

2021

**ICC TRADE
REGISTER
REPORT
SUMMARY VERSION**

**Global risks in
trade finance**

Market Trends

Analysis of Trade Finance Products

Analysis of Supply Chain Finance

Analysis of Export Finance Products



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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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<https://iccwbo.org/>

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 of 2007-2009 by the World Trade Organization (WTO), the Asian Development Bank (ADB), the members of 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 the ICC.

The International Chamber of Commerce is delighted to continue working with its two Trade Register Project partners:

As always, the International Chamber of Commerce extends special thanks to the 21 ICC Trade Register Member Banks:

- ANZ
- Bank of America Merrill Lynch
- Bank of China
- Barclays
- BMO Financial Group
- BNP Paribas
- Crédit Agricole CIB
- Deutsche Bank
- H.S.B.C
- ING
- J.P. Morgan Chase
- KfW IPEX-Bank
- Rabobank
- Rand Merchant Bank
- Santander
- Société Générale
- Standard Bank
- Standard Chartered Bank
- Sumitomo Mitsui Banking Corp
- UniCredit
- Wells Fargo

The findings of this report are based on our Member Banks' underlying datasets 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.

Finally, the International Chamber of Commerce would like to thank the Project leadership: Krishnan Ramadurai, Chair, ICC Trade Register Project; Andrew Wilson and Tomasch Kubiak, ICC Project Managers; our team of Project Advisors, Henri d'Ambrières of HDA Conseil in France, Hugo Verschoren of goVer Trade Technologies in Belgium, and Christian Hausherr of Deutsche Bank AG; the ICC Secretariat; Sukand Ramachandran, Ravi Hanspal, Patrick Bunker, and Nikhil Dangayach of BCG; and Richard Crecel, and Michaël Dhaenens of GCD. The entire team has been instrumental in the design and execution of the 2021 Trade Register Report.

2.1 OUR PARTNERS

2.1.1 Global Credit Data

Global Credit Data's objectives, as set out in its Articles of Association, include providing its members with credit data collection, analysis, and research, contributing to a better understanding of credit risk, and promoting quality standardisation and transparency of data to improve credit risk management. GCD's data-collection and analysis competencies allow the ICC to remain focused on core strategic and advocacy activities.

GCD is a non-profit association owned by over 50 Member Banks. Its mission is simple - to help banks better understand and model their credit risks through data pooling and benchmarking activities. GCD started collecting data in 2005 as the Pan European Credit Data Consortium (PECDC), with the goal of helping banks to develop Basel II-compliant Loss Given Default (LGD) and Exposure at Default (EAD) models. Member Banks have exclusive access to this database and use it to successfully support their IRB

Advanced accreditation applications. It now covers over 120,000 non-retail defaulted loan facilities from around the world. In 2009, GCD introduced a Probability of Default (PD) database which now covers more than 10 years of data and helps banks to calibrate and benchmark their PD master scales for Basel II and III Advanced and Foundation models. In 2014, PECDC changed its name to The Global Credit Data Consortium (GCD) to reflect the growth in membership of US and Canadian banks. In 2017, GCD introduced a Benchmarking Platform for Member Banks to compare their forward-looking PD, EAD, and LGD estimates against their peers. The robustness and capacity of GCD's data collection and management infrastructure make GCD databases a leading global standard for credit risk data pooling.

The value of GCD membership extends beyond the data itself, to a deep network of highly experienced credit risk professionals. GCD Member Banks benefit from exclusive rights and access to credit databases and analytics, and from knowledge and research facilitation via the unique industry association. In a variety of forums, such as workshops, webinars, and surveys, GCD facilitates discussion in key strategic areas including LGD modelling, stress testing, Comprehensive Capital Analysis and Review (CCAR), and International Financial Reporting Standards 9 (IFRS9) modelling. Highlights include the North American and European GCD conferences held each year.

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.

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 25 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 sixth 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 table for maximum value for 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 digital, regulation, geopolitics, and sustainability in trade.

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 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 2021 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 and non-profits, and continued free

access for academics and regulators. 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 22 trade finance and export finance banks, which provides a representative set of over 38 million global trade finance and export finance transactions that amount to exposures in excess of \$19 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 28% of global traditional trade finance flows and 12% of all global trade flows (Figure 1).

Figure 1
Estimated coverage of ICC Trade Register in 2020 (products grouped to enable like-for-like comparison)

Product	2020 exposures in Trade Register (USD T)	Est. share of 2020 trade finance, by product (%) ²	Est. share of 2020 total global trade flows (%) ²
L/Cs (including import and export)	0.71	33%	4%
Other trade and SCF	1.21	25%	7%
Total	1.92	28%	12%

Source: ICC Trade Register Report 2021

The data is analysed by GCD, BCG, member bank specialists, and the International Chamber of Commerce 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.

For this edition, the data collection process has been accelerated substantially, meaning that this report contains new data from both 2019 and 2020. The key motivation for this change was to provide early insight into the impact of the COVID-19 pandemic on credit risk, and we are grateful for the ready cooperation of Member Banks in accelerating data submissions to make this possible.

¹ Member Banks contributed to the report in 2021, but the ICC Trade Register contains data from 22 banks in total across all years

² BCG trade finance model data for 2020

4. TRADE FINANCE: STATE OF THE MARKET

4.1 MARKET TRENDS IN TRADE AND TRADE FINANCE

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Introduction

The COVID-19 pandemic triggered an unprecedented year for global trade, as both demand and supply were disrupted dramatically. Over a year into the pandemic, we are in a better position to measure the impact on global trade, understand the shape of recovery, and evaluate emerging trends. While large parts of the global economy have recovered, in many regions the direct and indirect impacts of the pandemic are still being felt. Despite the rapid development and distribution of vaccines, the reopening of society remains incomplete, especially with regard to international travel. In addition, the pandemic may have caused lasting changes to preferences and behaviours that shape supply chains.

Other factors unrelated to COVID-19 have also affected global trade. These range from one-off events, such as the blockage of the Suez Canal, to more sustained changes, such as supply chain diversification, ongoing geopolitical tensions, and an increased focus on environmentally sustainable supply chains. The long-term shift from documentary trade to open account trade continues, encouraged by the progress of digitisation and platform-based trade.

Trade in 2020: An unprecedented year of disruption in global trade

COVID-19 and policy responses to it created shocks to both the supply and demand sides of the global economy, with dramatic knock-on effects for international trade and supply chains. Government-imposed shutdowns and staff sickness have forced temporary closures of factories, causing shortages of goods downstream. Supply-side shocks have also hit the shipping industry directly. Port closures, crews testing positive for COVID-19,

and the prioritisation of medical supplies have led to delays that prompted businesses to seek domestically produced substitutes and alternative shipment routes for goods. Such changes were sometimes required at very short notice, as with the closure of the UK-France border in December 2020 upon discovery of the COVID-19 Alpha variant in Kent, UK. On the demand side, fears about the spread of the virus have led consumers to steer away from sectors relying on person-to-person contact. The fall in income among consumers who have lost jobs, along with general risk aversion, have caused a more generalised decline in demand.

The upshot for international trade is that the volume of goods traded in 2020 was 10% down compared to 2019. Oil accounted for 34% of this decline. Indeed, demand for oil declined so dramatically in 2020 that US oil prices briefly went negative, exacerbated by a price war between Saudi Arabia and Russia.

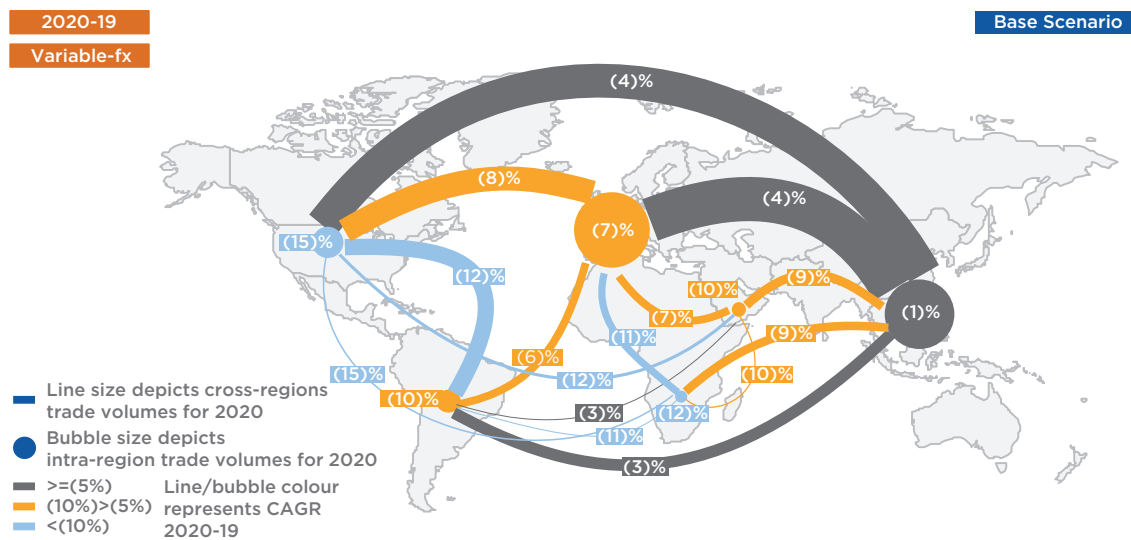
This decline in trade volumes is at the smaller end of the range of predictions made for 2020 in the 2019 ICC Trade Register. Written at the height of the pandemic, the 2019 report suggested a decline of between 11% and 30%. The lower decline of 10% is partly attributable to unprecedented economic support from governments. In many developed nations, including the UK and the US, fiscal support measures have amounted to more than 15% of GDP. It is also attributable to the resilience of the goods sector in the face of the extreme disruption the pandemic caused to our day-to-day lives. While sectors such as leisure and hospitality were shut down, many goods sectors remained open (apart from brief closures in the spring of 2020).

