ICC BANKING COMMISSION | GUIDING INTERNATIONAL BANKING PRACTICE | DRIVING CHANGE IN TRADE FINANCE

2019 ICC TRADE REGISTER REPORT

GLOBAL RISKS IN TRADE FINANCE

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

ICC INTERNATIONAL CHAMBER OF COMMERCE @100 years

IN THIS REPORT

THE FULL REPORT

APPENDICES

ABOUT THE INTERNATIONAL CHAMBER OF COMMERCE

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

As always, the ICC Banking Commission extends special thanks to our 22 Member Banks:

ANZ
Bank of America Merrill Lynch
Bank of China
Barclays
BMO Financial Group
BNP Paribas
Crédit Agricole CIB
Deutsche Bank
HSBC
ING
J.P. Morgan Chase
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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 data sets, and financial and resource contributions. Their continued financial support, investment of time and resources, and uncommon focus on the bigger picture let us collect increasingly robust and meaningful data to produce this report each year.

Finally, the ICC Banking Commission would like to thank the project's leadership: Krishnan Ramadurai, Chair, ICC Trade Register; David Bischof, Project Manager; our team of Project Advisors, Henri d'Ambrières of HDA Conseil in France, Jonathan Joseph-Horne of Sumitomo Mitsui Banking Corporation, Hugo Verschoren of goVer Trade Technologies Ltd in Belgium, and Christian Hausherr of Deutsche Bank AG; the ICC Secretariat; Sukand Ramachandran, Ravi Hanspal, and Noah Mayerson of BCG; and Richard Crecel and Michaël Dhaenens of GCD. The entire team has been instrumental in the design and execution of the 2019 Trade Register Report.

OUR PARTNERS

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.

BOSTON CONSULTING GROUP

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.

By partnering with the ICC Trade Register, BCG aims to bring additional strategic insight, 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 releasing a publication with SWIFT ahead of SIBOS last year: *Digital Ecosystems in Trade Finance*.

In addition, for the first time this year, BCG will be supporting the ICC and its editorial board in co-authoring the ICC Global Survey – looking at more holistic trends and sentiments in the trade finance space.

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.

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FOREWORD FROM CHAIR OF THE ICC TRADE REGISTER

Krishnan Ramadurai
Chair, ICC Trade Register

In its 11th year of publication, the ICC's annual Trade Register Report remains a unique source for trade finance and export finance-related credit risk data which is used by:

- Banks as an internal reference point for getting appropriate capital and accounting treatment for trade finance and export finance products
- Banks and the industry in their dialogue with regulators to ensure trade finance products are treated appropriately under various global and national regulations and receive consistent risk-aligned capital treatment, and
- Capital markets participants as a proxy benchmark for investments made in trade assets, even though the Trade Register clearly highlights the limitations in using this data as an investment benchmark.

At the time of writing, the unexpected and unpredictable rise and spread of COVID-19 is disrupting the world around us – and trade is no exception. As we discuss the impacts of the virus on global trade and trade finance later in the report, it behoves us to recognise the precariousness of the international trading system, but also to acknowledge that relative to other banking products we continue to see trade finance as a low-risk asset class – even, or perhaps particularly, in these uncertain times.

In terms of developing the Trade Register Report, this year the project team set itself the task of:

- **Further simplifying and standardising the data collection process within the GCD portal:** I am happy to report progress in improving the data collection process by eliminating the collection of redundant data fields and making changes based on feedback received from banks submitting data to the Trade Register. The quality and robustness of the data has also been enhanced by introducing product and sub-product hierarchies. This enables the Trade Register to measure obligor-level defaults more accurately for short-term trade finance and for export finance by expanding the time period of data collected on recovery and write-off amounts.
- **Refining estimates of Credit Conversion Factors and Loss Given Default for L/Cs and guarantees:** Progress on this front has been mixed; while estimating Loss Given Default for letters of credit (L/Cs) and guarantees remains challenging, given the

practice-based differences in place to deal with defaulted obligors, progress has been made on estimating Credit Conversion Factors (CCF) for L/Cs and guarantees. This is illustrated by the fact that we were able to combine the expertise of GCD in collecting and analysing data and the project team's technical knowledge, to put together a paper which clearly shows that the empirical CCF for performance guarantees and financial guarantees are far below the regulatory stipulated values of 20/50/100%. While this exercise was undertaken in response to proposed changes to CCFs for guarantees in the new Basel III regulations, it can also be used by banks to make a case for empirical CCFs for estimating Expected Losses (ELs) under IFRS and US GAAP accounting rules.

- **Convergence in the use of Trade Register data for estimating LGD and EAD within corporate models:** This is one area where progress has unfortunately been limited. While tentative steps have been taken, including a joint working group meeting of GCD risk professionals and ICC trade professionals, this group has not been able to make progress given the need to address data and other qualitative issues with the trade data set. Given the technical challenges in convergence, one action being explored involves using a common data portal to collect LGD and EAD data for both the Trade Register and the GCD participating banks. This also has the added advantage of potentially increasing the number of banks participating in the report.
- **Expanding the scope of supply chain finance (SCF) techniques and the estimation of LGD:** Given the issues surrounding supply chain finance raised in part by the accounting firms and the rating agencies, the Trade Register has focused on strengthening the data collected on supply chain finance and making a start at embedding the methodology for identifying obligor-level defaults and exposure movements which will help in estimating LGD. Given the limited number of defaults reported and the need to maintain the anonymity of data, estimation of LGD for SCF will commence only from 2020.

The storyline of this year's report reinforces the themes of previous years. Both trade finance and export finance products continue to exhibit low credit risk characteristics. This is driven by a combination of low probability of default and high recovery rates, and in the case of trade finance shorter time to recovery. This year's dataset includes nearly USD 15 trillion of trade finance, export finance, and SCF transactions from over the past decade.

The Trade Register is at a crossroads: while its continuing evolution will require it to expand product scope to include the full range of SCF products and receivables finance, it will need to address issues emanating from the current crisis in a timely and transparent manner. This will enhance the usefulness of the report to a wide range of stakeholders ranging from banks and regulators to capital market investors.

To address these challenges the team will need to focus on:

- The Trade Register data converging with the GCD data as a single source of data for modelling LGD and EAD for trade finance products
- Expanding the scope of the SCF data collected to estimate LGD
- Using the data collected for L/Cs and guarantees to make a case with the regulators to lower the regulatory CCF values, and
- Expanding the number of banks providing data to the Trade Register, and as part of this sufficiently rewarding our participating Member Banks.

We hope you find this to be a useful report, and welcome your comments, feedback, and suggestions for enhancing it further in future years.

Krishnan Ramadurai
Chair of the Trade Register

EXECUTIVE SUMMARY

As we enter a new decade, the trends of the past decade will doubtlessly accelerate and continue to shape both trade and the world around us: growing digitisation, the rise of industry disrupters, the world's march towards increased interconnectedness, the rise in the impact and awareness of climate change, and political tensions disrupting the long-held assumptions of the world order. Indeed, the ways that trade and trade finance operate today look radically different from what they did at the start of the past two decades. Since 2000, global trade flows have trebled from USD 6.2 trillion to USD 18.1 trillion in 2019 – undoubtedly made possible through trade finance products which offer liquidity and risk mitigation solutions for importers and exporters, allowing them to transact with confidence across borders.

The COVID-19 pandemic – and the global economic downturn that has followed – will in the short term likely reverse the growth in global trade over the past decade. As discussed later in the report, various scenarios suggest the 2020 value of global trade could decline by anywhere from 11% to 30%. With supply chains disrupted and consumer demand plummeting at an unprecedented rate, it is understandable that the virus is top of mind for those involved in global trade.

As a result, the risk profile of trade products will likely increase this calendar year – data that is not yet reflected in the bank data utilised by the Trade Register. At the same time, the world will at some point emerge from this crisis. Some variation of business as usual will, slowly, resume – a new normal will take hold. The short-term impacts of COVID-19 aside, the virus will likely disrupt and perhaps accelerate existing industry trends. The risk mitigating properties of documentary trade may grow in popularity (reversing the ongoing shift to open account trade), although this may be less pronounced than in previous crises as more attention has been placed on how to apply risk mitigation to SCF. Further, the challenges in producing original documentation may help speed up the shift to digital in the industry. Importers and exporters, trade banks, and regulators must not only focus on immediate risk mitigation but also on how to incorporate the lessons learned from this crisis into how global trade operates and is governed in the future.

As the banking environment continues to evolve and respond to the changing political, economic, and regulatory milieu, trade finance and export finance will also need to adapt and evolve. This context makes it more critical than ever for banks to understand the risk profiles of their trade finance and export finance products. The ICC Trade Register plays an important role in this with its data-driven, objective and transparent view of the credit-related risk profile of trade finance and export finance.

The 2019 Trade Register Report, which contains data up until the end of 2018, reinforces the themes of previous years; notably, that trade finance and export finance products continue to present low credit risk compared to other banking products. This is driven by a combination of low probability of default, high recovery rates and, in the case of trade finance, shorter times to recovery.

For trade finance products, the latest Trade Register data suggests that default rates have largely remained the same as, or lower than, in 2017. Import L/Cs are a notable exception to this, with an increase in default rates when weighted by exposures and transactions. This rise was driven by the default of a major French retailer, whose impact was felt across its global supply chain. While it is encouraging to note that the rise in import L/C defaults was not driven by an industry-wide issue, it is still revelatory to observe the wide-scale impact of a single corporate default.

Expected Losses, on the other hand, are similar across products when compared to 2017. This is consistent when viewed from either an obligor-weighted or exposure-weighted perspective.

Conversely, export finance has seen increases in default rates in 2018. This growth in default rates is not uniform across asset categories; the corporates asset class had the largest increase while specialised asset class defaults decreased. The regional perspective is mixed, with North America in particular and Europe to a lesser extent seeing increases in default rates while the Middle East saw a decline (even though it retains the highest default

rates across the regions). In spite of these increases and the geographic variance, export finance credit risk for banks remains very low, driven in particular by Export Credit Agency (ECA) backing, which is typically at around 95%. As such, recovery rates for defaulting transactions are typically above 95%, resulting in low overall Expected Losses.

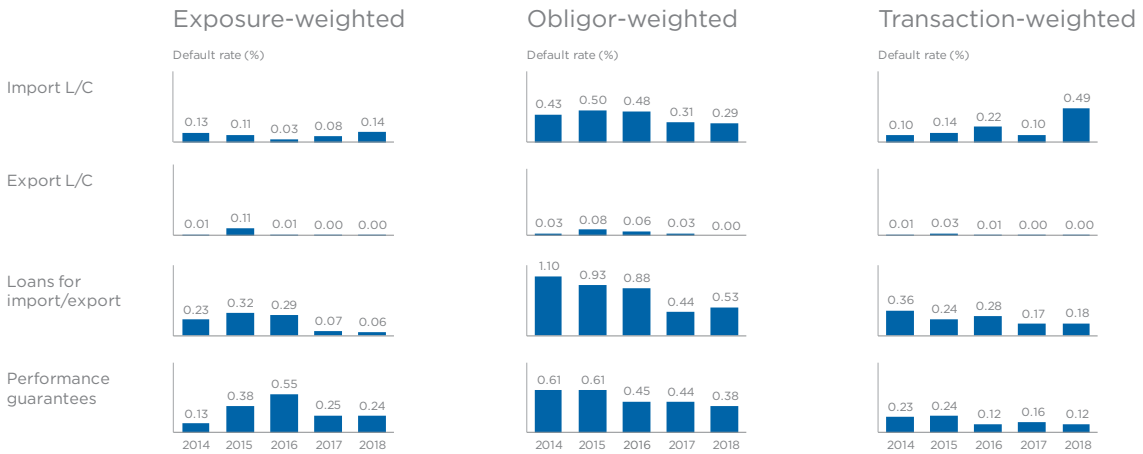
The supply chain finance data set, specifically covering payables finance, is only in its second year of ICC Trade Register coverage and is hence comparatively small; however, initial indications are that the probability of default for SCF is comparable to other short-term trade finance products. Nevertheless, 2018 saw an increase in SCF defaults due to the default of a single UK-based construction firm, which impacted suppliers around the world. Over the coming years, we will collect further data to substantiate and disaggregate these results so that they can be used to inform regulatory, capital, and accounting policies.

The ICC is continuing to enhance the scope, improve the data quality and refine the methodology of the Trade Register. Indeed, the quality of the data included in the Trade Register has continued to improve in recent years. In the longer term, we will explore ways to expand the scope of the Trade Register to include operational and fraud risks. We will also continue to actively expand participation in the Trade Register to grow the underlying data set.

Figure 1:
Products included within trade finance and export finance[1]

Trade finance (short term)	Export finance (medium and long term)
• (Issued) import letters of credit • (Confirmed) export letters of credit • Loans for import/export • Performance guarantees and standby letters of credit • Supply chain finance (payables finance)	• Products (e.g. export credits) for which an ECA has provided a state-backed guarantee or insurance to the trade finance bank

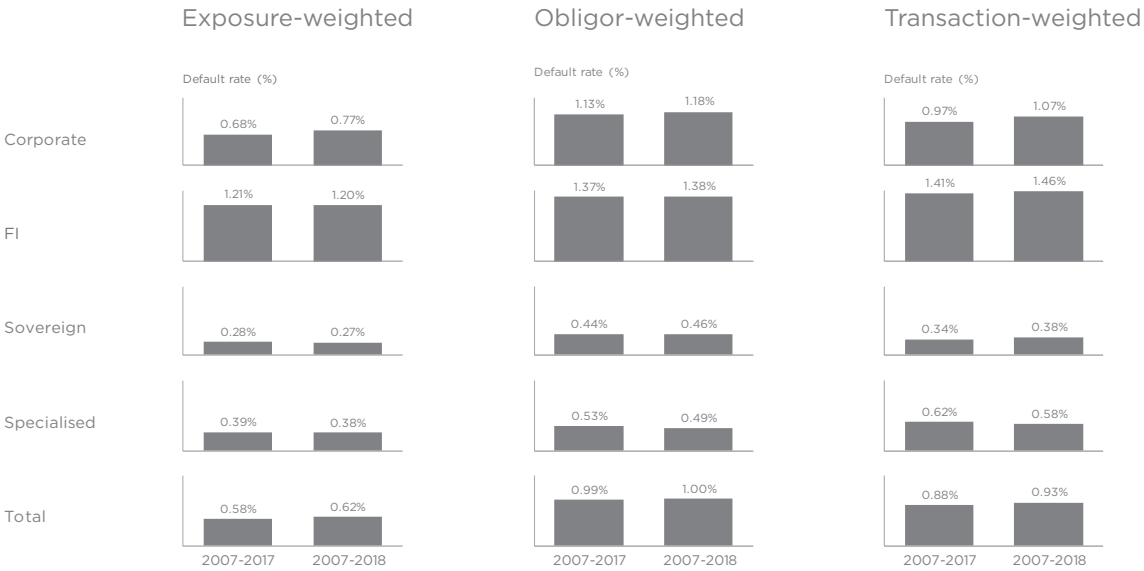
Figure 2:
Summary of default rate trends Trade finance, 2014–2018



Source: ICC Trade Register 2019

1. See Appendix A for detailed trade finance and export finance product definitions

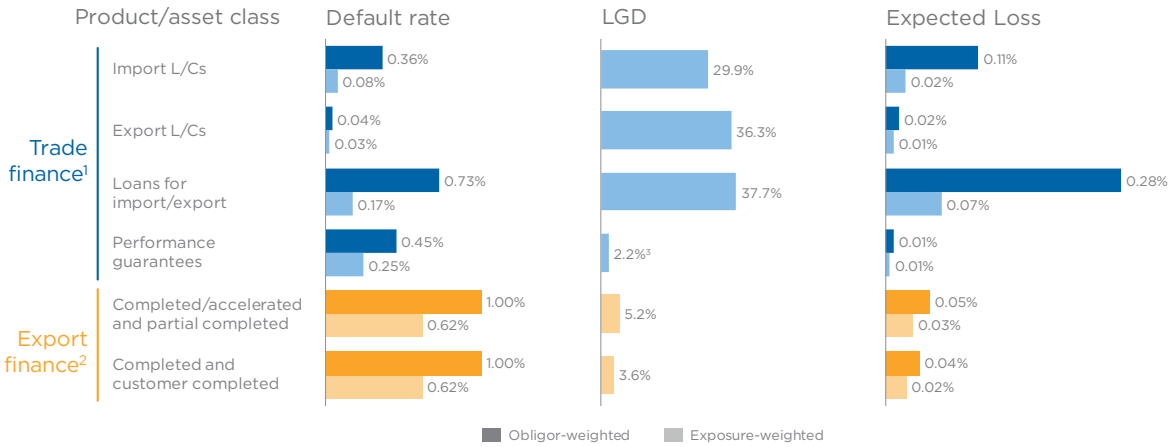
Export finance, 2007–2018



Source: ICC Trade Register 2019

Figure 3:

Summary of Expected Loss findings for trade finance, 2008-2018, and export finance, 2007-2018



1. 2008-2018 2. 2007-2018 3. Accounts for 4.1% observed 'claim rate' (i.e. applying CCF to Loss Given Defaults)
Source: ICC Trade Register 2019

THE FULL REPORT

INTRODUCTION TO THE ICC TRADE REGISTER REPORT

Context of the Trade Register Report

The ICC Trade Register Report presents a global view of the credit risk profiles of trade finance, supply chain finance, and export finance transactions. The Trade Register demonstrates the low-risk nature of the transactions that enable global trade and the trillions of dollars in economic value that flow from these commercial activities.

The report draws on data from 25 trade finance and export finance banks[2] – a representative set of global trade finance and export finance transactions that amounts to 32 million transactions in total and nearly USD 15 trillion in exposures. 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 11% of all global trade flows (Figure 4).

The data is analysed by GCD, BCG, member bank specialists, and the ICC Banking Commission 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 increasingly align with the Basel framework, while also providing a practitioner's view of credit risks within trade finance and export finance.

While the report format has varied, the objectives of the Trade Register have stayed the same:

- To provide an objective, transparent view of the credit-related risk profile and characteristics of trade finance and export finance using a rich, data-driven approach with the intention of contributing to relevant informed policy and regulatory decisions
- To progress the understanding of trade finance and export finance, their importance to global trade and their highly effective global risk mitigation capability to a broad range of parties, and
- To promote understanding of the international regulations affecting bank capital requirements for trade finance and export finance, and their history and objectives, in order to create a uniform global view of this industry as part of the ICC Banking Commission's commitment to effective and collaborative advocacy.

This year's report reflects the findings from past years: **trade finance and export finance continue to be a low-risk asset class.**

It should be noted that an increasing number of investors are using the Trade Register and its data in making investment decisions. Given the data limitations that are outlined below, **the ICC can only authorise – and strongly encourages – the usage of the report's data and information for research purposes and not to inform investment decisions.**

Report scope

To continue its relevance and reliability, the scope of the ICC Trade Register is frequently updated; for example, to include expanded geographic reach, number and diversity of contributors, volume and quality of data, and align analytical methods to the Basel framework.

Figure 4:

Estimated coverage of ICC Trade Register in 2018 (products grouped to enable like for like comparison)

Product	2018 exposures in Trade Register (USD T)	Est. share of 2018 trade finance, by product (%)	Est. share of 2018 total global trade flows (%)
L/Cs (including import and export)	0.60	28%	3%
Other trade and SCF	1.36	26%	7%
Total	**1.96**	**28%**	**11%**

Source: BCG Trade Finance Model

2. 22 Member Banks contributed to the report in 2019, but the ICC Trade Register contains data from 25 banks in total across all years

Gathering representative data from a multitude of banks internationally is complex and, as a result, the Trade Register focuses only on credit risk across the following products:

- Issued import letters of credit (referred to as import L/Cs in this report)
- Confirmed export letters of credit (referred to as export L/Cs in this report)
- Loans for import/export
- Performance guarantees and standby letters of credit (referred to as performance guarantees in this report)
- Supply chain finance payables finance (referred to as SCF payables finance in this report)
- Export (finance) credits, backed by an ECA

Definitions of these products are outlined in Appendix A.

The scope of export finance products historically has been limited to products for which an OECD ECA has provided a state-backed guarantee or insurance to the trade finance bank. For 2019, the project team has once again extended data collection to non-OECD Export Credit Agency-backed export finance. Data is thus collected from two different streams: OECD and non-OECD countries.

For the purpose of the report, export finance transactions are split into four asset categories (sovereign, financial institutions, corporate and specialised), with definitions outlined in Appendix A.

The risk scope is currently restricted to credit risk.

Overview of methodology

An important methodological imperative for the Trade Register has been to align the analysis and calculations to a Basel-compliant view, as the Basel regulations provide a uniform methodology to assess and manage credit-related risk.

An ongoing, multi-year effort is underway to align the Trade Register's data structure, methodology detail and calculations more closely with the Basel approach. Specific explanations of the methodology and calculations are mentioned in the relevant sections, and a full discussion on export finance calculations is included in Appendix A.

As in previous years, the report includes three different weighting methodologies to measure default rates – exposure, obligor, and transaction. While data is collected at a granular level to ensure as consistent a methodology as possible, several limitations exist and are explored in detail in Appendix A. However, it is worth noting three points here:

(1) An element of judgement remains in the definition of default. The definitions prescribed require banks to identify not only borrowers with overdue payments of 90 days or more, but also other borrowers judged by the bank as "unlikely to pay". This element of judgement will always result in a difference between banks.

(2) 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.

(3) As is the Basel approach, the obligor-weighted default rate for a product is calculated as the number of obligors (holding the product in question) who default on any financial product that they hold with the bank, divided by the total obligors holding the product in question. While this is the definition used in the report, there is ongoing discussion with contributing banks to apply this consistently in the data provided – a topic we will look to address in future editions.

Care is needed when comparing the different weighting methods of obligor, transaction, and exposure. While exposure-weighted data gives a good insight into the effects of defaults and losses on the banking industry, the most common default and LGD rates used and reported by banks are based on obligor or transaction weightings. In the case of

obligor and transaction-weighted data, equal weight is given to small and large borrowers and transactions, meaning this data is more representative of smaller borrowers and transactions.

