# 2018
# 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 ›

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**ICC** INTERNATIONAL CHAMBER OF COMMERCE @100 years

# IN THIS REPORT

# ABOUT THE INTERNATIONAL CHAMBER OF COMMERCE

The International Chamber of Commerce (ICC) is the world's largest business organization with a network of over 6 million members in more than 100 countries. We work to promote international trade, responsible business conduct and a global approach to regulation through a unique mix of advocacy and standard setting activities—together with market-leading dispute resolution services. Our members include many of the world's largest companies, SMEs, business associations and local chambers of commerce.

For more information please visit: www.iccwbo.org

**Visit the ICC Banking Commission website:**

https://iccwbo.org/global-issues-trends/banking-finance/

# ACKNOWLEDGEMENTS

# OUR PARTNERS

**Global Credit Data**
*by banks for banks*

## Global Credit Data

Global Credit Data's (GCD'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 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 members 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.

**BCG** 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 addressing industry questions and challenges such as market entry and growth, pricing, cost reduction, operations, digital change and transformation.

BCG continues to support the broader trade finance community with thought leadership, including a recent 2018 paper, a 'Pulse Check' of Digital in Trade Finance, in collaboration with SWIFT. By partnering with the ICC Trade Register Project, BCG aims to bring additional strategic insight, commercial and technical industry perspectives to the table for maximum value for the reader base.

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 Project

ICC's annual Trade Register Report is an authoritative source and benchmark for trade finance-related and export finance-related credit risk data for regulators, capital market participants and financial analysts.

This year's report builds on the commitment we gave to our member banks last year:

- **To strengthen the ICC/GCD/BCG partnership:** The Trade Register is building a data collection portal that is synchronised with the GCD data portal. This has helped to improve the data collection methodology by including validation at the point of data entry and strengthening data integrity. In addition, ICC, GCD and BCG continue to collaborate closely on analysing the data, interpreting the results, and compiling the Report

- **To expand the scope of the Trade Register Coverage:** Payables finance, one of the major techniques of Supply Chain Finance (SCF), has been added to the list of products covered by the Report. In export finance the scope has been expanded to include non-OECD Export Credit Agencies (ECA)

- **To use the Report to advocate for the appropriate capital treatment for trade:** We have had some success in using the Report to successfully argue for appropriate treatment of Credit Conversion Factors (CCF) for trade products within the final Basel III rules

This edition of the Report reinforces the themes of the previous years. Notably, that trade finance and export finance products continue to exhibit low credit risk characteristics. This is driven by a combination of low probability of default, high recovery rates and, in the case of trade finance, shorter time to recovery. This year's data includes over USD 12 trillion of trade finance, export finance and SCF transactions and illustrates the low-level default rates across obligors with these product level exposures.

The standardisation of the data collection process for trade within the GCD portal is combined with GCD's expertise in collecting data for modelling Probability of Default (PD), Loss Given Default (LGD) and Exposure At Default (EAD) for other corporate asset classes. This presents the industry with an opportunity to integrate the Trade Register as a uniform source of data to model PD, LGD and EAD parameters for trade products within Corporate and Bank PD, LGD and EAD models.

This ability to act as a uniform source of data for banks will help the Trade Register to further strengthen its fundamental role in putting forward advocacy messages to the Basel Committee and other regulatory bodies. As the final rules published by the Basel Committee in December 2017 are being translated into local jurisdiction-specific rules and regulations for implementation in 2020, the Trade Register Report and our advocacy programme are increasingly critical and relevant for trade products to receive the appropriate capital treatment they deserve.

The Trade Register's continuing evolution, in line with the requirements of our member banks, market participants and regulators, is vital to its ongoing efficacy. In the coming year our team will focus on:

- Further simplifying and standardising the data collection process within the GCD portal

- Enhancements in data collection to improve and refine estimates of CCF and LGD for guarantees and letters of credit (LCs)

- Convergence in the use of Trade Register data for estimating LGD and EAD within Corporate and Bank LGD/EAD models

- Expanding the scope of payables finance as a supply chain finance technique, and banks providing data to estimate LGD for these products

- Examining the feasibility of expanding the Trade Register coverage to receivable finance

- Work with regulatory authorities to ensure trade receives risk-aligned and consistent capital treatment across all jurisdictions

We welcome your comments, feedback and suggestions for improving the Trade Register Report.

Krishnan Ramadurai
**Chair of the Trade Register Project**

# EXECUTIVE SUMMARY

In the 18 years since the turn of the millennium, global trade flows have trebled from USD 6.2 trillion to a new peak of USD 18.5 trillion in 2018 – with a notable dip following the global financial crisis 10 years ago. This growth would not have been possible without trade finance products which offer liquidity and risk mitigation solutions for importers and exporters, allowing them to transact with confidence across borders. However, trade and the trade environment continue to evolve through shifting trade corridors, changes in product mix, evolving client needs, increased price sensitivity and accelerating technological enhancements. In response, banks and the products they offer will need to continue to evolve to stay relevant.

Given the significance, complexity and evolving nature of trade finance, regulators and banks need up-to-date information on the risk profile of trade finance and export finance products. While some may have questioned the need for a yearly report when the guidelines of Basel II were defined in 2011, maintaining up-to-date information is important to inform future regulation, and the interpretation and clarification of current regulation. 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.

To meet industry needs, the ICC Trade Register is evolving with each report. The 2018 edition includes a number of methodological and scope improvements to continue to provide a data-rich tool to support decisions:

- We have increased the scope of the Register to include payables finance, one of the major techniques of Supply Chain Finance (SCF), to reflect the shift in trade financing from documentary trade towards open account terms

- We have increased the scope of the Register to include non-OECD ECAs for export finance products, to reflect increasing importance of non-OECD Arrangement ECAs

- We have improved the data collection methodology to include validation at point

of data entry, improving the usability and integrity of underlying data set.

The 2018 Trade Register Report, which contains data up until the end of 2017, reinforces the themes of previous years; notably, that trade finance and export finance products continue to present low credit risk. 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 remained the same as, or lower than, in 2016 (Figure 2). Expected losses have shown marginal increases driven by increases in the Loss Given Default (LGD). This view is consistent when viewed from either an obligor-weighted or exposure-weighted perspective.

Conversely, export finance has seen increases in default rates and associated expected losses in 2017 (Figure 3). 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 Africa, North America and Central/South America seeing increases in default rates while the Middle East saw declines (even though it retains the highest default rates across 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 (SCF) data set, in its inaugural year, is relatively small; however, initial indications are that the probability of default for SCF is comparable to other short-term trade finance products. 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.

ICC is continuing to enhance the scope, improve the data quality and refine the methodology of the Trade Register. In the

coming years, we plan to use the new data collection methodology, implemented in 2018, to enhance data integration with GCD. The data will be a better input for LGD risk models to inform regulation, capital allocation and accounting practices. We will also look to expand the scope of the Trade Register to reflect open account products better – a journey that started with the inclusion of

payables finance, a major technique of supply chain finance, in this year's report. 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 | Export Finance |
| --- | --- |
| • Import Letters of Credit (Import L/C) <br><br> • Export Letters of Credit (Export L/C) <br><br> • Loans for Import/Export <br><br> • Performance Guarantees and Standby Letters of Credit <br><br> • Supply Chain Finance (Payables Finance) - **NEW** | • Products 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, 2013–2017**



Source: ICC Trade Register 2018

1.   See Figure 52 in Appendix A for detailed trade finance and export finance product definitions

## Export finance, 2013–2017

| | Exposure-Weighted | Obligor-Weighted | Transaction-Weighted |
|---|---|---|---|
| | Default rate (%) | Default rate (%) | Default rate (%) |
| Corporate | 0.55% / 0.68% | 1.03% / 1.13% | 0.84% / 0.97% |
| Financial Institutions | 1.17% / 1.21% | 1.37% / 1.37% | 1.36% / 1.41% |
| Sovereign | 0.14% / 0.28% | 0.43% / 0.44% | 0.30% / 0.34% |
| Specialised | 0.43% / 0.39% | 0.60% / 0.53% | 0.67% / 0.62% |
| Total | 0.50% / 0.58% | 0.95% / 0.99% | 0.82% / 0.88% |
| | 2007-2016 / 2007-2017 | 2007-2016 / 2007-2017 | 2007-2016 / 2007-2017 |
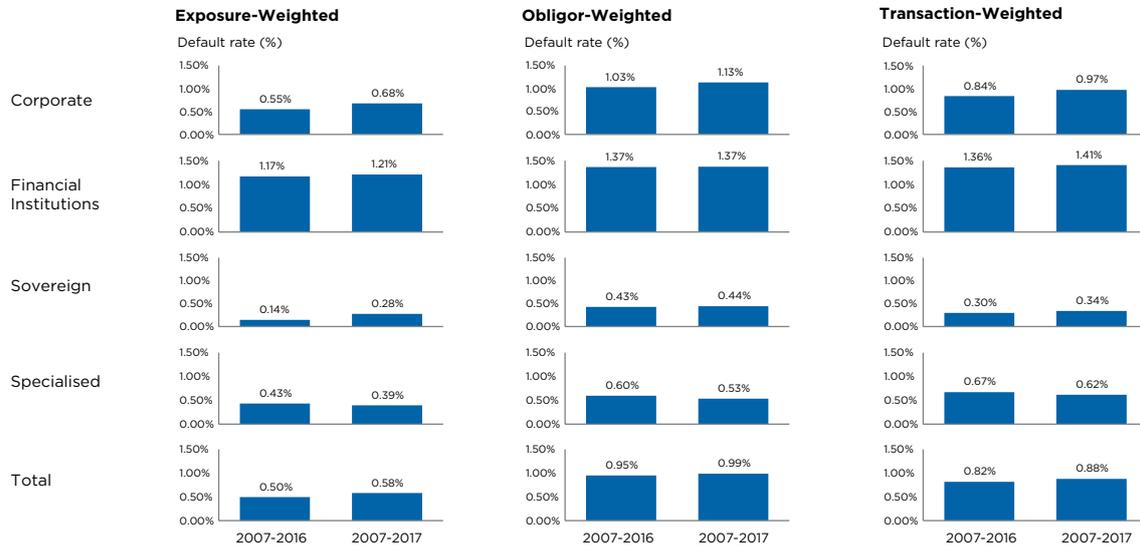
Source: ICC Trade Register 2018

Figure 3:

## Summary of expected loss findings for trade finance, 2008-2017, and export finance, 2007-2017

| Product/Asset Class | | Default Rate | LGD | Expected Loss |
|---|---|---|---|---|
| Trade Finance[1] | Import L/Cs | 0.37% / 0.07% | 29.9% | 0.11% / 0.02% |
| | Export L/Cs | 0.05% / 0.03% | 36.3% | 0.02% / 0.01% |
| | Loans for Import/Export | 0.76% / 0.19% | 36.2% | 0.27% / 0.07% |
| | Performance Guarantees | 0.47% / 0.25% | 3.1%[3] | 0.01% / 0.01% |
| Export Finance[2] | Completed/accelerated and partial completed | 0.99% / 0.58% | 6.2% | 0.06% / 0.04% |
| | Completed and customer completed | 0.99% / 0.58% | 3.6% | 0.04% / 0.02% |

■ Obligor Weighted    ■ Exposure Weighted

1. 2008-2017 2. 2007-2017 3. Accounts for 7.6% observed 'