the cost and complexity of trade and enable more SMEs to participate in global trade.

Modernising antiquated systems and processes will enable SMEs to operate more efficiently through the smarter use of technology solutions.

Harmonized systems will help SMEs scale their businesses into international markets at lower cost and better access supply chain opportunities.

Safer, more secure digital systems will reduce fraud and criminal activity reducing exposure to risk and disputes.

Greater access to trade finance solutions will address 50% of the global trade finance gap and help SMEs grow into international markets.

Promoting Sustainable Trade

The digitalisation of trade, when combined with investment in digital infrastructure and skills, will help ensure no one gets left behind, particularly in the emerging economies.

Legal reform and harmonisation is a fundamental building block to a successful modern digital trade ecosystem. Without reform, the cost of trade will remain high and solutions will be unable to scale across borders. It is also a pre-requisite to implementing international digital standards, another key building block that removes the fragmentation that currently exists in the trading systems and enables systems and processes to talk to each other and information to flow in digital form.

Digitization helps alleviate poverty by promoting more trade and shared prosperity between nations. Trade reduces consumer costs, improves choice, increases access to investment and opportunity, creates good jobs and improves living standards. On average, 5 of 6 digital businesses are led by women. Digital trade enables more SMEs to participate across the whole economy reducing regional, sectoral and international inequalities.

Scaling Reforms and Maintaining Momentum

The opportunity now exists to rapidly scale up legal reforms to harmonise legal frameworks worldwide and remove a key barrier to the growth of digital trade. In the context of the economic recovery, this exercise presents itself as a low cost, high return activity for all governments seeking to reduce the cost and complexity of trade and increase SME participation to drive the recovery.

However, this isn't a given. More business cases and economic data are required to demonstrate the value of reform and ensure that the momentum generated by the G7 in 2021 is sustainable and long term. The business cases provided by this project will generate the evidence to ensure this happens.

The reports will be published at the same time as G7 governments provide a full report back in October 2021 on legal barriers and a roadmap for reform.

Current Legal Situation in Germany

Since 2013, Germany has had laws enabling the use of electronic transport documents. Under the current law, an electronic record has the same functions as a paper document of transport and shall be deemed equivalent to a document of transport, provided that the authenticity and integrity of the record are assured (electronic document of transport).

However, the existing laws only cover transport documents and do not provide sufficient clarity for industry implementation. The result has been low usage of electronic documents.

Functional equivalence as guiding principle

Pros	Cons	Results
Technology neutral	Details missing	Companies are reluctant to introduce electronic documents.
Flexible	Requirements unclear	It isn't clear how functional equivalence could be proven in a court proceeding.
Design is up to the users	Analogue application of the law	Use of some electronic documents is low.

Electronic documents of transport

To digitalise the trade ecosystem the law must enable all documents to be handled in digital form. In Germany, this is not currently the case.

Document of trade	Relevant section of law	Accepted in digital form
Waybill	Sec. 408 (3) HGB	Yes
Consignment note	Sec. 443 (3) HGB	Yes
Warehouse receipt	Sec. 475c (4) HGB	Yes
Bill of Lading	Sec. 516 (2) HGB	Yes
Sea-Waybill	Sec. 526 (4) HGB	Yes
Transport Insurance Certificate	Sec. 363 (2) HGB	No
Bills of Exchange	Art. 1; 3 (1 and 2) Bills of Exchange Act	No
Promissory Notes	Art. 75; 3 (1 and 2) Bills of Exchange Act	No

Legal reform: two solutions required

To enable industry to implement legislation and fully align German law to MLETR, two solutions are required.

Solution 1: Adopt implementing regulations (for electronic documents of transport)

The following text would enable existing laws to be implemented by industry:

Solution 2: Legal reform and regulation

Two tasks are required of the German government:

Add electronic form to the Bills of Exchange Act.

Enable use of electronic transport insurance certificates.

Enact dedicated regulation on the details of electronic documents.

Legal terminology is required to provide industry the necessary certainty they need to implement legally compliant technology for electronic transferrable records. This spans a legal definition (functional equivalence: electronic record, same functions, authenticity and integrity), the details of process (issuing, presenting, returning, transmitting, retroactive changes) and a technical definition (reliable methods, electronic signatures, data formats).