Some countries have been hit harder than others. The impact has varied according to the severity of the pandemic, the stringency of governmental responses, the sectoral composition of the domestic economy (e.g.

manufacturing vs. tourism-led, commodities focus), and the extent of government support for businesses and consumers. Exports from many large energy-producing countries were badly hit due to the temporary collapse in demand and prices for crude oil. Exports from Russia and UAE fell 21% from their 2019 level, and exports from Qatar fell 29%. Similarly, countries that have struggled to

contain the virus have seen more significant drops in trade, with France, India, the UK, and the US all experiencing declines of 12% to 15%. Countries that have effectively contained the virus have performed better. Exports from New Zealand fell by just 2%, while exports from China grew 4%, driven by strength in Q4 of 2020.

Figure 2
Impact of COVID-19 on global trade, 2019-20



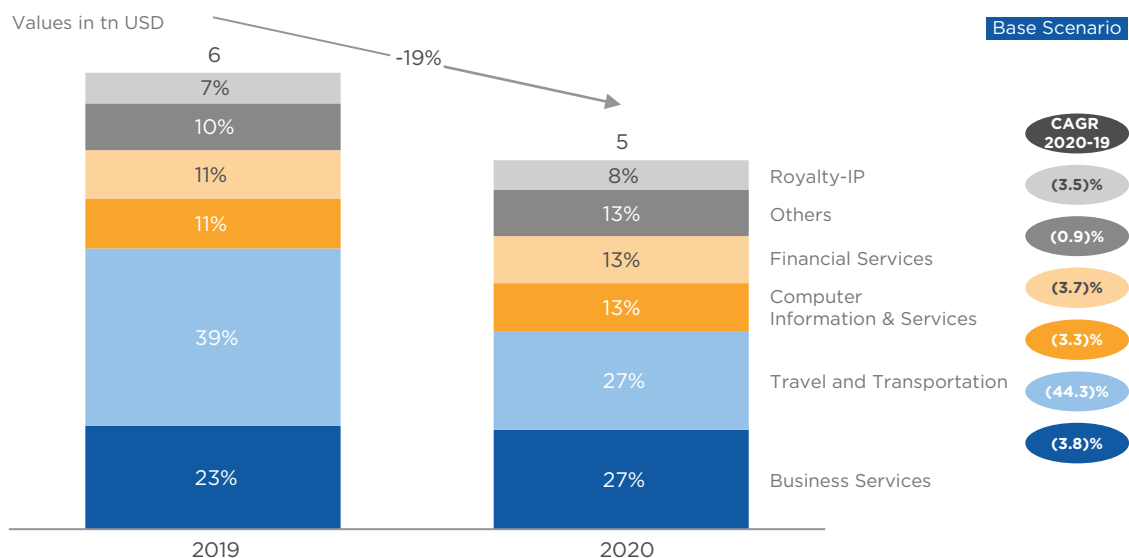
Source: BCG Trade Model 2021, DESA/UNSD, United Nations Comtrade database, WTO, BCG Analysis

BCG's Global Trade Model has been expanded to include the increasingly significant trade in services. The model now covers six sectors: business services; computer and information services; financial services; royalties and licenses (IP); travel and transportation; and other services (construction, government, personal, cultural, and recreational services)⁵. Trade in services declined 19%, from \$6.0 trillion in 2019 to \$4.8 trillion in 2020, proving

less resilient than trade in goods. The largest contributor to this decline was travel and transportation, for which volumes fell by more than 40% as a result of lockdowns and international travel restrictions. Countries such as Spain (43% drop) and Thailand (61% drop), for which tourism is a major export, have been hit especially hard.

⁵ Note that the model only covers Modes 1, 2 and 4 of services trade, according to WTO definitions

Figure 3
Impact of services trade by sector, 2019-20



Note: Includes modes 1, 2 and 4 of services trade, according to WTO definitions. Source: BCG Trade Model 2021, DESA/UNSD, United Nations Comtrade database, WTO, BCG Analysis

An outlook for 2021 and beyond: Positive yet constrained recovery with signs of longer-lasting change

2021 has brought a substantial V-shaped recovery to global trade as vaccine rollouts have accelerated and restrictions have been lifted gradually in many countries. However, this rebound in international trade has been constrained by factors related to the pandemic and by separate issues.

Demand for consumer goods and for intermediary goods used in production has recovered across most corridors. Most professional workers have remained employed and shifted to remote working. But lockdowns and fear of the virus have prevented them from spending on categories such as restaurants, leisure, and travel. As a result, consumers in developed economies have amassed \$2.9 trillion in extra savings during the pandemic. Combined with pent up demand from COVID-19 restrictions, this accumulated wealth is driving a strong rebound in spending. In the UK, retail sales in May 2021 were 10% higher than in May 2019.

Supply-side constraints have persisted, however. Government lockdowns in some

parts of the world continue to cause uncertainty for supply chains, and there have been shortages in key parts of the shipping industry. For example, a COVID-19 surge in India, which provides around 15% of seafarers to the sector, has led to a labour shortage in ports and on freight ships, and the price of shipping containers has increased 282% since June 2020. Intermittent COVID-19 outbreaks at ports also continue to cause disruption. For example, the one-week closure of Yantian Port in China in May 2021 delayed ships by 14 to 16 days, and backlogs persisted for over a month.

Industry-specific challenges, such as the shortage of semiconductor chips, are affecting sectors from electronics to automotive. These shortages have been caused by production shutdowns in 2020, which means that the industry has been unable to meet rapidly increasing demand by using fragile, just-in-time supply chains that are commonplace in the industry. There are over 50 points across the supply chain for semiconductor chips where a single region holds over 65% of the global market share.

In addition to the continued impact of COVID-19, trade has been disrupted by unrelated one-off events such as the blocking of the Suez Canal (which accounts for 12%

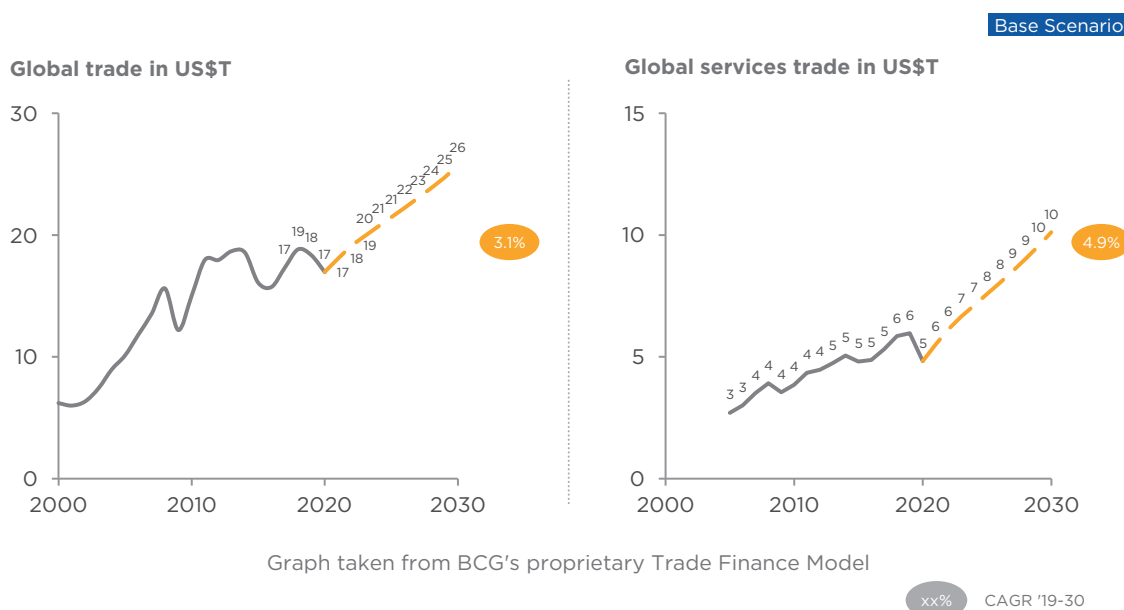
of global shipping activity) in March 2021. While the blockage lasted only six days, the knock-on effects were considerable, with waiting times in European ports increasing substantially for several months.

This constrained recovery is reflected in the 2021 forecasts from BCG's Global Trade Model. It estimates that goods trade volumes will recover to \$18.1 trillion in 2021, and then exceed 2019 levels in 2022. However, this estimate assumes an equitable global recovery from the pandemic, unhampered by factors such as vaccine nationalism. Because global trade is driven by the interlinking of economies, it could be hindered by regional economies recovering at different rates. The effect of governments' gradual withdrawal of fiscal stimulus is also an open question. In

the longer term, however, the forecast is for a return to healthy growth, with a CAGR of 3.1% from 2019 to 2030. The uneven impact of COVID-19 across geographies is also evident in the forecasts. Exports from China, for example, are expected to grow well beyond 2019 levels in 2021.

From a services perspective, trade is expected to remain subdued in 2021 because of continued disruption to international travel. Volumes are expected to be \$5.5 trillion in 2021, still 8% down on 2019, with travel and transportation services making up only 30% compared with 39% in 2019. Beyond 2021, however, services trade is expected to return to a robust growth trend. The Global Trade Model forecasts a CAGR of 4.9% from 2019 to 2030, with volumes reaching \$10.1 trillion by 2030.

Figure 4
Outlook for global goods and services trade, 2019-2030



Note: Forecasts are at constant FX rates
Source: BCG Trade Model 2021, BCG Analysis, DESA/UNSD, United Nations Comtrade database, WTO, OECD, WEF, IHS, TradeAlert,

In addition to constrained recovery in volumes following the pandemic, we are seeing the start of longer-lasting shifts in supply chain patterns. The importance of supply chain resilience became evident during the disruption of 2020, leading many organisations to 'de-risk' their supply chains. For example, many businesses have diversified the firms and countries from which they source their

production inputs or the final goods they sell suppliers and, hence, the trade routes they depend on. Some are 're-localising' elements of their supply chains to bring manufacturing closer to the end-consumer.

Geopolitical developments are also influencing trade patterns. The most significant is the continued friction between

western nations and China, despite the change of administration in the US. Security concerns are encouraging domestic production in strategically important industries such as defence, technology, and medical supplies. The US is aiming to develop domestic production of semiconductor chips, including mining the rare earth materials used in them. Similarly, China is reversing moves to open its economy to international trade and investment and re-emphasising state capitalism. An annual US Trade Representative Report to Congress on China's WTO compliance argues that the Chinese transition to a market economy has gone backwards in recent years. While this is likely to curb the growth of international trade, in some cases it will simply lead to shifts between corridors. For example, American companies that want to limit exposure to China may choose to move manufacturing to ASEAN countries rather than bring it back to the US.

Other geopolitical issues affecting trade include fraught relations between the UK and the EU post-Brexit, with Northern Ireland remaining a key sticking point, and the waning influence of international arbiters such as the WTO, whose Appellate Body collapsed in 2019 following sustained blocking of adjudicator appointments by the Trump administration.

Growing political commitment to fight climate change is also affecting trade. For example, President Xi Jinping has pledged that Chinese emissions will peak by 2030 and that the country will achieve net zero by 2060. In Europe, a carbon border adjustment mechanism aiming to prevent carbon leakage (whereby stronger climate policies in one jurisdiction lead to increased emissions in other jurisdictions) is due to start being rolled out in 2023. More directly, the EU has committed to zero emissions by 2050 for waterborne transport.

This focus on sustainability has the potential to restrict growth of long-haul international trade in the medium to long-term. One challenge is that 'sustainable trade' is still undefined, with no universal guidelines or standards for what counts as sustainable. This limits the power of banks, corporates, governments and NGOs to help direct change across supply chains and promote a globally consistent and positive set

of behaviours. Recognising this challenge, the ICC is taking advantage of its position as an independent party to engage with stakeholders and help set out clear definitions, guidelines and standards.

Implications for trade and supply chain finance

Trends in global trade have a direct impact on trade finance. Echoing last year's decline in global trade, revenue pools across key trade finance products declined from \$50 billion to \$45 billion, representing the largest single-year drop in recent history and falling back to 2016-17 levels.

The decline in trade finance revenue was not uniform across products:

- International supply chain finance was least affected, with revenues falling by 6%. This resilience is explained by the continued growth trajectory of the asset class as a percentage of global trade, combined with increased demand from suppliers of larger corporate buyers to support their liquidity through the crisis. While corporates had access to cash reserves and liquidity injections through the capital markets, smaller suppliers had fewer options, and an effective supply chain finance programme provided a clear lifeline for many. Government support for short-term credit insurers to maintain some lines also likely played an important role in steadying supply chain finance
- Documentary trade revenues fell by 16% - a greater decline than global trade - reflecting the especially steep declines in sectors that rely on documentary trade, such as mining (including oil), and automotive and mobility components. The use of funds from government stimulus to finance trade may also have softened demand for documentary trade products
- Trade loans and other non-risk mitigating trade products were also affected significantly, declining by 13.5%, largely owing to reduced underlying volumes and lender risk appetite

Recovery in trade finance revenues is expected to mirror global trade, with constrained growth in 2021 and a positive longer-term outlook. We expect aggregate revenues to recover to about

\$47 billion (4-5% growth) in 2021 and reach 2019 levels by 2022-23. Beyond this, we expect continued growth at around 3% CAGR to 2030, reaching a new high of around \$70 billion.

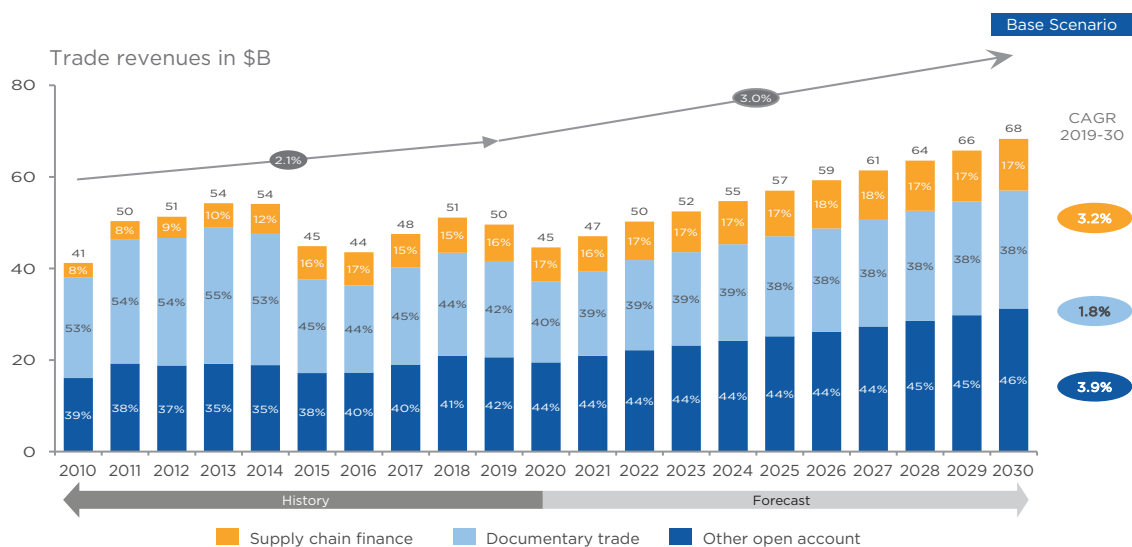
On a like-for-like basis, we expect a slight increase in margins as interest rates rise with inflation, and banks price in the additional perceived risk coming out of the pandemic as government support is wound down. This is likely to be offset by shifts in product mix. We expect a continued shift towards open account trade, albeit slightly softened by increased demand for risk-mitigation products in response to the recent disruptions. More specifically, we expect open account trade to grow at 3.2% CAGR through to 2030, while documentary trade grows at an average rate of 1.8%. Growth in open account trade will be skewed towards more trusted corridors and remain flat across riskier corridors where demand for documentary trade will persist.

This ongoing shift towards open account will be driven by a mix of existing and emerging factors. Greater cross-border trading confidence, more longstanding buyer-supplier relationships, and better business technology (e.g. procure-to-pay, order-to-cash, e-invoicing) have been driving the rise of open account trade. During the pandemic,

the world was forced to digitise overnight and the constraints of traditional documentary trade became all too apparent. In some cases, transactions stalled in the face of COVID-19 restrictions because, while the goods could still be moved, the supporting documentation could not. This has convinced many businesses to reconsider how they transact. The new corporate focus on sustainability and achieving net zero supply chains may also encourage the shift towards new products. For example, supply chain finance (SCF) may be an effective vehicle for tracking, influencing, and, rewarding supplier behaviours.

One challenge for the SCF industry is a potential rise in cost of funding if the investors lose appetite. While the recent high-profile default of a UK-based SCF provider was not strictly related to the creditworthiness of the asset class, it may reduce investor confidence in favour of more traditional asset classes. That said, the speed at which alternative funding was found for the majority of the book can be seen as an industry vote of confidence in the SCF asset class. Similarly, a broader risk for open account trade is the potential tightening supply of trade credit insurance, which was observed to some extent at the height of the pandemic.

Figure 5
Outlook for trade finance revenue pools, 2019-2030



Note: Forecasts are at constant FX rates Source: BCG Trade Model 2021, BCG Analysis

What's next for digital trade?

Innovation and digitisation are continuing across all trade finance products. We expect this to accelerate, especially coming out of the pandemic. Important developments can be seen in digital platforms, trade instruments, and bionic operations.

Growth of digital platforms

Trade Finance has long been proposed as a key application for distributed ledger technology (DLT), with multiple DLT-based platforms already operating in the space. Over the last year, more of these platforms have moved towards the next of stage of maturity, processing commercial transactions for the first time (albeit not yet profitably, given their small scale). DLT can bring substantial benefits to trade, such as real-time ownership transfer, a single source of truth to reduce fraud, the ability to guarantee authenticity, and self-executing smart contracts. However, focusing on DLT - which in many cases is merely the underlying technology - can lead one to overlook the bigger picture of how platforms will shape both trade and wholesale banking more broadly.

We are seeing near exponential growth in digital platforms, which is fundamentally changing how businesses trade. Platforms are replacing fragmented and bilateral transactions with at-scale venues where multiple parties can come together, access

partners, products, and services, and transact more easily, quickly, and cheaply. Serving customers via platforms removes the need for a salesforce and materially reduces suppliers' cost to serve. As prices fall, trade products become affordable for SMEs. Traditional banks must build the capability to offer trade products to customers on-platform, and develop the digital products and API connectivity that enable this. BCG estimates that by 2025, 10-15% of trade finance and 20-25% of SME trade finance will be conducted through digital platforms.

Providing the current, highly manual trade products on-platform will be of little benefit. Products that cannot be fulfilled on-platform in a largely automated way will not be scalable, and banks operating such a model will fall into the trap of using platforms as a channel, rather than as a means of evolving their business models. The challenge of interoperability also persists. It is becoming clear that there will be no single winning platform for international trade, particularly when defining platforms in the broader sense. Given the limited number of trade banks, logistics firms, and insurers in the market, the industry will likely need to operate on a many-to-many type of model, where organisations can plug into many different platforms to serve customers' varying needs. Doing this cost effectively, quickly, and securely - and avoiding a repeated decade of slow innovation in this space - requires common standards and guidelines for digital trade, such as those being developed by ICC.

Digital innovation and competition are creating a challenge for trade banks. They need to think about what part of the banking 'stack' they serve on platforms.

Banking can be deconstructed into layers – distribution, product supply, infrastructure, balance sheet, etc. – with bank and non-bank competition at each layer. On many platforms, banks and non-banks will have a choice as to how they participate. The options range from providing the full stack, potentially even going as far as orchestrating the whole ecosystem, to providing product fulfilment and balance sheet only in a BaaS model. Many technology players now play at the distribution layer and are becoming increasingly influential in terms of customer relationships. For example, Taulia could retain many of Greensill's customer accounts with alternative funding after Greensill's collapse in 2021.