Representativeness of Pooled Data

Over the last year discussion has continued about the need for users of pooled data to prove that the data represents the portfolios to which it is being compared. The degree of representativeness will depend on the use of the data. For example, to calculate the overall industry average default rate for import L/C applicants, the average of the total data set may need to be adjusted to take account of regional data concentrations. To use the data to benchmark the modelling of a particular portfolio, the user would need to take into account the borrower countries, facility types, borrower types, industries and sizes. **This year the Trade Register will share anonymised data with contributors to allow them to create customised reference data sets for their own purposes.**

The Trade Register is based on data pooled voluntarily by banks active in trade finance. Given that these banks represent a large proportion of the global trade finance business, the data sets are globally representative, but may not fully capture country-level or regional nuances, as the depth of data sets does vary by market.

TRADE FINANCE: STATE OF THE MARKET

Market Trends in Trade Finance: From COVID-19 and Beyond

Sukand Ramachandran, Managing Director and Senior Partner, Boston Consulting Group
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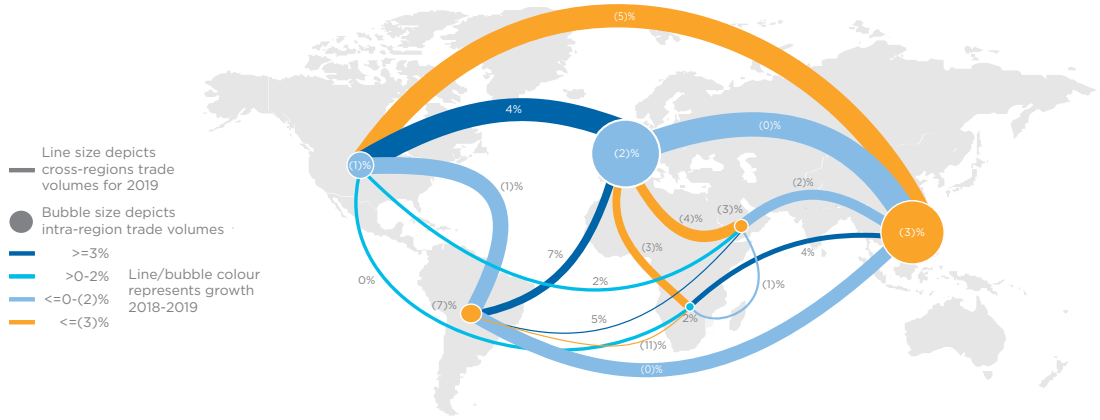
State of the market: An unprecedented time for global trade

International trade continued to grow over the last decade despite the after-effects of the 2008 financial crisis and the return of protectionist policies in many countries, including the US. But it now faces an even greater challenge from the COVID-19 pandemic.

Global trade volumes are sure to fall in 2020 and, with them, the revenues of the trade finance industry. The effect on volumes over the next few years will depend on the scale and duration of the pandemic, and on the immediate governmental responses to it. And, even after the pandemic and emergency measures have passed, international trade may still be constrained by long-term changes in commercial behaviour and public policy. Not since WWII have the prospects for international trade been so uncertain.

Figure 5:
BCG Trade Finance Model, change in 2019 global trade corridors from 2018



Source: BCG Omnia Global Trade Finance Model 2020

Review of 2019: Setting the scene before COVID-19 struck global trade

The value of international trade in 2019 showed a slight decline to USD 18.1 trillion, 2% down from its historic peak in 2018 of USD 18.5 trillion, but was nonetheless showing strong signs of recovery versus its 2015/16 dip. Indeed, the underlying volume of trade increased by 2%.

The fall in the value of global trade was largely the result of US Dollar appreciation (the local currencies of 18 of the top 20 trading countries depreciated against the US Dollar). Further, trade tensions between the US and China continued in 2019 – also dampening the rise in trade values seen in recent years. Trade between US and China fell by 12%, driving an overall 5% reduction in trade between the US and Asia. Trade in most other corridors was more or less flat, with Africa the only region to have shown positive growth (Figure 5).

Despite the slight decrease in global trade values, trade finance revenues ticked up by 1% to USD 46 billion in 2019. This was due to a 6% growth in documentary trade revenues. Open account revenues, by contrast, were down 4%. This reversed the trend of recent years in which revenues have shifted from documentary to open account trade. The most likely explanation is that trade tensions between the US and China have increased uncertainty in supply chains and, hence, the demand for the risk mitigation supplied by documentary trade products. Shifting from familiar suppliers in China to new suppliers in Vietnam or Thailand is also likely to increase demand for documentary trade, at least until the new relationships are well established.

We expect the uncertainties created by the COVID-19 pandemic to sustain increased demand for documentary trade over the short-to-medium term (as demand for these trade products tends to be countercyclical). Indeed, we expect this effect to be greater than it was in the 2008 financial crisis because COVID-19 is more far reaching, with grave economic consequences in all regions of the world.

What does COVID-19 mean for international trade?

The relatively benign outlook for international trade in 2019 has been abruptly impacted by the onset of the COVID-19 crisis. As of the end of April 2020, the pandemic shows no signs of abating. Confirmed infections have reached over three million globally, and the number of deaths attributed to COVID-19 is 200,000. More and more countries are being hit by the virus, with the US now an epicentre.

Governments are imposing ever more stringent lockdowns, banning people not only from entering the country but from travelling domestically. In many countries the entire population is confined to their homes, except those working in industries deemed essential, such as food supply and healthcare.

With large sections of many economies effectively shut down, stock indices have fallen dramatically and claims for unemployment benefits have exploded. Governments are offering unprecedented sums of aid to businesses and their employees, while central banks are cutting interest rates and injecting masses of liquidity into the financial markets.

Figure 6:

Web traffic, compared to baseline (BCG Demand Sentinel)
Change in normalised visits for the periods 31 March to 6 April 2020 vs. 27 January to 2 February 2020

Sector	AE	AU	BR	CA	DE	ES	FR	IN	IT	JP	MX	MY	SG	TH	UK	US	VN
Accommodation & Hotels	-71%	-79%	-81%	-78%	-83%	-84%	-80%	-74%	-85%	-48%	-68%	-84%	-55%	-63%	-82%	-74%	-77%
Air travel	-71%	-68%	-59%	-69%	-61%	-74%	-67%	-60%	-78%	-54%	-55%	-73%	-63%	-56%	-65%	-61%	-70%
Automotive Industry	-50%	-33%	-37%	-28%	-7%	-68%	-61%	-30%	-60%	-12%	-14%	-65%	-7%	-28%	-51%	-22%	54%
Banking Credit & Lending	-15%	-4%	-6%	-8%	-11%	-29%	-23%	-11%	-19%	-13%	5%	44%	3%	21%	-14%	-10%	15%
Beauty & Cosmetics	8%	11%	-28%	-11%	1%	-13%	-25%	-43%	-23%	-10%	-6%	-36%	-21%	-21%	-3%	-8%	-13%
Beverages	53%	9%	-25%	7%	16%	8%	-14%	22%	15%	-16%	-12%	-22%	4%	-9%	30%	32%	-3%
Car Rentals	-66%	-69%	-63%	-67%	-66%	-82%	-79%	-67%	-84%	-26%	-41%	-65%	-57%	-44%	-71%	-70%	-24%
Consumer Electronics	-25%	8%	-1%	-5%	-4%	-8%	-15%	-16%	5%	6%	-8%	-27%	-3%	-7%	-3%	-3%	-14%
Fashion & Apparel	-18%	-5%	-15%	-17%	-6%	-43%	-38%	-66%	-40%	-10%	-20%	-47%	-24%	-15%	-23%	-18%	-31%
Furniture	-19%	4%	-22%	-16%	-3%	-37%	-31%	-46%	-46%	27%	13%	-36%	5%	79%	-17%	-15%	-6%
Groceries	66%	9%	314%	60%	34%	-1%	96%	-15%	24%	-8%	6%	-13%	64%	22%	117%	81%	41%
Insurance	-19%	-37%	-29%	-27%	-23%	-35%	-33%	-19%	-23%	-3%	4%	-31%	10%	0%	-39%	-21%	-3%
Jewelry & Luxury	-37%	-24%	-22%	-41%	-10%	-59%	-15%	-57%	-49%	-25%	-29%	-32%	-36%	-10%	-29%	-29%	-34%
Marketplace	-29%	1%	-12%	-3%	1%	-19%	-16%	-54%	-16%	-2%	-20%	-13%	-17%	2%	-1%	3%	5%
Medicine	16%	27%	17%	-7%	-14%	-12%	7%	5%	22%	2%	3%	-11%	-27%	-28%	-3%	-4%	-22%
Restaurants & Delivery	-27%	-26%	19%	-13%	-5%	-54%	-61%	-53%	-24%	-12%	-8%	-16%	-4%	-17%	-32%	0%	-27%
Telecommunication	-5%	-5%	-6%	-21%	-2%	-21%	-12%	19%	-2%	-5%	-1%	-9%	-12%	-6%	-8%	-11%	21%

Source: SimilarWeb data (www.similarweb.com); BCG Demand Sentinel

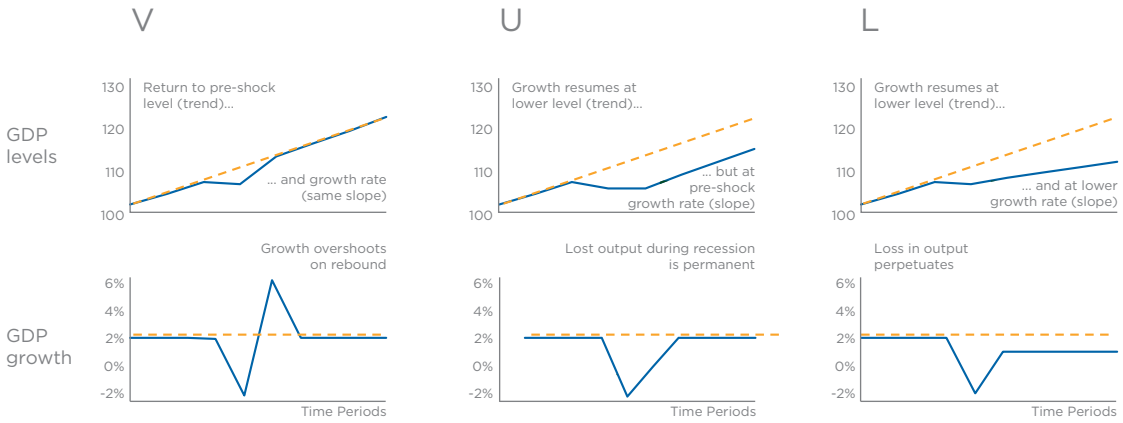
The immediate effects on international trade are best understood by noting that the COVID-19 crisis is simultaneously a demand shock and a supply shock. The demand effect is most acute for sectors where consumers have effectively been banned from making purchases – travel, sports, restaurants, high-street retail, and so on. But a general decline in demand is also being caused by the loss of income among those who have lost their jobs (perhaps temporarily), the reduced wealth of consumers with stock market exposures and increased saving in response to financial uncertainty. The exceptions are those sectors that the lockdowns directly benefit, such as supermarkets and online entertainment (Figure 6).

The reduction in demand and supply means that the movement of goods will slow down, and in turn global trade will fall. However, if the pandemic does not last significantly longer than now expected, the effect is likely to be less sustained than it was following the 2008 financial crisis (however, in the near term the impact may be deeper). In addition, some of the very sharpest impacts are likely to be on service industries (e.g. restaurants, travel and leisure), rather than the import and export of physical goods – the focus of this report – although the ramifications will ripple across their supply chains (e.g. equipment, aviation fuel, etc.).

On the supply side, factory closures caused by staff sickness or governmental edicts are disrupting supply chains and causing downstream shortages of retail goods and components for manufacturers. The problem is exacerbated by the direct effects of the COVID-19 crisis on shipping. Port closures, sickness among crew, and the prioritisation of medical supplies are resulting in a reduction in route options, congestion at ports and long delays in the receipt of goods. Where possible, buyers will likely seek to avoid these problems by finding domestic substitutes for imported final goods or components, thereby reconstituting supply chains in the near future to build resilience into their business models.

The ultimate impact of the crisis on economic output and international trade will depend on the geographic scope, scale, and duration over which the pandemic plays itself out. The longer it goes on, the greater the strain on companies' liquidity, the greater the job losses, and the greater the number of

Figure 7:
COVID-19 shock and recovery scenarios



Source: BCG analysis

insolvencies. But the economic outcome will also depend on the effects of the immediate governmental interventions and on potential longer-term changes in policy, some of which may rein in the globalisation that has characterised the last 40 years. It is, therefore, difficult to predict. However, we believe three scenarios for economic output are plausible:

1. A moderate 3-to-6-month downturn, with a **V-shaped recovery** into 2021 that returns the global economy to its pre-crisis growth path. This will occur only if COVID-19 has been brought under control in most major economies by Q3 2020.

2. A deeper 6-to-9-month downturn with a slower **V-shaped recovery** (approaching U-shaped) in 2021 (our current view as the most likely outcome).

3. A deep widespread shock lasting more than a year with an **L-shaped recovery** that leaves economic growth at a lower rate over the long run. This scenario becomes possible if COVID-19 cannot be brought under control within the next 6 months or returns in the winter of 2020/21.

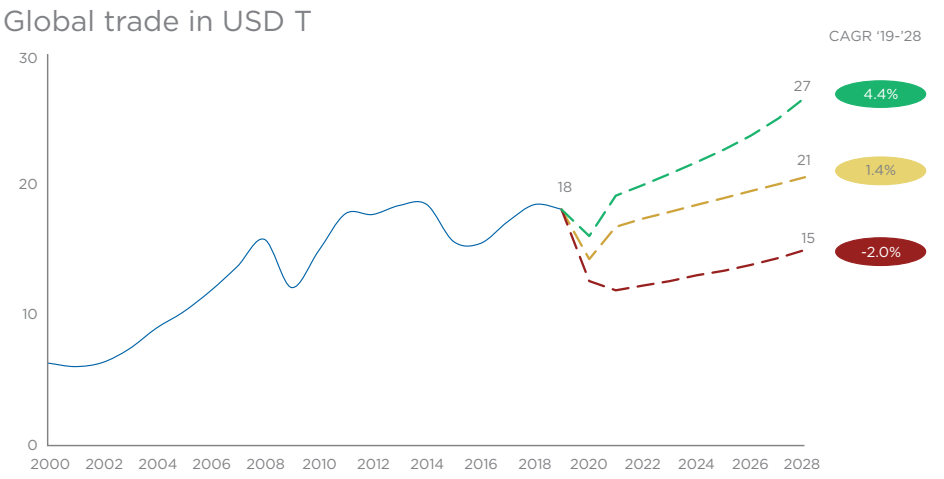
These output scenarios have dramatically different implications for international trade (Figure 8). On the moderate V-shaped scenario, we estimate that the fall in global trade for 2020 will be no greater than 11%, and that it will return to its 2019 value of USD 18 trillion by 2021, going on to reach nearly USD 27 trillion by 2028.

On our slower V-shaped scenario (approaching a U-shaped recovery) – the one we currently consider most likely – international trade makes a slow return to normality from Q3 2020. Global trade falls by 21% in 2020 and does not return to its 2019 value until 2024, reaching USD 21 trillion in 2028.

The severe L-shaped scenario entails a sustained setback for international trade. We estimate that global trade would decline by 30% in 2020 and not return to its 2019 value in the foreseeable future, rising to only USD 15 trillion by 2028.

This independent analysis largely mirrors the April 2020 projections of the World Trade Organization, which estimated global trade to decline by anywhere from 13% to 32% in 2020.

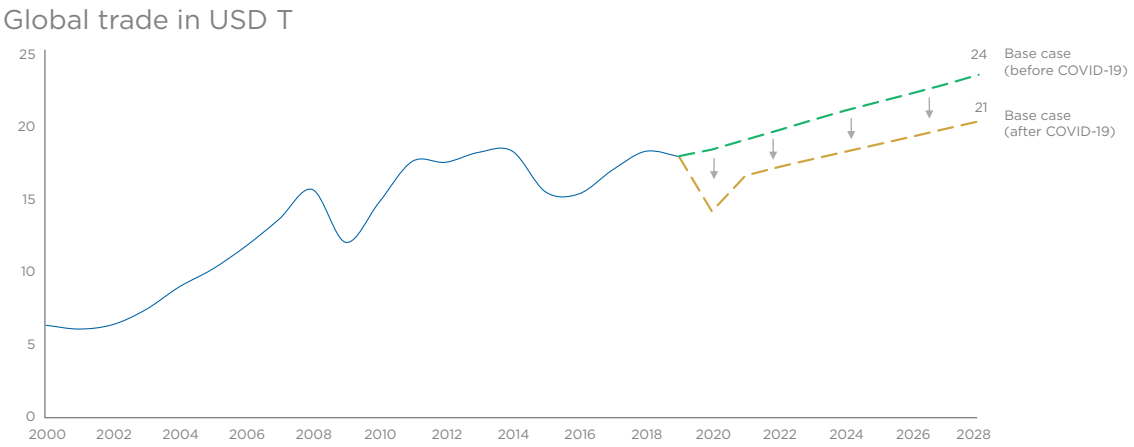
Figure 8:
BCG Trade Finance Model, estimated global trade flows, 2000-2028



Source: BCG Omnia Global Trade Finance Model 2020
These analyses represent only potential scenarios based on discrete data from one point in time (06 April 2020). They are not intended as a prediction or forecast, and the situation is changing daily.

Figure 9:

BCG Trade Finance Model, estimated global trade flows before and after COVID-19, 2000-2028



Source: BCG Omnia Global Trade Finance Model 2020
These analyses represent only potential scenarios based on discrete data from one point in time (06 April 2020). They are not intended as a prediction or forecast, and the situation is changing daily.

To put these scenario-based projections in context, we have also estimated future global trade flows in the absence of the COVID-19 crisis: our pre-COVID-19 base case. Under this now-impossible scenario, global trade would have been forecast to reach USD 24 trillion by 2028 rather than the USD 21 trillion of the slow V-shaped scenario.

FEATURE

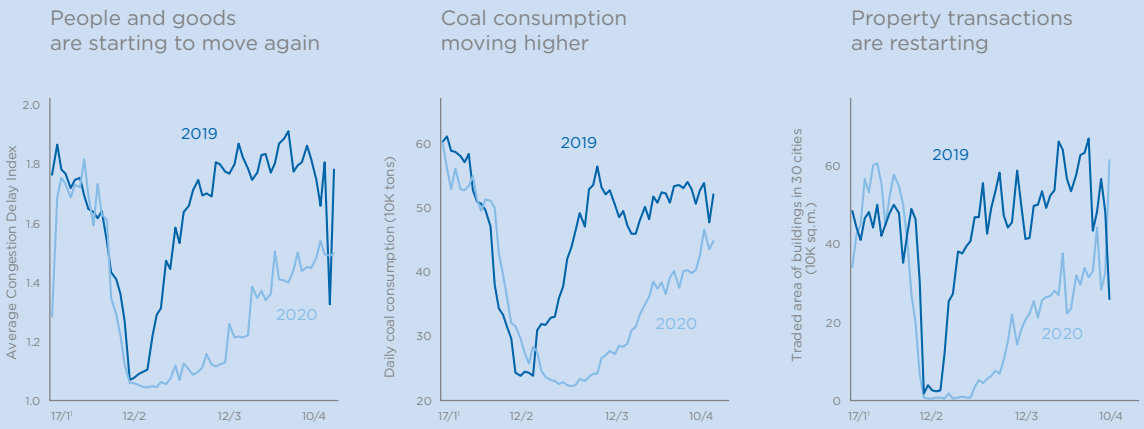
Progression of the COVID-19 crisis in China

The Chinese government locked down Wuhan on 23 January 2020, and subsequently most other cities in the Hubei province. In other parts of the country, people were encouraged to work from home and places where people gather in large numbers, such as cinemas and sports venues, were closed. The consequent lost output disrupted international supply chains, providing the initial supply shock of the COVID-19 crisis.

As of early April, the number of new COVID-19 cases in China is close to zero, as is the number of new deaths. Production has resumed in many industries, people and goods are moving again and the resumption of the real estate market suggests that a degree of economic confidence has returned (Figure 10). Overall the virus's economic impact in Asia appears less material than in Europe and North America (Figure 11). However, the speed with which the Chinese government lifted the lockdown means there is a material risk of another outbreak of the virus in the coming months.

All eyes are now on China to understand its recovery in the medium term – as this is currently the best indicator to other markets as to what recovery may truly look like.

Figure 10:
China COVID-19 recovery data



1. In DD/MM format

Note: As of 07 April 2020; China data re-based for weekdays excl. weekends relative to start of Chinese New Year. Congestion delay index average include Beijing, Shanghai, Guangzhou, Shenzhen, and Wuhan; Daily coal consumption of major power plants = sum of daily average coal consumption of Jerdin Electric, Guangdon Yudean Group, Datang International Power Generation, and Huaneng Power International, Inc.

Source: Wind, www.cqcoal.com, and BCG Center for Macroeconomics

Figure 11:

COVID-19 crisis and sector impacts by Total Shareholder Return (TSR) (as of 2 April 2020)

TSR performance (21 February - 2 April 2020)[1]

		Americas	Europe	Asia
Healthier sectors	Food/staples Retail	-9%	-8%	-10%
	Household Products	-11%	-13%	-2%
	Pharma	-13%	-13%	-12%
	Telecom	-14%	-15%	-10%
	Food & Beverage	-17%	-23%	-8%
Pressured sectors	Semiconductors	-21%	-34%	-21%
	Utilities	-22%	-27%	-4%
	Health Equipment	-22%	-23%	-4%
	Software	-25%	-27%	-23%
	Prof. Services	-26%	-26%	-24%
	Capital Goods	-28%	-32%	-25%
	Transport	-28%	-43%	-14%
	Financials	-28%	-31%	-24%
	Tech Hardware	-28%	-17%	-20%
	Materials	-28%	-25%	-24%
Vulnerable sectors	Media	-31%	-42%	-6%
	Retailing	-35%	-35%	-16%
	Insurance	-36%	-33%	-21%
	Banks	-39%	-48%	-23%
	Real Estate	-41%	-30%	-20%
	Auto	-45%	-42%	-30%
	Hospitality	-47%	-43%	-25%
	Durable Goods	-47%	-32%	-17%
	Energy	-47%	-26%	-28%

Note: As of 02 April 2020; Based on top S&P Global 1200 companies; Industries are based on Global Industry Classification Standard definitions.