Note: ICC Germany will publish a supplementary paper to this report, 'Electronic Documents of Trade in Germany', covering the legal situation in Germany with draft legal text for government.

Germany's Trade Position and the Impact of Digitalisation

Germany may be seeing the start of pandemic impact on supply chains

Germany's exports are 17% higher in value terms than they were at the start of the pandemic but have fallen back since March 2021.

The data show counts of Bills of Lading from Germany's ports - as Germany trades predominantly with Europe, trade through ports gives an idea of its non-EU trade position - imports are higher than exports.

Shipment counts fell between December 2020 and March 2021, picked up in April and May but fell back in June and have not recovered their December 2020 levels.

The pattern is similar for export shipments through ports, suggesting that supply chain shortages may be impacting Germany's trade.

Values have remained the same, suggesting inflationary pressures.

Digitalization can help address complexity for exporters, especially SMEs

Paperless trade helps address complexity by allowing digital communication, documentation and data across borders.

Digital trade helps by enabling digitally enabled transactions.

Digitalising electronic transferrable records helps by allowing transferrable documents like Bills of Lading, Bills of Exchange or Letters of Credit to streamline trade and reduce time and costs; it also enhances the use of digital documents for working capital purposes, speeding up access to finance.

Germany stands to reduce costs to business by around 81%, just from paperless trade.

Border cost reductions

2019 costs are taken from World Bank Ease of Doing Business and UNCTAD transportation cost data.

The trajectory of cost reduction is taken from the survey of 55 global banks conducted for the ICC MLETR alignment business case in March 2021.

The cost reductions assume that no legal change takes effect fully until 2023, therefore any effects amplify after 2024 quickly.

The impact is a significant drop in border costs (tariffs and customs and excise regulatory checks) and documentation (e.g. rules of origin).

Time savings associated with border crossing and paperwork is nearly 81%

Brexit has increased the amount of time taken crossing borders by an estimated 7%.

Paperless trade enables digital original documentation and speeds up the process significantly.

The technology exists and experts interviewed assessed that the reduction in the number of days on average would be between 75% and 85%.

Based on the Ease of Doing Business data for Germany, the figure is around 80%.

By aligning with MLETR, Germany could have €1.1 trillion extra trade by 2026

As Germany has a higher number of exports, the impact on export values is higher, but this feeds into supply chains and consumption elsewhere.

€1tn extra exports by 2026 increases the value of German trade by 71% if MLETR alignment can be implemented by the end of 2022.

The impact of digital trade facilitation on exports is lower at just below €45bn but will help Mittelstand businesses in terms of reducing costs proportionately more than bigger ones.

Sustainability Can Go Digital

Germany has a key role to play in sustainable trade.

Germany's trade associated with positive SDGs is 38% higher than its trade associated with negative SDGs.

But Germany ranks in the top five import partners in the five largest sectors associated with negative SDGs: crude and refined oil; coal; women's clothing (man-made textiles); plastic packaging; components for combustion engines.

It is No.1 for recycled plastic exports at \$38.8 billion.

Germany's sustainable power

Germany is the third largest trading partner and accounts for nearly 10% of world exports.

This means it can influence the way in which supply chains become sustainable.

There is scope for it to take a leadership role by implementing the EU taxonomy, but this will require monitoring ESG products, sectors and activities at a transactions level.

This requires a digital solution as it is too complex to be done manually.

MLETR has the potential to track products through Bills of Lading so the scope for linking ESG and digital goals offers huge possibilities.

Appendix: Methodology

The UK was taken as a base for costs and time savings over time for digital trade for banks and businesses using the ICC United Kingdom survey of 55 global banks.

World Bank Ease of Doing Business data was used as a base for export and import costs. This provides information about the costs in terms of dollar values per shipment and costs of border crossings and border compliance for base estimations and replaced the need for a dedicated survey approach as was conducted in the UK. This was used as the basis of the paperless trade analysis.

UNCTAD transportation costs were used as a baseline for creating an index of transport and freight costs in international trade.

Only exports are analysed to assess the costs and time savings associated with paperless trade to avoid double-counting on bilateral relationships.