This deconstruction can go beyond platforms. Large financial institutions can provide elements of their banking stacks directly to corporates, even using them as an intermediary to their customers – similar to the way a supply chain finance model generates network effects. In this space, large balance sheets, flexible technology, and long-standing top-tier relationships give traditional banks a clear advantage.

For example, orchestrating their own ecosystems, participating in third-party ecosystems, and playing at different layers of the stack for different capabilities. This will allow them to diversify revenue streams, grow relationships at scale, and hedge bets against being intermediated in the market.

Customer needs in a digital world

Making trade digital requires more than simply codifying the letter of credit. It also requires new ways of mitigating risk and financing trade. In parallel to the growth of platforms, we are seeing a range of new instruments from electronic promissory notes to hybrid trade/supply chain finance solutions, trade inventory financing, and auto-confirmed supply chain finance. Not only do platforms help to capture trade documents in digitised form, but the presence of multiple participants offering solutions on a platform opens up distribution to innovations from banks and non-banks alike.

Bionic operations

Despite the growth of platforms and digital trade, paper-based documentary trade will likely be around for many years. Despite progress in some jurisdictions (such as the UK, where a bill legalising the adoption of e-bills is expected to pass next year), many regulators continue to insist on paper

documentation, particularly in countries with IT constraints. As a result, many banks are investing heavily in bionic operations, which digitise paper inputs, read them via cognitive automation, and then process them to near-STP workflows. As alternatives grow, we expect more banks to price traditional trade to better reflect operational costs as a way of maintaining profitability while encouraging the adoption of alternatives. As more banks invest in bionic technology and increase the proportion of STP transactions to above 60% or 70%, banks that are behind the curve may struggle to compete effectively given their higher costs to serve. Regional banks will not have the same investment war chests as global banks, and some may withdraw from trade in more competitive markets, particularly as documentary trade volumes decrease. We are also likely to see larger players engaging in technology commercialisation, such as white-labelling and selling proprietary technology as-a-service.

4.2 FEATURE: IMPLICATIONS OF IFRS9

Krishnan Ramadurai, Chair, ICC Trade Register
Avinash Lath, Global Trade & Receivables Finance, HSBC

Context

Since 1 January 2018, all banks subject to International Financial Reporting Standards (IFRS) (i.e. banks in most countries, excluding the US) have been required to book credit loss provisions as per IFRS 9. This accounting standard requires banks to calculate credit loss provisions on all banking book assets, such as loans and off-balance sheet contingent exposures (e.g. L/Cs and Guarantees), based on expected credit loss (ECL) models. To build these forward-looking ECL models, banks require access to robust long-term data at a product/instrument level to enable them to calibrate provisions in an accurate manner.

The International Chamber of Commerce Trade Register data contains significant amounts of such information, allowing banks calibrate their IFRS 9 ECL models to reflect the low loss rates shown in this report.

This feature provides banks with a sample case study of how the loss rates shown in

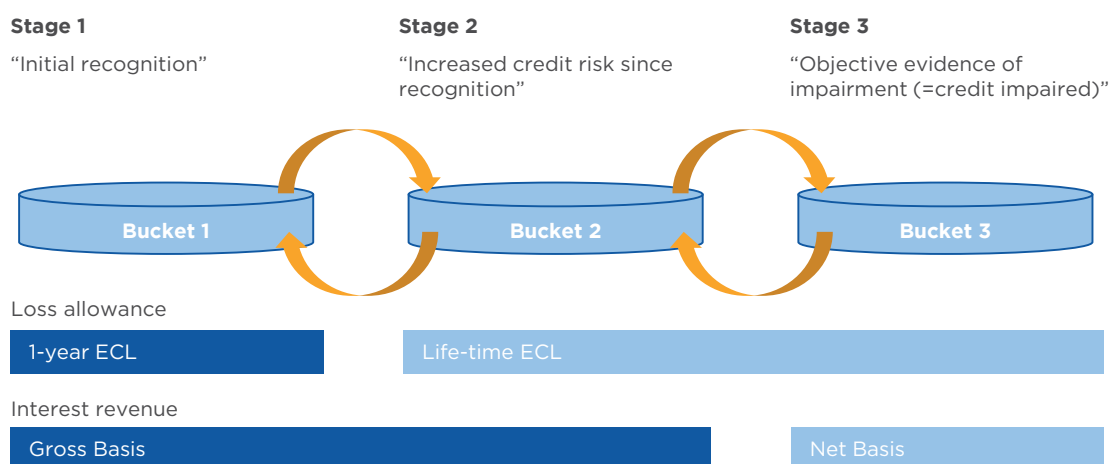
this report for Guarantees can be used as a benchmark to validate individual bank ECL models. The key takeaway from the case study is that banks can reduce impairment provisions and thereby increase profits, which is crucial in a low interest rate environment that has put bank returns under pressure.

Background and modelling required

A brief explanation of ECL models that banks are required to build is provided below. As a starting point, ECL models need to account for future macroeconomic scenarios, such as the impact of reduced GDP in the face of the COVID-19 pandemic on credit default rates. This is a required element of IFRS 9 ECL models, and their calibration will have a direct impact on bank P&Ls.

Banks are also required to re-appraise their loan portfolios on a regular basis to classify every individual loan into three buckets: (Figure 6).

Figure 6
Impairment stages



Source: ICC Trade Register Report 2021

- Stage 1 loans are initially booked loans and are subject to a 12-month probability of default (PD). This is essentially the performing book of the bank, and tends to make up a significant percentage of the overall loan book
- Stage 2 loans are exposures that are deemed to have experienced a significant increase in credit risk, often triggered by an internal credit rating downgrade causing the PD of the loan to increase. Importantly, from an ECL modelling perspective, the bank needs to calculate the ECL over the remaining life of the asset. For short-term trade finance exposures with a life span of less than 12 months, there is no effective difference between 'lifetime' and 'one year' expected loss calculations. For longer-term transactions, the expected credit loss multiplies quickly and can have a large P&L effect. For example, for financial and performance guarantees, which can have maturities of five years or more, the cumulative PD over a five-year period is greater than five times the one-year PD, meaning the effect of moving from stage 1 to stage 2 for any longer-term trade transaction can be substantial
- Stage 3 loans are, in effect, defaulted loans on which banks will need to stop accruing interest income and make a judgement call on the likelihood of losses, taking into account cash flows, collateral held and the time to recovery

IFRS 9 requires banks to model many different elements based on historical data. These elements include:

- One year and lifetime probabilities of default (PD)
- One year and lifetime loss-given-default (LGD)
- One year and lifetime Credit conversion factors (CCF), for contingent facilities such as Letters of Credit (L/C) and Guarantees
- One year and lifetime drawdown and repayment rates for loans
- Expected life of a multi-year facility

Often, the starting points for ECL models are the regulatory risk models already built by banks. However, the models can be calibrated using empirical data, whereas in regulatory models there is a need to build in a degree of conservatism, even if the empirical data is pointing to lower levels of defaults and losses.

To build ECL models, banks need a time series of historical data at a product and facility level. The more specific their models, the better they will reflect the portfolios in question. Banks that have access to sufficient data on trade finance products can incorporate this data into their IFRS 9 and pricing models. This will enable banks to use historical data to prove the lower volatility of short-term trade products' defaults and losses and avoid making incorrect assumptions in their IFRS 9 models.

Use of empirical data for calibration of CCF to estimate exposures within IFRS 9 models

The summary statistics in this report point to the relatively low loss rates and variability of trade products, and an example below uses the credit conversion factors (CCF) reported in the Trade Register to calibrate the IFRS 9 models for a hypothetical bank. The CCF factors derived from the Trade Register were used as an alternative to the regulatory CCF values that were the default values used to calibrate the IFRS 9 exposure at default (EAD) models. Figure 7 provides a summary output of CCF values generated using the empirical historical data for guarantees.





Figure 7

Summary output of CCF values generated from empirical historical data for guarantees (\$m)

Product	Exposure	Average IFRS9 PD	Average IFRS9 LGD	Regu-latory CCF	Regulatory EAD (Exposure* Regulatory CCF)	Current EL (PD*LGD* Regulatory EAD)	Empirical CCF	Regulatory EAD (Exposure* Regulatory CCF)	Empirical EL (PD * LGD * Empirical EAD)	ECL release (Current EL minus Empirical EL)
Performance Guarantee	20,000	1.0%	40%	50%	10,000	40	10%	2,000	8	32
Financial Guarantee	5,000	1.0%	40%	100%	5,000	20	30%	1,500	6	14

Source: ICC Trade Register Report 2021

Notes:

-  IFRS 9 PD and LGD values might differ compared to regulatory PD and LGD
-  Regulatory CCF for Performance Guarantees is 20% (instead of 50%) for some jurisdictions (EBA, PRA)
-  Performance and Financial Guarantee data collated from Member Bank submissions on claims and pay outs made following the default of an obligor is the principal driver of the lower CCF values for both products
-  Note the empirical CCF is defined as: total number of paid out Guarantees (out of active Guarantees for defaulted customers as on their date of default) claimed after the date of default / total number of active Guarantees for defaulted customers as on their date of default

Banks can use Trade Register data to calibrate the CCF values used within their internal ECL models. One important caveat is that banks have not provided data on Financial Guarantee claims and pay-out ratios in any consistent manner, as the Register has focused on collecting trade related Guarantees only. However, as GCD is set up to receive and process this data, the only limiting factor to providing meaningful empirical data will be the ability of individual banks to fill the required data fields to derive these CCF values. The Trade Register will be asking Member Banks to provide this data in future editions.