1. Performance is tracked for the period 21 February 2020 (before international acceleration of outbreak), through 02 April 2020.

Source: S&P Capital IQ; BCG Henderson Institute; BCG analysis

Implications for trade finance

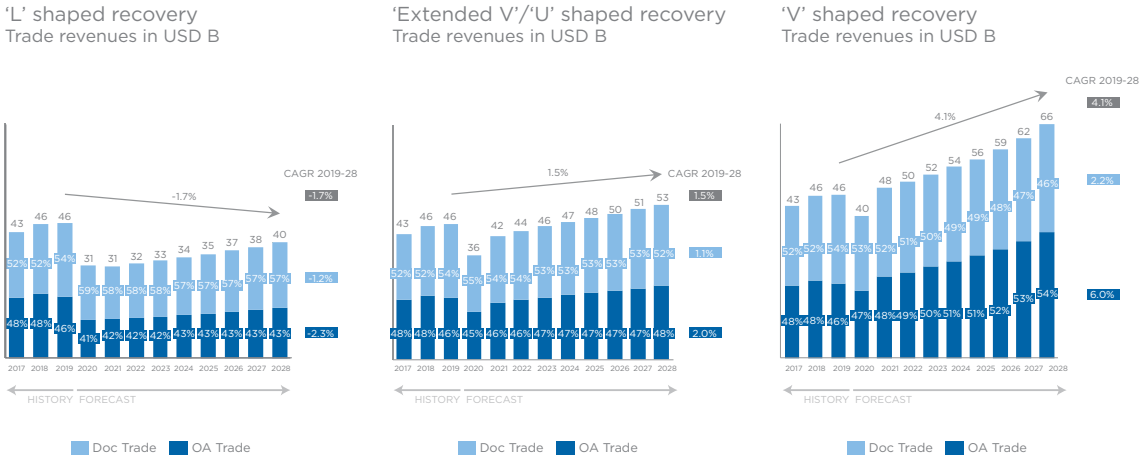
A slowdown in global trade, whether from COVID-19 or any other cause, will always reduce the use of trade finance and, hence, the revenues of its suppliers. However, the decline in trade finance revenues is unlikely to be strictly proportional to the fall in trade. This is because trade finance earnings as a percentage of total trade tends to be counter-cyclical. The uncertainties attendant on a difficult economic environment make importers and exporters more willing to pay for risk mitigation provided by letters of credit and bank guarantees – which are generally higher margin than open account trade.

We have factored this temporary shift away from open account trade and back to documentary trade into our estimates of future trade finance revenues under the three scenarios, with the shift increasing as the scenarios worsen (Figure 12). In the most severe scenario, we would expect documentary trade to jump from 54% of the total in 2019 to 59% in 2020. This will soften the blow, but it will not suffice to avoid an absolute decline in trade finance revenues (Figure 13). Even in the best scenario, revenues may fall from USD 46 billion in 2019 to USD 40 billion this year.

Reduced revenues are unlikely to be the only effect of COVID-19 on trade finance. In the short term, declining consumer demand and the disruption of supply chains will likely cause the default rate to spike (something that we look to explore in detail in future versions of the Trade Register, once the data is available). And banks will face calls for leniency, especially towards SMEs, which are expected to be hardest hit.

Figure 12:

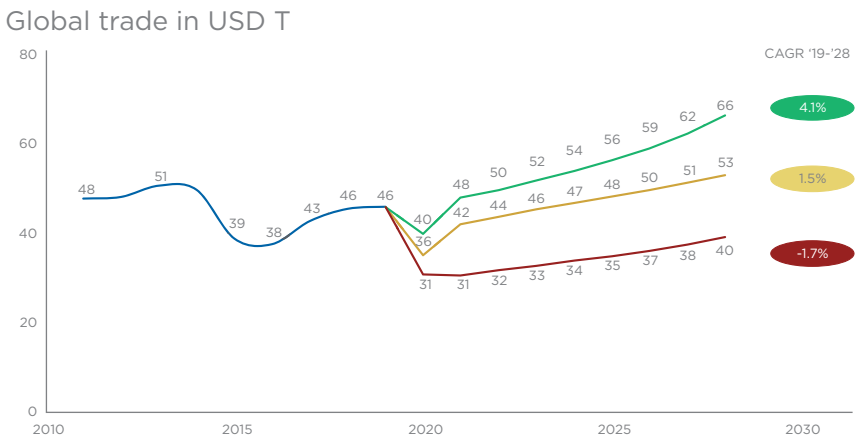
BCG Trade Finance Model, estimated share of documentary trade vs. open account trade, 2011-2028



Source: BCG Omnia Global Trade Finance Model 2020
These analyses represent only potential scenarios based on discrete data from one point in time (06 April 2020). They are not intended as a prediction or forecast, and the situation is changing daily.

Figure 13:

BCG Trade Finance Model, estimated global trade finance revenues, 2011-2028



Source: BCG Omnia Global Trade Finance Model 2020
These analyses represent only potential scenarios based on discrete data from one point in time (06 April 2020). They are not intended as a prediction or forecast, and the situation is changing daily.

The prices banks charge for documentary trade products are also likely to rise along with the demand for them and the risk of supplying them. Or banks may restrict supply to clients that they can be confident remain viable. Trade banks with deep customer relationships and, hence, the data required to detect early signs of trouble, will be at an advantage in knowing when to extend credit and when to take remedial action.

On a more optimistic note, the crisis may help catalyse the shift to digital trade. Flight bans and lockdowns are making processing of paper-based trade documents even more challenging and inefficient than usual, and organisations are working to find alternatives – such as replacing physical document presentation with sending SWIFT confirmations. In this regard, ICC released in April 2020 a guidance paper providing technical guidance to the market during COVID-19, including sharing different options for document delivery in a world in lockdown. The COVID-19 environment may have finally convinced everyone that paper-based trade is outdated and unsustainable, accelerating the move to digitisation.

From a risk perspective, it is unlikely that at the time of writing (April 2020) there has been a significant increase in trade defaults as a result of COVID-19. Many businesses have at least some form of cash reserves, and the tenor of a trade finance transaction is often 90+ days. However, as companies face further liquidity challenges and struggle to repay their trade finance facilities, we expect a notable increase in defaults during the crisis – particularly among SMEs. It will be important to understand not only the scale of trade finance defaults, but also how they compare to other asset classes. Will they, relatively speaking, continue to be low risk, even throughout this crisis? With these important considerations in mind, the Trade Register intends to expedite 2020 data collection to present a comprehensive view as early as possible, in 2021, of how COVID-19 impacted the risk profile of trade finance products.

FEATURE

Tackling COVID-19 with trade policy

Simon Evenett
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The COVID-19 pandemic has massively increased demand for ventilators, protective clothing, disinfectant, and testing kits in countries hit by it. Trade is crucial to meeting this demand, allowing such medical supplies to move rapidly from producer countries to the countries where they are needed. Any anti-globalisation sentiments that have been produced by the crisis would be seriously counter-productive if translated into barriers to the trade of medical supplies. Governments should take the opposite approach and free-up trade in medical supplies to the greatest extent possible. Measures could include:

- Removing import tariffs and quotas on all relevant medical equipment, medicines, disinfectant, and soap
- Eliminating all non-tariff regulatory barriers to importing relevant medical supplies, except those with the demonstrated purpose of ensuring safety
- Publicly refusing to ban or limit exports of relevant medical supplies, and reversing any such restrictions that already apply, and
- Strengthening incentives to ramp up domestic production by offering generous minimum prices for medical supplies sold to the state.

At the time of writing, the UK is starting to show progress here. The Chancellor of the Exchequer has waived customs duty and import VAT on medical equipment to be used in COVID-19 treatment. Similar actions by other governments would encourage much-needed global collaboration in dealing with the crisis.

Beyond COVID-19: the changing face of risk in trade

In the thick of the COVID-19 crisis, it is easy to think that nothing else is a priority. Even if that is almost true for now, it won't remain true. The trends that are reshaping the risks involved in trade finance will reassert themselves once the COVID-19 crisis has passed. We discuss three here: new digital technology, the ongoing trade tensions between the US and China, and climate risk.

Technology

Advances in digital technology have helped banks reduce the risks involved in supplying trade finance. Most obviously, they have greatly increased the data available for making credit assessments; they improve speed and accuracy when screening for criminal activity (in AML and KYC procedures); and they reduce the potential for human error. Technology also offers the opportunity to change how trade finance operates, from blockchain to electronic documents and signatures.

However, this technology also creates new kinds of operational risk. Systems failures can bring operations to a halt and cause significant reputational damage, as witnessed across multiple financial institutions when online banking or payments systems are down. In trade finance, such failures can have knock-on effects through a supply chain spanning several countries. And, of course, digital operations create opportunities for ever more sophisticated cyber-criminals. Furthermore, the greater the amount of subjective judgement given to machine learning models, the higher the risk that the models themselves make human-like errors, such as 'false negatives' in sanctions screening. The repercussions of this can be material in terms of operational losses and regulatory fines.

The shift to digital is thus changing the nature of the risks faced by trade banks and creating a second-order operational risk of not adapting risk management practices quickly enough. When technology works as it is intended, it serves to reduce operational risk by mitigating human error. However, when it doesn't work, technology can create a host of new risks for banks. Uncharted territory is often more perilous than familiar ground.

Trade tensions between the US and China

In 2018 the US government imposed import tariffs on a range of consumer and industrial goods. A like-for-like response from the Chinese government contributed to a hit on the value of global trade in 2019 – with a host of sectors suffering a 20%+ decrease in the value of goods imported between China and the United States. Given that these are the two largest economies in the world, this reduction in trade between them is materially subduing the aggregate value of global trade.

2019 saw encouraging signs of a potential rapprochement with the signing of a Phase 1 deal. However, this deal did not cancel the USD 370 billion in US tariffs on Chinese goods; it simply delayed the planned imposition of a further USD 60 billion of tariffs on Chinese consumer electronics. And any serious reduction in US-China trade tensions seems unlikely in the near future because they result from economic and geopolitical concerns that are shared across the political divide in the US.

Climate risk

Public and political concern about climate change has been mounting in recent years. Companies whose activities contribute to greenhouse gas emissions are increasingly likely to fall from favour with consumers and be subject to governmental interventions. The European Commission, for example, is considering a carbon border tax aimed at making European importers pay for the CO2 emissions resulting from the foreign production of the goods they buy. Its planned implementation in 2021 may be delayed, but some measure along these lines is likely in the coming years.

Such a tax would encourage European importers to seek low-emission alternatives to current high-emission suppliers, thereby changing global supply chains and

international trade flows. And it would reduce international trade, because the tax will not apply to companies within the EU, who would therefore become favoured suppliers. Insofar as other countries adopt measures with a similar green motivation or retaliate against what they see as a discriminatory trade barrier, the reduction in global trade will be exacerbated. The tax may also be applied to shipping itself, since this contributes to the emissions arising from imported goods. This would drive up its price and again favour domestic or "near-shore" suppliers.

The financial performance of high-emission companies is likely to deteriorate in this new environment, and trade banks will need to factor this into credit assessments. They will also need to take account of the green credentials of their clients due to regulatory and reputational risks. Regulators, shareholders and consumers increasingly disapprove not only of environmentally unfriendly companies but of the firms that finance them.

Recovery from COVID-19 will give companies an opportunity to reinvent themselves as more socially responsible enterprises. Though COVID-19 is not a consequence of climate change, it is likely to make the public and politicians even more conscious of global threats to our welfare. Indeed, banks and corporate leaders must look beyond just climate and environmental policies to advance a sustainability agenda. With its ability to shape economies and societies, global trade must also incorporate wider social causes in its sustainability principles, from child labour to women's inclusion and diversity to human rights. Many companies will be well-advised to "go green" and to more generally advance an ESG agenda. And the banks that finance these companies will be well-advised to make the same move.

The COVID-19 situation is rapidly evolving, on a daily basis. This article represents *a number of scenarios* based on discrete data from one point in time (early April 2020). It is not intended as a prediction or forecast about the duration of lockdown, peak of viral infections, efficacy of government or health care responses to the virus, or other health or societal impacts, and it does not represent an "official" BCG or ICC view. It also does not constitute medical, legal or safety advice, and is not an endorsement or recommendation of a particular response. As such, you are advised to use this document as general guidance only in making your own continued assessments as to the appropriate course of action, taking into account local laws, rules, regulations, and orders.

FEATURE

The 'Ins' and 'Outs' of Supply Chain Finance

Christian Hausherr, Chairman of Global Supply Chain Finance Forum, ICC
Markus Ampenberger, Associate Director, Boston Consulting Group
Ravi Hanspal, Principal, Boston Consulting Group
Noah Mayerson, Associate, Boston Consulting Group

Introduction to supply chain finance

The financing of global trade continues to be in a state of flux. Traditionally, documentary trade products such as letters of credit or documentary collection are the anchor of trade finance, offering financing, liquidity, and risk mitigation. In recent years, open account trade finance, most notably supply chain finance (SCF), has emerged as an increasingly popular and fast-growing alternative. With flexible and cost-effective techniques and mechanisms, SCF has become a cornerstone of global trade.

Growth in SCF is particularly material when compared to documentary trade, which has experienced relatively flat volumes in the last few years. Virtually all long-term growth in international trade finance is predicted to be driven by open account products. BCG's Trade Finance Model estimates that cross-border open account trade finance drives USD 21 billion of trade finance revenues today, representing 46% of the overall trade finance market, up from 42% five years ago. We expect this to grow at 2% CAGR over the coming decade, dependent on macroeconomic factors, including industry recovery from COVID-19. When including cross-border and domestic SCF transactions, we estimate that the global revenue pool for working capital and supply chain finance solutions today falls anywhere between USD 50 and 75 billion.

One of the fastest-growing and most frequently discussed open account products is payables finance, whereby sellers in the buyer's supply chain are able to access finance with the option of receiving the discounted value of receivables prior to their actual due date and, typically, at a financing cost aligned with the credit risk of the buyer.

But SCF exists in several other forms beyond payables finance. Receivables discounting, whereby corporates sell individual or multiple receivables (represented by outstanding invoices) to a finance provider at a discount, is one of the most popular SCF techniques, particularly among SMEs. Loans or advances against receivables are also growing in usage: financing is made available to a party in a supply chain on the expectation of repayment from funds generated from current or future trade receivables.

SCF's industry body – the Global Supply Chain Finance Forum (GSCFF) – defines eight techniques within its definition of SCF (receivables discounting, forfaiting, factoring, payables finance, loan or advance against receivables, distributor finance, loan or advance against inventory, and pre-shipment finance). For the purpose of the Trade Register's credit default risk analysis, only payables finance is considered in the report at this stage – as discussed below.

Drivers of growth in supply chain finance

But what is the appeal of supply chain finance techniques? Why are they all the rage in trade finance today?

The drivers behind the growth in SCF in recent years are related both to the changing nature of trade finance and to the inherent characteristics of SCF solutions that make them attractive to both buyers and suppliers. For suppliers, SCF allows companies to unlock

supply chain liquidity and optimise their cash positions. Crucially, SCF provides suppliers with access to a range of financing options, often on the back of their buyer's credit and hence at much more affordable rates than they would typically be offered otherwise. This is particularly valuable for suppliers such as SMEs with weaker credit histories. As such, SCF has helped to close the 'trade finance gap' for the SME segment, although there is still room for materially greater penetration, and many supply chains are yet to be readily served by large banks or other providers.

For buyers, the appeal of SCF is simple: in a symbiotic trading relationship, what is good for the supplier is ultimately good for the buyer. Indeed, SCF solutions help to safeguard supply chains from being disrupted by the lack of cash liquidity. Buyers can also utilise their own credit rating to get better borrowing terms from suppliers. The mutually beneficial solutions offered by SCF to both buyers and suppliers are just one explanation for its rise – but why is SCF on the rise now?

Improved technology and digitisation solutions, such as e-invoicing and automated reconciliations, have helped facilitate substantial adoption of SCF by making it more operationally viable and thereby scalable. SCF transactions are often originated at the level of an individual order, with much lower average values than a traditional L/C. As such, using technology to minimise the operational effort and cost per transaction is a critical success factor.

In addition, as the global economy has become more digitised and interconnected, trading partners have begun to operate with increased trust. Consequently, trading partners are increasingly willing to trade on open account terms without relying on the security and risk mitigation of documentary trade. For this reason, at times of economic stress there may be a reversal in SCF growth as businesses shift back to documentary trade. We expect this to be one of the many potential impacts of COVID-19 on global trade (more on the effects of COVID-19 on SCF is detailed below).

How the market is changing – and how incumbents need to react

More recent technological developments in SCF have largely been driven by non-bank players (e.g. fintechs). In recent years, many non-bank players have captured a large portion of the new SCF business, especially from SMEs that many incumbent banks find difficult to serve profitably. Fintech offerings often provide more usable channel capabilities (e.g. that allow companies to integrate procurement and accounts payable activities) or access to an ecosystem of related businesses through a single platform. It is important to note that while non-bank players may be able to provide easy-to-use and compelling online propositions, they often lack the credit controls or balance sheet capacity of incumbent banks. Skills, both institutional knowledge and human capital, are still required to manage risks across the cycle – areas of particular strength for incumbent banks.

Indeed, incumbents continue to have a number of built-in advantages over the disrupters that, if used correctly, can protect their primacy in the SCF market. Incumbents have much larger customer bases, more diverse and wide-reaching distribution channels, and balance sheets that give them far greater lending capacity. Further, while many of the disrupters provide channels and means to facilitate SCF techniques, they usually do not provide the actual lending – credit typically is provided by third-party investors. Incumbent banks therefore have a further advantage in having more advanced credit capabilities and a deeper understanding of and expertise in credit risk.

To make the most of these advantages, incumbents must respond to the challenge posed by the non-bank players. This means catching up with fintechs through platform functionality and integration with ERP and accounting systems. Banks can build their own, adopt a white-labelled platform, or form a partnership with a non-bank provider. Whichever approach they take, incumbents will need to make sure that platforms and related processes are standardised across

countries and branches. And to reduce operating costs and risks, SCF products should also be standardised as far as possible, while providing tailored solutions for large and mid-corporate customers.

Incumbents will also need to make better use of the rich data about customers, transactions, and networks that SCF products and platforms can provide. This requires strong data architecture and capabilities, potentially using artificial intelligence to support faster and more nuanced decision-making. Many global and regional banks will need to either recruit people (e.g. data scientists) with these skills or form partnerships with specialist firms.

However this increased competition in SCF plays out, it will lead to further investment in new solutions for businesses of all sizes across global supply chains. This will benefit SCF customers and the global economy, by reducing the costs of international trade and helping to offset opposing forces such as increased tariffs.

Supply chain finance in the context of the Trade Register

Given the rapid growth of SCF, it was only a matter of time before it made its way onto the ICC Trade Register. This began in the 2018 report, with the publication of data about cross-border payables finance transactions. This welcome development allows interested parties to understand both the growth in SCF volumes around the world and the risks to service providers and investors.

The ICC Trade Register uses the definition of payables finance that was standardised by the Global Supply Chain Finance Forum in 2016. However, the data available for last year's publication was not fully representative of the market. Banks under-reported because, being relatively new, payables finance is not yet always captured in the data systems from which banks report to the ICC Trade Register. Further, some of the new providers of payables finance do not report to the ICC Trade Register. We expect that these problems will be remedied over the coming years and that the ICC Trade Register will provide a richer and more precise representation of the cross-border payables finance market.

Risks in supply chain finance

Including payables finance in the ICC Trade Register has helped to provide a sense of its risk profile for service providers who offer payables finance and for investors who are interested in this technique. Although the data analysis is still in its early phase, the Trade Register's analysis supports the view that payables finance is low risk – in line with the risk profile of other trade finance products.

Still, low risk does not mean no risk, and it is important for the involved parties to appropriately manage the risks associated with payables finance (and SCF techniques more broadly). Typical risks in payables finance include credit, operational, and classification risks. Understanding how these risks factor into these facilities is crucial to developing appropriate risk-mitigation policies.

For credit risk (e.g. buyer default), service providers need to develop and implement a credit model that suits their risk appetite. This may include the type and size of clients they want to approach, regional aspects, legal documentation to use, and the diligence they want to spend on their clients and adjacent counterparties.

For operational risk (e.g. fraud or inability to deliver the product by the supplier), similar to a credit model, service providers need to implement sound procedures to manage their ongoing business. Payables finance today is a mostly large-scale business that is processed automatically rather than handled manually on an individual transaction level. Protection measures against operational risk include appropriate understanding of risk tied to supply chain logistics, credit checks, legal action to ensure a valid assignment of the purchased receivable where required, and experienced operational staff who manage the ongoing business. In addition, the use of more subjective automation such as machine intelligence and artificial intelligence can also give rise to new operational risks: Are

the models performing correctly? Are they biased? Are they as accurate as humans?

Finally, there is the risk of reclassification from trade payable to bank debt. While this is primarily a risk that the party using payables finance faces, it is similarly relevant for a service provider. Payables finance offers corporates the option to retain the classification of financed transactions as trade payables, rather than debt; in turn, trade payables do not affect the corporate's debt ratio. This is a key driver in making payables finance so attractive.

More generally, questions around how to reflect payables finance on a corporate's balance sheet have triggered increased attention, as accounting firms grapple with how to characterise payables finance and rating firms scrutinise a perceived lack of transparency. This is after a number of recent corporate collapses put SCF, and particularly payables finance, in the spotlight. In all known cases, payables finance may not necessarily have been the cause of these collapses but would have added to the leverage of the companies that later collapsed.

Payables finance is a useful tool to optimise the working capital of both buyers and sellers – when implemented correctly. The corporate collapses may have been inevitable, but the use of payables finance could have been avoided with appropriate risk-protection measures.

The GSCFF, in partnership with the ICC, provides guidance on how payables finance should be structured and implemented, and is actively engaging with accounting associations on this important point.

Supply chain finance and Carillion

Public scrutiny of SCF peaked with the collapse of Carillion in 2018. Carillion, a UK-based construction firm, was forced into compulsory liquidation in 2018 with liabilities of around GBP 7 billion – a shock to British industry and front-page news in the UK.

Carillion utilised SCF in its dealings with many of its suppliers. When the company went into administration in January 2018, it owed GBP 500 million to banks through SCF facilities, although this was not immediately clear from its balance sheet: as per common practice, SCF debts were listed as money "owed to creditors" (i.e. "trade receivables") rather than bank debt.

SCF was not the cause of Carillion's collapse: it was a financing tool that the company used to improve its cash flow, but it also somewhat masked some of the firm's financial challenges. While the incident by no means suggests SCF products are high risk, it highlights the need for all parties in SCF to fully understand its risks and how to best reflect and treat them. Given the rapid growth in SCF and open account trade witnessed over the past decade – a trend expected to only increase in the coming years – it is imperative that industry bodies including the GSCFF, accountants, and regulators work together to adapt and clarify their rules and standards to a rapidly shifting industry.

What does COVID-19 mean for supply chain finance?

COVID-19's impacts on global trade are myriad, sparing no industry sector or geography. This report's *Market Trends in Trade Finance* feature discusses how trade and trade finance may be affected by the virus. But what might be the direct impacts on supply chain finance? Will COVID-19 halt its growth and momentum? There are multiple factors to consider.

First, COVID-19 has not only led to a global health crisis followed by an exogenous demand and supply shock to the worldwide economy, but it has also triggered a significant reduction in foreign trade and a breakdown in global supply chains. Consequently, de-risking supply chains and improving cash and liquidity management within the supply chains will become an even more important topic for multinationals and SMEs alike in the economic downturn initiated by COVID-19.

Second, there may be the risk of a slowdown of SCF, in particular relative to traditional documentary trade finance products which offer stronger risk mitigation. In the past, particularly in times of macroeconomic risk and uncertainty, documentary trade has benefitted from its less risky reputation.

Third, we expect increased demand from suppliers for buyer-led financing arrangements (like SCF) due to supply chain disruptions, factory closures, and the inability of many workers to do their day-to-day jobs. Cash-strapped suppliers in need of rapid liquidity will seek favourable financing arrangements through the (often) higher credit-worthiness of their buyers. Although the origination and set-up of SCF typically take a few months including educating and onboarding the supplier base, increased use of supply chain finance may be part of the solution to fight the adverse effects of the economic downturn.

Fourth, buyers are likely to resist extending this credit to their suppliers because, if the supplier is unable to meet its obligations, the buyer may be liable for the debts if they have recourse. Buyers will want to push recourse to the banks who will themselves be liable in the event of a supplier default – though banks may still not want to take on the added risk.

Fifth, a further driving force of the growth in SCF – third-party investors – may abate in the coming months because of COVID-19. In recent years, third-party investors have purchased securitised trade finance assets from banks and other providers, who tend to see SCF products as a low-risk asset class. However, these third-party investors have limited experience in SCF securities across a full credit cycle and cannot be certain the risks will pay off as market uncertainty rises. They may prefer to invest in more established asset classes. As a result, SCF supply may fall and, with that, prices may increase.

In any scenario, the (unexpected) breakdown of global supply chains will lead to a stronger emphasis on risk management around supply chains both physical and financial. Large buyers will think about de-risking their physical supply chains by, for example, increasing the number of suppliers, ensuring strategic suppliers come from different regions of the world, or focusing more on local proximity rather than price for strategic suppliers. At the same time, banks have to ensure that sophisticated risk management practices are in place to be able to offer supply chain finance in the future – and to position themselves as part of the solution to fight the economic downturn initiated by COVID-19.

ANALYSIS OF TRADE FINANCE

Overview of findings

The ICC Trade Register's filtered data set contains nearly USD 15 trillion of exposures (Figure 14), and 24 million transactions (Figure 16) from 2008–2018 across four trade finance products: import L/Cs; export L/Cs; (short-term) loans for import/export; and performance guarantees (including standby L/Cs). The data set is used to carry out detailed analysis of the credit risk characteristics of these products.

The findings of the 2019 ICC Trade Register reinforce those of previous years: that trade finance products present banks with low levels of credit risk. Indeed, the ICC's data set from 2008–2018 clearly demonstrates the low levels of default for trade finance products across all geographies and product types. Weighted by obligors, default rates over the past ten years are 0.36% for import L/Cs, 0.04% for export L/Cs, 0.73% for loans for import/export, and 0.45% for performance guarantees (Figure 15). Across export L/Cs, loans for import/export, and performance guarantees, 2018 default rates were largely in line with the previous year. Import L/Cs saw a marked rise in the transaction-weighted default rate in 2018, driven primarily by a large obligor default, mostly affecting Asia Pacific (APAC). Import L/Cs are discussed later in this report.

While obligor-weighted default rates are the official means of measuring default rates as per the Basel methodology, in the Trade Register we also consider exposure- and transaction-weighted default rates, which in this context may be more appropriate to gauge the credit risk profile of trade and export finance. Obligor-weighted default rates are best examined at a client-level. At a whole portfolio level, however, obligor-weighted default rates typically become skewed towards the risk profile of SMEs, as a balanced portfolio – such as the one examined in the Trade Register – will likely have many more SMEs (high volume, low value) than large corporates (low number, high value). The same applies for transactions, whereby some SMEs may have a larger number of lower value transactions compared to a large corporate. For this reason, exposure-weighted default rates can be the most balanced way of looking at the overall portfolio: here default rates are effectively weighted by the total dollar value of defaulting transactions, removing any particular 'skew'.

Figure 14:

Total exposures and default rate by exposure, by product, 2008–2018

	Total exposure (USD M)	Defaulting exposure (USD M)	Exposure-weighted default rate (%)
Import L/C	3,202,070	2,544	0.08%
Export L/C	1,901,356	496	0.03%
Loans for import/export	6,645,580	11,546	0.17%
Performance guarantees	2,559,444	6,275	0.25%

Source: ICC Trade Register 2019

Figure 15:

Total obligors and default rate by obligor, by product, 2008–2018
Note: the "double counting" of obligor defaults is addressed in Appendix A.

	Total obligors	Defaulting obligors	Obligor-weighted default rate (%)
Import L/C	250,377	910	0.36%
Export L/C	170,404	70	0.04%
Loans for import/export	331,684	2,420	0.73%
Performance guarantees	402,357	1,827	0.45%

Source: ICC Trade Register 2019

Figure 16:

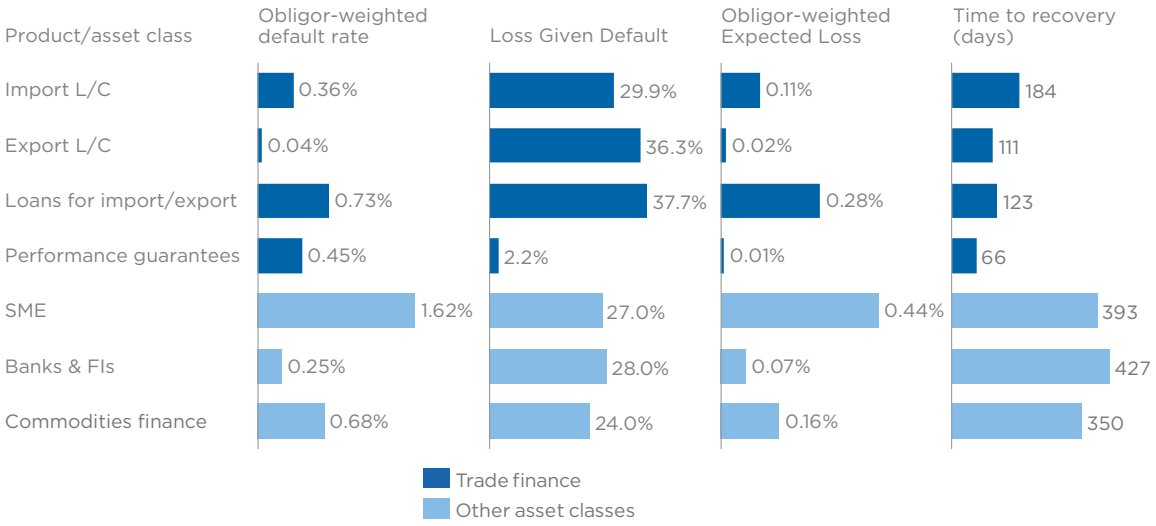
Total transactions and default rate by transaction, by product, 2008–2018

	Total transactions	Defaulting transactions	Transaction-weighted default rate (%)
Import L/C	6,634,572	10,351	0.16%
Export L/C	2,699,070	217	0.01%
Loans for import/export	13,649,945	30,131	0.22%
Performance guarantees	4,172,725	6,729	0.16%

Source: ICC Trade Register 2019

Figure 17:

Comparison of trade finance to other asset classes, 2008–2018



Source: ICC Trade Register 2019

For 2008–2018, Loss Given Default rates are 29.9% for import L/Cs, 36.3% for export L/Cs, and 37.7% for loans for import/export. For performance guarantees the LGD is 52.3%, but in practice this is 2.2% when factoring in the low call rate (i.e. number of successful times a performance guarantee facility was called upon) and negligible losses (see Figure 18 below).

Time to recovery is much shorter for trade finance products versus other asset classes. For example, time to recovery is, on average, six months for import L/Cs and only two months for performance guarantees, compared to over one year for other asset classes such as term lending.

When comparing trade finance products and other asset classes, some care is needed. While the comparison across the various products in the 2019 Trade Register is done at an obligor level, the data for other asset classes comes from a separate pool (e.g. GCD data pool for corporates) and the underlying methodology varies slightly (see Appendix A).

Low LGD and default rates result in low exposure-weighted Expected Losses for trade finance products: 0.02% for import L/Cs, 0.01% for export L/Cs, 0.07% for loans for import/export, and 0.01% for performance guarantees (Figure 18). These levels are similar to results seen in 2017.

Figure 18:

Overview of exposure-weighted default rate, LGD, and Expected Loss, by product, 2008–2018

	Exposure-weighted default rate	Exposure at default	LGD	Expected Loss
Import L/C	0.08%	100.0%	29.9%	0.02%
Export L/C	0.03%	100.0%	36.3%	0.01%
Loans for import/export	0.17%	100.0%	37.7%	0.07%
Performance guarantees (Applying CCF to EAD)	0.25%	4.1%	52.3%	0.01%
Performance guarantees (Applying CCF to LGD)	0.25%	100.0%	2.2%	0.01%

Source: ICC Trade Register 2019

Figure 19:

Overview of obligor-weighted default rate, LGD, and Expected Loss, by product, 2008–2018

	Obligor-weighted default rate	Exposure at default	LGD	Expected Loss
Import L/C	0.36%	100.0%	29.9%	0.11%
Export L/C	0.04%	100.0%	36.3%	0.02%
Loans for import/export	0.73%	100.0%	37.7%	0.28%
Performance guarantees (Applying CCF to EAD)	0.45%	4.1%	52.3%	0.01%
Performance guarantees (Applying CCF to LGD)	0.45%	100.0%	2.2%	0.01%

Source: ICC Trade Register 2019

Similarly, obligor-weighted Expected Losses mirror the figures from previous years. ELs are 0.11% for import L/Cs, 0.02% for export L/Cs, 0.28% for loans for import/export, and 0.01% for performance guarantees (Figure 19). These compare favourably to obligor-weighted ELs of 0.44% for SME lending, 0.07% for banks and financial institutions, and 0.16% for commodities finance.

As discussed in last year's report, the CCF for letters of credit and performance guarantees is set at 20% and 50% under the Standardised and IRB-Foundation Approaches, with the percentages reflecting the likelihood of these off-balance sheet products becoming on-balance sheet assets. In practice, for an L/C and a guarantee of USD 100 each, the Standardised and IRB-Foundation approaches expect, on average, a loss of USD 20 and USD 50 respectively upon default, but before any recovery (e.g. sale of collateral). While the LGD of 29.9% is in line with (or marginally higher than) the 20% CCF applicable to L/Cs, the 2.2% LGD reported for performance guarantees is significantly lower than the 50% CCF that banks are required to apply under current regulations. As such, historical data demonstrates that there is a strong case for revisiting and lowering the CCF to better match the risk profile of the product.

Observed average maturity

In general, the longer the maturity of a bank's credit exposure, the higher the credit risk; more can go wrong over a longer period, and a bank may be unable to reduce its exposure to a failing obligor.

Trade finance products typically have short contractual maturities and are typically issued on a transaction-by-transaction basis. This provides banks with the ability to actively manage their risk by ceasing to underwrite trade business for customers with deteriorating credit quality.

The Trade Register shows that the average contractual maturity for trade finance products is 111 days for import L/Cs, 129 days for export L/Cs, 133 days for loans for import/export, and 625 days for performance guarantees. However, there is significant variation in the maturities within products, highlighting that banks are willing to underwrite a wide variety of businesses with varying working capital cycles, even within individual products (Figure 20).

As seen in previous years, performance guarantees stand out with a significantly longer average maturity than other trade finance products, as they are often used for long-term projects or long-term contractual obligations. Despite this difference, clients use performance guarantees to execute tangible economic projects that could involve trade activity, and the banks manage their risk similar to other short-term trade finance products. For these reasons, performance guarantees are included in the Trade Register.

Figure 20:
Average maturity by trade finance products, 2008–2018 (days)

	Average maturity	10th percentile	90th percentile
Import L/C	111.0	74.8	183.4
Export L/C	129.0	74.8	297.4
Loans for import/export	132.7	78.4	257.0
Performance guarantees	624.6	395.4	1055.5

Source: ICC Trade Register 2019

Trends in Default Rates

Default rates in 2018 were largely in line with the positive trends seen in 2017 (Figure 21), demonstrating the low-risk nature of many trade finance products. For example, for most trade finance products, exposure-weighted default rates decreased to some of the lowest levels seen in recent years. However, import L/Cs saw a marked rise in default rates when weighted by both exposure and transactions, bucking the trend in other trade finance products. As discussed later in the report, this rise was driven almost exclusively by the default of a single global corporate in France (referred to in this report as CorpX), highlighting the interconnectedness of supply chains and the impacts of a single default on connected companies.

Import L/Cs

Default rates for import L/Cs largely mirrored the 2017 rates when weighted by obligors but have risen considerably when weighted by exposure and transactions (Figure 22) – suggesting that the increase was driven by a small number of large obligor defaults, rather than necessarily a systemic issue.

When weighted by obligors, the default rate decreased from 0.31% in 2017 to 0.29% in 2018. When weighted by exposure, the default rate increased from 0.08% to 0.14%, driven by a significant increase in defaults in APAC (and in Europe to a lesser extent). When weighted by transactions, the default rate for import L/Cs increased from 0.10% to 0.49%, driven almost exclusively by APAC. In 2018, 3,790 transactions defaulted, up from

851 the previous year – this is despite overall transactions being lower. Approximately 90% of transaction defaults originated in APAC, with 95% of the regional defaults in Hong Kong, again highlighting that the increase in defaults this year was likely relatively concentrated.

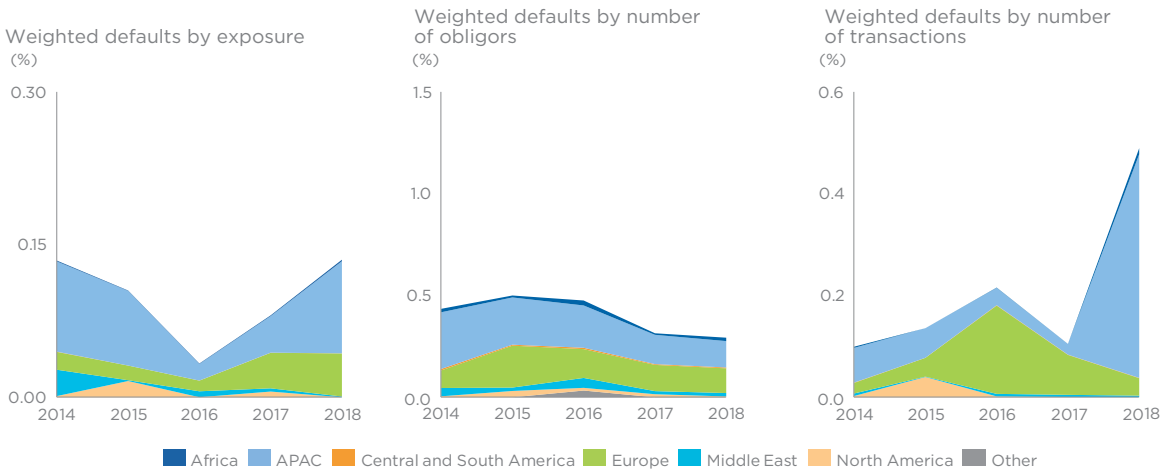
Figure 21:

Summary of default rate trends for trade finance, 2014–2018

Source: ICC Trade Register 2019

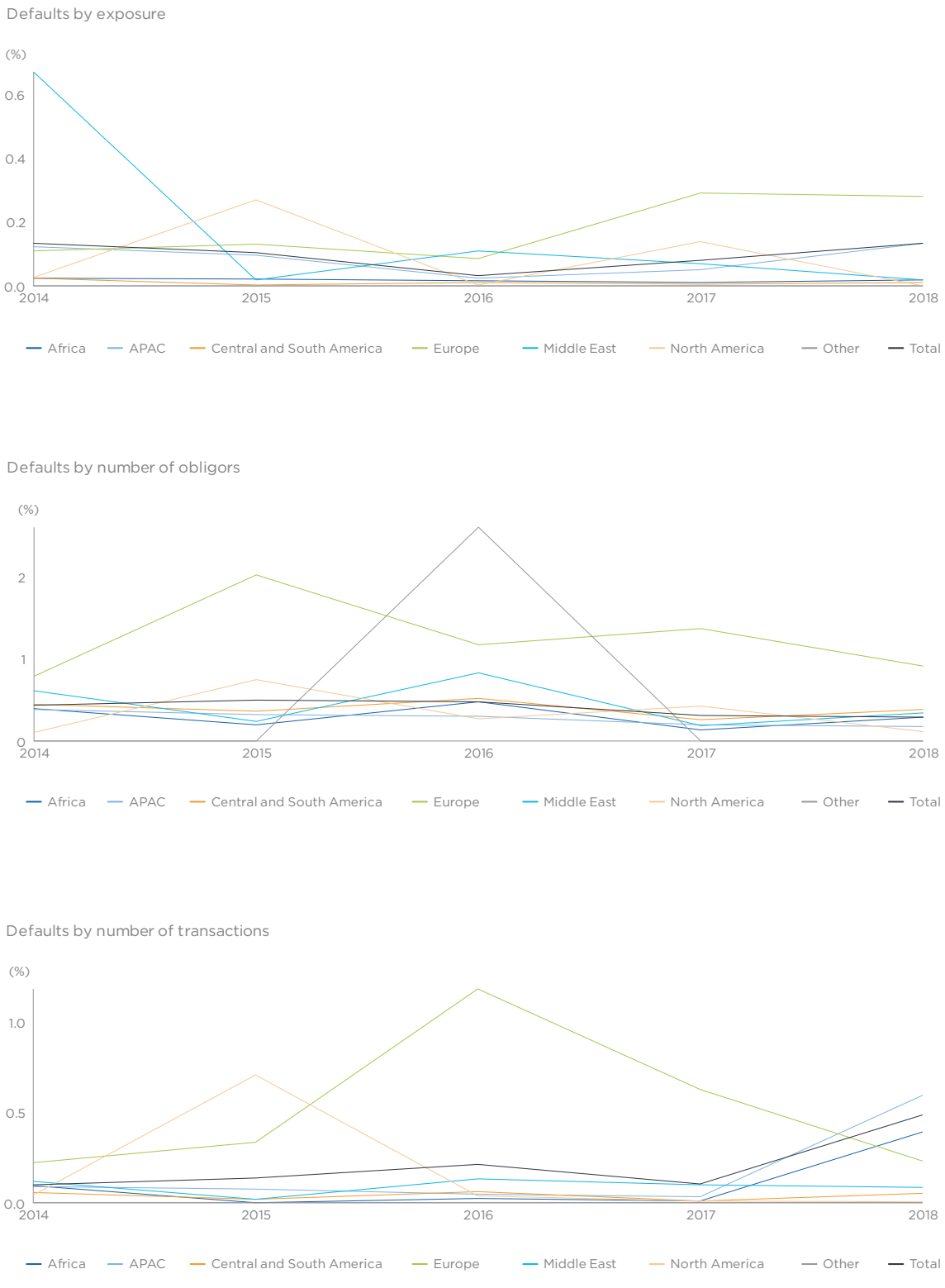
Figure 22:

Import L/C default rates by region (weighted), 2014–2018



Note: Regions and countries reflect those of risk holder
Source: ICC Trade Register 2019

Figure 23:
Import L/C default rates by region (absolute), 2014–2018



Note: Regions and countries reflect those of risk holder
Source: ICC Trade Register 2019

Figure 24:
Import L/C total and defaulted volumes by region, 2014–2018

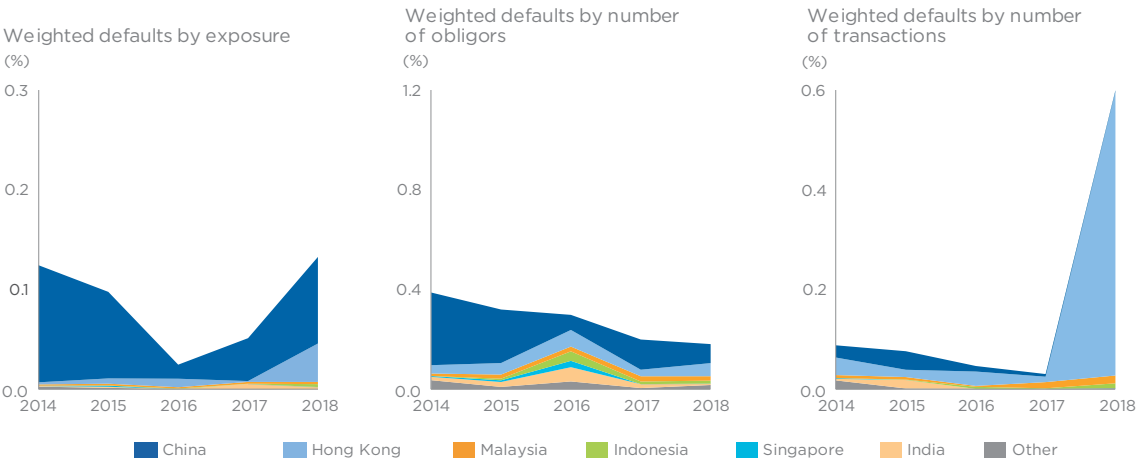
Note: Regions and countries reflect those of risk holder
Source: ICC Trade Register 2019

In APAC, 2018 saw a continuing downward trend in obligor-weighted defaults, with a further decrease in the default rate from 0.20% in 2017 to 0.18% (Figure 25).

In contrast, the transaction-weighted default rate reversed its decreases of recent years to record a significant increase from 0.03% in 2017 to 0.60% in 2018. Meanwhile, exposure-weighted defaults also increased from 0.05% in 2017 to 0.13% in 2018. Driven primarily by Hong Kong and China, the total value of exposures in default tripled in 2018 compared to the previous year, despite overall lower exposures.

Analysis suggests that the sharp rise in the transaction and exposure-weighted default rates was caused by the default of a Europe-based furniture retailer in 2018, with impacts on a host of products in several geographies and APAC most affected by the default. The company was heavily burdened with debt which could no longer be sustained after an accounting scandal – which erased 95% of its market value – was revealed. Given that the default was driven by a single, large, global organisation, there was a material impact on the exposure- and transaction-weighted default rate but minimal impact at the obligor-level.

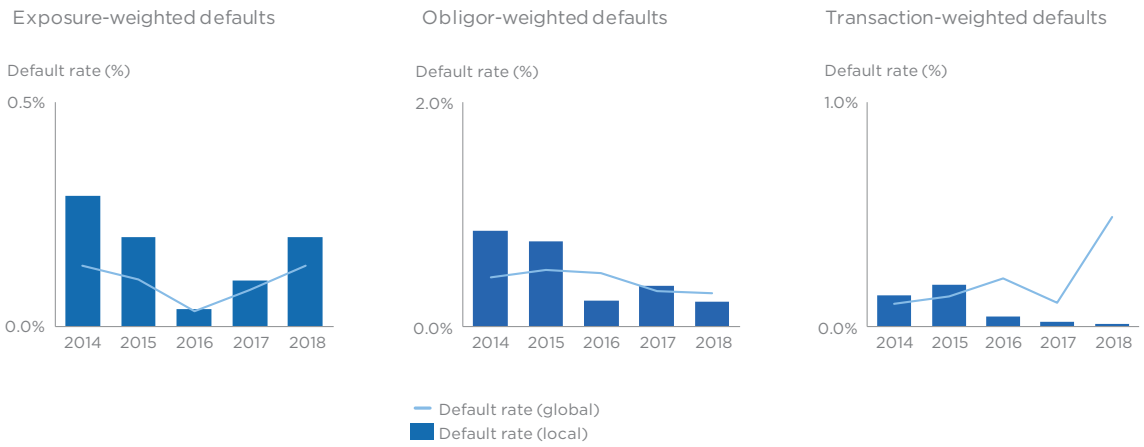
Figure 25:
Import L/C default rates in APAC (weighted), 2014–2018



Note: Regions and countries reflect those of risk holder
Source: ICC Trade Register 2019

Looking at APAC by country, China saw its exposure-weighted default rate double from 0.10% in 2017 to 0.20% in 2018 (Figure 26), a clear driver of the increase in the global default rate given China's significant contribution to global exposures. It should be noted that, while this default rate increased from 2017, in absolute terms it remains quite low. While the underlying drivers could not be determined with the data available, one possibility is a rise in defaults due to manufacturing and supply chain pressures caused by escalating trade tensions between the United States and China. Meanwhile, the obligor-weighted default rate in China decreased from 0.36% to 0.22%. Similarly, transaction-weighted defaults decreased from 0.02% to 0.01%, significantly below the global average.

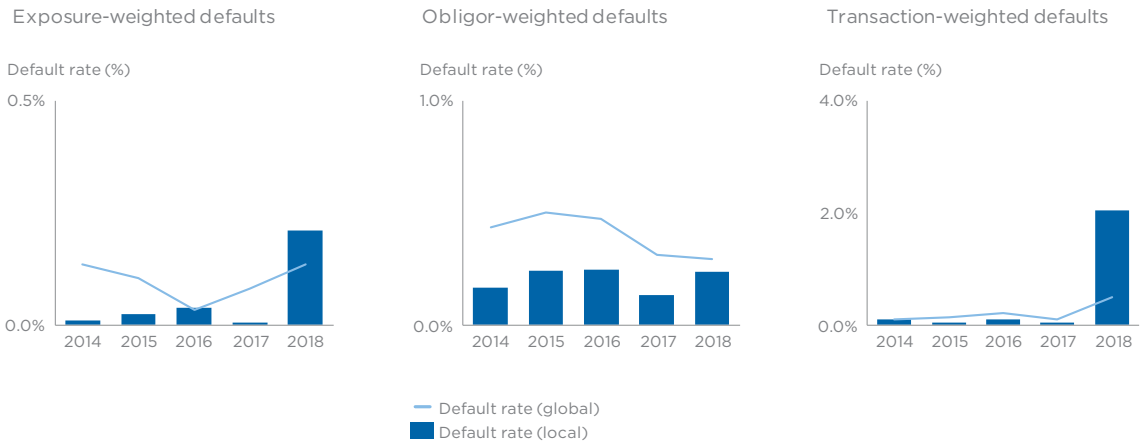
Figure 26:
Import L/C default rates in China (absolute), 2014–2018



Note: Regions and countries reflect those of risk holder
Source: ICC Trade Register 2019

Hong Kong saw its exposure-weighted default rate increase from a very low 0.01% in 2017 to 0.21% in 2018 (Figure 27), primarily due to the default of CorpX. The transaction-weighted default rate also showed a material increase to 2.0%, suggesting that CorpX had many medium-value transactions. Hong Kong's obligor-weighted default rate only showed a modest increase to 0.24%, supporting the case that this trend was not systemic and primarily driven by one large defaulting obligor.

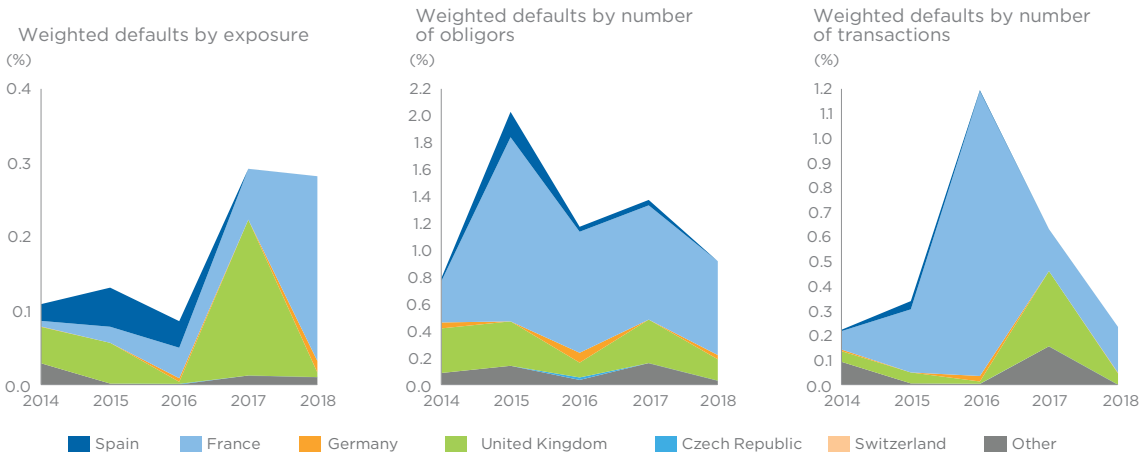
Figure 27:
Import L/C default rates in Hong Kong (absolute), 2014–2018



Note: Regions and countries reflect those of risk holder
Source: ICC Trade Register 2019

In Europe, import L/C default rates decreased across all three default measures (Figure 28). The exposure-weighted default rate decreased from 0.29% in 2017 to 0.28% in 2018. Although the United Kingdom saw an encouraging decrease in exposure-weighted defaults, this was outweighed by a sharp increase in France. The obligor-weighted default rate in Europe decreased from 1.38% to 0.92%, and the transaction-weighted default rate decreased to 0.23% from 0.63% – the lowest levels since 2014.

Figure 28:
Import L/C default rates in Europe (weighted), 2014–2018

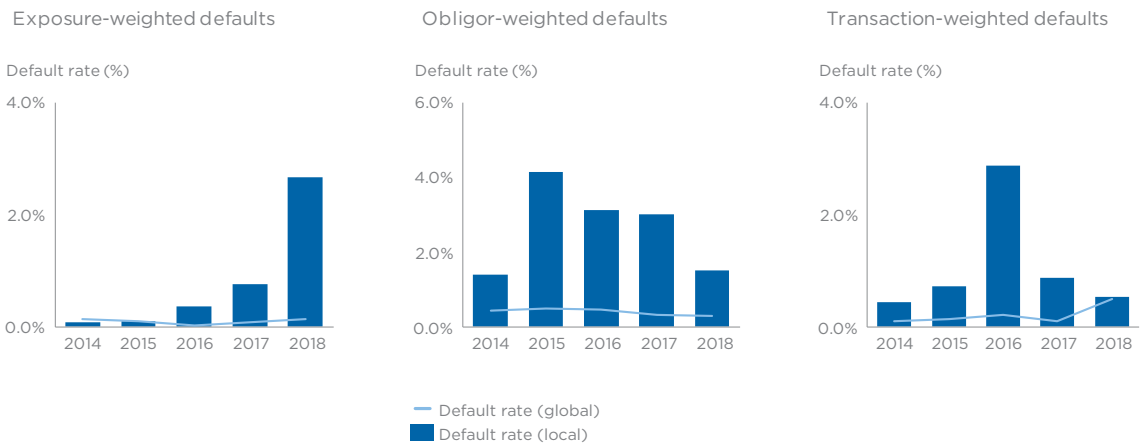


Note: Regions and countries reflect those of risk holder
Source: ICC Trade Register 2019

France saw significant variation across measures between 2017 and 2018 (Figure 29). Exposure-weighted defaults rose from 0.77% in 2017 to 2.67% in 2018. The default of the Europe-based furniture retailed mentioned earlier, which reverberated across products and geographies, particularly APAC, was the most significant driver of the increased default rate in France when weighted by exposure.

In contrast, obligor-weighted defaults halved in 2018 from 3.00% to 1.50%. France also saw a drop in its transaction-weighted defaults to 0.54% – the lowest level since 2014. It is not possible to directly link causality, but this could suggest that the defaulting retailer had high exposures in France with relatively few transactions.

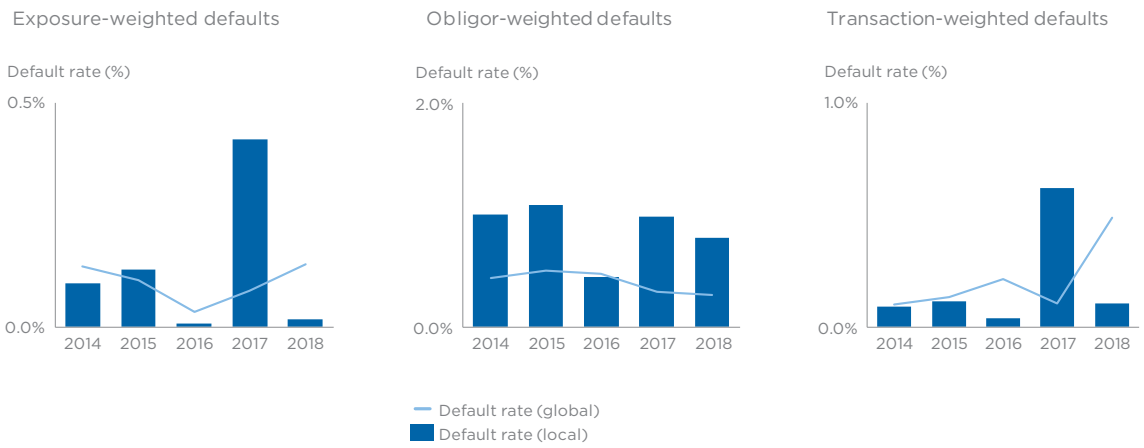
Figure 29:
Import L/C default rates in France (absolute), 2014–2018



Note: Regions and countries reflect those of risk holder
Source: ICC Trade Register 2019

In the United Kingdom, 2018 saw all three default measures fall, a reversal of 2017 when they all increased significantly (Figure 30). Exposure-weighted defaults returned in 2018 to a level more in line with the years preceding 2017, decreasing from 0.42% to 0.02%. Similarly, transaction-weighted defaults decreased from 0.62% to 0.11%. Obligor-weighted defaults in the UK decreased as well from 0.98% to 0.79%. While 2017 raised the possibility that the 2016 depreciation in the value of sterling might present long-term challenges to UK trade conditions, 2018 offered an encouraging sign that the sharp increases seen in the prior year may have been a single-year event.

Figure 30:
Import L/C default rates in UK (absolute), 2014–2018



Note: Regions and countries reflect those of risk holder
Source: ICC Trade Register 2019

Export L/Cs

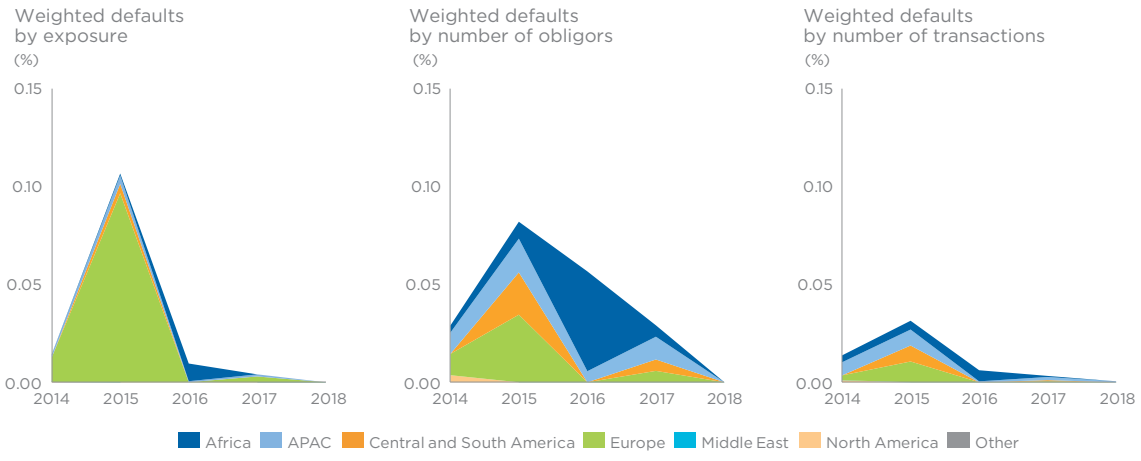
Export L/C default rates remained largely in line with 2017 and continue to be very low relative to other products. The Trade Register received no export L/C defaults for 2018, giving the year a default rate of 0.00% across all three weighting methodologies (Figure 31). These default rates, both in 2018 and in the preceding years, are the lowest of the trade finance products in the Trade Register.

The low relative risk results from 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.

Some caution is needed when interpreting country or regional data. For the Trade Register the country or region reflects the location of risk. For import L/Cs, this is the same as the importer's country – the country in which the organisation taking out the facility is based. However, for an export L/C, the risk arises on the other side of the transaction – the importer's country. This means defaults on export L/Cs are driven by banks in the importing country, rather than the importing business itself.

Figure 31:

Export L/C default rates by region (weighted), 2014–2018



Note: Regions and countries reflect those of risk holder
Source: ICC Trade Register 2019

Figure 32:

Export L/C default rates by region (absolute), 2014–2018

Note: Regions and countries reflect those of risk holder
Source: ICC Trade Register 2019

Figure 33:
Export L/C total and defaulted volumes by region, 2014–2018

Note: Regions and countries reflect those of risk holder
Source: ICC Trade Register 2019

Loans for import/export

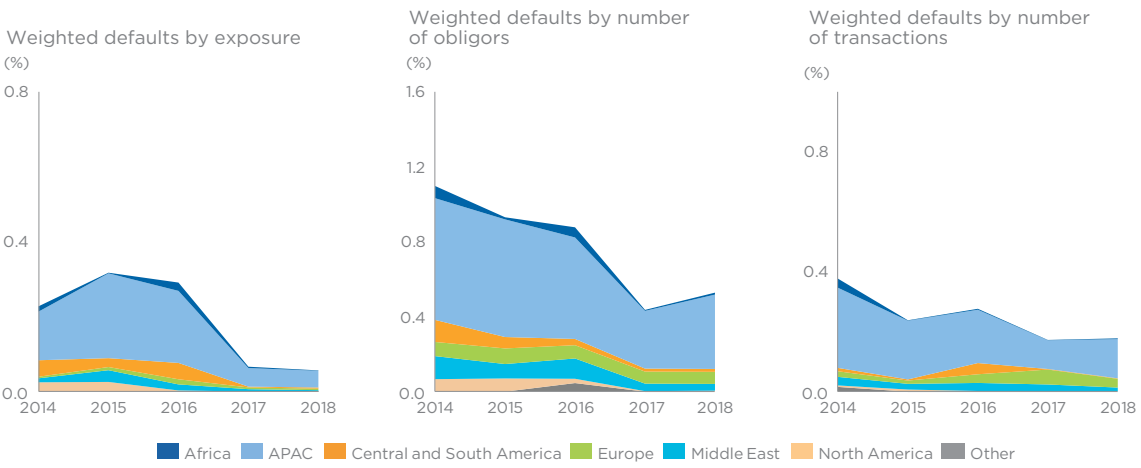
In 2018, default rates for loans for import/export were largely similar to the previous year. Exposure-weighted defaults decreased slightly from 0.07% in 2017 to 0.06% in 2018. Meanwhile, both obligor and transaction-weighted defaults saw slight increases versus 2017, at 0.53% and 0.18% respectively (Figure 34).

All regions saw decreases in the exposure-weighted default rates, except for Central and South America, which saw a rise from 0.04% in 2017 to 0.24% in 2018. This was driven primarily by a series of defaults in Argentina, reflecting the macroeconomic difficulties that necessitated intervention from the International Monetary Fund in 2018. Meanwhile, Africa continued to see an encouraging drop in exposure-weighted defaults from 0.13% in 2017 to 0.04% in 2018.

For obligor and transaction-weighted defaults, APAC was the biggest driver of the increases compared to 2017; this was unsurprising given that APAC represents 75% of total obligors and transactions. Compared to 2017, APAC's absolute default rate when weighted by obligors rose to 0.56%, and to 0.21% when weighted by transactions. CorpX, which drove default rates higher for import L/Cs, also had an impact on loans for import/export defaults in APAC.

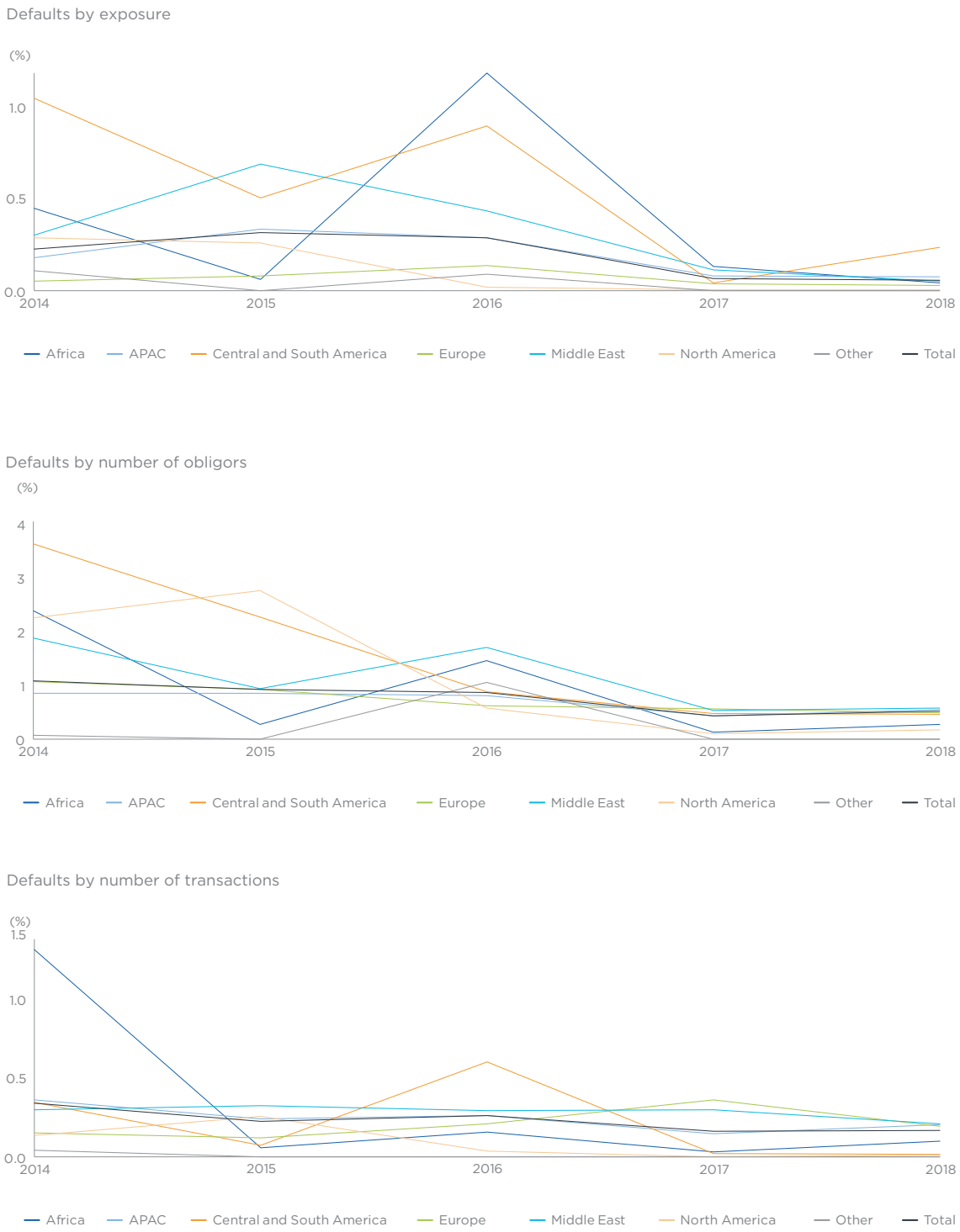
Figure 34:

Loans for import/export default rates by region (weighted), 2014–2018



Note: Regions and countries reflect those of risk holder
Source: ICC Trade Register 2019

Figure 35:
Loans for import/export default rates by region (absolute), 2014–2018



Note: Regions and countries reflect those of risk holder
Source: ICC Trade Register 2019

Figure 36:

Loans for import/export total and defaulted volumes by region, 2014–2018

Note: Regions and countries reflect those of risk holder
Source: ICC Trade Register 2019

Performance guarantees

While performance guarantees (including standby L/Cs) tend to have the highest default rates of trade finance products, in 2018 this was only the case for exposure-weighted defaults. This change was driven in part by an across-the-board decrease in default rates for performance guarantees.

