2022
Summary Version

ICC Trade Register Report

Global risks in trade finance

Market Trends
Analysis of Trade Finance Products
Analysis of Supply Chain Finance
Analysis of Export Finance Products

ICC

In this report

1. About the International Chamber of Commerce

International Chamber of Commerce (ICC) is the institutional representative of more than 45 million companies in over 100 countries. ICC's core mission is to make business work for everyone, every day, everywhere. Through a unique mix of advocacy, solutions, and standard setting, we promote international trade, responsible business conduct and a global approach to regulation, in addition to providing market-leading dispute resolution services. Our members include many of the world's leading companies, SMEs, business associations, and local chambers of commerce.

For more information please visit: www.iccwbo.org

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2. Acknowledgements

This International Chamber of Commerce (ICC) Trade Register Report would not have been possible without the path-finding work done during the Global Financial Crisis (GFC) of 2007–2009 by the World Trade Organization (WTO), the Asian Development Bank (ADB), the ICC Banking Commission, and various partners and policy makers. We would like to acknowledge Steven Beck of the ADB and former WTO Director General Pascal Lamy for providing the initial impetus and the ADB for the all-important seed funding to create a consolidated trade finance database hosted by ICC.

ICC Banking Commission is the largest commission of ICC. It is the authoritative voice for the trade finance industry, setting the standards and benchmarks for industry practices. The Commission is delighted to continue working with its two Trade Register Project partners: Boston Consulting Group (BCG) and Global Credit Data (GCD).

As always, the ICC Banking Commission extends special thanks to our 21 Member Banks:

- ANZ
- Bank of America Merrill Lynch
- Bank of China
- Barclays
- BMO Financial Group
- BNP Paribas
- Crédit Agricole CIB
- Deutsche Bank
- HSBC
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- Société Générale
- Standard Bank
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- Sumitomo Mitsui Banking Corp
- UniCredit
- Wells Fargo

The findings of this report are based on our member banks' underlying data sets, and financial and resource contributions. Their continued financial support, investment of time and resources, and uncommon focus on the bigger picture, lets us collect increasingly robust and meaningful data to produce this report each year.

The authors would like to thank SWIFT for their contribution in providing 'Trade Traffic' data to help validate trade finance growth rates at a product and regional level (governed by a SWIFT BI partnership framework).

Finally, the ICC Banking Commission would like to thank all those who have been instrumental in the design and execution of the 2022 Trade Register report.

2.1 Our Partners

2.1.1 Global Credit Data

Since 2004, the Global Credit Data Consortium (GCD), owned by 50+ member banks to collect, pool and share back the anonymised internal credit risk data from contributing banks' loan books, to support modelling of Probability of Default (PD), Loss Given Default (LGD), and Exposure at Default (EAD) in compliance with prudential regulatory requirement. GCD is also providing to ICC members services for credit data collection, analysis, and research, contributing to **a better and data driven understanding of credit risk in Trade Finance instruments** and allowing ICC to focus on core strategic and advocacy activities.

Members include prominent Banks from Europe, North America, South Africa and Asia Pacific, and have exclusive access to the GCD databases to successfully support their IRB Advanced accreditation applications.

The PD database covers 18 years of quarterly rating migration, default rates and PDs calibration. The LGD/EAD database now totals over 300,000 CIB defaulted bank loans from around the world and over 155,000 borrowers covering 11 Basel asset classes. The robustness of GCD's data collection and quality infrastructure helps place GCD's databases as the global standard for credit risk data pooling (https://globalcreditdata.org/interactive-dashboard/).

GCD members are owners of the association and its data. They have a prominent role in steering the GCD's strategic direction to keep activities member-centric and drive the "by Banks for Banks" credo.

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BOSTON CONSULTING GROUP

2.1.2 Boston Consulting Group

Boston Consulting Group (BCG) plays a central role in the Trade Register Report by supporting the day-to-day project and the development of the report, and by contributing a strategic, value-focused perspective to the core topics.

BCG is a global management consulting firm and the world's leading advisor on business strategy. BCG partners with clients from the private, public, and not-for-profit sectors in all regions to identify their highest-value opportunities, address their most critical challenges, and transform their enterprises.

BCG's expertise in the financial institutions sector spans all major topic areas to give global, regional, and local banks detailed insight, knowledge, and analysis across markets. Trade finance is an established and growing topic area for BCG's wholesale and transaction banking practices. BCG has worked on more than 30 recent trade finance-related projects globally on industry questions and challenges such as market entry and growth, pricing, cost reduction, operations, and digital change and transformation. In addition, BCG's Global Trade Model, which analyses and forecasts global trade flows and trade finance revenues, is in its seventh year, and now includes services trade as well as goods trade.

By partnering with the ICC Trade Register Project, BCG aims to bring additional strategic insight, and commercial and technical industry perspectives, to the reader base.

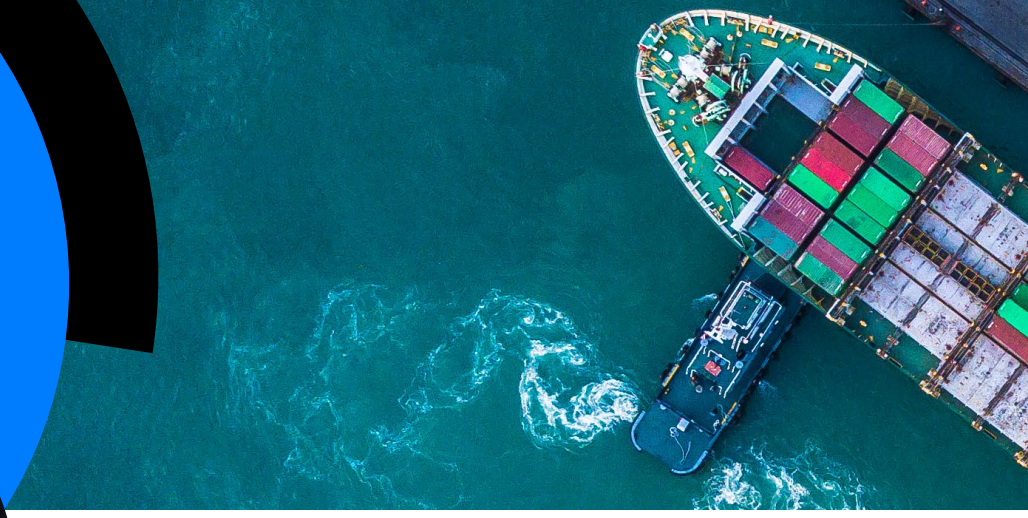
Beyond the ICC Trade Register, BCG continues to actively support the trade finance community with thought leadership, including recent and a pipeline of future publications covering topics such as the digital, regulation, geopolitics, and increasingly importantly sustainability in trade.

As part of BCG's commitment to protecting our planet and helping our clients achieve sustainable competitive advantage, BCG is deepening and broadening our focus. The BCG Center for Climate and Sustainability brings together more than 550 experts covering the full range of sustainability topics, including biodiversity, circular economy, decarbonization, sustainable agriculture, transition financing, water management, and other ESG topics— across all sectors—to support our clients around the world.

As BCG partners with our clients to help them realize their sustainability and net-zero ambitions, we must also continue to change the way we operate as a firm, and have set out the following net-zero commitments:

- We will reach net-zero climate impact by 2030; from 2030 onward, we will become climate positive by removing more carbon than we emit
- We are committing $400 million over the next decade to enable BCG teams to drive climate and environmental impact across industries and countries

BCG was founded in 1963. It is a private company with more than 90 offices in 50 countries. For more information, please visit www.bcg.com.



3. Introduction to the ICC Trade Register Summary (Public) Report

The full ICC Trade Register Report presents a global view of the credit risk profiles of trade finance, supply chain finance, and export finance transactions. It examines default rates, observed average maturities, and expected losses for these products at global, regional, and national levels, supplying extensive analytical commentary along with granular data charts and tables. Overall findings demonstrate the low-risk nature of these transactions, which play a crucial role in enabling global trade.

This publicly released document gives a brief summary of the 2022 ICC Trade Register Report, and includes aggregated data only. In line with a new commercial model for the Trade Register, the full version of the Report is available to third parties for a fee, with reduced fees available for associations, non-profits, academic and regulators - to be agreed on a case-by-case basis. This model provides greater value to our 21 Member Banks, without whose cooperation the Trade Register could not be published. The redacted tables in Appendix C illustrate some of the detailed outputs and analyses that are available in the full report.

The Report draws on data from 24 trade finance and export finance banks, which provides a representative set of over 42 million global trade finance and export finance transactions that amount to exposures in excess of $21 trillion. The combination of import letters of credit, export letters of credit, performance guarantees, and supply chain finance exposures in the Trade Register is equal to approximately 24% of global traditional trade finance flows and 9% of all global trade flows (Figure 1).

1. 21 Member Banks contributed to the report in 2021, but the ICC Trade Register contains data from 24 banks in total across all years

2. Based on BCG's Global Trade Model

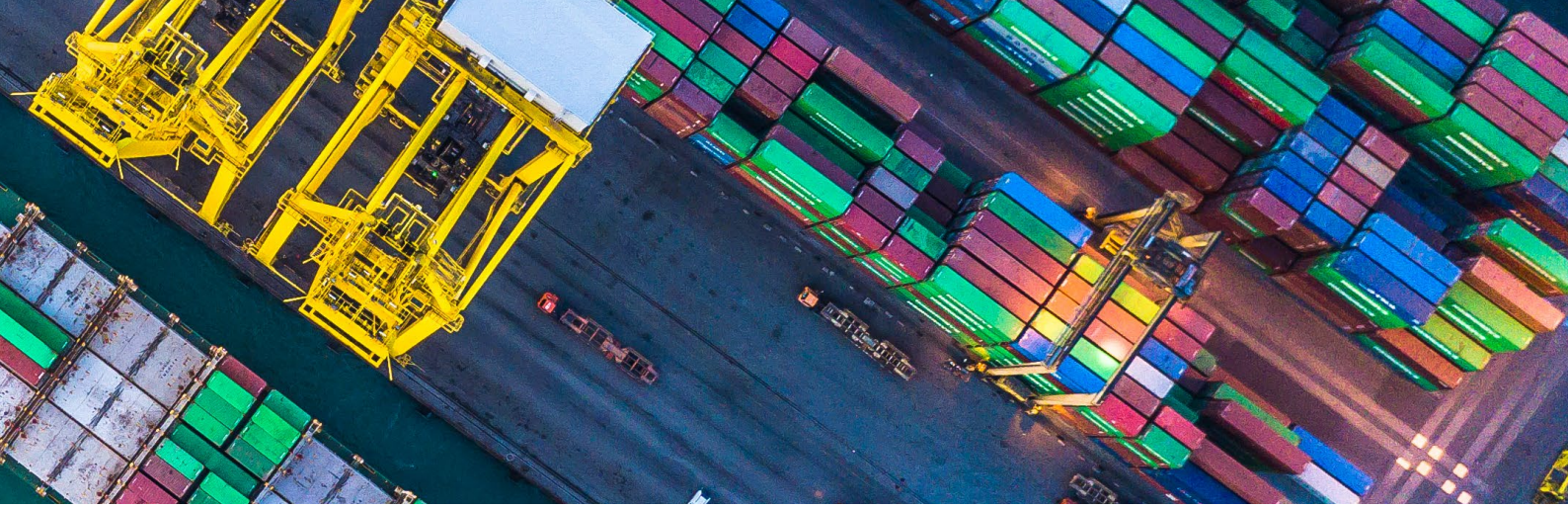


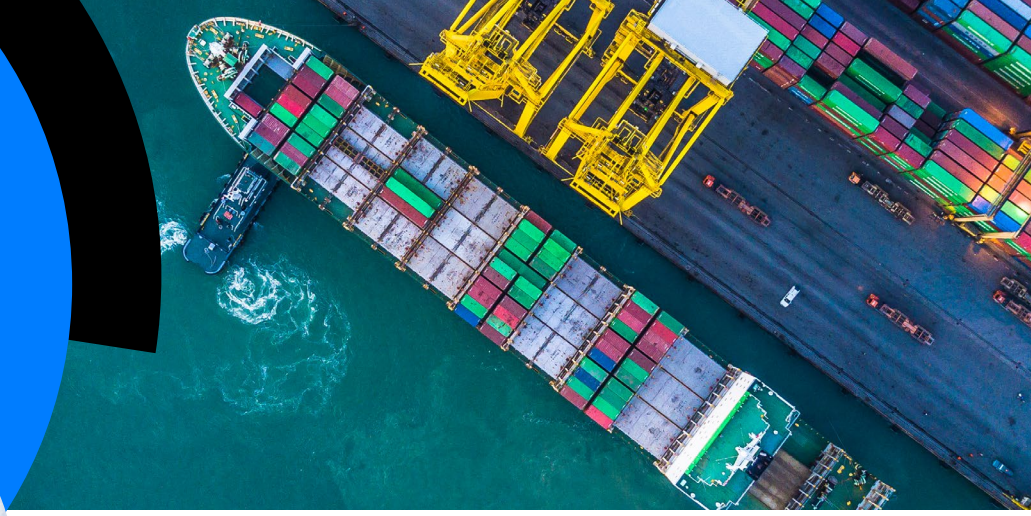
Figure 1
Estimated coverage of ICC Trade Register in 2021 (products grouped to enable like-for-like comparison)

Product	2021 exposures in Trade Register ($T)	Est. share of 2021 trade finance, by product (%)	Est. share of 2021 total global trade flows (%)[2]
Documentary trade	0.65	25%	3%
Open account trade and SCF	1.18	23%	6%
Total	**1.83**	**24%**	**9%**

The data is analysed by GCD, BCG, member bank specialists, the ICC project team and Project Advisors. The methodology used is consistent with the approach used in past years and, over time, the Trade Register has evolved to align increasingly with the Basel framework, while also providing a practitioner's view of credit risks within trade finance and export finance.

This year's report continues to reflect the finding from past years: trade finance and export finance represent a low-risk asset class even at times of market uncertainty.

In addition, an improvement to the Trade Register this year is in using Global Credit Data's larger, more granular, and more representative data set for analysis of loss given default (LGD) and expected loss (EL). This new data set has also enabled us to report LGD and EL analysis of supply chain finance for the first time.



4. Trade Finance: State of the Market

Market Trends in Trade and Trade Finance

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Introduction

Please note, figures shared in this analysis represent a 'best view' at time of writing. Given the evolving macroeconomic and geopolitical environment, please reach out to your ICC or BCG contacts should you wish to receive the latest iteration of any forecasts.

When last year's ICC Trade Register was published, the world was still dealing with recurring waves of COVID-19 variants, and their impact on economic activity and trade. In many parts of the world, it looked like the COVID-19 pandemic would cause a couple of years of subdued trade volumes before a return to the trends that had characterised the previous decade. In the end, international trade proved to be highly resilient: on a global level, merchandise trade reached a new record level of $20.8 trillion.

A year on, however, the notion of a return to normalcy in international trade must be discarded. The war in Ukraine has caused a radical shift in the patterns of international trade, especially in food and energy. Disruption to supply chains is encouraging many Western nations to aim to be more self-sufficient – or at least de-concentrated from a trade perspective. This policy is also sometimes linked to the goal of environmental sustainability to which governments are increasingly committed. A surge in inflation is simultaneously driving up interest rates and increasing the risk of recession. While trade will continue to grow, the shape and patterns of that growth will be affected by non-market factors to a greater extent than at any time since the Cold War.

In this 2022 ICC Trade register we review the developments in international trade and trade finance over the last year and look forward to flows for the coming decade. It has rarely been more important for banks, corporates, SMEs and governments – all of whom enable and rely on trade – to understand the environment they face.

Trade in 2021: A year of constrained recovery

After a flat Q1, economic growth picked up rapidly from Q2. Mass vaccination in developed economies meant that the direct effects of COVID-19 declined substantially; much government support for businesses continued; and companies had learned to live with COVID-19 both operationally and strategically. During lockdowns, savings rates quadrupled across developed markets. As lockdowns were lifted, pent up demand drove a surge in consumer spending as savings returned to normal levels by Q3. Industrial output and transportation revived, causing the price of oil to recover. And travel even began to return, if slowly.

Last year's Trade Register had forecast international goods trade flows of $18.1T for 2021. In fact, they reached $20.8T, up 22% from the sharp dip in 2020 and exceeding 2019 levels. Evidencing the shift in trade corridors, this increase was not evenly spread geographically. For example, goods trade between the US and China grew by only 16%, while between the EU and China it grew 25%. The greatest growth rates occurred in various Mercosur and India-related trade routes.

On a sectoral basis, energy saw the biggest rebound in 2021, up 44% on account of increased industrial production and rising wholesale prices. Semiconductors and materials were up only 16% and electrical machinery up 18%, both affected by supply constraints.

Trade in services recovered less rapidly than trade in goods, up 16% overall. Travel & transport was up 24% on 2020, but still well below pre-pandemic levels. Trade in financial services grew only 12%, having not been materially affected by the pandemic in 2020 on a volume basis.

Despite this return to growth, trade was supply constrained in 2021. Some of the constraints concerned shipping itself. A shortage of labour and containers – the results of snap lockdowns and manufacturing disruptions – caused route delays and soaring prices. Freightos Baltic Index estimated that in September 2021 the average cost of shipping a 40-foot container (based on 12 different regional route indexes) reached $11k, compared to $1.3k before the pandemic. In addition, there were many localised events. The Suez Canal was blocked by a wedged container ship for six days in March 2021. Lloyd's List estimated that this choked off $9.6B of trade per day for the duration of the incident.

On top of these shipping constraints, trade was inhibited by production constraints – most notably in electronics supply chains. Over recent years, the global structure of the electronics supply chain has enabled great specialisation and cost savings that have made the expansion of the digital economy possible. But this geographic specialisation has also created vulnerabilities.

For example, in semiconductors, BCG estimates that there are more than 50 points across the supply chain where one region holds more than 65% of the global market share. About 75% of semiconductor manufacturing capacity is concentrated in China and East Asia, as are the suppliers of key materials such as silicon wafers, photoresistors, and specialty chemicals. Almost all of the world's most advanced semiconductor manufacturing capacity is currently located within two countries in East Asia. These are single points of failure for the supply of chips that could be disrupted by natural disasters, infrastructure shutdowns, or international conflicts. As we saw during the pandemic, unexpected changes in supply (lockdowns, shipping disruptions) or demand (a rapid shift to home working) can quickly throw the industry into disarray, causing severe shortages not only of these components but the swathes of goods that they power.

While industry had generally returned to capacity after the easing of COVID-19 restrictions by mid-to-late 2021, there were exceptions. Approaches to easing COVID-19 restrictions differed across Europe, Asia and the Americas, leading to significant differences in trade growth across corridors.

International travel started to return in 2021, but it remained subdued. Trade in travel-related services in 2021 was still 29% below 2019 levels – a consequence of variation in the easing of COVID-19 restrictions across markets, challenging border restrictions, and the ongoing threat of new COVID-19 variants.

Outlook for 2022 and beyond: An unchartered path

2022 already looks quite different from 2021. The effects of COVID-19 may have subsided but other trade headwinds have replaced them.

The Russia-Ukraine war

The war in Ukraine has disrupted supply chains, especially in food and energy. Russia and Ukraine were jointly responsible for 26% of global wheat production prior to the war, and Ukrainian agricultural exports are down 50%[3]. Sanctions imposed on Russia by the US, EU, and other nations are driving down the volume of exports from Russia and increasing volumes from alternative exporting countries.

Disrupted energy flows and rising prices

The war has also disrupted the supply of oil and gas. As with food, sanctions and other restrictions on energy not only reduce the volumes exported from Russia but change energy flows as importers source from other countries and in alternative forms (e.g. LNG), often at higher cost from farther afield. Russia has reacted by selling oil at a discount to countries that have not imposed sanctions, such as India, which is further changing trade patterns. This, combined with other factors such as low storage levels in Europe, have driven a rapid rise in wholesale energy prices. Not only has this contributed to higher household bills, but also a great rise in input costs for many industrial sectors – driving material substitutions, changes in processes and productivity methods, and price rises.

Inflation and interest rates

These increasing energy prices along with dramatic fiscal expansion resulting from government spending during the pandemic (amongst other contributory factors) have lifted inflation to near double-digit levels in many Western countries. Central banks have reacted by increasing the cost of borrowing. The US Federal Funds rate is up over 3% since the start of year, to the 3.00-3.25% range, and further hikes are expected. Meanwhile, the Bank of England has increased its base rate on 6 occasions in 2022 moving from 0.25% at the beginning of the year to 2.25% by mid-September. Similarly, the European Central Bank increased interest rates by 0.75% in September.

Wages are increasing but not as fast as prices. This squeeze is likely to dampen discretionary spending on luxury goods, tourism and the like – an effect that will only be exacerbated when base rate increases flow though to mortgage rates. If interest rates rise to 5% or more, as currently predicted, an increase in company failures and mortgage defaults may be expected. This may end inflation but will also reduce economic output and slow down trade.

Climate change

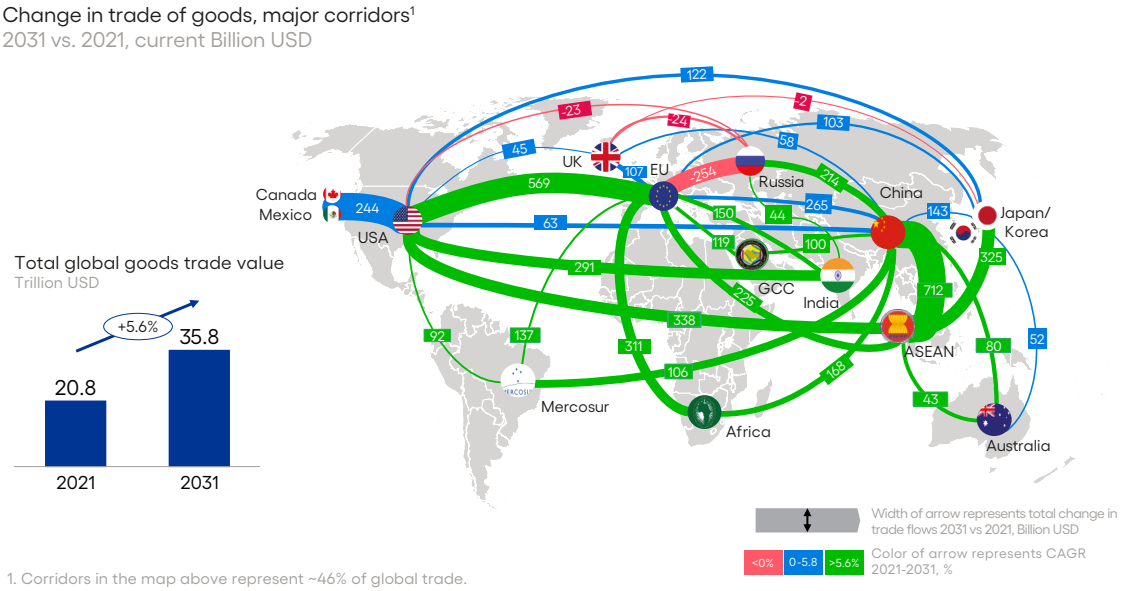
Governments are increasingly aware of the threats posed by global warming. Trade in itself has a substantial role in supporting this agenda, enabling corporates and SMEs to decarbonise their supply chains and move to more sustainable practices – from an environmental, social, and economic lens. Nevertheless, responses are likely to impact patterns of trade. For example, the EU's Carbon Border Adjustment Mechanism, which comes into force next year, will increase the cost of importing certain goods from countries which lack a compliant carbon-pricing scheme. Such policies will not only reduce the carbon intensity of goods imported into the EU, but also re-draw trading patterns as products, materials, and suppliers come to be preferred for their sustainability credentials.