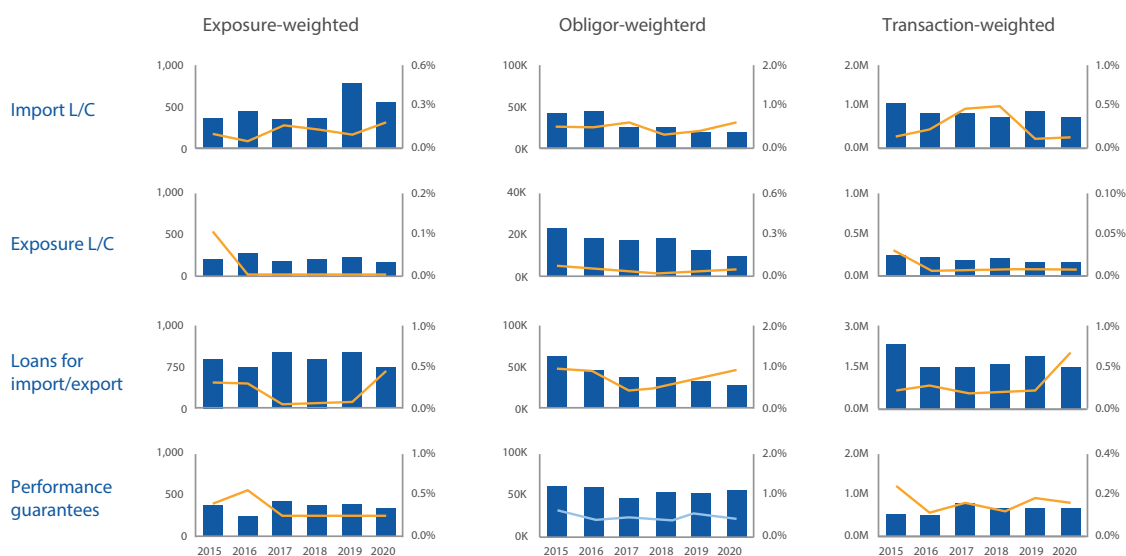
5. ANALYSIS OF TRADE FINANCE

5.1 Trends in Default Rates

After a mixed 2019, default rates for most trade finance products experienced a modest spike in 2020, at least in part due to the COVID-19 pandemic (Figure 8). However, these increases have generally not been to levels that are unprecedented over the 13-year

period for which the ICC Trade Register has collected data, reinforcing the view that trade finance products represent inherently low-risk asset classes.

Figure 8
Summary of default rate trends for trade finance, 2015-2020

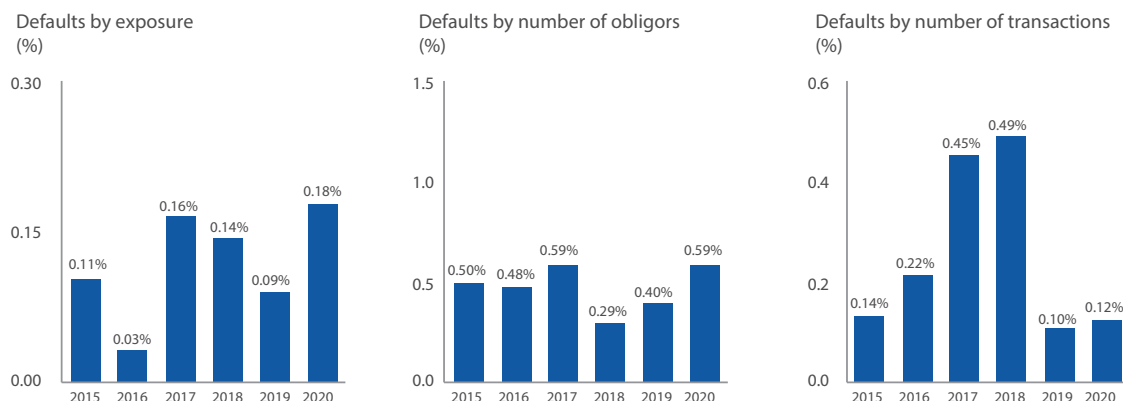


Source: ICC Trade Register Report 2021

Default rates for import L/Cs showed mixed performance in 2019, with a fairly significantly decrease when weighted by exposure and in particular by transactions (from 0.49% in 2018 to a 5-year low of 0.10% in 2019), but an increase from 0.29% to 0.59% by obligor weighting. Default rates increased across all three measures from 2019 to 2020,

with exposure and obligor weighted rates jumping to 5-year highs of 0.18% and 0.59% respectively – albeit still considerably below the long-term averages of other asset classes. Transaction weighted default rates increased more moderately, from 0.10% in 2019 to 0.12% in 2020.

Figure 9
Import L/Cs default rates, 2015–2020

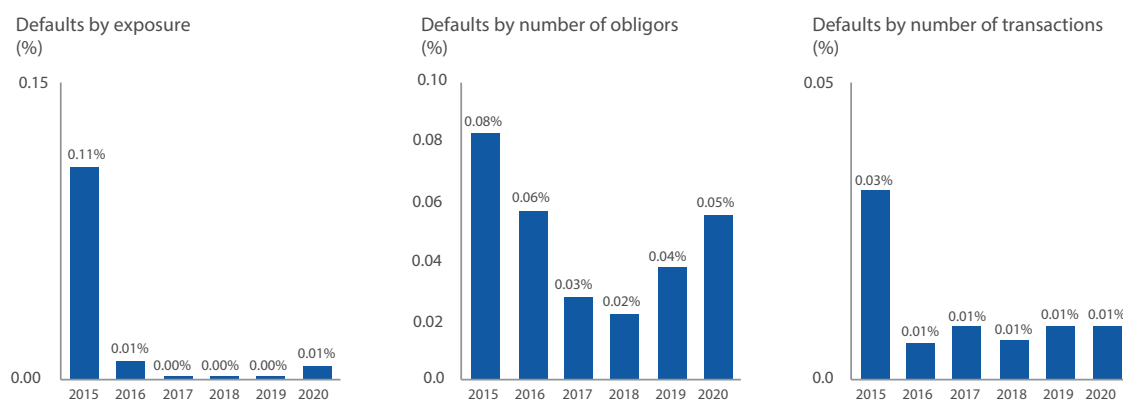


Note: Regions and countries reflect those of risk holder
 Source: ICC Trade Register Report 2021

Default rates for export L/Cs increased across all weightings in 2019 and 2020, but remain significantly lower than for other trade finance products. This low relative risk reflects the fact that the exposure of the bank confirming an export L/C is on the issuing bank (i.e. the bank

of the importer in the importing country) and not on the importer itself. As such, defaults are rare and will only occur when either (a) the issuing bank defaults, or (b) a technical default occurs.

Figure 10
Export L/Cs default rates, 2015–2020

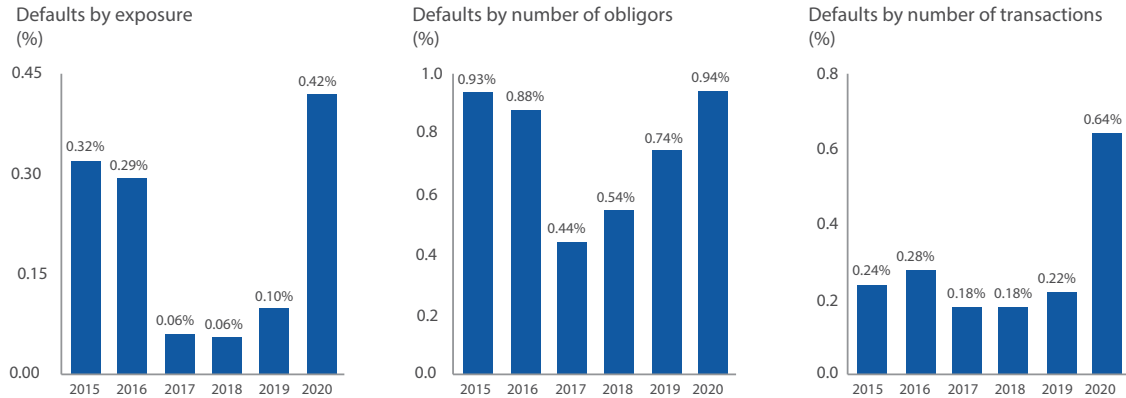


Note: Regions and countries reflect those of risk holder
 Source: ICC Trade Register Report 2021

Default rates for loans for import/export increased from 2018 to 2019 and from 2019 to 2020, leading to 5-year peaks across all measures. The rise from 2019 to 2020 was

generally steeper than from 2018 to 2019, likely driven by the impact of the pandemic (Figure 11).

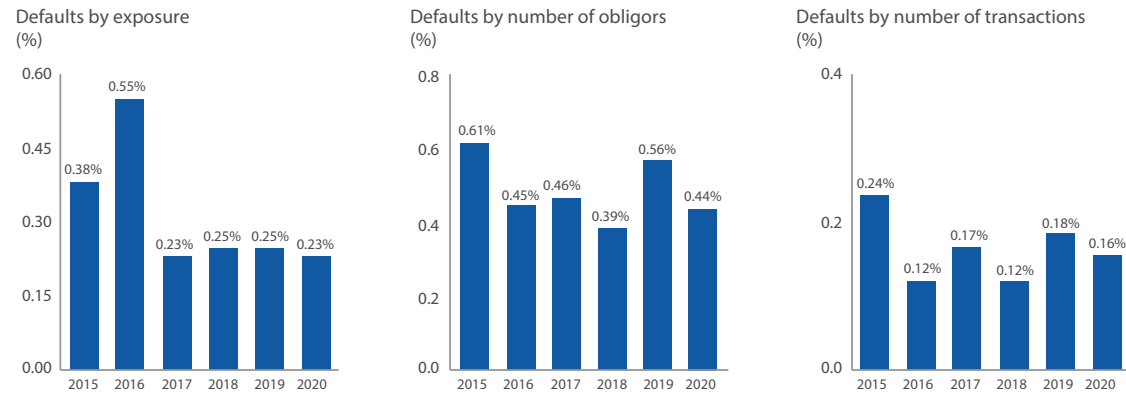
Figure 11
Loans for import/export default rates, 2015–2020



Note: Regions and countries reflect those of risk holder
 Source: ICC Trade Register Report 2021

Performance guarantees (including standby L/Cs) typically have the highest default rates in 2019. In fact, after some moderate increases from 2018 to 2019, default rates for loans for performance guarantees went against trend, decreasing by all three weightings from 2019 to 2020.