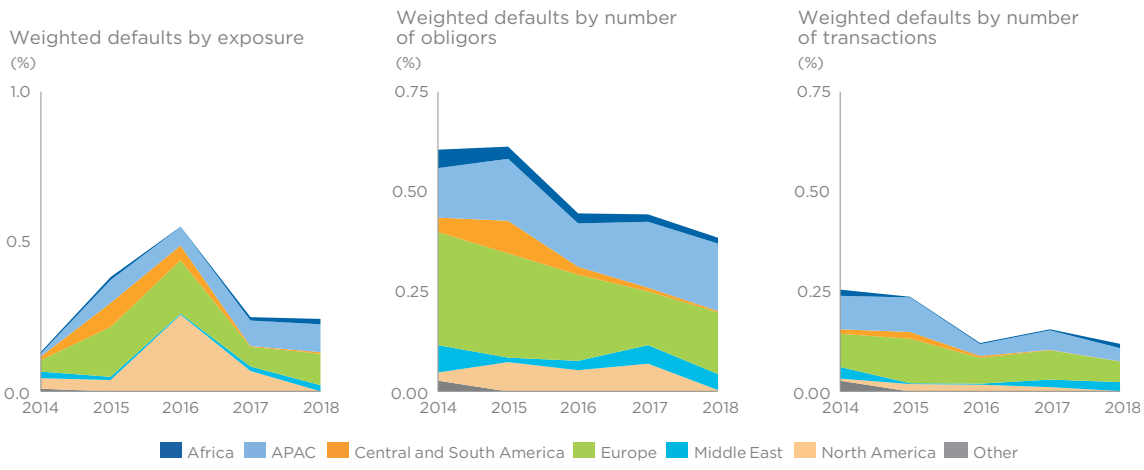
The exposure-weighted default rate decreased in 2018 to 0.24% from a peak of 0.55% in 2016 (Figure 37). The obligor-weighted default rate also decreased from 0.44% in 2017 to 0.38% in 2018. Likewise, transaction-weighted defaults decreased to 0.12% in 2018 from 0.16% in 2017.

APAC and Europe, the two regions with the highest contribution to performance guarantees in 2018, saw a divergence in their default rates. In APAC, default rates decreased across all three measures compared to 2017: 0.26% for exposure; 0.36% for obligors; and 0.08% for transactions. In contrast, Europe saw default rates either similar to or above the previous year, with the exposure-weighted default rate rising to 0.25% in 2018 from 0.18% in 2017. This was driven by several banks in Spain, Malta, Germany, and France, due to isolated local events but also the default of CorpX.

Performance guarantee default rates in North America reached their lowest levels in several years across all three measures, with all North American banks that contributed to this year's report revealing similar declines. Meanwhile, Africa's exposure-weighted default rate doubled to 0.74% in the year from 2017 to 2018, reaching its highest level in years and the highest default rate among all regions. This increase was primarily driven by the default of a single obligor with a large exposure in South Africa (also likely to be connected to the default of CorpX).

Figure 37:

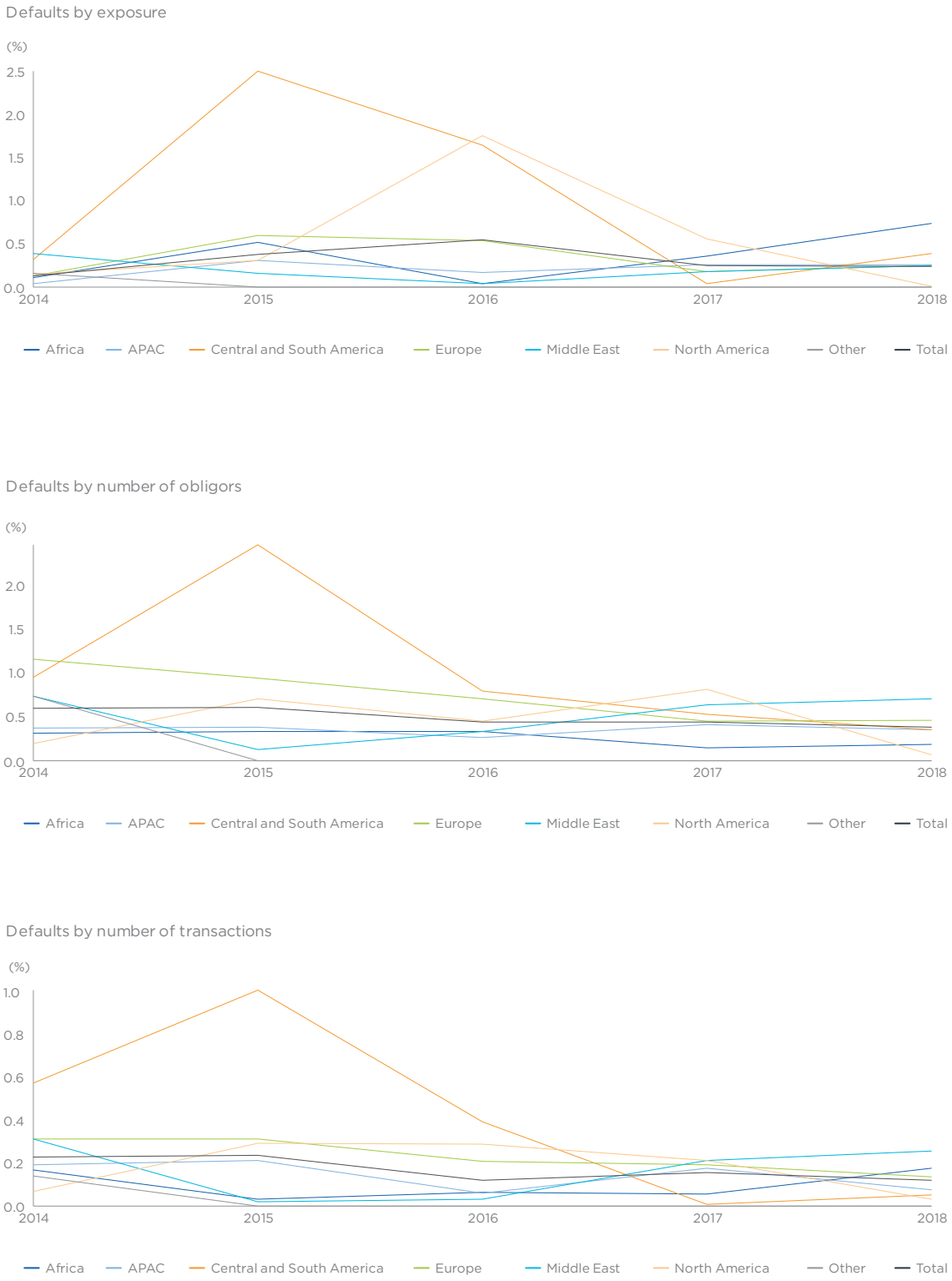
Performance guarantee default rates by region (weighted), 2014–2018



Note: Regions and countries reflect those of risk holder
Source: ICC Trade Register 2019

Figure 38:

Performance guarantee default rates by region (absolute), 2014–2018



Note: Regions and countries reflect those of risk holder
Source: ICC Trade Register 2019

Figure 39:

Performance guarantee total and defaulted volumes by region, 2014–2018

Note: Regions and countries reflect those of risk holder
Source: ICC Trade Register 2019

Trends in Loss Given Default and Expected Loss Analysis

Trade finance products continue to have low Expected Losses. Between 2008 and 2018, exposure-weighted ELs were 0.02% for import L/Cs, 0.01% for export L/Cs, 0.07% for loans for import/export, and 0.01% for performance guarantees (Figure 40). These results are similar to those in previous years.

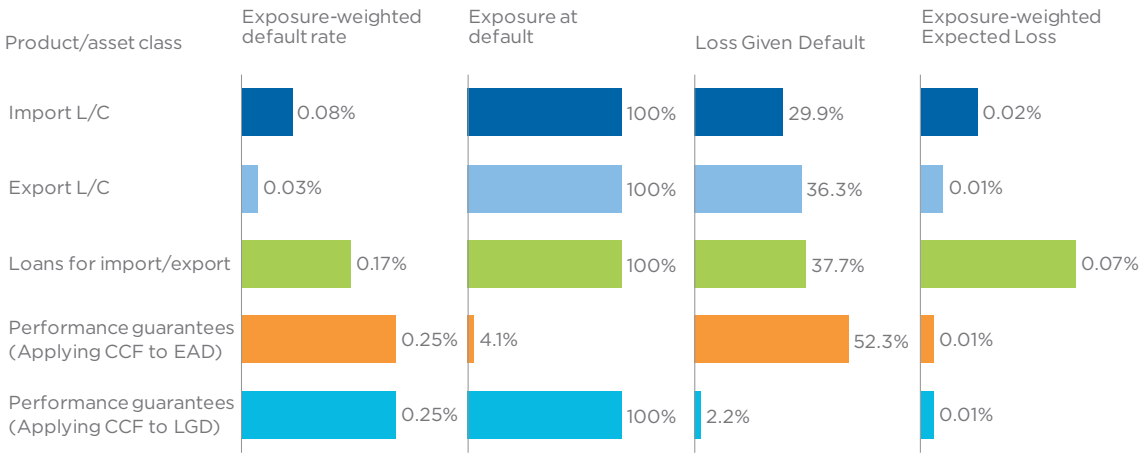
Loans for import/export continue to have a higher Expected Loss than other trade finance products driven by both default rate and moderate LGDs. The relative contribution of each of these factors to the ELs can be seen in Figure 40.

As in previous versions of the Trade Register, EL for performance guarantees is calculated using two alternative methods. In the first methodology, the call rate – the number of successful claims that are made on performance guarantee transactions – is applied to the exposure at default, which results in a higher LGD. In the second method, the call rate is applied to the LGD, resulting in a higher EAD and a lower LGD.

The call rate for the 2019 Trade Register was 4.1%, based on all data from 2008–2018. This is a reduction from 7.6% in the 2017 report (2008–2016), although this decrease may be the result of the smaller data pool used for the 2017 report, rather than any meaningful change in the call rate (see Appendix A for more detail on the call rate calculation and the differences between these methodologies).

Figure 40:

Expected Loss breakdown for trade finance products, 2008–2018

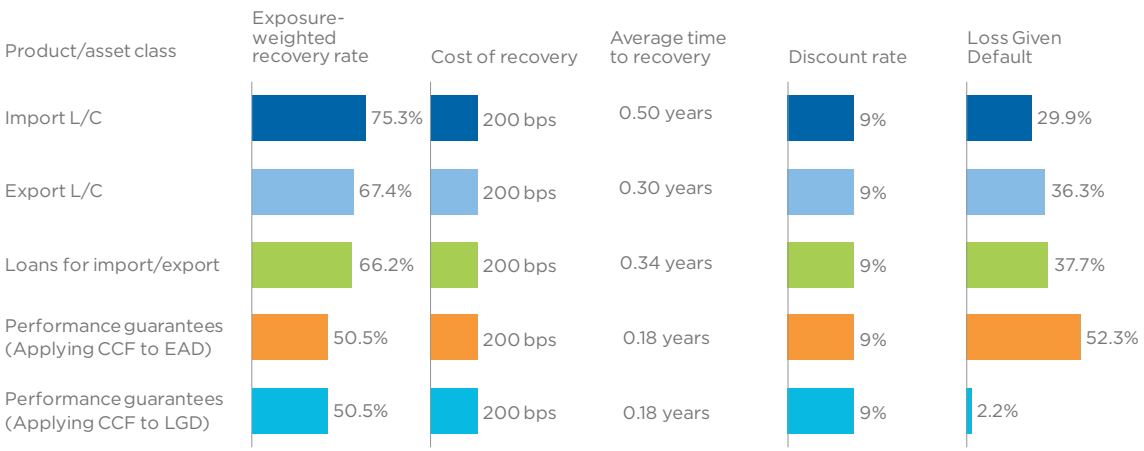


Source: ICC Trade Register 2019

LGD rates for 2008–2018 remain relatively low across all product types, with some differences between products driven by differences in recovery rate and, to a lesser extent, differences in average time to recovery (Figure 41). This year's report does not contain any new data submissions on the recovery rates for import and export L/Cs, and caution is needed when interpreting any year-on-year changes. This is not altogether surprising as it frequently takes multiple years to complete the recovery process. 2018 data is expected to be updated in next year's report.

As such, LGD for import L/Cs and export L/Cs are unchanged from last year's numbers because there are no new data submissions for 2018. Compared to last year's data set (2008–2017), loans for import/export saw a modest rise in their LGD from 36.2% to 37.7%. This increase was driven by a slight reduction in the recovery rate from 67.7% to 66.2%. The LGD for performance guarantees also increased from 41.3% to 52.3%.

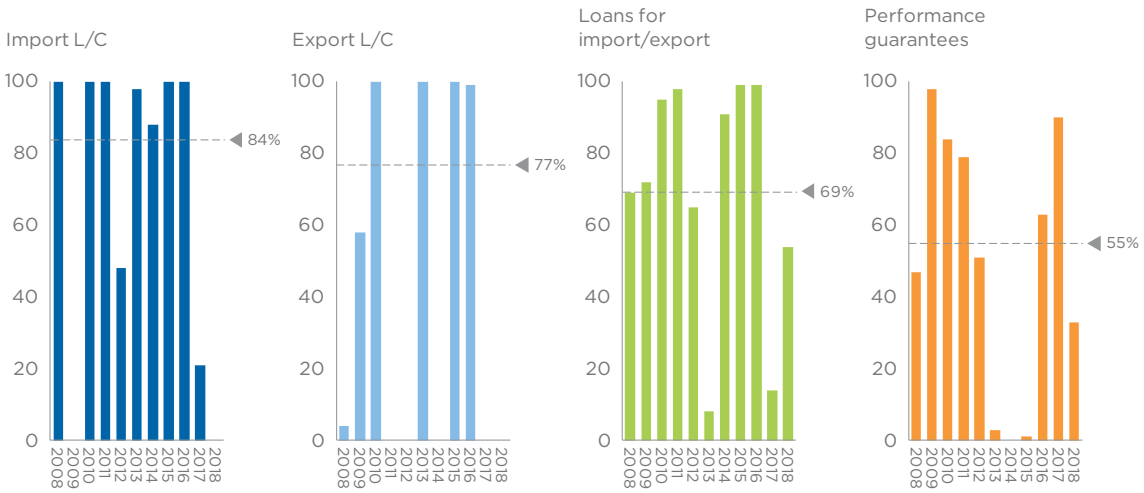
Figure 41:
LGD calculation for trade finance products, 2008–2018



Source: ICC Trade Register 2019

Figure 42:

Average exposure-weighted recovery rates for trade finance products, 2008–2018



Source: ICC Trade Register 2019

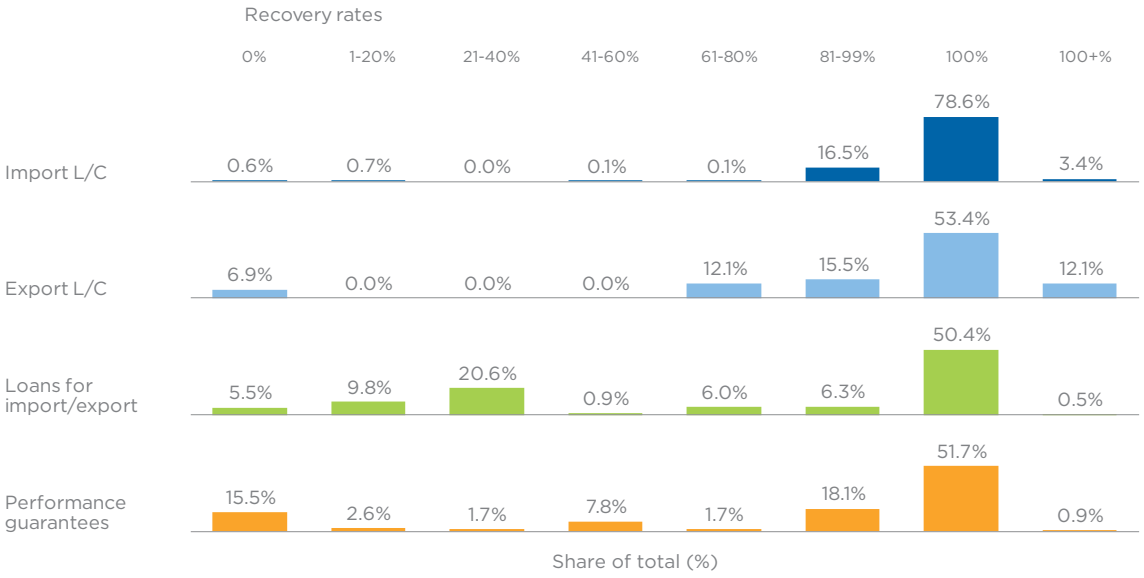
The distribution of recovery rates (Figure 43) shows how a significant majority of transactions have greater than 80% recovery rates, particularly for L/Cs. For import L/Cs, 98.5% of transactions have recovery rates above 80%, while for export L/Cs it is 81.0%.

Loans for import/export have more variation in recovery rates; around 50% of transactions have 100% recovery rates, but just over one-third of transactions have recovery rates below 40% (a reduction from 2017).

For performance guarantees, the percentage of transactions with a recovery rate of 0% increased from 5.9% in 2017 to 15.5% in 2018. This is likely driven by the small sample size (13 cases in 2018), rather than a systemic trend driving down recovery rates.

Figure 43:

Distribution of recovery rates across trade finance products, 2008–2018



Source: ICC Trade Register 2019

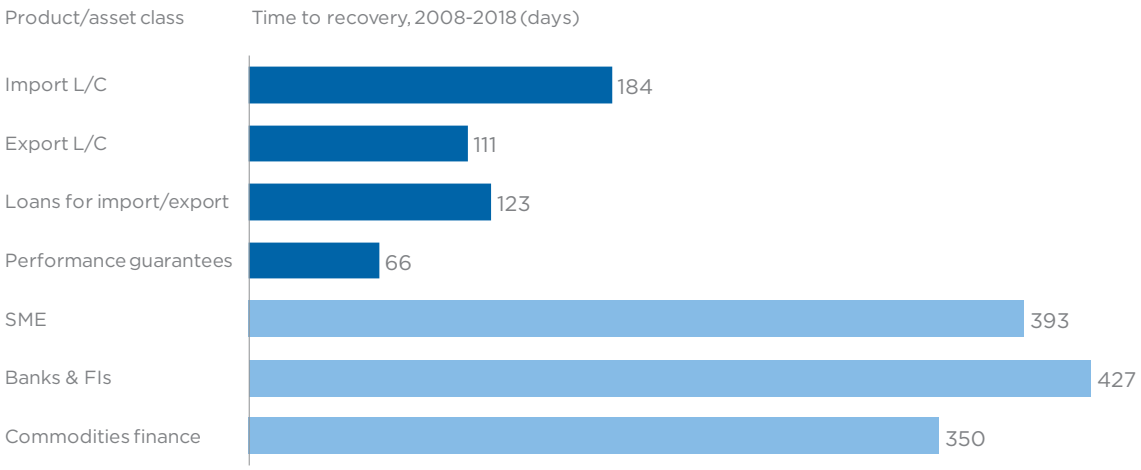
Time to recovery is the second major driver of the LGD calculation; the longer it takes to recover the defaulted value of a transaction, the higher the LGD. Trade finance products have significantly lower time to recovery than other comparable asset classes (Figure 44) – ranging from 66 days for performance guarantees to 184 days for import L/Cs. Potential explanations vary by product. When it comes to import L/Cs, depending on the commodity, banks can take ownership of underlying goods and sell them quickly. This results in the exposure being held on the balance sheet for a short time, reducing the discount factor on the potential loss.

For performance guarantees, in the event of a default, the obligor will often indemnify swiftly as the guarantee was called for technical reasons.

Note that some caution is needed when comparing data between the Trade Register and other asset class benchmarks. The underlying data sets for trade finance products and other asset classes are quite different; the former being business data (e.g. transaction-level data), and the latter being risk data (which requires far stricter data submission requirements given its use in risk modelling).

Figure 44:

Average time to recovery between trade finance and other asset classes, 2008–2018



Source: ICC Trade Register 2019

ANALYSIS OF SUPPLY CHAIN FINANCE

Last year's edition of the Trade Register marked an important step in its history by including supply chain finance for the first time. The 2019 report builds on that foundation to once again analyse SCF data, although it continues to only focus on payables finance (out of the various other SCF products in the market). The data collection for SCF is in its early stages, which makes it challenging to draw any widespread conclusions from the limited data points. Nevertheless, it is important to share preliminary observations (though the data is not ready to be used for financial modelling purposes).

SCF and other open account trade products are becoming increasingly important in trade finance. As discussed earlier in the report, trade finance revenue growth is projected to be largely driven from the growth in open account trade, which has already overtaken documentary trade in terms of exposures.

In addition, the regulatory treatment of SCF, along with the accounting and reporting treatment, is still evolving with ongoing dialogue, advocacy, and engagement between regulatory authorities and industry leaders. Ideally, this will lead to the design and delivery of regulatory regimes that align with the risk characteristics of SCF, achieve regulatory objectives, and do not result in adverse or unintended consequences for the associated products. These factors highlight the need for data-driven insights into the risk associated with SCF.

Over the past two years, the Trade Register has gathered data on USD 133 billion in exposures and 2.4 million individual facilities. While this data set is small relative to that of trade finance products, it is an important step in the expansion of the scope of the report.