ICC recognises that we are still in the early days of sustainable trade. Much work is needed to increase the proportion of trade that is genuinely sustainable. Some financial products already benefit from a single definition or set of standards for sustainability, but none have yet been established for trade. ICC has initiated a programme to define sustainable trade and create an assessment framework that can be applied to any trade flow. The first iteration will be launched in November 2022 at COP27.

3. Source: Ukrainian agriculture ministry

Figure 2

BCG forecast of 2021 vs. 2031 trade volumes and patterns



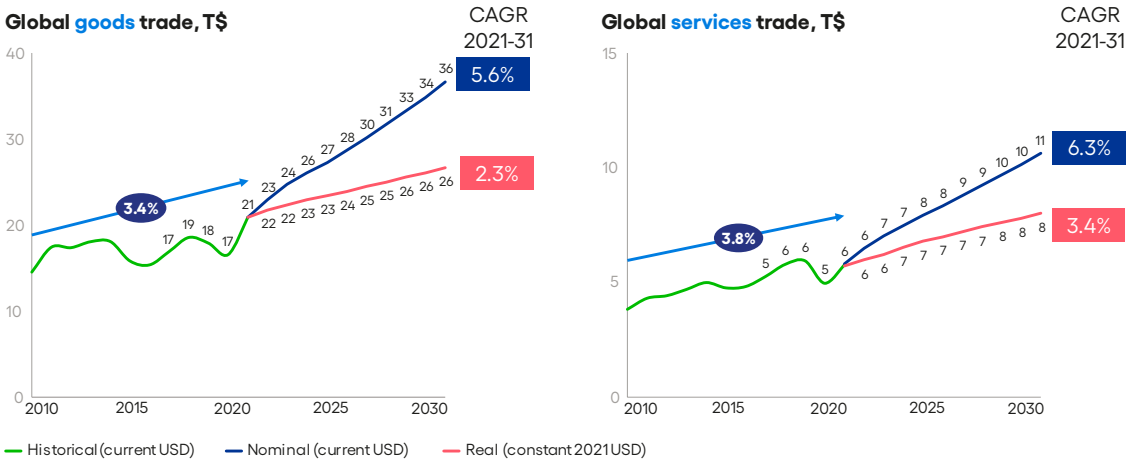
1. Corridors in the map above represent ~46% of global trade.
Note: EU Intra-trade estimated to grow by 1.5T USD by 2031 CAGR 1.8%; inflation adjusted
Source: UN Comtrade, Oxford Economics, IHS, WTO, BCG Global Trade Model 2022, BCG analysis

Given these developments, BCG forecasts goods trade to grow 8.9% from 2021 to 2022 (from $21T to $23T). However, much of this nominal dollar growth in goods trade is driven by inflation. The real or inflation adjusted growth is expected to be 3.3%.

BCG forecasts significant decreases in real two-way trade flows between Russia and Western countries (-51% with UK, -65% with USA, -63% with EU) and increases between Russia and other countries (+30% with ASEAN, +48% with China, +68% with India). Ongoing geopolitical relations and supply chain shifts may drive a forecasted 3% decrease in trade between USA and China, which is projected to continue declining by 1% a year beyond 2022. In contrast to the decline in USA-China goods trade, BCG forecasts an 8% increase in USA-EU trade. From an EU perspective, BCG forecasts a 17% increase in GCC-EU trade in 2022 as a result of an increased volume of energy imports to Europe combined with higher unit prices for energy.

From a trade value perspective energy will be among the fastest growing sectors, with trade increasing 13% on last year, largely driven by price. Trade in all other sectors is expected to increase in the low single figures, with the exception of metals and mining, which is forecast to increase by 9%.

Figure 3
BCG forecast of nominal and real trade growth, 2010-2031



Source: UN Comtrade, Oxford Economics, IHS, WTO, BCG Global Trade Model 2022, BCG Analysis

Looking farther ahead, BCG expects nominal goods trade volumes to continue to grow at a rate of 5.6% over the coming years, reaching $36T by 2031. However, much of this nominal growth is the result of inflation. Real growth is expected to be 2.3% per annum (2021-2031 CAGR), with total goods trade in 2031 reaching $26T in 2022 dollars. For services trade, we expect higher growth of 6.3% per annum, reaching $11T by 2031 on a nominal basis and $8T in 2022 dollars.

Implications for Trade & Supply Chain Finance

Continued year-on-year growth

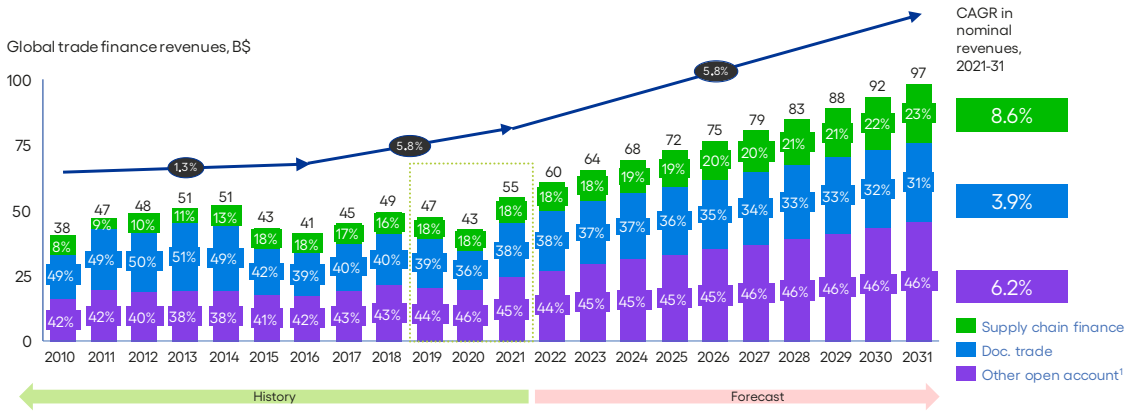
Despite some narrowing of margins, BCG estimates that nominal trade & supply chain finance revenues grew by 28% from 2020 to 2021 on a nominal basis, reaching $55Bn and exceeding 2019 revenues by 15%. This is a natural consequence of the recovery in trade volumes described above. Documentary trade revenues gained share from open account trade – a result of increased value of the trade in oil, where documentary trade is the norm, and a greater demand for protection in a higher risk environment.

We expect further nominal growth of 10% in 2022. This is slightly above underlying trade growth because banks will be able to increase margins in a high-rate environment, and because they will price-in the higher risk ratings of customers during this period of economic uncertainty (a trend confirmed by ICC Member Banks). Of course, much of this growth is merely a result of inflation. Real growth will be closer to 5.0%. Over the next two to three years, we may also see an increase in defaults (albeit small given the low volatility of trade finance, as demonstrated by the Trade Register), depending on the severity of any recessions in certain regions. This may give rise to a short-term increase in demand for the risk mitigation properties of documentary trade.

Over the coming 10 years, trade & supply chain finance revenues are forecast to grow 5.8% annually and reach $97Bn by 2031 on a nominal basis. Again, financing revenues will increase slightly faster than the volume of the underlying trade, a consequence not only of strong margins but of greater penetration of SME trade with digitised products and platforms. These expected gains would be yet higher if not for price pressure made likely by increased competition from fintechs and non-banks.

Figure 4

BCG forecast of trade and supply chain finance revenue pools (2010-2031)



1. Other open account includes working capital finance revenues for cross-border trade
Source: UN Comtrade, Oxford Economics, IHS, WTO, SWIFT, BCG Global Trade Model 2022, BCG Analysis

Open Account going from strength to strength

As trading partners become better established and more trusted, open account trade becomes more attractive. The benefits of speed, ease, and operating cost outweigh the risk mitigation benefits of documentary trade. Simultaneously, technology such as e-invoicing and procure-to-play platforms are substantially reducing the scale at which open account propositions become viable for importers and exporters. And product innovation from fintechs over the coming decade is likely to make open account trading attractive to even more traders, especially when simpler forms of means of risk mitigation, such as insurance, can easily be bundled in.

We therefore expect most of the growth forecast for trade finance revenues over the next decade to occur in open account trade (albeit slightly softened by the macroeconomic environment over the next 2-3 years sustaining demand for documentary trade). More exactly, we expect open account trade (supply chain finance and working capital finance for cross-border trade) to increase at an annual nominal rate of 6.9% while documentary trade increases at a nominal rate of 3.9% over the full period. By 2031, open account products will account for 70% of trade finance revenues, up from 60% today.

Increased demand for trade assets

Securitised trade finance assets have historically been below their fair share in the market. They have been costly to package and distribute and offer low yields compared with many other securities. However, they are increasingly attractive to investors seeking low-risk assets and diversification away from pure interest-rate risk.

Simultaneously, banks increasingly need to get assets off their balance sheets so that they can free up the capital to "say yes" to their high value corporate customers. As trade and supply chain finance programmes grow and concentration risk becomes a more acute issue, selling trade assets to third parties becomes even more attractive for banks. And it becomes easier to do as data availability and technology continues to improve, with trade being digitised and legacy systems being replaced or renewed.

Platforms and ecosystems – the future of trade?

The hot topic in trade has shifted from distributed ledger technology (DLT) and blockchain to platforms and ecosystems. That is, attention has shifted to the delivery model for next-generation trade finance rather than the technology that underlies it.

Fundamentally, the rapid growth in platforms and ecosystems – even outside trade – has driven consumers, corporates, and SMEs to congregate in a range of new digital venues. These include digital marketplaces (e.g. Amazon, Alibaba, Tokopedia, Shopee), e-invoicing and procure-to-pay platforms (e.g. Tradeshift), logistics platforms (e.g. Tradelens), trade-specific platforms (e.g. MarcoPolo, Contour) and networking platforms (e.g. GlobalLinker). Unlike traditional bank-led origination, platforms and ecosystems therefore allow banks to operate in these very same venues where their customers frequent to do business, and acquire at a much greater scale, at lower cost, and in a more customer centric and digitally-native way.

Financial institutions should regard platforms and ecosystems in trade not merely as channels but as alternative business models that sit alongside their core relationship-led business. They provide the opportunity to transform trade finance products, for example, by replacing traditional letters of credit with insured invoice or supply chain finance propositions.

Platforms produce powerful network effects. They allow a bank to serve a corporate and its full tail of buyers and suppliers in a single venue, substantially reducing acquisition and operating costs and facilitating alliances with their large corporate customers. The reduced cost to acquire and cost to serve provided by digital platforms means that banks can serve SMEs whose business was previously too small to transact profitably, potentially helping to close the "trade finance gap". While corporates will probably continue to use complex channels and direct ERP-connectivity, platform-based trade may soon become the norm for SMEs and MidCorps.

The role of trade finance in unlocking sustainable supply chains

The climate crisis is now clearly on the radar of business leaders and governments. Many countries are now committed to Net Zero emissions by 2050. And, as recognised in the Paris Agreement on Climate Change and the Sustainable Development Goals, sustainable supply chains must be part of the answer.

This, in turn, requires sustainable trade finance. ICC defines sustainable trade finance as any such product that facilitates a combination of:

- the transfer of sustainable goods or services
- from a sustainable and socio-economically responsible supplier
- to a sustainable and socio-economically responsible buyer
- by sustainable and socio-economically responsible transportation
- to achieve a sustainable and socio-economically responsible end-purpose.

Financial institutions can help corporates and SMEs finance decarbonisation and other sustainable changes to their products, processes and supply chains. To do so, they must be more aware of what they are financing, and for what

purpose. And they must act on this knowledge to incentivise sustainable trade through more attractive terms and better pricing amongst other levers.

But the role of financial institutions in driving sustainable supply chains is not limited to financing alone. Banks can also act as a central source of knowledge to advise their clients on how to decarbonise their supply chains and become more sustainable – especially SMEs and corporates in less developed markets who lack ready access to relevant expertise – perhaps providing them with tools that help track the sustainability and provenance of goods.

Trade & supply chain finance brings together banks, large corporates, and their thousands of SME suppliers through the provision of finance via interconnected technology, such as data platforms. It is particularly well positioned to be a driving force for sustainable supply chains.

Conclusions

International trade is in a state of flux. The challenges of COVID-19 have been replaced by new geopolitical and industrial challenges. But these new challenges also bring new opportunities. These prospects should excite trade finance professionals: increased demand for trade finance, increased penetration of new technologies that provide unprecedented access and connectivity, investors increasingly queuing up to get involved, and the reward of an increasingly sustainable global economy.

New reporting requirements for supply chain finance – what does this mean for the industry?

Christian Hausherr, Deutsche Bank

Despite the rapid growth in supply chain finance, the substantial value it brings to corporates and SMEs, and its low risk nature as demonstrated by the Trade Register, it has at times had an unfair reputation given its role in several high-profile corporate defaults. As mentioned before, in virtually all cases supply chain finance has played no role in the default itself but has been implicated due to the lack of transparency in its usage. This is now likely to change, spelling good news for the product and changing its position from a widely used but 'under the radar' financial product to a key enabler for corporate supply chains that is widely understood and spoken about.

This change stems from the fact that the Financial Accounting Standards Board (FASB) has recently approved a new rule[4] on how companies must report the use of supply chain finance programs, also known in the market as 'Reverse Factoring' or 'Payables Finance'. Going forward, companies reporting under US-GAAP will be required to disclose information about the key terms of a supplier finance program, including a general description of the programme, its payment terms and how they were determined as well as any form of guarantee or pledges that are provided to the finance provider in the same context.

4. Further detail available from FASB: https://fasb.org/Page/ProjectPage?metadata=fasb-DisclosureofSupplierFinanceProgramObligations-022820221200

To provide investors and analysts a more qualified view on the balance sheet, companies are also asked to provide a 'roll-forward' amount in their annual report:

Figure 5
Example of 'roll-forward' reporting requirements under new FASB rules

	YEAR N+1	YEAR N
Confirmed obligations oustanding at the beginning of the year	$ 733	$ 712
Invoices confirmed during the year	2,435	2,278
Confirmed invoices paid during the year	(2,315)	(2,257)
Confirmed obligations oustanding at the end of the year	$ 853	$ 733

In essence, the decisions that have been taken by the FASB are in line with industry expectations. In the interest of providing more transparency in the usage of supply chain finance, companies will need to disclose whether and to what extent they make use of such programmes. The recent decision qualifies this requirement in more detail and prepares the ground for an official update of the accounting standards framework.

In this context, it is important to keep in mind the FASB reporting requirement refers to reporting only and does not give any direction or guidance on the question how such programmes should be accounted for. The question of classification (i.e., whether certain transactions in scope of a supplier finance program qualify as debt or a trade payable) is separate and needs to be individually assessed by the respective auditor when preparing the annual report of a company.

So, what will be the impact of these new reporting requirements on corporates and their service providers?

Corporates may have to take a closer look at how their payment terms are determined and which suppliers they want to include in a supply chain finance programme, as these components will ultimately be part of the information that is later shared in their annual reports.

Service providers may also be asked to provide their expertise when it comes to defining the selection criteria to onboard suppliers. With sustainability as an additional relevant component for supply chain finance programmes, the complexity of this field is rapidly increasing, and subject matter expertise is essential.

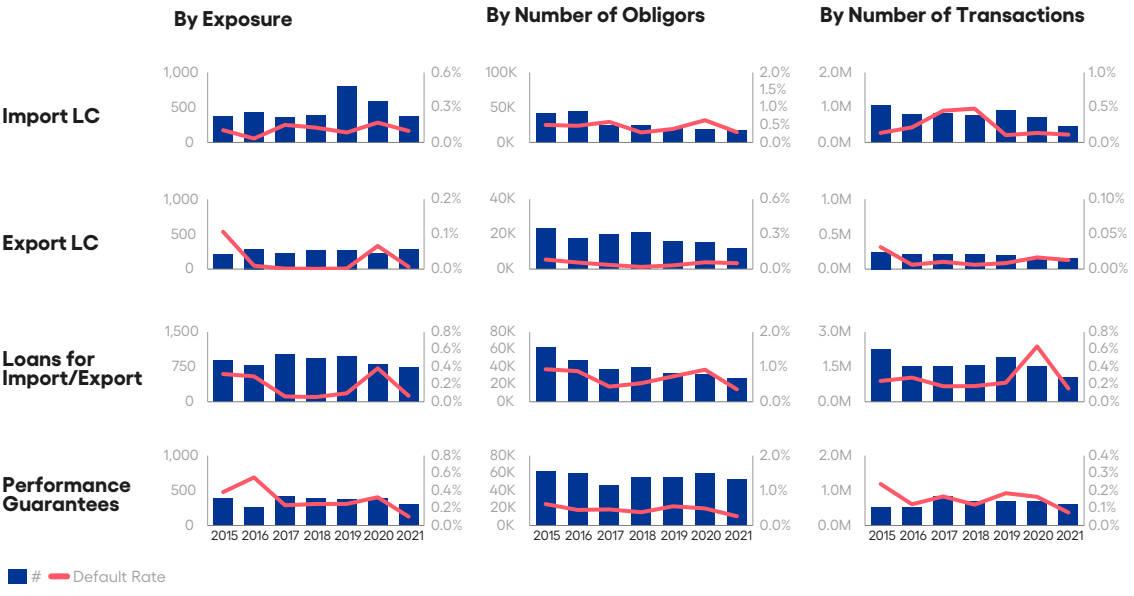
The industry is well positioned to master these requirements, and, if all requirements are followed – the use of a supply chain finance program will qualify as a quality label for good corporate governance that increases the attraction of a company to investors and banks.

5. Analysis of Trade Finance

5.1 Trends in Default Rates

In general, default rates for trade finance products have fallen slightly in the 2008-2021 data set compared to the 2008-2020 data set used in last year's report. While this in itself would be expected given the impact of COVID-19 on the economy in 2020, it is more surprising that observed 2021 default rates are below 2019 figures across many products and measures. Weighted by obligors, default rates for 2008-2021 are all lower than last year; excluding export L/Cs, they are all also lower than 2019 pre-pandemic default rates.

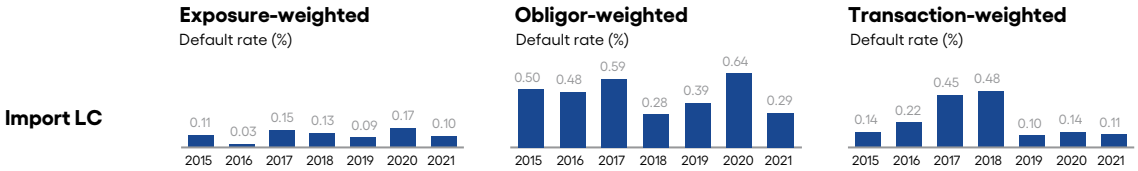
Figure 6
Summary of default rate trends for trade finance, 2015–2021



Source: ICC Trade Register 2022

Default rates for import L/Cs returned to low levels in 2021, with exposure-weighted default rates decreasing to 0.10% vs. 0.17% in 2020 and remaining largely in line with 2019 levels of 0.09% The trend was similar on a transaction-weighted basis, but on an obligor-weighted basis 2021 default rates were proportionately even lower at 0.29% vs. 0.64% in 2020 and 0.39% in 2019. This suggests that 2021 default rates were likely driven by a small number of high-value defaults.

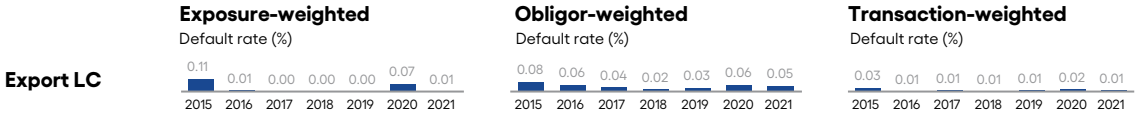
Figure 7
Import L/Cs default rates, 2015–2021



Source: ICC Trade Register 2022

Default rates for export L/Cs continue to remain significantly lowr than for other trade finance products. This reflects the fact that the exposure of a bank confirming an export L/C is to the issuing bank (i.e. the bank of the importer in the importing country) and not to the importer itself. As such, defaults are rare and will only occur when either the issuing bank defaults or a technical default occurs (see Appendix A for more detail). Default rates for export L/Cs declined in 2021 versus 2020 on an exposure- (0.01% versus 0.07%), obligor- (0.05% versus 0.06%) and transaction-weighted basis (0.01% versus 0.02%), albeit were slightly higher than in 2019 before the pandemic.

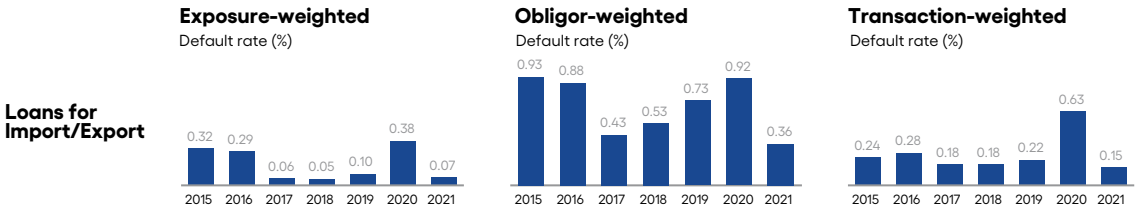
Figure 8
Export L/Cs default rates, 2015–2021



Source: ICC Trade Register 2022

Default rates for loans for import/export decreased in 2021 to below 2019 pre-pandemic levels across all measures, demonstrating amongst the lowest default rates for this product since 2015. On an exposure-weighted basis, default rates fell from 0.38% in 2020 to as low as 0.07% in 2021. On an obligor- and transaction-weighted basis, default rates fell from 0.92% to 0.36% and 0.63% to 0.15% respectively. While it is not possible to be certain at a systemic level, this overall drop supports the hypothesis that default rates were kept low across products due to government stimulus efforts remaining in place to support businesses as the pandemic started to ease.