Figure 12
Performance guarantee default rates



Note: Regions and countries reflect those of risk holder
 Source: ICC Trade Register Report 2021

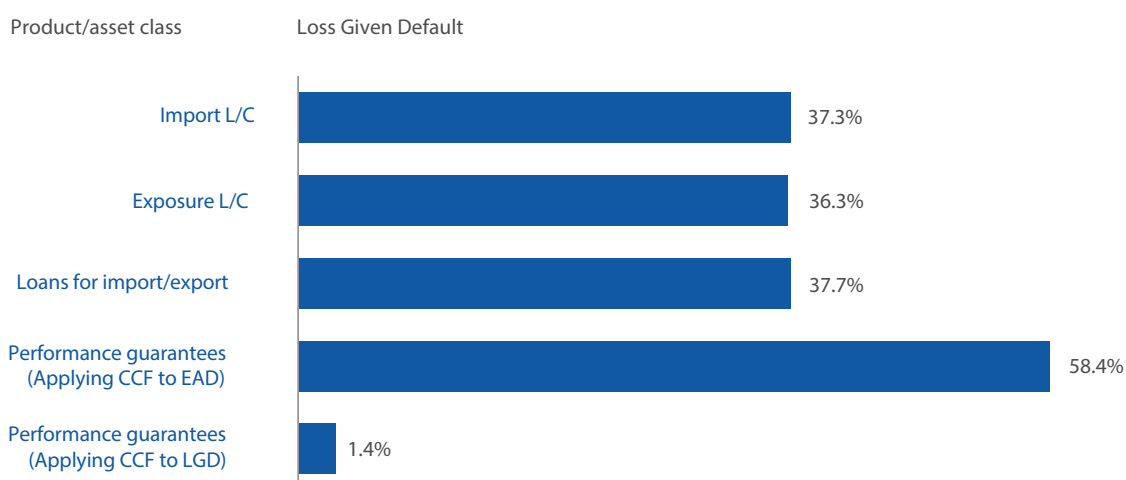
5.2 Loss Given Default Analysis

The 2021 Trade Register supports the finding from previous years that trade finance products have low LGD (Figure 13), as well as the low default rates discussed above. Loans for import/export continue to have a higher LGD than other trade finance products and, aside from a slight uptick for import L/Cs, the

LGD reported in the 2021 Trade Register, are similar to previous years.

Note that this year's report does not include LGD data from 2020, given there would be insufficient time to allow recoveries to complete, and as such data would be overstated.

Figure 13
LGD for trade finance products, 2008–2019



Source: ICC Trade Register Report 2021

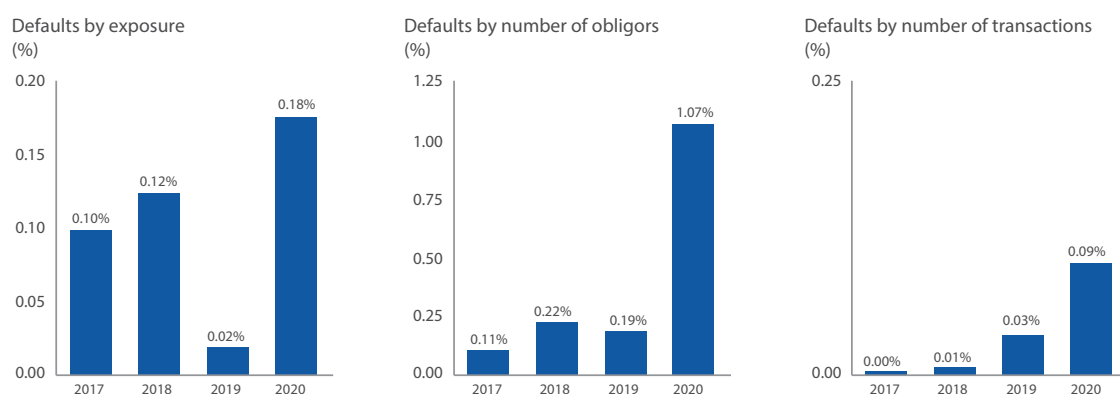
6. ANALYSIS OF SUPPLY CHAIN FINANCE

Since 2017, the ICC Trade Register has collected data on supply chain finance, focusing specifically on payables finance. The size of the data pool remains a constraint to some degree; for example, it is not yet possible to provide meaningful analysis of LGD and EL for supply chain finance. However, preliminary analysis of SCF default rates shows a rise

across all measures from 2019 to 2020 (Figure 14), after relatively low default rates in 2019.

Note that these figures are likely skewed by a small number of corporate supply chain defaults, and more data will be required over coming years to add confidence to these findings.

Figure 14
SCF payables finance default rates, 2017-2020



Note: Regions and countries reflect those of risk holder
Source: ICC Trade Register Report 2021

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.

At an overall level, export finance default rates have remained broadly in line with the long-term average for exposure and obligor

weightings (Figure 15), bucking a trend of increasing rates from 2013 to 2018 as reported by the Trade Register.

Looking at completed/accelerated and partially completed cases from 2007–2020, the obligor weighted default rate is 1.01% with an EL of 0.042%. Meanwhile, for completed and customer completed cases the EL is 0.048% due to a slightly higher LGD of 4.8%, driven by higher discounting.

Figure 15

Export finance default rates by obligor, exposure, and transaction, 2007–2020 (vs. 2007–2018)

	Defaults by obligor	Defaults by exposure	Defaults by transaction
	2007–2018	2007–2020	2007–2018
Default rate	1.00%	1.01%	0.62%

Source: ICC Trade Register Report 2021

8. FUTURE OF THE TRADE REGISTER

The ICC Trade Register is the leading report on trade risk, covering nine products, over 200 geographies, and 12% of global trade flows, all of which are substantial increases since the launch of the Trade Register over a decade ago.

This year, we have made significant changes to the commercial and participation model of the Trade Register, with the clear objective of a value proposition for Member Banks that encourages participation. Increasing the number of participating banks will continue to enhance the value of the Trade Register by enriching the data set on which it is based, particularly in areas currently based on smaller data pools, such as supply chain finance and LGD analysis. This will continue to support the Trade Register's value in demonstrating reliable metrics on the risk performance of the asset class, to inform regulators of appropriate capital and other treatments.

ICC is continuing to make advancements to maximise value to Member Banks, its readership, and the broader Trade Finance community in a number of areas:

Data:

- Work with Member Banks to fine-tune the consistency and quality of data submissions to further boost the reliability of Trade Register findings and accelerate cycle times
- Enhance the methodology of the Trade Register to incorporate legal entity identifiers, where data protection regulations allow, enabling removal of duplication across banks
- Continue to expand the size of the data set, particularly in areas such as supply chain finance and LGD analysis which are currently based on smaller data pools

Scope:

- Look to include products such as Receivables Finance, and potentially additional types of risk such as operational and fraud risk
- Aim to work with Member Banks to enrich data submissions by 'tagging' transactions to provide additional nuance and context. For example, adding markers for sustainability and SMEs would allow analysis of the differentiated risk characteristics of green and SME trade

Give-backs:

- Prepare enhanced dashboards for Member Banks, allowing more targeted digestion of data
- Develop these dashboards over time, eventually providing advanced outputs such as customised benchmarking

As ever, we are grateful to our Member Banks for their cooperation, without which the Trade Register could not be published. The International Chamber of Commerce looks forward to further engaging with Member Banks and broader affiliates to 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: The 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 volume of 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 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 mis-booking of a payment overlooked for 90 days, while another regulator may allow a similar event to be ignored for default counting purposes.

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 they default 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: (i) summing the defaults in each country will slightly overstate the true global total number of defaults; but that (ii) 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-level 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. For the detailed recovery rate data, each bank has a different ability to provide the granular data requested (e.g. a higher level of detail for workouts of these defaults), while 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.

For the limitations above, it is important for readers of the ICC Trade Register Report to apply caution in how data is used. The ICC strongly encourages the use of the report's data and information for research purposes, but strongly advise against its use to inform investment decisions. Please reach out to the International Chamber of Commerce if you would like to understand whether your use of the Trade Register data is recommended and/or appropriate.

9.2 TRADE FINANCE

9.2.1 Scope of Trade Finance Products

For the purpose of the ICC Trade Register, participating banks are requested to submit data for five trade finance product categories: 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 16.

Figure 16
Definitions of trade finance products

Trade finance products	Definition
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)	<p>Documentary letter of credit confirmed by the participating bank but issued by another bank also including 'silent confirmations'.</p> <p>Consequently, apart from few rare exceptions, the exposures in this product category constitute bank risk.</p>
Loans for import/export	<p>All loans classified as 'trade' including but not limited to clean import loans, pre-export finance and post-import finance.</p> <p>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.</p>
Performance guarantees and performance standby L/Cs (referred to as performance guarantees)	<p>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.</p> <p>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).</p>
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.

Source: ICC Trade Register Report 2021

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 undrawn or unutilised facilities. 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.

Given these data limitations, a CCF of 100% has been used in this report to estimate an EAD figure for import L/Cs, export L/Cs, and loans for import/export. As discussed in previous reports, the Project intends to continue building the database over the coming years to calculate a robust CCF for these products.

The CCF is particularly important for performance guarantees. These instruments exist primarily to protect against unforeseen outcomes, such as non-performance or performance below the standards agreed, and only a small call rate is expected. As with L/Cs, the Trade Register has been collecting data since 2013 to better determine CCFs for performance guarantees. The data points collected remain few, but using the data collected, the call rate has been calculated (and therefore assumed CCF) as 2.3% (Figure 17). This value is below the 4.1% calculated in last year's report. It is important to note that the 2.3% figure does not mean that in all cases

the customer defaulted on its obligations to the bank. In many cases, the transaction is settled from the customer’s account, but current data does not allow us to estimate how much is paid from the client’s versus the bank’s account.