The assessment of the impact on trade of electronic transferrable records was based on the UK case study published by the ICC in May 2021 which included a survey of 55 international banks. This study gave estimates from that survey of the total benefits to banks' trade finance businesses of a move to electronic transferrable records.

A typical shipment was valued at \$25,000. UNCTAD and the OECD estimate costs on the basis of a typical container of 20 ft that weighs between 1.8 and 2.2 metric tonnes. We assumed 2.2 metric tonnes and used trade volume data from the United Nations Comtrade database to estimate the "typical value" of that shipment using the Coriolis Technologies MultiLateral platform's mirroring approach.

Costs by country were derived from the Ease of Doing Business indicators, a more accurate and recent estimation of costs than is currently available in the Ease of Doing Business data which was last published for 2019.

The value of trade was divided by \$25,000 for each country to get a unit value of trade in 2021 for each country. The total cost for each country (compliance + documentation + transport) was multiplied by the number of units to get a total cost of transportation, border compliance and documentary costs.

The percentage of total trade accounted for by trade costs was calculated.

Cost and time savings were taken from documentary research, expert interviews and discussions with trade professionals (approx. 20 in total) and the ICC UK survey of 55 banks. There were assumed to be no impacts on costs in the first year after legal reform, so growth in line with trend forecasts was calculated for 2022. Benefits were estimated to accrue from 5% in the first year and exponentially thereafter.

Coriolis Technologies creates a momentum forecast of trade to give a baseline picture of how trade will grow over the following five years. The cost elasticity of trade was derived from a meta-analysis of academic research on the subject using cross-country analysis, and the country elasticity from this analysis was used as a coefficient to create uplifts in trade forecasts between 2021 and 2026 using an upper-bound and a lower-bound estimate given the estimated expectation of changes in trade costs from paperless trade.

Cost changes year-on-year were estimated assuming a gradual reduction from 10% in 2024 to 15% in 2025 and 25% in 2026 if regulations are implemented in the next 18 months. This gives the base forecast and the lower and upper bound estimates for 2025. The acceleration in impact is because of the multiplier effect as legal reform is implemented before 2024. However, this is substantially below the estimated cost savings in the documentary research because these tend to be unquantified.

Documentary research

Documentary research covering 600 media sources, speeches and third-party documentation across the G7, Europe, Asia, Africa, North America and South America was analyzed using a Python-based Natural Language Processing tool.

Approximately 1.1 million words in appropriate documents were analyzed.

Documents were analyzed for the frequency, context and content of key words associated with trade digitization, paperless trade facilitation and related legal reform.

The results were grouped into specific categories and themes related to legal reform, electronic transferrable instruments, and digital trade facilitation.

The documentary research was supplemented by 20 expert interviews with trade practitioners, in particular covering SME impact and sustainability.

ESG calculations

All goods exports and imports are classified by a standardised customs and excise code - the HS code.

This HS code is mapped to sustainable development goals (SDGs) using the UN concordance.

This yields the five largest sectors contributing positively to SDGs in global trade flows and the five largest sectors contributing negatively to SDGs in global trade flows.

The number of times a G7 country is counted amongst the top five importers or exporters in each of these five sectors is recorded.

Glossary

Paperless trade: digital cross-border trade facilitation measures, meaning "Trade taking place on the basis of electronic communications, including exchange of trade-related data and documents in electronic form across borders."

Electronic Transferrable Records: "electronic transferrable records that are equivalent to transferable documents or instruments." In other words, these are electronic versions of often paper-based transferable documents that entitle the holder to claim the performance of the obligation indicated in the documentation - for example payment or delivery.

Border compliance: "captures the time and cost associated with compliance with the economy's customs regulations and with regulations relating to other inspections that are mandatory in order for the shipment to cross the economy's border, as well as the time and cost for handling that takes place at its port or border."

Documentary compliance: "captures the time and cost associated with compliance with the documentary requirements of all government agencies of the origin economy, the destination economy and any transit economies."

Digital trade: digitally enabled transactions in goods and services.

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Note: This project is part of a wider ICC global programme making the case for legal reform. The programme has multiple research commissioners, project funders and institutional partners.