Figure 9
Loans for import/export default rates, 2015–2021

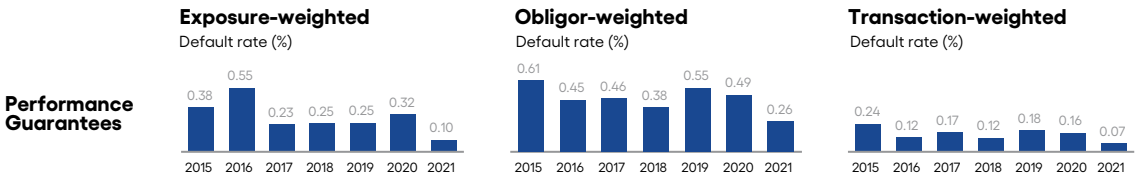


Source: ICC Trade Register 2022

Performance guarantees (including standby L/Cs) showed a reduction in default rates across all measures in 2021 versus both 2020 and 2019.

Indeed, across all three measures, the 2021 default rates are the lowest observed by the Trade Register since 2015.

Figure 10
Performance guarantees default rates, 2015–2021



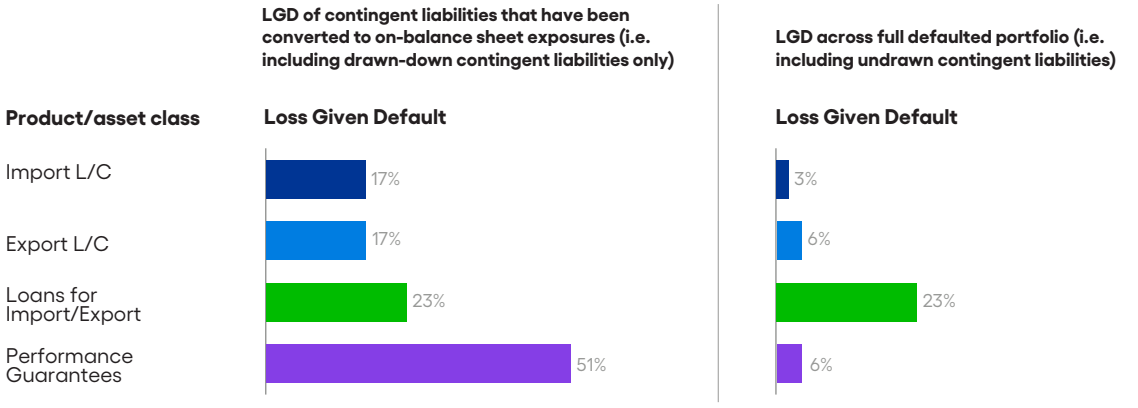
Source: ICC Trade Register 2022

5.2 Loss Given Default Analysis

The new methodology and data set for calculating LGD and EL means that the reported LGD in this year's trade register is even lower than in previous years. This demonstrates even more clearly than previous years' reports that trade finance products have low LGD (Figure 11) in addition to the low default rates discussed above.

This year, we have provided two alternative numbers for LGD. The first set only include contingent liabilities that have been converted to on-balance sheet exposures, for example claimed performance guarantees. If the whole portfolio of instruments were included (second set of numbers), expressed LGD figures would be much lower. Using these values would be equivalent to making the assumption that EAD is 100% across trade finance instruments.

Figure 11
LGD for trade finance products, 2000-2020



Source: ICC Trade Register 2022

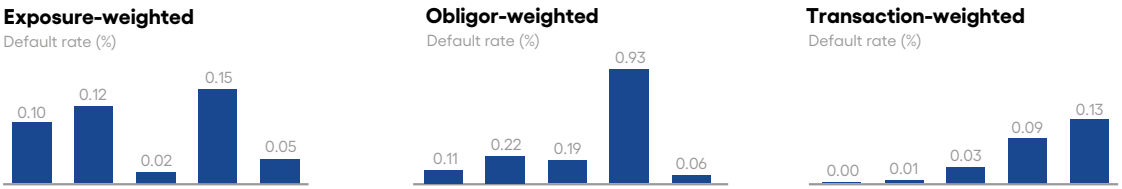
6. Analysis of Supply Chain Finance

Since 2017, the ICC Trade Register has collected data on supply chain finance, focusing specifically on payables finance. As of 2021, we now have five years' data to demonstrate the risk characteristics of the product over the medium-term, including the COVID-19 pandemic. The Trade Register's data set now captured c. 16% of global SCF exposures. In addition, for the first time this year, we are able to share initial analysis relating to LGD for SCF payables finance.

6.1 Trends in default rates

After a peak in 2020 – probably due to the direct and indirect impact of the COVID-19 pandemic – global default rates for SCF have largely fallen back towards pre-pandemic levels on both an exposure- (0.05% in 2021 versus 0.15% in 2020) and obligor-weighted (0.06% in 2021 versus 0.93% in 2020) basis. Interestingly, on a transaction-weighted basis, defaults increased in 2021 versus 2020 (0.13% versus 0.09%), potentially driven by the default of a corporate with a high-volume, low-value SCF programme.

Figure 12
SCF payables finance default rates, 2017–2021



Note: Regions and countries reflect those of risk holder | Source: ICC Trade Register 2022

6.2 Loss Given Default Analysis

Comparing GCD datasets covering 2008-2019 and 2008-2020 demonstrates there has been no change in SCF LGD rates over that year.

The figure for 2000-2020 is significantly higher and higher than other trade finance instruments (excluding PGs). We believe there were significant write-downs on SCF facilities during the global financial crisis that may have driven this.

Figure 13
Loss given default values using three different reference datasets for supply chain finance

	ICC 2008-2019	GCD 2008-2019	GCD 2008-2020	GCD 2000-2020
Supply chain finance	Not available	19.8%	19.8%	26.9%

7. Analysis of Export Finance

The findings in this year's ICC Trade Register Report support the long-running conclusion that export finance presents a low risk for banks. This finding is due to the low EL of export finance, which derives from low LGD combined with a PD that is comparable to below-investment grade project finance and corporate finance assets.

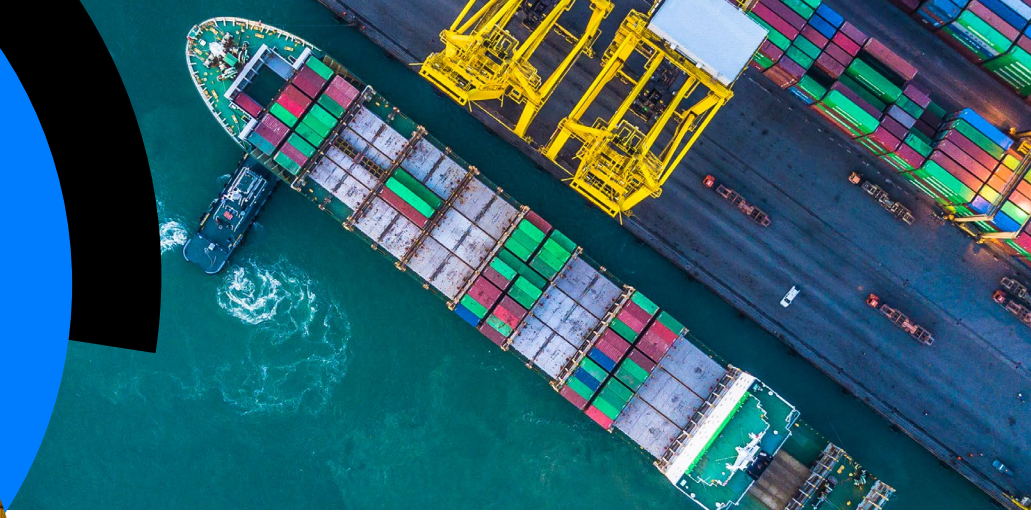
Default rates from 2007-2021 have slightly declined by obligor, exposure and transaction weightings when compared to average rates from 2007-2020 across all asset classes. Given this data reflects an average over a 15-year period, even small movements in the average reflect relatively large in-year shifts. Indeed, across all measures, export finance default rates in 2021 were the second lowest in the history of the Trade Register.

Figure 14

Asset class export finance defaults by obligor, exposure, and transaction, 2007–2021 (versus 2007–2020)

	Defaults by Obligor		Defaults by Exposure		Defaults by Transaction	
	2007-2020	2007-2021	2007-2020	2007-2021	2007-2020	2007-2021
Default rate	1.01%	0.97%	0.62%	0.59%	1.06%	1.03%

5. Each data point represents one reference to a transaction in a given year by a participating bank – that is, single transactions may occur in multiple data points across different years and banks.



8. Future of the Trade Register

The ICC Trade Register project has evolved substantially since its inception over a decade ago, and now covers six trade products across over 200 geographies, with a database representing 9% of the global trade flows and 24% of financed trade flows.

Despite the progress to date, the ICC Trade Register is committed to continuous improvement, and sees its role as an ongoing project to improve the understanding and awareness of the risk characteristics of trade and trade finance products for financial institutions, investors, and regulators, while maintaining an attractive value proposition to reward its member banks.

The 2021 Trade Register, published last year, was a milestone for the project in two ways. Firstly, ICC launched a new commercial model that improves and differentiates the proposition for member banks, while encouraging participation from new banks, with the aim of both increasing the project's data pool and the representativeness of the data set. Secondly, ICC managed to work with its member banks, GCD, and BCG to accelerate the cycle time of the report, publishing results only c. 9 months after yearend (versus c. 18 months previously).

In this year's report, in addition to carrying forward the enhancements above, ICC has also made changes to its LGD analysis, which was previously limited by a smaller, less representative data set compared to what is used for default rate analysis. From this year onward, the GCD data set on trade finance LGD is being used, which will not only improve accuracy and resolve methodological challenges, but also enable coverage of a further product – SCF payables finance.

Going forward, ICC would like to continue to enhance the project in several ways:

- **Participation:** Continue to leverage the new commercial model to increase participation across member banks, in turn growing the data pool and market coverage. Not only will this improve the reliability of the result, but also help advocacy efforts with regulators, which is a critical objective of this work. Improving participation continues to be the single biggest priority for the Trade Register.

- **Methodology:** Enhance the methodology of the Trade Register to incorporate legal entity identifiers - where data protection regulations allow - enabling removal of duplication across banks.

- **Product Coverage:** Work with member banks to improve product coverage, particularly around receivables finance. Over recent years, receivables finance has grown significantly, and will continue to do so, fuelled by the digital and platform economy. Receivables are particularly important in the SME space, where a greater understanding of risk dynamics can play an influential role in helping close the 'Trade Finance Gap'. In a similar vein, ICC is also looking into how it can form partnerships with insurers to include trade credit insurance within its data pool in order to gain a more comprehensive view of trade losses.

- **SME Tagging:** A current limitation of the Trade Register is the inability to distinguish between corporate and SME defaults. Working with banks to tag SME transactions will enable the project to determine the risk characteristics for SME trade in particular and hopefully demonstrate low credit risk comparable to other products. This should improve its regulatory treatment, critically encouraging greater financing for SMEs in trade.