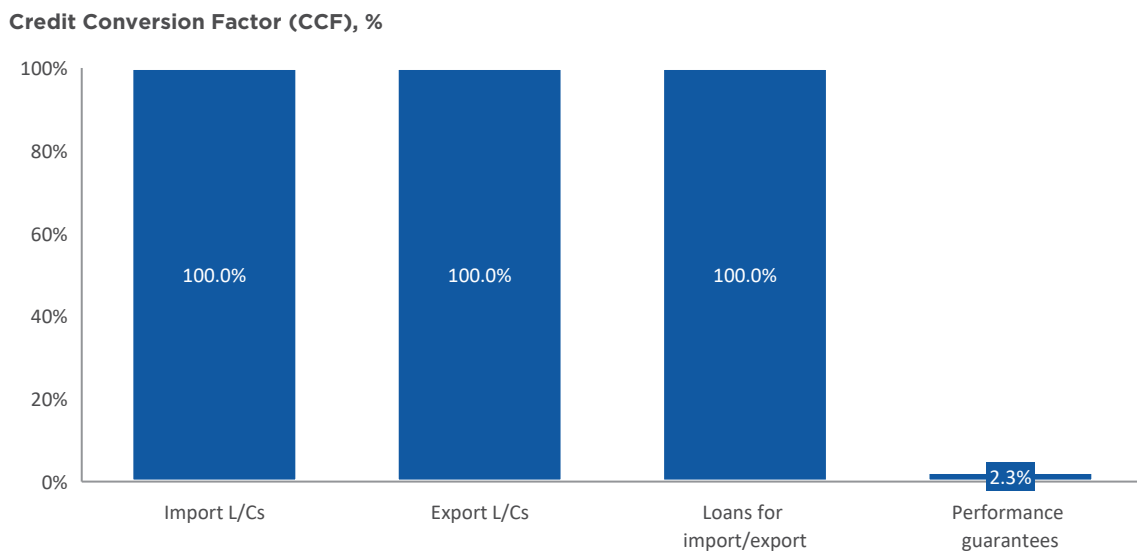
Both methodologies derive the same EL result, which means there is limited impact from changing approach. For consistency, both methodologies are used in this report.

As per the ongoing debate, this 2.3% call rate can be applied to either EAD or LGD calculations. Technically speaking, in the case of a claim, the true EAD is likely to be the outstanding exposure value of the performance guarantee (presumably higher than 2.3% of the limit), and therefore the Trade Register’s historical methodology of applying the call rate to EAD is incorrect. The more correct alternative would be to apply this 2.3% to LGD and assume EAD to be 100% as done so for L/Cs and loans for import/export.

As discussed in the 2019 report Performance Guarantees and Claims, jointly authored by the ICC and GCD, the underlying data to calculate CCF is difficult to come by. Using similar methodologies on different data pools can yield CCFs of anywhere from less than 1% to 8%. However, whichever data set is used to calculate CCF, any and all support the case that a CCF of 20% is acceptably conservative.

The following CCFs have been used to reflect EAD for trade finance products in this report:

Figure 17
Assumed CCFs by Trade Finance Product






Source: ICC Trade Register Report 2021

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.

When using this data, please apply the following caveats:

1. 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.
2. 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.
3. 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.
4. The discount rate for LGD has been applied at a consistent 9%.
5. Borrower size, borrower industry, and country profile differ between the trade finance and other asset class data pools.
6. 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.

Credit Conversion Factors

The Credit Conversion Factor (CCF) estimates the likelihood of an undrawn trade facility being drawn down and is a key input in the calculation of Exposure at Default. CCFs are also applicable to both funded and unfunded trade products. Additionally, CCFs are used as a proxy to estimate the on-balance sheet exposure of contingent liabilities (e.g. L/Cs and performance guarantees). In practical terms:

- For an import L/C, the CCF is an estimate of the likelihood of an L/C becoming an on-balance sheet liability; when the import L/C does become an on-balance sheet liability it becomes a Bill Receivable for a sight L/C and a Deferred Payment Bill for a usance L/C.
- For a performance guarantee, the CCF could be used to reflect the likelihood of a claim being made and being paid out against the performance guarantee.

As noted in previous ICC Trade Register Reports, the definition of CCF in the Basel framework is open to interpretation and has led to different interpretations by regulators and institutions. This presents a key challenge as: a) the CCF is a critical factor in calculating risk capital and leverage exposure for a bank; and b) in the case of default, the CCF is a key driver in the loss calculation through EAD.

The following areas of ambiguity make a statistically sound analysis of the CCF, which is one of the aims of the Trade Register, challenging for now:

- As EAD is recorded on facility level, aggregating across undrawn proportions of, for example, overdraft lines, guarantees, documentary credit, isolating the EAD data of a specific trade finance product is difficult for most banks.

- The lifecycle of a documentary trade transaction, and the document processing and checking steps and their results, has a significant impact on whether a claim does or doesn't exist on the level of the trade finance product when the obligor defaults. For example, if documents were rejected as not compliant, a claim on the trade finance product could not be constituted.

- Estimates of EAD in trade finance are interpreted in two ways:

- If a successful claim is never made against a product, and no money is ever paid by the bank, it should be reflected in a lower EAD throughout the transaction life cycle.

- If a customer defaults, there is outstanding exposure for the bank and EAD should equal 100%. Other factors should be reflected in the LGD itself.

- Both these approaches result in the same Expected Loss.





For a precise CCF calculation, transaction/product level data is critical to reconcile the transaction lifecycle of a trade finance product. The ICC Trade Register Project is looking at collecting this data in the future. Given the practical challenges in reporting data consistently on product level and across the full lifecycle (including the pre-default and post-default periods), only very few banks have been able to provide data in the required format. As a result, the Trade Register uses assumed CCFs across products.

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 18.

Figure 18
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	<ul style="list-style-type: none">  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 <p>Examples include project finance, income producing real estate, object finance (e.g. ships, aircraft, and satellites), and commodities finance.</p>

Source: ICC Trade Register Report 2021

9.3.2 Observed average maturity

The maturity describes the total maturity of the contract upon its initial issuance. The Trade Register Report shows the distribution of maturities across the entire sample, 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 Basel Default Rate measures are based on a 12-month outcome window (as opposed to a transaction or customer lifetime perspective), different methodologies can be applied to arrive at these metrics. In short, the default rates presented in this report are annual averages over 2008–2020; 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

9.3.4.1 Overview

As detailed in the trade finance analysis, Loss Given Default 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 is calculated as:

$$\text{LGD} = (1 - \text{recovery rate}) + \text{discount on recoveries (\%)} + \text{costs (\%)}$$

9.3.4.2 Completed and observed recovery rates

By definition, a large proportion of the recovery of export finance products is insured by an ECA. For example, if a customer defaults on a loan that has a 95% comprehensive coverage from an ECA, then the bank can expect recoveries from the ECA covering 95% of:

- The outstanding principal at the point of default
- Interest contractually due but unpaid
- Direct costs associated with recovering from the customer (including, for example, legal fees)

Typically, when a customer defaults, the ECA will assume responsibility for the payments due under the terms of the contract and make payments in line with the original contract. This does cause potential challenges when analysing observed recoveries for which the full recovery period is not available. For example, if 3.5 years remain contractually at the point of default, on average 25–30% of the total recoveries would be expected to come from the ECA each year.

In this report, we analyse two different views of recovery rates:

- Completed and customer-completed cases
- Completed/accelerated and partial completed cases (or observed recoveries)

Completed and customer-completed cases consider data from those cases where the recovery has been completed. Because recovery efforts can take several years, this method may not capture significant data points from recent years of defaults.

Completed/accelerated and partial completed cases, or observed recoveries, provide a view on more recent defaults, even if recovery is not complete.

As a result, observed recoveries for the most recent defaults may amount to the instalments due as agreed originally (i.e. not to the full contractual loan lifecycle expected recovery rate, based on the level of cover). While the defaulted amount recognised will be the full outstanding amount, the observed recovery will be a portion of the defaulted amount as the ECA will pay out based on the agreed payment schedule instead of the full outstanding amount. In other situations, the ECA will make an upfront lump-sum payment. Where the ECA recovery is not complete, the amount due is determined by comparing the original payment profile with the observed recoveries.

Even in situations where the ECA has accelerated the workout or the workout is complete, additional recoveries from borrowers may occur and eventual recoveries may be higher than those indicated in this report.

Additionally, where recoveries are made from the customer, they are shared between the bank and the ECAs based on the uncovered and covered portions, as the ECA is subrogated in the rights of the bank after indemnification.

For example, if a customer defaults owing the bank \$1 million, with ECA cover of 95%, the ECA will pay the bank \$950,000. If the customer makes a payment of \$100,000, \$95,000 (95%) would be given to the ECA and \$5,000 (5%) would be retained by the bank. The bank's overall recovery is \$955,000.

9.3.4.3 Discounting

For Basel Loss Given Default purposes, the following factors need to be accounted for:

- Discount rate on recoveries, with recoveries discounted from the point of default to the point of recovery
- Direct external recovery costs, typically shared with an ECA
- Downturn effects (i.e. the potential impact of an economic downturn on recovery cash flows and cure rates), in addition to export finance transactions

The discount rate applied to these products differs significantly across banks and is an area of ongoing debate. Applying a discount rate to the export finance Trade Register data is further complicated, as many of the products in the data set have state backing from OECD sovereigns – with 2017 being the first year for which data was collected also on non-OECD ECAs. This state backing means the stream of payments from these products can be assumed to be similar to those of a government bond. Therefore a discount rate is applied to a bond from the government of the ECA with a similar maturity. For example, if the recovery from the ECA occurs two years after default, we use a discount rate based on the two-year sovereign bond rate.

Given that highly rated ECAs have never defaulted on a valid claim, some practitioners believe the discount rate should be based on the three-month sovereign bond rate as the ECA is committed to indemnify within a few months, instalment-by-instalment (and not at the date of the default) and to cover interest.