Exposure-weighted default rates for SCF in 2018 were 0.13%, a slight increase from 0.11% in the previous year, and comparable to other trade finance products (Figure 45). Meanwhile, the obligor-weighted default rate increased from 0.11% to 0.23% – below all documentary trade finance products in this year's report (except for export L/Cs).

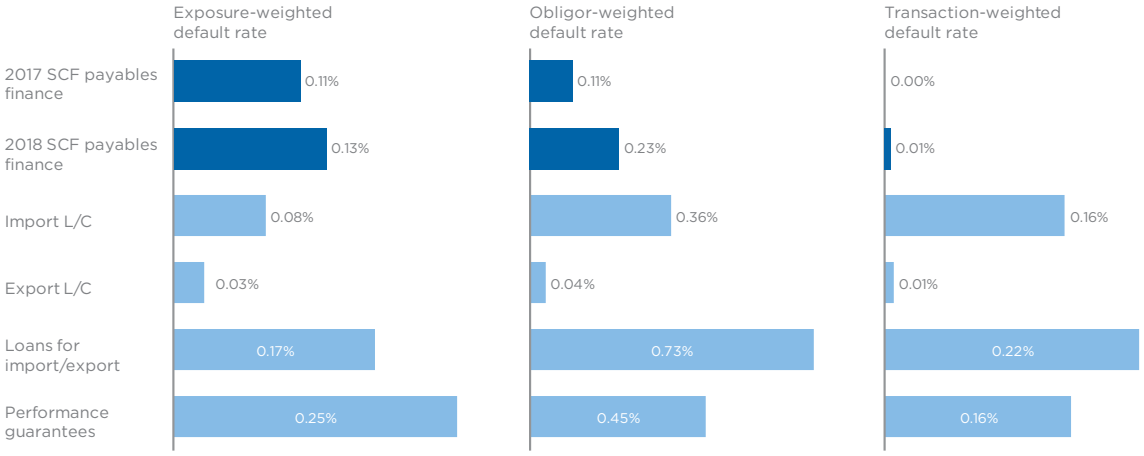
Given the relatively small size of the data pool, it may be challenging to reach meaningful conclusions about the riskiness of SCF; for example, the number of obligor defaults in 2017 was just three, while in 2018 it increased to 10. This year's report also includes transaction-weighted default data for SCF, but again for a relatively small sample size. Defaults weighted by transactions rose to 0.01% in 2018 from <0.01% in the previous year. Looking forward, the report is likely to need three to five years of data to draw meaningful, industry-wide conclusions.

In addition, many clients (particularly large corporates today, but this may trickle down) choose to distribute their SCF programmes across multiple providers, which drives a risk of double-counting. This is because the default of one obligor may appear as a default with multiple banks, and without legal entity identifiers (LEIs), it is not possible to determine whether they are indeed the same. However, if anything this would overestimate the default rates of SCF, ensuring that the Trade Register provides a conservative view.

While these results are based on a small data set of two years and submissions from only a few banks, they indicate that the probability of default for SCF is comparable to that of trade finance products. The Trade Register will continue to collect data to substantiate and de-average this result across regions and years in subsequent editions.

Figure 45:

Summary of default rates for SCF (2017 and 2018) vs. trade finance products (2008–2018)



Source: ICC Trade Register 2019

ANALYSIS OF EXPORT FINANCE

Overview of Findings

The ICC Trade Register draws from a data set comprising nearly 46,000 data points (this is higher than the number of transactions given that a single long-term export finance transaction is likely to appear multiple times across different years in the sample) spanning from 2007–2018.

This large data set allows us to conduct meaningful analysis on the Probability of Default, Loss Given Default, and thereby Expected Loss in export finance.

The findings in this year's report support the long-running conclusion that export finance presents a low risk for banks. This finding is due to its low EL, which derives from low LGD combined with a PD comparable to below-investment grade project finance and corporate finance assets. Export finance has a particularly low LGD as most transactions are covered by Export Credit Agencies at up to 100% of their value (and an average of 94% in the Trade Register sample), which grants the banks the capacity to be indemnified by an ECA for up to the level of cover provided by the ECA.

Looking at completed/accelerated cases only from 2007–2018, the exposure-weighted default rate is 0.62% with an LGD of 2.9%, resulting in an EL of 0.018%. This is marginally lower than the EL of 0.021% reported in 2007–2017, driven by a slight decrease in exposure-weighted LGD. When partially completed cases are also included, LGD is 4.4%, resulting in EL of 0.027%. These higher values are driven by incomplete recoveries in partially completed cases, which lower the recovery rate and in turn increase LGD and EL.

Risk Characteristics of Export Finance Products

As in previous editions of the report, the export finance products included within the Trade Register are export credits with the backing of high-income, OECD member-based ECAs, representing the full faith and credit of their respective governments. Building on last year's report, the scope of products considered in this report also includes non-OECD ECAs to reflect their growing importance in export finance. The number of data points collected on non-OECD ECAs is relatively low at this point, but their inclusion is important for the ongoing relevance of the Trade Register.

While these in-scope export finance transactions have different product characteristics from the transactions included in the trade finance component of this report, their risk profile is similarly low. This low risk to banks is largely a function of the ECA coverage. Losses are limited unless the ECA itself defaults, which is unlikely because in-scope ECAs are sponsored by governments (largely high-income, OECD members). If an obligor defaults on a loan with 95% coverage from an ECA, the bank can expect recoveries of 95% from the ECA for:

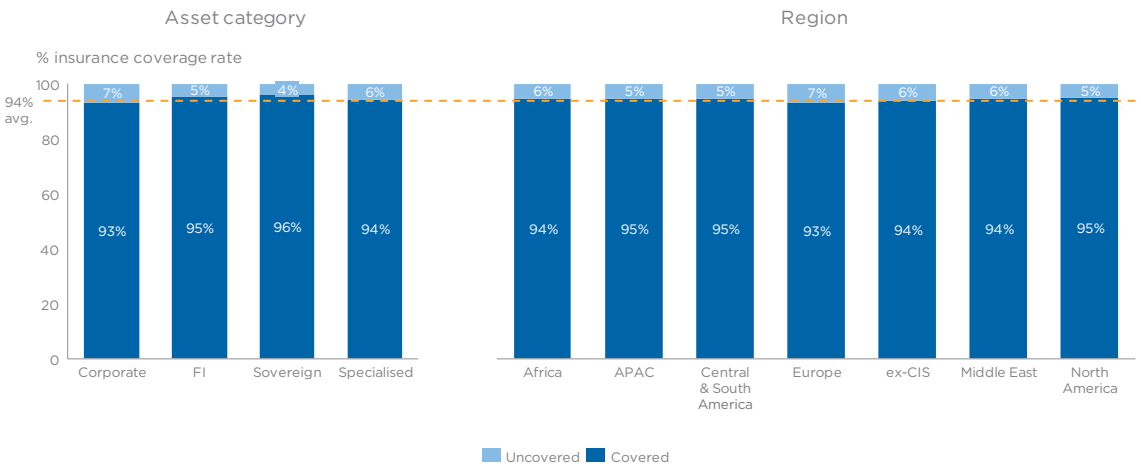
- Outstanding principal at the point of default;
- Interest contractually due but unpaid; and
- Direct costs associated with recovery from the customer (e.g. legal fees).

While the average level of cover in the 2007–2018 data is 94%, it varies slightly across products and regions (Figure 46). For sovereign obligors, the rate of cover is for political risk because they do not present a commercial risk. For other obligors, comprehensive cover is considered to reflect the portion of the transaction covered for both political and commercial risks. Observing the regional differences, Europe sits slightly below the average at 93%, while all other regions are at or above the average.

If an obligor ultimately makes good on its obligations, the recoveries are shared between the bank and the ECAs in proportion to their uncovered and covered portions, as the ECA is subrogated in the rights of the bank after indemnification.

Figure 46:

Average ECA insurance coverage rate by asset category and region, 2007–2018



Source: ICC Trade Register 2019

Observed Average Maturity

Export finance products (sometimes referred to as medium-to-long-term products) have significantly longer maturity than trade finance products (often referred to as short-term products). Over half (56%) of transactions across all asset categories have an original maturity of greater than 10 years, while just 11% have maturities of five years or less (Figure 47). The Trade Register defines four broad asset classes of export finance: corporate, financial institution, sovereign borrowers, and "specialised" borrowers (comprising project and asset-based finance).

Financial institution borrowers continue to have the widest spread of maturities (per the original tenor when the facilities were signed); 22% of transactions have maturities of five years or less, and 18% have maturities of 15 years or more – the highest of any asset class in both time brackets. Sovereign and specialised assets have the longest maturities with unweighted average tenors of 12.4 years and 11.8 years respectively. These are, on average, around two years longer than the average tenors for corporate and financial institution assets, and often relate to long-term programmes or projects.

As seen in previous years, the exposure-weighted average tenor is longer than the unweighted tenor, indicating that larger transactions have longer maturities than smaller transactions.

Figure 47:

Average maturity by asset class, 2007–2018

Asset class	5 years or less	5–10 years	10–15 years	15 years or more	Unweighted average tenor	Exposure-weighted average tenor
Corporate	13%	38%	43%	5%	10.0	11.7
Financial institutions	22%	37%	23%	18%	10.2	11.5
Sovereign	3%	26%	55%	16%	12.4	12.8
Specialised	2%	21%	71%	6%	11.8	12.1
Total	11%	33%	46%	10%	11.1	12.1

Trends in Default Rates

Default rates from 2007–2018 have risen slightly across all weighting methodologies when compared to average rates from 2007–2017. Obligor-weighted default rates have risen to 1.00% from 0.99%; similarly, exposure-weighted default rates have risen to 0.62% and transaction-weighted default rates have increased to 0.93% (Figure 48).

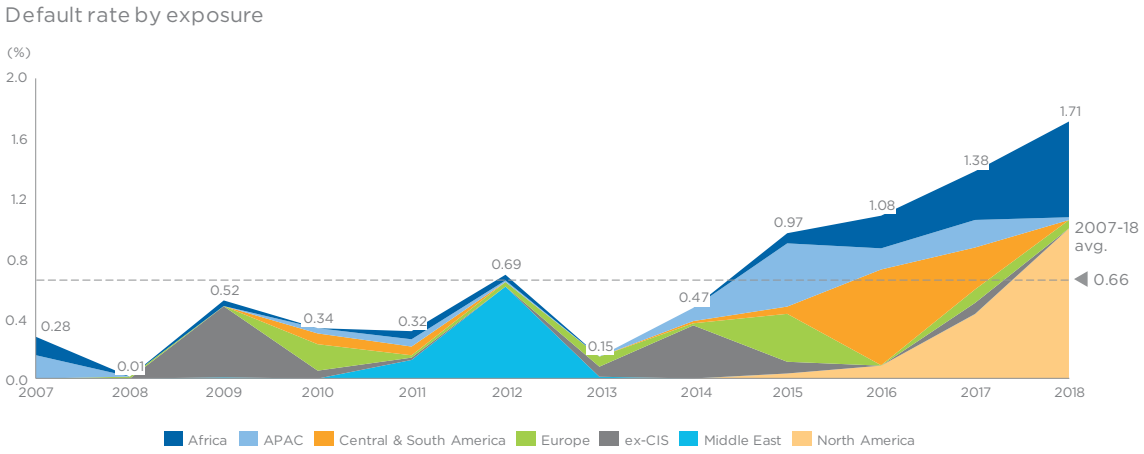
Figure 48:

Asset class export finance defaults by obligor, transaction and exposure, 2007–2018 (vs. 2007-2017)

	Defaults by obligor		Defaults by exposure		Defaults by transaction	
Asset class	**2007–2017**	**2007–2018**	**2007–2017**	**2007–2018**	**2007–2017**	**2007–2018**
Corporate	1.13%	1.18%	0.68%	0.77%	0.97%	1.07%
Financial institutions	1.37%	1.38%	1.21%	1.20%	1.41%	1.46%
Sovereign	0.44%	0.46%	0.28%	0.27%	0.34%	0.38%
Specialised	0.53%	0.49%	0.39%	0.38%	0.62%	0.58%
Total	0.99%	1.00%	0.58%	0.62%	0.88%	0.93%

Figure 49:

Export finance exposure-weighted default rates by region, 2007–2018



Note: Regions and countries reflect those of risk holder
Source: ICC Trade Register 2019

Figure 50:

Regional export finance defaults by obligor, transaction and exposure, 2007–2018 (vs. 2007-2017)

	Defaults by obligor		Defaults by exposure		Defaults by transaction	
Region	**2007–2017**	**2007–2018**	**2007–2017**	**2007–2018**	**2007–2017**	**2007–2018**
Africa	0.93%	0.92%	0.64%	0.83%	0.80%	0.83%
APAC	0.57%	0.55%	0.41%	0.39%	0.56%	0.71%
Central and South America	1.16%	1.14%	0.68%	0.66%	0.74%	0.78%
Europe	0.66%	0.74%	0.35%	0.35%	0.58%	0.60%
ex-CIS	1.23%	1.23%	1.01%	1.00%	1.28%	1.34%
Middle East	2.32%	2.23%	0.91%	0.84%	2.07%	1.99%
North America	0.66%	0.83%	0.49%	0.82%	0.63%	0.70%
Total	**0.99%**	**1.00%**	**0.58%**	**0.62%**	**0.88%**	**0.93%**

Trends in Loss Given Default and Expected Loss Analysis

Observed Recovery Rate

The 2019 Trade Register shows an observed recovery rate of 97.3% for completed / accelerated and partial completed cases from 2007–2018 (Figure 51), up slightly from 96.1% in 2007–2017. As in prior years, this recovery rate remains well above the 94% average coverage rate as ECA recovery amounts include coverage for principal, interest, and costs, and recoveries often also occur – at least in part – for the uncovered portion of the exposure.

The overall level of recoveries before and after customer recoveries is attributed to the ECA (Figure 51), while subsequent figures (Figures 52-54) show recoveries only post-attribution.

Figure 51:

Export finance observed recovery, 2007–2018, pre- and post-attribution of customer recoveries for ECA completed/accelerated and partial completed cases

	Exposure (USD M)	ECA recoveries (USD M)	Customer recoveries (USD M)	Total recoveries %
Pre-attribution of customer recoveries	1,735	1,402	286	97.3%
Post-attribution of customer recoveries (observed recovery rate)	1,735	1,672	16	97.3%

Loss Given Default

LGD was calculated using the same approach as in previous years – a discounting and recovery cost approach. This requires a transaction level discounting calculation, and a standard addition of 1.0% to account for the exposure recovery cost.

This year, the LGD was 5.2% for ECA completed/accelerated and partially completed cases (Figure 52). This was lower than the 6.2% reported last year, driven by an increase in the recovery rate from 95.3% to 96.4%, and a decrease in the loss rate from 3.9% to 2.7%.

For completed cases from 2007–2018, the LGD of 3.6% is slightly above last year's LGD of 3.5%. This is expected to be lower than the 5.2% cited above, as looking at completed cases strips out recent defaults for which recovery activities have not been completed.

Figure 52:

Recoveries and estimated LGD for partially completed and fully completed cases, 2007–2018

	ECA recoveries	Customer recoveries	Total recoveries	Loss rate	Dis-counting	Costs	LGD
ECA completed/accelerated and partial completed cases	96.4%	0.9%	97.3%	2.7%	1.4%	1.0%	5.2%
ECA completed and customer completed cases	96.1%	2.7%	98.8%	1.2%	1.5%	1.0%	3.63%

Expected Loss

The Expected Loss for ECA completed/accelerated and partially completed ECA cases in 2007–2018 is 0.032% (Figure 53), down from 0.036% in 2007–2017. This is driven mostly by the exposure-weighted LGD decreasing from 6.2% in 2007–2017 to 5.2% in 2007–2018. The EL for fully completed cases is 0.025%, slightly higher than the 0.021% reported last year.

Figure 53:

Estimated Expected Loss for export finance products using exposure-weighted default rate, 2007–2018

	Exposure-weighted default rate	Exposure at default	LGD	Expected Loss
ECA completed/accelerated and partial completed cases	0.62%	100.0%	5.2%	0.032%
ECA completed and customer completed cases	0.62%	100.0%	3.9%	0.025%

As with trade finance products, obligor-weighted ELs are higher than exposure-weighted ELs (Figure 54), as a result of the higher obligor-weighted default rate. Exposure-weighted data also gives more weight to larger (and therefore typically better-rated) obligors, resulting in lower default rates on average. For both ECA completed/accelerated and partial completed cases and ECA completed and customer completed cases, obligor-weighted ELs compare favourably to the other asset classes – SMEs at 0.44%, banks and financial institutions at 0.07%, and commodities finance at 0.16%. These results support the low-risk nature of export finance.

Figure 54:

Estimated Expected Loss for export finance products using obligor-weighted default rate, 2007–2018

	Obligor-weighted default rate	Exposure at default	LGD[1]	Expected Loss
ECA completed/accelerated and partial completed cases	1.00%	100.0%	5.2%	0.052%
ECA completed and customer completed cases	1.00%	100.0%	3.9%	0.039%

1. These LGD numbers are exposure-weighted. See Appendix A for further details.

FUTURE OF THE TRADE REGISTER: LISTENING TO OUR MEMBERS

As part of our continued review of the value the Trade Register brings to our Member Banks, the Banking Commission conducted a brief survey with 16 contributors to capture and reflect upon their feedback and steer the development of the Trade Register accordingly. In the survey, we considered several key aspects of the project.

Value from the Trade Register for our Member Banks

- Overall, almost all banks were in full support that the Trade Register is a valuable exercise and should be continued. Indeed, the single bank that felt differently cited concerns around lack of efficiency and the time involved in data collection as the reason for this.
- Further, the majority of the banks surveyed were satisfied with the current member benefits that they receive from the project. Some felt, however, that these benefits could be of further value if they were extended to include raw data for model building and a bank vs. industry analysis.
- Most respondents found the Trade Register to be beneficial for their specific business line and half also felt that it has value for their risk department, which is positive to see. However, the majority felt that the benefits were more limited for potential investors in trade assets, and therefore ways in which the report can benefit this group further in the future should be considered.
- On the whole, members did not feel that their operational and credit controls were directly benefiting from their participation in the Trade Register. However, it was positive to receive the feedback that some members have indeed benefitted in these areas, citing having a framework with which they can evaluate credit risk and having an improved awareness of default rates as benefits.

Expanding the Scope of the Trade Register

- There appears to be only limited appetite to extend the scope of the report to other areas at this point in time, for example to cover operational risk or fraud risk. Members were largely concerned about confidentiality breaches and their ability to provide the relevant data, as opposed to having a lack of interest in these areas. Therefore, these practical obstacles will need to be considered and addressed before any scope changes can be introduced.

Subscription Model

- While two-thirds of respondents did not find the membership fees prohibitive, one-third showed concern in this area and therefore some changes may be needed in future years.
- In particular, among those who raised concerns, many cited the discrepancy in fees for participants and non-participants as the reason for this. Further supporting this sentiment, most respondents felt that there should be a differential in the content available to non-fee paying and fee-paying recipients. This is something that the Banking Commission is actively considering, and more information will be shared at a later date.

Data Collection

- A key obstacle faced by the participants is the data gathering exercise itself, primarily due to the manual and time-consuming nature of this exercise. There is opportunity to reduce this obstacle as currently only one-third of participants have a partly or fully automated data collection process. To address this challenge, the majority of respondents would like to receive assistance with data collection from ICC/GCD, provided data confidentiality issues could be mitigated.
- Despite the above concerns regarding the time-consuming nature of data collection, most respondents found that they had sufficient time to gather the data. Additionally, most respondents are satisfied with the timing of completion and release of the annual report, and state Q3 of the following year as the preferred timing and therefore no changes are needed to these timings.

As conversations on the evolution of the Trade Register continue, the Banking Commission looks forward to further engaging with its Member Banks and broader affiliates to ensure that the project maximises value for those involved and continues to provide a worthwhile return on investment for the trade finance community. Looking ahead, the Banking Commission is exploring ways to incorporate sustainability data into the report, such as by measuring the portion of transactions deemed sustainable by the contributing banks. In addition, we anticipate demand for 2020 data to materialise as swiftly as possible – to understand how trade finance risk fared amid the COVID-19 crisis – and as such the Banking Commission will work with Member Banks to learn how data collection could be accelerated for this purpose.

CONCLUSIONS

Trade finance, including supply chain finance and export finance, act as essential facilitators of global trade by providing low-risk financing methods across a range of maturities for importers and exporters who are often transacting with unknown and distant counterparties. These products are also important transaction banking products, providing considerable revenue pools for global and regional banks.

Given the significance of trade finance, regulators and banks rely on up-to-date, accurate information on the risk profile of trade finance and export finance products. The ICC Trade Register plays an important role in this process. Its data-driven approach provides an objective and transparent view of the credit-related risk profile and characteristics of trade finance and export finance. These findings are essential for informing policy and regulatory decisions and broadening the awareness and understanding of the risk and regulation associated with trade finance and export finance.

At the same time, the underlying data set of the Trade Register is not real-time. In the fast-moving crisis created by the COVID-19 virus, industry and regulators need not only past risk data but also a timely and nimble understanding of the here-and-now. The utility of the Trade Register is not only in its analysis of risk data, but also in its inclusion and promulgation of industry experts. The report's analyses on risks in supply chain finance and the expected impact of COVID-19 on trade finance are highly topical and provide key data-driven and qualitative insights to the industry. It is precisely analyses like these that elevate the Trade Register from a risk assessment report to a flagship publication for the global trade finance community.

The findings of this year's report show that trade finance and export finance both remain low-risk products for banks. Trade finance default rates were broadly consistent with previous years and maturities remain short. Expected Loss percentages remain below many comparable asset classes. While export finance default rates increased slightly in 2018, export finance continues to be very low risk, particularly when considering fully completed recovery cases. And early indications are that supply chain finance – specifically payables finance – default rates are comparable with those of traditional trade finance products.

The Trade Register is constantly evolving to improve the value it delivers to industry participants by enhancing data quality and methodology to make the data more useful for internal risk modelling and keeping aligned with regulatory practice. To date, the ICC Trade Register, with 22 Member Banks, is the only authoritative source of credit risk and default data in trade finance and export finance. We will continue to explore ways to enhance the scope, improve the data quality, and refine our methodology to ensure that trade receives consistent risk-aligned capital treatment across all jurisdictions.