- **Sustainability Tagging:** Similarly, with its current data set, the Trade Register is unable to apply a sustainability or sector lens to its analysis. ICC thus cannot showcase whether more sustainable transactions demonstrate favourable risk characteristics. This will be particularly important for banks and regulators, as they consider how to incentivise and price sustainable transactions in, for example, sustainability-linked supply chain finance programmes. Such an effort by ICC will complement its ongoing work to set a global definition and standards for sustainable trade.

As ever, we are grateful to our member banks for their cooperation, without which the Trade Register could not be published. ICC looks forward to further engagement with member banks and broader affiliates to make good on the above ambitions, and ensure that the project continues to provide a worthwhile return on investment for the trade finance community.

9. Appendix A: Approach to Analysis and Definitions

9.1 Report Limitations

Data quality and completeness: ICC collects data from member banks at the most granular level of detail, resulting in large numbers of fields for each transaction and many thousands or hundreds of thousands of transactions per bank. This data is therefore large and complex. To reduce input errors, we take great care to validate and review the data, and to apply consistent definitions across banks. In particular, since the 2018 report we have implemented a new digital submission process to automate a number of these validation checks at source.

In addition, we perform a number of manual checks to ensure accuracy. For example, the number and percentage of defaulted obligors per facility type per year is compared between each bank to look for outliers. If a bank's initial input data suggests a default rate that is outside of a normal range or inconsistent with its prior year's input, then we discuss this with the bank involved to ensure that the data input is both complete and accurate.

The size of the data set helps to reduce the effect of any small errors, while the complexity allows us to cross-validate the numerous averages to check consistency. No database of this size will be error free, so the aggregates and averages per year and per product provide a good approximation.

Comparability of results: The ability to compare results between years is affected by improvements to the methodology and new participants to the Trade Register. In some cases, the underlying data sample may differ between analyses as some banks have not contributed to all years.

Consistency of definition of default: The bank-declared defaults contributed to this database are in line with Basel methodology, in which defaults are counted whenever an obligor is declared 'in default' by the reporting bank. The definitions prescribed require the bank to identify only borrowers with overdue payments of 90 days or more and borrowers judged by the bank as 'unlikely to pay'. This element of judgement will always result in a difference between banks. For example, one contributing bank may regard a certain importer bank as 'unlikely to pay' and default it due to political unrest in the importer bank's home country, while another bank may have a different political or economic interpretation of the same events and not default it.

Furthermore, differences in default recognition can arise from setting divergent materiality levels for overdue payments (e.g. very small amounts are not regarded as causing a default). Bank regulators have set very different minimum thresholds, which can affect the recognition of defaulted counterparties substantially.

Finally, the definition of a 'technical default' varies widely between regulators. For example, one bank may be required to briefly declare that an otherwise sound borrower is in default due to a mistaken booking of a payment, overlooked for 90 days, while another regulator may allow a similar event to be ignored for default counting purposes. Application of the EBA's new guidance will hopefully improve uniformity of submissions, at least across European banks.

As a result, the Trade Register reports of defaults include many cases where the borrower restored the position quickly and no loss was incurred by the bank. For this reason, care should be taken not to interpret a certain default rate as a loss rate.

Potential double counting of obligor defaults: In the current methodology, if an obligor defaults across one country, product, or transaction, it is assumed that it defaults across all countries where they have business, products, and transactions. This conservative approach is also driven by confidentiality, which prevents banks from disclosing names (or LEIs) of obligors in default. This means that while calculating the defaults in each country will slightly overstate the true global total number of defaults, obligor and transaction default rates will be correct as both the numerator of defaults and denominator of all transactions and obligors are proportionally increased.

Obligor-weighted expected loss: Due to limitations of obligor recovery data provided by some members, obligor-weighted EL is calculated using exposure weighted LGD.

The data template for the trade finance element of the Trade Register comprises sections covering non-defaulted transactions and borrowers in aggregate (used for default rates), and sections covering detailed reporting of defaulted cases which are used for recovery rate analysis and CCF analysis. Every bank has a different capacity to provide the granular data requested (such as a higher level of detail for workout of defaults) for the detailed recovery rate For the aggregated statistics used in the default analysis, banks were able to provide most of the aggregated data for non-defaulted obligors.

Transaction count data has been included to increase the trade finance data available across regions and products for obligors and exposures. Given the changes in sample size, improvements in data collection processes made by individual banks and their differing ability to provide granular level data, some degree of caution must be exercised when comparing default and recovery rates. These risk metrics as reported in this study are historically observed averages. Further adjustments would be necessary to convert historical averages into forward-looking calibrated projections.

Regarding the limitations above, it thus is important for readers of the ICC Trade Register Report to apply caution in use of the data. ICC strongly encourages the use of the report data and information for research purposes, but strongly advises against its use to inform investment decisions. Please contact the Banking Commission if you would like to understand whether your use of the Trade Register data is recommended and/or appropriate.

9.2 Trade & Supply Chain Finance

9.2.1 Scope of Trade & Supply Chain Finance Products

For the purpose of the ICC Trade Register, participating banks are requested to submit data for five trade finance product categories. These are issued import L/Cs, confirmed export L/Cs, loans for import/export, performance guarantees and performance standby L/Cs, and supply chain finance. The definitions of these product categories are included in Figure 55.

Figure 15
Definitions of trade finance products

Trade finance products	Definition
Issued import L/Cs (Referred to as import L/Cs)	Documentary letter of credit issued by the participating bank, covering the movement of goods or services.
Confirmed export L/Cs (Referred to as export L/Cs)	Documentary letter of credit confirmed by the participating bank but issued by another bank also including 'silent confirmations'. Consequently, apart from few rare exceptions, the exposures in this product category constitute bank risk.
Loans for import/export	All loans classified as 'trade' including but not limited to clean import loans, pre-export finance and post-import finance. Participating banks are asked to report loans for import and loans for export separately; additionally, a breakdown of loans where the counterparty is a bank and loans where the counterparty is a corporate is also requested.
Performance guarantees and performance standby L/Cs (referred to as performance guarantees)	Guarantee instruments issued by the participating banks, representing an irrevocable undertaking to make payment in the event the customer fails to perform a non-financial contractual obligation. Note: only includes performance instruments as distinguished from financial guarantee instruments (as determined by the nature of the contractual obligation that would trigger a payment under the guarantee).
Supply chain finance – payables finance	Buyer-led program within which sellers in the buyer's supply chain can access finance by means of receivables purchase.

9.2.2 Default Rate

Banks may treat default as a product-specific phenomenon, meaning that a customer can be in default on one product but not another. Under Basel II, however, banks are supposed to take an 'obligor default perspective', meaning that if a customer defaults on any product, then all the customer's products held with the bank should be deemed in default. For example, if an import L/C customer defaults on a loan, then its L/C is also deemed to be in default even if the customer has met all its obligations under the L/C. The ICC Trade Register uses the Basel II definition of default.

Banks were asked for information on how many customers had a trade finance product when they entered Basel default. Using this obligor default perspective gives a higher default rate, but a lower LGD, than a transaction-specific perspective.

9.2.3 Exposure at Default

Exposure at Default (EAD) measures a bank's exposure to a counterparty at the time of default. It is defined as the gross exposure, including an estimate of contingent exposures that are not converted to on balance sheet exposures. L/C and performance guarantee exposures are contingent on an act that must be performed before the exposure is created. For example, trade documentation must be presented and accepted to trigger a valid claim under an L/C.

Once the contingent event has occurred, the bank will attempt to pay the required balance from their customer's account. If the customer's account has insufficient funds to cover the balance, the bank will pay the remaining balance from its own funds. The contingent liability has then been converted into an (on-balance sheet) exposure for the bank.

In many cases, the amount requested for payment of the default is lower than the limit on a facility over the course of a transaction's lifecycle. This occurs where a reduction in volumes reduces the total exposure level, as in the case of a partial shipment under an L/C. A total exposure often comes by way of multiple transactions. For example, a customer may have a limit and contingent exposure of $900,000, but typically purchases goods of up to $300,000 each, meaning that the EAD might be considerably less than the whole $900,000.

EAD plays a major role in expected loss calculations. However, there is an ongoing industry debate about whether the potential events described above should be taken into account in the EAD or LGD component of the calculation by means of credit conversion factors (CCF).

It is difficult to determine accurate EAD figures across banks. Efforts to gather this information on a consistent basis across the sample are at an early stage. One obstacle is that many jurisdictions require exposures for defaulted obligors to be consolidated under one account, which eliminates the granular information required for the calculations. To deliver this data, banks would need to track transactions through their lifecycles, which some banks could do only manually and others not at all. Many banks collect data on performing and non-performing credits in separate systems of books, which creates another obstacle for analysing pre- and post-default exposures.

The new GCD dataset, which has replaced the ICC dataset for LGD calculations in this year's report, has enabled a more accurate and realistic assessment of EAD for contingent trade finance liabilities. Previously, the data was only available to estimate EAD for performance guarantees, and a very conservative EAD of 100% was assumed for import L/Cs, export L/Cs and loans for import/export.

This year, the new dataset has enabled us to estimate EAD for each asset class based on the ratio of the LGD figures for whole portfolios and portfolios excluding contingent liabilities that are not converted to on balance sheet exposures. The most important difference in this approach is that, whereas previously, we did not account for the contingent liability of letters of credit, we have now been able to estimate the effect this has on expected loss, moving away from our prior overly conservative methodology.

Given the increased accuracy of this approach compared to last year, we no longer present the dual results for performance guarantees as in previous years - when we expressed the CCF as applied to both EAD and LGD calculations.

9.2.4 Loss Given Default and Expected Loss

Loss given default measures the loss incurred by a bank in relation to the overall exposure of the bank at the time that an obligor defaults. Under Basel rules, this should be the net present value of recoveries discounted at an appropriate discount rate and should include direct and indirect costs associated with recovering the bank's money. Basel requires that "the definition of loss used in estimating LGD is economic loss. When measuring economic loss, all relevant factors should be taken into account. This must include material discount effects and material direct and

indirect costs associated with collecting on the exposure". As a result, LGD is made up of three key components:

- Observed recovery rates, as a percentage of the exposure at default.
- Direct and indirect costs incurred in the recovery process, which are deducted from the recoveries.
- Discounting of any post-default cash flows using an appropriate discount rate.

Calculating expected losses requires transaction-level data from banks, which limits the data points available for analysis. As a result, EL cannot be broken down by region and country, as was done for default rates. For recovery rates in particular, acquiring sufficient data points to estimate recovery rates accurately continues to be a challenge for the Trade Register, and large one-off events can skew overall patterns.

9.2.5 Benchmarking: Comparison of Trade Finance to other Asset Classes

The benchmarks for and comparisons between trade finance and other asset classes used in this report bring together data from different databases to make a very high-level comparison of observed loss statistics by product and borrower types.

- The ICC Trade Register data for trade finance and the GCD data for other asset classes are based on separate data pools for default rate and loss given default, meaning that the underlying data effectively comes from four different data pools. Each pool is supplied by an overlapping but not perfectly consistent set of lenders.
- For each of the trade finance and other asset class pools, the defaulted borrowers in the default rate calculation are not completely consistent with the defaulted borrowers used in the LGD calculation.
- The trade finance default rate data is obligor-weighted, while the LGD data is exposure-weighted. The GCD comparative other asset class data is obligor-weighted for both default rate and LGD data.
- The discount rate for LGD has been applied at a consistent 9% (except for export finance, where 0% is used).
- Borrower size, borrower industry, and country profile differ between the trade finance and other asset class data pools.
- The data templates differ between ICC Trade Register and GCD. The ICC Trade Register LGD collection of short-term data receives exposure amounts at the time of default and the final loss or recovery, meaning that the recoveries are delivered net and aggregated before discounting. GCD collects detailed cash flows tagged by date and source and uses this to compute a discounted recovery rate and LGD.