However, this rate needs two adjustments:

- A liquidity premium to reflect the fact that ECA claims are a relatively small and illiquid market (a liquidity premium of 1% has been used as in previous years)
- An adjustment for the risk of disagreement on the validity of the claim (as this is increasingly rare, no adjustment has been made at this stage. Most practitioners argue that the risk of disagreement on the claim validity is an operational risk and more appropriately reflected in operational risk capital)

The discount rate for the covered portion of the repayments is based on a point on the government yield curve (based on the maturity of the underlying transaction) with an additional 1% liquidity premium. The last 12 months of data and the average time to recovery suggest an average discount rate of approximately 1.5–2.5%. However, where the export finance element of the Trade Register only reflects principal repayments, no discounting effect has been applied, as the interest due would offset any discounting effect.

For the uncovered portion of the portfolio (i.e. those recoveries from the customer rather than the ECA post-attribution), a discount rate of 9% is applied, similar to the one used for trade finance products and a typical unsecured recovery.

9.3.4.4 Costs of recovery

The ECA will typically cover a substantial share of the collection/workout costs for the defaulted exposure in line with the level of cover provided.

For this year's calculations, workout costs are assumed to be 1% of export finance exposures (including banks' internal indirect costs in line with Basel requirements).

9.3.5 Expected Loss

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

$$\text{EL} = \text{Default Rate} \times \text{EAD} \times \text{LGD}$$

Sufficient information to appropriately calculate the EAD based on empirical data is not available. For the purposes of this calculation, EAD, and for the purposes of this calculation EAD is assumed to be equal to the current balance.

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 seventh year (covering eight years of data from 2012–2020) 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

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 'unlikelihood 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 specific area where the number of observations continues to be 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 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.

To account for these challenges and maintain data quality, consistency, and comparability, the final dataset is compiled using an iterative four-step data cleansing process:

- New data submitted by Member Banks is evaluated critically to identify outliers, data errors, omissions, and any other issues in each submission
- A detailed audit report is provided to each Member Bank, followed by audit and questioning as data is replaced or clarified
- New and updated data is aggregated with prior data from each Member Bank, followed by a further round of audit and questioning
- Unresolved issues or erroneous data points are filtered, resulting in the omission of certain years, products, and banks where necessary (in collaboration with the submitting banks)

This four-step process delivers a qualified, quality-controlled data set that maximises the acceptance of available data.

10.2 QUALITY AND QUANTITY OF SUBMITTED DATA

As the Trade Register evolves, so do the abilities of Member Banks to submit accurate, granular data. The 2020 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 an increase on the analyses from previous 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 include approximately 85% of available transactions, up from 83% last year. This results in over 50,000 transactions available for analysis, which is a 10% 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 19-20 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 19
Unfiltered data sample for trade finance, 2008-2020

	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
Recovery Rate Analysis	12	7,969	586	2.8

Source: ICC Trade Register Report 2021

Figure 20
Unfiltered data sample for export finance, 2007-2020

	Banks in sample	# Transactions	# Customers	Exposure (\$B)
Submitted data	18	59,717	7,017	953
Default rate analysis	18	50,610	5,869	893
Recovery Rate Analysis	13	244	154	1.9

Source: ICC Trade Register Report 2021

Data required to accurately calculate observed LGD rates must come from cases where the recovery has been completed. Incomplete cases can give some information as to the likely outcome, but only fully complete cases can tell us how much a bank has lost, if anything. Due to the long recovery process for export finance cases, it takes many years after the date of default to complete the set of all defaulted cases with their final outcomes, leading to the relative scarcity of completed data for LGD in the export finance data set.

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 and LGD. The unavoidable result of this difference in filtering is that the Expected Loss calculation is a mixture of different borrowers for each of the default rate and LGD elements.

Almost 90% of the excluded transactions are for 2007–2012. This reflects improvements in data quality and completeness of the Trade Register, as well as 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 OECD 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 fifth year in which Member Banks submitted data to the export finance element of the Trade Register, after initial submissions in 2012 asked participants to submit data back to 2007. Significant effort has been put into comparing submissions from different years and appropriate cleansing to arrive at a consistent year-after-year data set for individual transactions. Ultimately, a coherent data set covering export finance data from 2007–2020 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 DETAILED ANALYSIS TABLES

11.1 TRADE FINANCE

11.1.1 Default Rate Analysis

Figure 21

Total customers and default rate by loan sub-product, 2008-2020

Loan sub-product	Obligors	Defaulting obligors	Default rate
Loans for import/ export (Bank & Corp.)	[]	[]	[]
Loans for import (Bank & Corp.)	[]	[]	[]
Loans for export (Bank & Corp.)	[]	[]	[]
Loans for import/ export (Bank)	[]	[]	[]
Loans for import/ export (Corp.)	[]	[]	[]

Source: ICC Trade Register Report 2021

Figure 22

Import L/Cs obligor weighted default rates by region, 2016-2020

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

Source: ICC Trade Register Report 2021

Figure 23
Import L/Cs exposure weighted default rates by region, 2016–2020

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

Source: ICC Trade Register Report 2021

Figure 24
Export L/Cs obligor weighted default rates by region, 2016–2020

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

Source: ICC Trade Register Report 2021

Figure 25
Export L/Cs exposure weighted default rates by region, 2016-2020

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

Source: ICC Trade Register Report 2021

Figure 26
Loans for import/export obligor weighted default rates by region, 2016-2020

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

Source: ICC Trade Register Report 2021

Figure 27

Loans for import/export exposure weighted default rates by region, 2016–2020

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

Source: ICC Trade Register Report 2021

Figure 28

Performance guarantee obligor weighted default rates by region, 2016–2020

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

Source: ICC Trade Register Report 2021

Figure 29

Performance guarantee exposure weighted default rates by region, 2016–2020

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

Source: ICC Trade Register Report 2021

11.1.2 Loss Given Default and Expected Loss Analysis

Figure 30

Average time to recovery (TTR) in days and years, 2008–2019

Product	TTR - days	TTR - years
Import L/C	[]	[]
Export L/C	[]	[]
Loans for import/export	[]	[]
Performance guarantees	[]	[]

Source: ICC Trade Register Report 2021

Figure 31
Cumulative recoveries and exposure weighted recovery rates, 2008-2019

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

Source: ICC Trade Register Report 2021

Figure 32
Exposure-weighted recovery rate range across banks, 2008-2019

Product	Minimum	Maximum
Import L/C	[]	[]
Export L/C	[]	[]
Loans for import/export	[]	[]
Performance guarantees	[]	[]

Source: ICC Trade Register Report 2021

Figure 33
Transaction weighted recovery rate, 2008–2019

Product	Recovery rate
Import L/C	[]
Export L/C	[]
Loans for import/export	[]
Performance guarantees	[]

Source: ICC Trade Register Report 2021

Figure 34
Exposure weighted LGD by product (discount rate sensitivity adjusted), 2008–2019

Product	Recovery rate	TTR - years	Discounted recoveries and costs (at 2%)			LGD		
			5%	9%	13%	5%	9%	13%
Import L/C	[]	[]	[]	[]	[]	[]	[]	[]
Export L/C	[]	[]	[]	[]	[]	[]	[]	[]
Loans for import/export	[]	[]	[]	[]	[]	[]	[]	[]
Performance guarantees	[]	[]	[]	[]	[]	[]	[]	[]

Source: ICC Trade Register Report 2021

Figure 35
Expected Loss calculation by product, 2008-2019

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

Source: ICC Trade Register Report 2021

11.2 EXPORT FINANCE

11.2.1 Default Rate Analysis: By Asset Category

Figure 36
Obligor-weighted default rates by asset category, 2007-2020

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

Source: ICC Trade Register Report 2021

Figure 37

Transaction weighted default rates by asset category, 2007-2020

Asset	Total transactions	Defaulting transactions	Default rate
Corporate	[]	[]	[]
Financial institutions	[]	[]	[]
Sovereign	[]	[]	[]
Specialised	[]	[]	[]
Total	[]	[]	[]

Source: ICC Trade Register Report 2021

Figure 38

Exposure weighted default rates by asset category, 2007-2020

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

Source: ICC Trade Register Report 2021

11.2.2 Default Rate Analysis: By Region

Figure 39
Obligor weighted default rates by region of risk, 2007-2020

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

Source: ICC Trade Register Report 2021

Figure 40
Transaction weighted default rates by region of risk, 2007-2020

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

Source: ICC Trade Register Report 2021

Figure 41

Exposure weighted default rates by region of risk, 2007-2020

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

Source: ICC Trade Register Report 2021

12. APPENDIX D: LIST OF ACRONYMS

ADB	Asian Development Bank	ICC	International Chamber of Commerce
A/F-IRB	Advanced / Foundation-Internal Ratings-Based Approach	IMF	International Monetary Fund
AML	Anti-Money Laundering	KYC	Know Your Customer
APAC	Asia-Pacific	L/C(s)	Letter(s) of credit
ASEAN	Association of Southeast Asian Nations	LGD	Loss Given Default
BCBS	Basel Committee on Banking Supervision	MENA	Middle East and North Africa
BPS	Basis Point(s)	MFW	Maturity Floor Waiver
CAGR	Compound Annual Growth Rate	NAFTA	North American Free Trade Agreement
CCAR	Comprehensive Capital Analysis and Review	NSFR	Net Stable Funding Ratio
CCF	Credit Conversion Factor	OECD	Organisation for Economic Co-operation and Development
CIS	Commonwealth of Independent States	PD	Probability of Default
EAD	Exposure At Default	RWA	Risk Weighted Assets
ECA	Export Credit Agency	SA	Standardised Approach
EL	Expected Loss	SME	Small and Medium-Sized Enterprises
EU	European Union	UCC	Unconditionally Cancellable Commitment
FI	Financial Institution	UNGA	United Nations General Assembly
GDP	Gross Domestic Product	WTO	World Trade Organization
IFRS	International Financial Reporting Standards		

THE INTERNATIONAL CHAMBER OF COMMERCE

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.

The ICC Banking Commission is one of eleven ICC Policy Commissions and the world's essential rule-making body for the trade finance industry, producing 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 USD 2 trillion trade transactions a year. Together with the ICC International Centre for Expertise, ICC administers the ICC Rules for Documentary Instruments Dispute Resolution Expertise (DOCDEX) to facilitate the rapid settlement of disputes arising in banking.

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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