APPENDICES

APPENDIX A: APPROACH TO ANALYSIS AND DEFINITIONS

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 which performs a number of these validation checks at source, in an automated fashion.

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 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 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 as "in default" by the reporting bank. The definitions prescribed require the bank to identify not only borrowers with overdue payments of 90 days or more but also other 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 banks, 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 report 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 usage of the report's data and information for research purposes, but strongly advises against its usage to inform investment decisions. Please reach out to the Banking Commission if you would like to understand whether your usage of the Trade Register data is recommended and / or appropriate.

Trade Finance

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. The definitions of these product categories are included in Figure 55.

Figure 55:

Definitions of trade finance products

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

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.

Exposure at Default

Exposure at Default 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 USD 900,000, but typically purchases goods of up to USD 300,000 each, meaning that the EAD might be considerably less than the whole USD 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.

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 report intends to continue building the database over the coming years to calculate a robust CCF for these products.

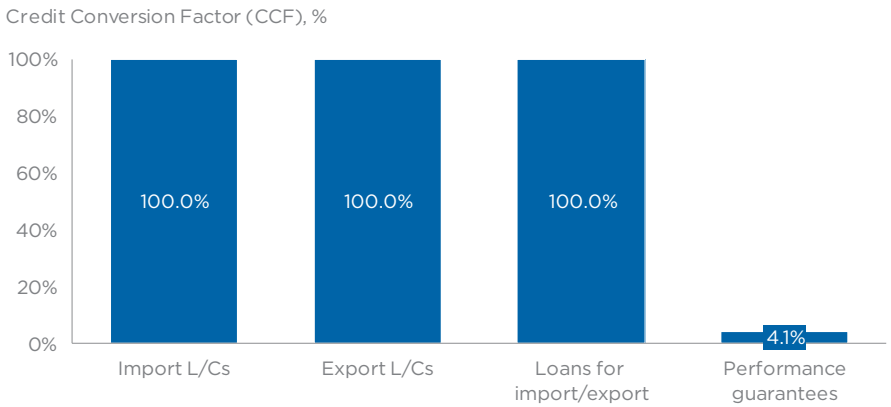
The CCF is particularly important for performance guarantees. These instruments exist primarily to protect against unforeseen outcomes, such as non-performance or performance below the standards agreed, and only a small call rate is expected. As with L/Cs, the Trade Register has been collecting data since 2013 to better determine CCFs for performance guarantees. The data points collected remain few, and limited additional data points were submitted by banks for 2017. Using the data collected, the call rate has been calculated (and therefore assumed CCF) as 4.1% (Figure 56). This value is below the 7.6% calculated in last year's report. It is important to note that the 4.1% 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.

As per the ongoing debate, this 4.1% 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 4.1% 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 4.1% to LGD and assume EAD to be 100% as done for L/Cs and loans for import/export.

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 discussed in the 2019 paper "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.

Figure 56:
Assumed CCFs by trade finance product



Source: ICC Trade Register 2019

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.

Benchmarking: Comparison of Trade Finance to other Asset Classes

The benchmarks/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 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 the 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 added 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 (CCFs)

The Credit Conversion Factor 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 of 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 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.

Export Finance

Definitions of Export Finance Asset Categories

For the purpose of this report, export finance transactions are split into four specific asset categories to allow for analyses of the exposures to each of these categories. These are outlined in Figure 57.

Figure 57:

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

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, and a comparison of the transaction average and the exposure weighted average. These calculations are made over the entire sample of transactions for which maturity values were submitted.

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 four major asset categories – corporate, FI, sovereign and 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 2008–2018; 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.

Loss Given Default

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:

LGD = (1 - recovery rate) + discount on recoveries (%) + costs (%)

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 USD 1 million, with ECA cover of 95%, the ECA will pay the bank USD 950,000. If the customer makes a payment of USD 100,000,

USD 95,000 (95%) would be given to the ECA and USD 5,000 (5%) would be retained by the bank. The bank's overall recovery is USD 955,000.

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%. 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.

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).

Expected Loss

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

EL = Default Rate x EAD x LGD

Sufficient information to appropriately calculate the EAD based on empirical data is not available, 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.

APPENDIX B: DATA COLLECTION & FILTERING

Data Availability

Data collection under the revised methodology is now in its sixth year (covering six years of data from 2012–2018) 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 2019 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 "unlikeliness to pay". This is particularly significant for larger borrowers, banks and sovereigns
- Data sourcing, collection and submission may involve multiple systems within a single financial institution, and may require manual intervention. This can introduce errors or cause the dataset to be incomplete
- Data is not always accessible or available at the desired level of detail, and some observations can only be presented in aggregated form which can make comparisons difficult

One 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:

1. New data submitted by Member Banks is evaluated critically to identify outliers, data errors, omissions and any other issues in each submission
2. A detailed audit report is provided to each member bank, followed by audit and questioning as data is replaced or clarified
3. New and updated data is aggregated with prior data from each Member Bank, followed by a further round of audit and questioning
4. 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.

Quality and Quantity of Submitted Data

As the Trade Register evolves, so do the abilities of Member Banks to submit accurate, granular data. The dataset in the 2019 report shows continued improvement in quality and quantity over the datasets used in earlier editions of this report.

For trade finance, 92% of the transactions now included in the Trade Register have successfully passed the data-filtering process. This compares to 91% in last years' analyses and demonstrates an improvement in the quality of data received for the Trade Register – in part driven by the new methodology.

For export finance, the filtering process includes approximately 83% of available transactions. This results in 45,821 transactions available for analysis, which is a 6% 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 58-59 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 58:

Unfiltered data sample for trade finance, 2008–2018

	Banks in sample	# Transactions	# Customers	Exposure (USD B)
Submitted data	25	32,155,108	1,311,758	16,345
Default rate analysis	23	29,534,596	1,162,185	14,411
Recovery rate analysis	12	7,899	516	2

Figure 59:

Unfiltered data sample for export finance, 2007–2018

	Banks in sample	# Transactions	# Customers	Exposure (USD B)
Submitted data	18	54,928	6,454	835
Default rate analysis	17	45,821	5,306	775
Recovery rate analysis	13	234	145	2

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 future 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.

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 were 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 recent improvements in data quality and completeness of the Trade Register, and the challenges associated with the introduction of new data collection templates in 2012.

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

- ECA filter: as transactions in which an 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 2007–2018 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.

APPENDIX C: DETAILED ANALYSIS TABLES

Trade Finance

Default Rate Analysis

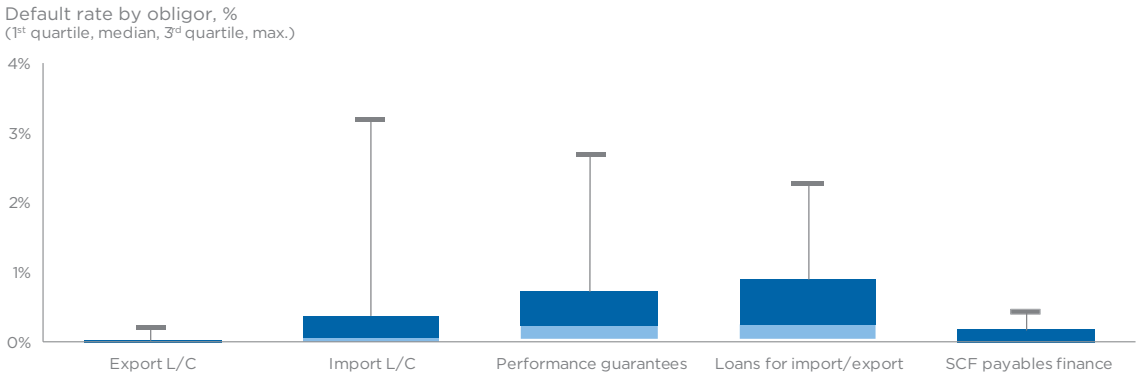
Figure 60:

Total customers and default rate by loan sub-product, 2008–2018

Loan sub-product	Obligors	Defaulting obligors	Default rate
Loans for import/export (Bank & Corp.)	331,683	2,419	0.729%
Loans for import (Bank & Corp.)	131,407	1,175	0.894%
Loans for export (Bank & Corp.)	119,892	859	0.716%
Loans for import/export (Bank)	69,270	108	0.156%
Loans for import/export (Corp.)	262,413	2,311	0.881%

Figure 61:

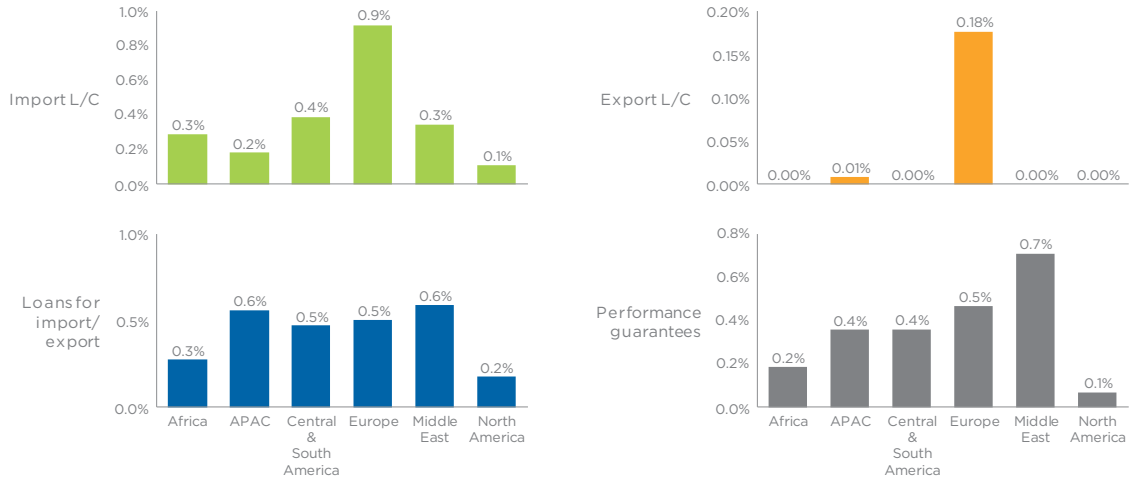
Variance of obligor default rates across banks by product, 2008–2018



Source: ICC Trade Register 2019

Figure 62:

Obligor-weighted default rates by product and region, 2008–2018



Source: ICC Trade Register 2019

Figure 63:

Import L/Cs obligor-weighted default rates by region, 2014–2018

	2014	2015	2016	2017	2018
Africa	0.39%	0.20%	0.48%	0.14%	0.29%
APAC	0.39%	0.32%	0.30%	0.20%	0.18%
Central & South America	0.45%	0.37%	0.52%	0.26%	0.39%
Europe	0.80%	2.03%	1.18%	1.38%	0.92%
Middle East	0.61%	0.23%	0.83%	0.19%	0.35%
North America	0.10%	0.75%	0.27%	0.43%	0.11%
Other	0.00%	0.00%	2.62%	0.00%	0.00%
Total	0.43%	0.50%	0.48%	0.31%	0.29%

Figure 64:

Import L/Cs exposure-weighted default rates by region, 2014–2018

	2014	2015	2016	2017	2018
Africa	0.02%	0.02%	0.02%	0.01%	0.02%
APAC	0.12%	0.10%	0.02%	0.05%	0.13%
Central & South America	0.02%	0.00%	0.01%	0.01%	0.01%
Europe	0.11%	0.13%	0.09%	0.29%	0.28%
Middle East	0.67%	0.02%	0.11%	0.07%	0.02%
North America	0.03%	0.27%	0.00%	0.14%	0.00%
Other	0.00%	0.00%	0.00%	0.00%	0.00%
Total	0.13%	0.11%	0.03%	0.08%	0.14%

Figure 65:

Export L/Cs obligor-weighted default rates by region, 2014–2018

	2014	2015	2016	2017	2018
Africa	0.057%	0.088%	0.586%	0.049%	0.000%
APAC	0.016%	0.025%	0.009%	0.018%	0.000%
Central & South America	0.000%	0.858%	0.000%	0.232%	0.000%
Europe	0.093%	0.314%	0.000%	0.054%	0.000%
Middle East	0.000%	0.000%	0.000%	0.000%	0.000%
North America	0.113%	0.000%	0.000%	0.000%	0.000%
Other	0.000%	0.000%	0.000%	0.000%	0.000%
Total	0.029%	0.082%	0.057%	0.029%	0.000%

Figure 66:

Export L/Cs exposure-weighted default rates by region, 2014–2018

	2014	2015	2016	2017	2018
Africa	0.002%	0.007%	0.270%	0.000%	0.000%
APAC	0.002%	0.007%	0.001%	0.001%	0.000%
Central & South America	0.000%	0.197%	0.000%	0.002%	0.000%
Europe	0.064%	0.971%	0.000%	0.027%	0.000%
Middle East	0.000%	0.000%	0.000%	0.000%	0.000%
North America	0.003%	0.000%	0.000%	0.000%	0.000%
Other	0.000%	0.000%	0.000%	0.000%	0.000%
Total	0.014%	0.107%	0.010%	0.004%	0.000%

Figure 67:

Loans for import/export obligor-weighted default rates by region, 2014–2018

	2014	2015	2016	2017	2018
Africa	2.403%	0.276%	1.471%	0.131%	0.274%
APAC	0.866%	0.855%	0.812%	0.433%	0.559%
Central & South America	3.665%	2.285%	0.887%	0.474%	0.470%
Europe	1.084%	0.929%	0.630%	0.564%	0.502%
Middle East	1.894%	0.942%	1.722%	0.544%	0.589%
North America	2.269%	2.787%	0.584%	0.104%	0.176%
Other	0.066%	0.000%	1.068%	0.000%	0.000%
Total	1.098%	0.931%	0.878%	0.437%	0.529%

Figure 68:

Loans for import/export exposure-weighted default rates by region, 2014–2018

	2014	2015	2016	2017	2018
Africa	0.448%	0.061%	1.192%	0.132%	0.044%
APAC	0.180%	0.334%	0.289%	0.080%	0.074%
Central & South America	1.053%	0.510%	0.899%	0.042%	0.236%
Europe	0.054%	0.082%	0.137%	0.038%	0.028%
Middle East	0.305%	0.691%	0.436%	0.116%	0.053%
North America	0.290%	0.259%	0.018%	0.003%	0.006%
Other	0.107%	0.000%	0.092%	0.000%	0.000%
Total	0.228%	0.318%	0.291%	0.067%	0.057%

Figure 69:

Performance guarantee obligor-weighted default rates by region, 2014–2018

	2014	2015	2016	2017	2018
Africa	0.316%	0.330%	0.333%	0.147%	0.187%
APAC	0.369%	0.386%	0.267%	0.414%	0.358%
Central & South America	0.958%	2.477%	0.797%	0.527%	0.359%
Europe	1.159%	0.941%	0.714%	0.450%	0.467%
Middle East	0.735%	0.126%	0.336%	0.636%	0.709%
North America	0.194%	0.711%	0.451%	0.817%	0.068%
Other	0.736%	0.000%	0.000%	0.000%	0.000%
Total	0.606%	0.613%	0.446%	0.444%	0.385%

Figure 70:

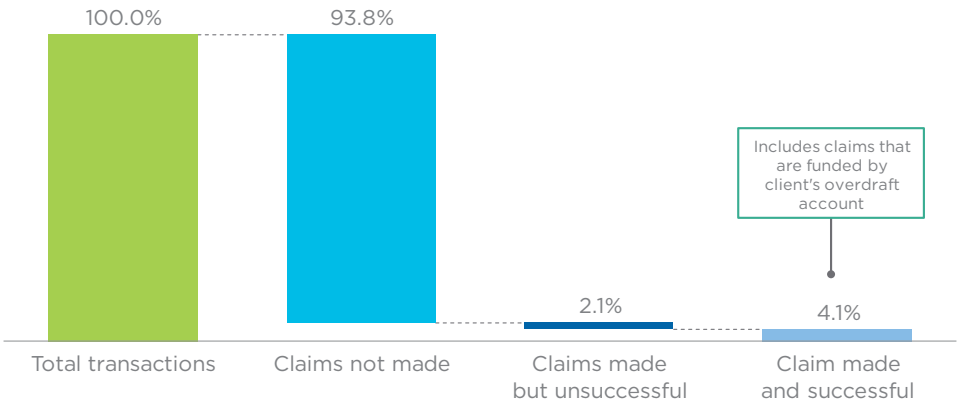
Performance guarantee exposure-weighted default rates by region, 2014–2018

	2014	2015	2016	2017	2018
Africa	0.110%	0.524%	0.044%	0.363%	0.743%
APAC	0.038%	0.307%	0.168%	0.264%	0.263%
Central & South America	0.324%	2.518%	1.654%	0.037%	0.393%
Europe	0.127%	0.602%	0.537%	0.178%	0.246%
Middle East	0.386%	0.159%	0.036%	0.181%	0.250%
North America	0.146%	0.308%	1.762%	0.563%	0.009%
Other	0.156%	0.000%	0.000%	0.000%	0.000%
Total	0.131%	0.382%	0.550%	0.248%	0.242%

Loss Given Default and Expected Loss Analysis

Figure 71:

Average "event likelihood" in the life of a performance guarantee, 2008-2018



Source: ICC Trade Register 2019

Figure 72:

Average time to recovery in days and years, 2008-2018

Product	TTR - days	TTR - years
Import L/C	184	0.50
Export L/C	111	0.30
Loans for import/export	123	0.34
Performance guarantees	66	0.18

Figure 73:

Cumulative recoveries and exposure weighted recovery rates, 2008-2018

Product	Cumulative recoveries (USD K)	Balance at default (USD K)	Recovery rate
Import L/C	225,346	299,363	75%
Export L/C	125,504	186,087	67%
Loans for import/export	888,550	1,342,690	66%
Performance guarantees	196,102	388,505	50%

Figure 74:

Exposure-weighted recovery rate range across banks, 2008-2018

Product	Minimum	Maximum
Export L/C	0.5%	100.0%
Import L/C	51.3%	100.0%
Loans for import/export	7.5%	91.7%
Performance guarantees	0.0%	101.7%

Figure 75:

Transaction-weighted recovery rate, 2008-2018

Product	Recovery rate
Export L/C	81.7%
Import L/C	92.7%
Loans for import/export	60.5%
Performance guarantees	75.7%

Figure 76:

Exposure-weighted LGD by product (discount rate sensitivity adjusted), 2008-2018

			Discounted recoveries & costs (at 2%)			LGD		
Product	**Recovery rate**	**TTR - years**	**5%**	**9%**	**13%**	**5%**	**9%**	**13%**
Import L/C	75%	0.50	1.8%	3.2%	4.5%	28.6%	29.9%	31.2%
Export L/C	67%	0.30	1.0%	1.7%	2.5%	35.5%	36.3%	37.0%
Loans for import/ export	66%	0.34	1.1%	1.9%	2.7%	36.9%	37.7%	38.5%
Performance guarantees	50%	0.18	0.4%	0.8%	1.1%	52.0%	52.3%	52.6%

Figure 77:

Expected Loss calculation by product, 2008-2018

			Default rate	EAD	LGD (9% discount rate)	Expected Loss		
Product	Exposure-weighted	Obligor-weighted	Transaction-weighted			Exposure	Obligor	Transaction
Import L/C	0.08%	0.36%	0.16%	100.0%	29.9%	0.02%	0.11%	0.05%
Export L/C	0.03%	0.04%	0.01%	100.0%	36.3%	0.01%	0.01%	0.00%
Loans for import/export	0.17%	0.73%	0.22%	100.0%	37.7%	0.07%	0.28%	0.08%
Performance guarantees	0.25%	0.45%	0.16%	4.1%	52.3%	0.01%	0.01%	0.00%

Export Finance

Default Rate Analysis: By Asset Category

Figure 78:

Obligor-weighted default rates by asset category, 2007-2018

Asset	Total obligors	Defaulting obligors	Default rate
Corporate	10,261	121	1.18%
FI	3,758	52	1.38%
Sovereign	2,376	11	0.46%
Specialised	3,876	19	0.49%
Total	20,271	203	1.00%

Figure 79:

Transaction-weighted default rates by asset category, 2007-2018

Asset	Total transactions	Defaulting transactions	Default rate
Corporate	21,300	227	1.07%
FI	7,858	115	1.46%
Sovereign	6,806	26	0.38%
Specialised	9,839	57	0.58%
Total	45,803	425	0.93%

Figure 80:

Exposure-weighted default rates by asset category, 2007-2018

Asset	Total exposures (USD K)	Defaulting exposures (USD K)	Default rate
Corporate	415,138,039	3,179,769	0.77%
FI	52,358,573	630,636	1.20%
Sovereign	135,812,545	366,121	0.27%
Specialised	171,451,133	645,285	0.38%
Total	774,760,291	4,821,812	0.62%

Default Rate Analysis: By Region

Figure 81:

Obligor-weighted default rates by region of risk, 2007-2018

Region	Total obligors	Defaulting obligors	Default rate
Africa	2,056	19	0.92%
APAC	3,815	21	0.55%
Central & South America	2,451	28	1.14%
Europe	4,078	30	0.74%
ex-CIS	4,461	55	1.23%
Middle East	1,572	35	2.23%
North America	1,807	15	0.83%
Total	20,240	203	1.00%

Figure 82:

Transaction-weighted default rates by region of risk, 2007-2018

Region	Total transactions	Defaulting transactions	Default rate
Africa	5,397	45	0.83%
APAC	10,541	75	0.71%
Central & South America	5,806	45	0.78%
Europe	8,712	52	0.60%
ex-CIS	7,335	98	1.34%
Middle East	4,227	84	1.99%
North America	3,730	26	0.70%
Total	45,748	425	0.93%

Figure 83:

Exposure-weighted default rates by region of risk, 2007-2018

Region	Total exposures (USD K)	Defaulting exposures (USD K)	Default rate
Africa	86,212,775	715,480	0.83%
APAC	180,396,923	707,794	0.39%
Central & South America	111,051,873	732,781	0.66%
Europe	156,768,786	554,367	0.35%
ex-CIS	77,901,941	779,954	1.00%
Middle East	79,491,812	665,997	0.84%
North America	81,405,967	665,439	0.82%
Total	773,230,077	4,821,812	0.62%

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**	Standard 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		

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