Numerous choices of data selection and methodology have been made in the calculation of default rates and LGDs, and the choices are not necessarily consistent between each of the data pools. For example, post-default advances in LGD from the GCD data pool have been added back to the exposure at default, which has not been done within the trade finance data pool. Both methods are valid and many other possibilities exist.

9.3 Export Finance

9.3.1 Definitions of Export Finance Asset Categories

For the purpose of this report, export finance transactions are split into four specific asset categories – sovereign, financial institutions, corporate, specialised – to allow for analyses of the exposures to each of these categories. These categories are outlined in Figure 56.

Figure 16
Definitions of export finance asset categories

Export finance asset categories	Definition
Sovereign	This category covers all exposure to counterparties treated as sovereigns under the standardised Basel approach. This predominantly includes sovereigns and their central banks. However, certain public sector entities (PSEs), such as regional governments and local authorities identified as sovereigns in the standardised Basel approach, are also included in this category.
Financial Institutions	Banks and non-bank financial institutions, including leasing companies.
Corporate	In general, a corporate exposure is defined as a debt obligation of a corporation, partnership or proprietorship. This excludes 'sovereigns', 'financial institutions' and 'specialised' as separately defined. Contrary to 'specialised', the source of repayment of the loan is based primarily on the ongoing operations of the borrower, rather than the cash flow from a project or property.
Specialised	• The economic purpose of the loan is to acquire or finance an asset • The cash flow generated by the collateral is the loan's sole or almost exclusive source of repayment • The subject loan represents a significant liability in the borrower's capital structure • The primary determinant of credit risk is the variability of the cash flow generated by the collateral rather than the independent capacity of a broader commercial enterprise Examples include project finance, income producing real estate, object finance (e.g. ships, aircraft, and satellites), commodities finance.

9.3.2 Observed average maturity

The maturity describes the total maturity of the contract upon its initial signing. The Trade Register shows the distribution of maturities across the entire sample, and a comparison of the transaction average and the exposure-weighted average. These calculations are made over the entire sample of transactions for which maturity values were submitted.

9.3.3 Default rate

The data underlying the analysis of the export finance element of the Trade Register is collected at the transaction level, and banks are asked to provide both unique customer and transaction IDs. As a result, consistent transaction-level and customer-level default rates can be calculated for closer alignment to the Basel methodology. All transactions are reported by the four major asset categories – sovereign, financial institutions, corporate, specialised – to highlight the differences in risk profile.

Given that export finance transactions typically span 10–15 years, and banks report data to the export finance Trade Register on an annual basis, any individual transaction is likely to appear in multiple years. However, as the Basel Default Rate measures are based on a 12-month outcome window (as opposed to a transaction or customer lifetime perspective), a different methodology can be applied to produce these metrics. In short, the default rates presented in this report are annual averages over 2008–2020 and the sum of the number of defaults across all years is divided by the sum of total transactions in each year. Defaults are only counted in the year that they occur and are excluded from the total transaction count in subsequent years.

Three different default rates (by exposures, number of obligors, and number of transactions) are calculated based on the same set of underlying transactions and the methodological approach outlined above. For each of these metrics, the sums are calculated across the entire sample for 2008–2018.

9.3.4 Loss Given Default

As detailed in the trade finance analysis, Loss Given Default (LGD) is a measure of the loss incurred by a bank in relation to the overall exposure of the bank at the time that a counterparty defaults.

This year's LGD measures are based on a GCD dataset and methodology. GCD calculated LGDs based on realised transactions, from the moment of default until the conclusion of the workout. LGD is calculated as:

$$LGD = \frac{\text{Economic Loss}}{\text{Default Amount}}$$

Recovery rate = 1 – LGD

The LGD rate on export finance instruments is calculated directly, without discounting.

9.3.5 Expected Loss

Using the results generated in default and LGD calculations, overall EL is estimated based on the formula:

EL = Default Rate x EAD x LGD

Previously in the Trade Register, sufficient information to appropriately calculate the EAD based on empirical data was not available, and therefore EAD was assumed to be equal to the current balance (i.e. 100%). This year, given the new methodology and underlying data set for calculating LGD, we are able to estimate EAD for each asset class based on the ratio of the LGD figures for whole portfolios and portfolios excluding contingent liabilities that are not converted to on balance sheet exposures.

Results are based on the average coverage ratios from the export finance element of the Trade Register. In some instances, this coverage is higher, up to 100%, and the EL will vary by case.

10. Appendix B: Data Collection & Filtering

10.1 Data Availability

Data collection under the revised methodology is now in its tenth year (covering ten years of data from 2012–2021) and significant improvements have been made:

- Significantly larger data set from more banks with more data points across years
- More complete data set across the granular data categories in particular, such as geographical breakdowns
- More consistent data items across submitted data sets and between contributing Member Banks
- Improved data gathering and data processing across participating banks, including the introduction of a digital portal for collection of data for the 2020 report
- Broader product coverage, now including SCF payables finance

Despite recent improvements, several difficulties in the data gathering process need to be considered when reviewing the results:

- Data definitions and terminology may vary between member banks, requiring significant verification and validation to make sure the data is as accurate and consistent as possible. These variations include the definition of default, which requires expert judgment by the member bank to determine the crucial element of 'unlikeliness to pay'. This is particularly significant for larger borrowers, banks, and sovereigns.
- Data sourcing, collection, and submission may involve multiple systems within a single financial institution, and may require manual intervention. This can introduce errors or cause the dataset to be incomplete.
- Data is not always accessible or available at the desired level of detail, and some observations can only be presented in aggregated form, which can make comparisons difficult.

One area where the number of observations has historically been considerably smaller than for other analyses is the recovery rate and LGD analysis. This is the result of the low number of defaults and the fact that, after the date of default of an obligor, many banks aggregate exposures and recovery data at either a customer or facility level and cannot then break them down into the transaction- or product-level information required to estimate recoveries and losses. This issue is not specific to trade finance data and is not a weakness of data collection or processing. It reflects the complex legal and operational environment faced by banks when collecting defaulted loans and transactions when every case is unique. Fortunately, this year's change in methodology – that leverages GCD's global data pool for LGD analysis – helps minimise this impact by using a larger pool of more granular data that is less dependent on bank inhouse calculations.

10.2 Quality and Quantity of Submitted Data

As the Trade Register evolves, so does the ability of member banks to submit accurate, granular data. The 2021 dataset shows continued improvement in quality and quantity over the datasets used in earlier editions of this report.

For trade finance, 94% of the transactions now included in the Trade Register have passed the data filtering process successfully. This is in line with last year's analysis, itself an increase on prior years, and demonstrates the continually high and improving quality of data received for the Trade Register – in part driven by the new methodology.

For export finance, the filtering process includes approximately 86% of available transactions, up from 85% last year. This results in over 52,000 data points available for analysis, which is a 4% increase on the data set used in last year's report.

As noted, the complexity of data access in complex global financial services firms and limitations to data availability means not all member banks can complete the data collection templates in full. In some cases, different subsets of the data are used for different analyses to include as many observations as possible and represent the fullest scope of trade finance.

Figures 57-58 show the unfiltered data set that comprises the Trade Register. It should be noted that the following sections are to be treated as additional detail and are not a comprehensive overview of all aspects of the analysis contained in this report.

Figure 17
Unfiltered data sample for trade finance, 2008–2021

	Banks in sample	# Transactions	# Customers	Exposure ($B)
Submitted data	25	41,607,335	1,593,304	20,980
Default rate analysis	23	38,986,823	1,303,398	19,046

Figure 18
Unfiltered data sample for export finance, 2007–2021

	Banks in sample	# Transactions	# Customers	Exposure ($B)
Submitted data	18	60,955	7,153	1,010
Default rate analysis	18	52,487	5,930	951

10.3 Data Quality Checks and Filtering Process

In the trade finance element of the Trade Register, the filtering criteria that lead to most exclusions are linked to the requirement for each bank to be able to submit obligor, transaction, and exposure level information on a consistent basis. This is reflected in the 'customer' and 'transaction' filters (e.g. if a bank cannot provide customer information, it would be reflected in the customer filter). The transaction filter also includes transactions excluded due to other data quality issues that could not be resolved over the course of the data collection process.

The customer filter and transactional filter can be applied independently to derive the customer level default rate and the transaction level default rate. On the one hand this would create

a larger sample set, but on the other hand this approach would lead to two different subsamples to analyse. When compared, these subsamples would always have inherent differences and could lead to incorrect conclusions. As a result, a smaller, more comparable dataset has been produced for the purposes of the overall default rate analysis, using only data where both customer and transaction information was available. However, this filter has been relaxed where possible for other analyses such as maturity.

Almost 90% of the excluded transactions are for 2007–2012. This reflects improvements in data quality and completeness of the Trade Register, and the challenges associated with the introduction of new data collection templates in 2012.

In the export finance element of the Trade Register, the following filters are applied for the purpose of the default rate analysis:

- ECA filter. As transactions in which an ECA has provided a guarantee or insurance are in scope of the export finance element of the Trade Register, the ECA filter excludes transactions without information about the ECA or the level of political or commercial coverage.

- Year and default filter. To establish analytical integrity, each default is considered once in the database (in the year that default occurs). This filter excludes defaulted transactions reported in multiple years and any transactions with misaligned dates (e.g. a default date prior to the trade date).

- Customer and transaction data quality filter. To measure customer and transaction default rates accurately, any transactions without unique customer or transaction IDs are excluded. This filter also excludes transactions with other data quality reasons such as zero exposure values or missing country or asset category information.

Given the long-term character of export finance transactions, data submissions always cover multiple years on a transaction-by-transaction basis. This was the tenth year in which member anks submitted data to the export finance element of the Trade Register, after initial submissions in 2012 asked participants to submit data dating back to 2007. Significant effort has been put into comparing submissions from different years and appropriate cleansing to arrive at a consistent year upon year data set for individual transactions. Ultimately, a coherent data set covering export finance data from 2007–2021 has been derived. In the last five years, the Trade Register has experienced a healthy increase in the number of transactions and the number of banks participating, and this trend is expected to continue.

11. Appendix C: Redacted Analysis Tables

11.1 Trade Finance

11.1.1 Default Rate Analysis

Figure 19
Import L/Cs obligor weighted default rates by region, 2016–2021

	2016	2017	2018	2019	2020	2021
Africa	[]	[]	[]	[]	[]	[]
APAC	[]	[]	[]	[]	[]	[]
Central & South America	[]	[]	[]	[]	[]	[]
Europe	[]	[]	[]	[]	[]	[]
Middle East	[]	[]	[]	[]	[]	[]
North America	[]	[]	[]	[]	[]	[]
Other	[]	[]	[]	[]	[]	[]
Total	**[]**	**[]**	**[]**	**[]**	**[]**	**[]**

Figure 20
Import L/Cs exposure weighted default rates by region, 2016–2021

	2016	2017	2018	2019	2020	2021
Africa	[]	[]	[]	[]	[]	[]
APAC	[]	[]	[]	[]	[]	[]
Central & South America	[]	[]	[]	[]	[]	[]
Europe	[]	[]	[]	[]	[]	[]
Middle East	[]	[]	[]	[]	[]	[]
North America	[]	[]	[]	[]	[]	[]
Other	[]	[]	[]	[]	[]	[]
Total	**[]**	**[]**	**[]**	**[]**	**[]**	**[]**

Figure 21
Export L/Cs obligor weighted default rates by region, 2016–2021

	2016	2017	2018	2019	2020	2021
Africa	[]	[]	[]	[]	[]	[]
APAC	[]	[]	[]	[]	[]	[]
Central & South America	[]	[]	[]	[]	[]	[]
Europe	[]	[]	[]	[]	[]	[]
Middle East	[]	[]	[]	[]	[]	[]
North America	[]	[]	[]	[]	[]	[]
Other	[]	[]	[]	[]	[]	[]
Total	**[]**	**[]**	**[]**	**[]**	**[]**	**[]**

Figure 22
Export L/Cs exposure weighted default rates by region, 2016–2021

	2016	2017	2018	2019	2020	2021
Africa	[]	[]	[]	[]	[]	[]
APAC	[]	[]	[]	[]	[]	[]
Central & South America	[]	[]	[]	[]	[]	[]
Europe	[]	[]	[]	[]	[]	[]
Middle East	[]	[]	[]	[]	[]	[]
North America	[]	[]	[]	[]	[]	[]
Other	[]	[]	[]	[]	[]	[]
Total	**[]**	**[]**	**[]**	**[]**	**[]**	**[]**

Figure 23
Loans for import/export obligor weighted default rates by region, 2016–2021

	2016	2017	2018	2019	2020	2021
Africa	[]	[]	[]	[]	[]	[]
APAC	[]	[]	[]	[]	[]	[]
Central & South America	[]	[]	[]	[]	[]	[]
Europe	[]	[]	[]	[]	[]	[]
Middle East	[]	[]	[]	[]	[]	[]
North America	[]	[]	[]	[]	[]	[]
Other	[]	[]	[]	[]	[]	[]
Total	**[]**	**[]**	**[]**	**[]**	**[]**	**[]**

Figure 24

Loans for import/export exposure weighted default rates by region, 2016–2021

	2016	2017	2018	2019	2020	2021
Africa	[]	[]	[]	[]	[]	[]
APAC	[]	[]	[]	[]	[]	[]
Central & South America	[]	[]	[]	[]	[]	[]
Europe	[]	[]	[]	[]	[]	[]
Middle East	[]	[]	[]	[]	[]	[]
North America	[]	[]	[]	[]	[]	[]
Other	[]	[]	[]	[]	[]	[]
Total	**[]**	**[]**	**[]**	**[]**	**[]**	**[]**

Figure 25

Performance guarantee obligor weighted default rates by region, 2016–2021

	2016	2017	2018	2019	2020	2021
Africa	[]	[]	[]	[]	[]	[]
APAC	[]	[]	[]	[]	[]	[]
Central & South America	[]	[]	[]	[]	[]	[]
Europe	[]	[]	[]	[]	[]	[]
Middle East	[]	[]	[]	[]	[]	[]
North America	[]	[]	[]	[]	[]	[]
Other	[]	[]	[]	[]	[]	[]
Total	**[]**	**[]**	**[]**	**[]**	**[]**	**[]**

Figure 26

Performance guarantee exposure weighted default rates by region, 2016–2021

	2016	2017	2018	2019	2020	2021
Africa	[]	[]	[]	[]	[]	[]
APAC	[]	[]	[]	[]	[]	[]
Central & South America	[]	[]	[]	[]	[]	[]
Europe	[]	[]	[]	[]	[]	[]
Middle East	[]	[]	[]	[]	[]	[]
North America	[]	[]	[]	[]	[]	[]
Other	[]	[]	[]	[]	[]	[]
Total	**[]**	**[]**	**[]**	**[]**	**[]**	**[]**

11.1.2 Loss Given Default and Expected Loss Analysis

Figure 27
Average time to recovery (TTR) in days and years, 2000-2020

Product	TTR – days	TTR – years
Import L/C	[]	[]
Export L/C	[]	[]
Loans for Import/Export	[]	[]
Performance Guarantees	[]	[]

Figure 28
Cumulative recoveries and exposure weighted recovery rates, 2000-2020

Product	Cumulative recoveries ($K)	Balance at default ($K)	Recovery rate
Import L/C	[]	[]	[]
Export L/C	[]	[]	[]
Loans for Import/Export	[]	[]	[]
Performance Guarantees	[]	[]	[]

Figure 29
Exposure weighted recovery rate range across banks, 2000-2020

Product	Minimum	Maximum
Import L/C	[]	[]
Export L/C	[]	[]
Loans for Import/Export	[]	[]
Performance Guarantees	[]	[]

Figure 30

Transaction weighted recovery rate, 2000-2020, excluding off-balance sheet contingent liabilities

Product	Recovery rate
Import L/C	[]
Export L/C	[]
Loans for Import/Export	[]
Performance Guarantees	[]

Figure 31

Exposure weighted LGD by product (discount rate sensitivity adjusted), 2000-2020

			LGD	
Product	**Recovery rate**	**TTR - years**	**5%**	**9%**
Import L/C	[]	[]	[]	[]
Export L/C	[]	[]	[]	[]
Loans for Import/ Export	[]	[]	[]	[]
Performance Guarantees	[]	[]	[]	[]

Figure 32

Expected Loss calculation by product, 2008-2020

	Default rate					Expected loss		
Product	**Exposure weighted**	**Obligor weighted**	**Transaction weighted**	**EAD**	**LGD (9% discount rate)**	**Exposure**	**Obligor**	**Transaction**
Import L/C	[]	[]	[]	[]	[]	[]	[]	[]
Export L/C	[]	[]	[]	[]	[]	[]	[]	[]
Loans for Import/Export	[]	[]	[]	[]	[]	[]	[]	[]
Performance Guarantees	[]	[]	[]	[]	[]	[]	[]	[]

11.2 Export Finance

11.2.1 Default Rate Analysis: By Asset Category

Figure 33
Obligor weighted default rates by asset category, 2007–2021

Asset	Total obligors	Defaulting obligors	Default rate
Corporate	[]	[]	[]
Financial Institutions	[]	[]	[]
Sovereign	[]	[]	[]
Specialised	[]	[]	[]
Total	**[]**	**[]**	**[]**

Figure 34
Transaction weighted default rates by asset category, 2007–2021

Asset	Total obligors	Defaulting obligors	Default rate
Corporate	[]	[]	[]
Financial Institutions	[]	[]	[]
Sovereign	[]	[]	[]
Specialised	[]	[]	[]
Total	**[]**	**[]**	**[]**

Figure 35
Exposure weighted default rates by asset category, 2007–2021

Asset	Total exposures ($K)	Defaulting exposures ($K)	Default rate
Corporate	[]	[]	[]
Financial Institutions	[]	[]	[]
Sovereign	[]	[]	[]
Specialised	[]	[]	[]
Total	**[]**	**[]**	**[]**

11.2.2 Default Rate Analysis: By Region

Figure 36
Obligor weighted default rates by region of risk, 2007-2021

Region	Total obligors	Defaulting obligors	Default rate
Africa	[]	[]	[]
APAC	[]	[]	[]
Central & South America	[]	[]	[]
Europe	[]	[]	[]
ex-CIS	[]	[]	[]
Middle East	[]	[]	[]
North America	[]	[]	[]
Total	**[]**	**[]**	**[]**

Figure 37
Transaction weighted default rates by region of risk, 2007–2021

Region	Total obligors	Defaulting obligors	Default rate
Africa	[]	[]	[]
APAC	[]	[]	[]
Central & South America	[]	[]	[]
Europe	[]	[]	[]
ex-CIS	[]	[]	[]
Middle East	[]	[]	[]
North America	[]	[]	[]
Total	**[]**	**[]**	**[]**

Figure 38
Exposure weighted default rates by region of risk, 2007–2021

Region	Total exposures ($K)	Defaulting exposures ($K)	Default rate
Africa	[]	[]	[]
APAC	[]	[]	[]
Central & South America	[]	[]	[]
Europe	[]	[]	[]
ex-CIS	[]	[]	[]
Middle East	[]	[]	[]
North America	[]	[]	[]
Total	**[]**	**[]**	**[]**

12. Appendix D: List of Acronyms

APAC	Asia-Pacific	**FI**	Financial Institution
ASEAN	Association of Southeast Asian Nations	**GDP**	Gross Domestic Product
CAGR	Compound Annual Growth Rate	**GFC**	Global Financial Crisis
CCAR	Comprehensive Capital Analysis and Review	**ICC**	International Chamber of Commerce
CCF	Credit Conversion Factor	**IRB**	Internal Ratings-Based Approach
CIS	Commonwealth of Independent States	**L/C(s)**	Letter(s) of credit
COP27	2022 United Nations Climate Change Conference	**LEI(s)**	Legal Entity Identifier(s)
DLT	Distributed Ledger Technology	**LGD**	Loss Given Default
DPD	Days Past Due	**OECD**	Organisation for Economic Co-operation and Development
EAD	Exposure At Default	**PD**	Probability of Default
EBA	European Banking Authority	**PO**	Purchase Order
ECA	Export Credit Agency	**RWA**	Risk Weighted Assets
EL	Expected Loss	**SA**	Standardised Approach
ERP	Enterprise Resource Planning	**SCF**	Supply Chain Finance
ESG	Environmental, Social and Governance	**SME(s)**	Small and Medium-sized Enterprise(s)
EU	European Union	**USA-GAAP**	United States of America Generally Accepted Accounting Principles
FASB	Financial Accounting Standards Board	**WTO**	World Trade Organization

ICC Banking Commission

The world's essential rule-making body for the banking industry

The International Chamber of Commerce (ICC) is the world's largest business organization representing more than 45 million companies in over 100 countries. ICC's core mission is to make business work for everyone, every day, everywhere. Through a unique mix of advocacy, solutions and standard setting, we promote international trade, responsible business conduct and a global approach to regulation, in addition to providing market-leading dispute resolution services. Our members include many of the world's leading companies, SMEs, business associations, and local chambers of commerce.

Rules

The ICC Banking Commission produces universally accepted rules and guidelines for international banking practice. ICC rules on documentary credits, UCP 600, are the most successful privately drafted rules for trade ever developed, serving as the basis of UD 2 trillion trade transactions a year.

Policymaking

The ICC Banking Commission is helping policymakers and standard setters to translate their vision into concrete programs and regulations to enhance business practices throughout the world.

Publications And Market Intelligence

Used by banking professionals and trade finance experts worldwide, ICC Banking Commission publications and market intelligence are the industry's most reputable and reliable sources of guidance to bankers and practitioners in a broad range of fields.

Dispute Resolution

The ICC Banking Commission and ICC International Centre for Expertise administer the ICC Rules for Documentary Instruments Dispute Resolution Expertise (DOCDEX) to facilitate the rapid settlement of disputes arising in banking.

Education and Certification

The ICC Academy is the world business organization's ground-breaking e-learning platform. Its industry-relevant Global Trade Certificate (GTC) provides an extensive overview of trade finance products and techniques.

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In addition to its bi-annual summit, gathering over 300 international delegates every six months, the ICC Banking Commission organises regular seminars and conferences around the world, in partnerships with ICC national committees and other sponsors.

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Well-established collaboration with leading policymakers and trade association, including WTO (World Trade Organization), ADB (Asian Development Bank), Berne Union, EBRD (European Bank for Reconstruction and Development), IDB (Inter American Development Bank), IFC (International Finance Corporation), IMF (International Monetary Fund), SWIFT, the World Bank and others.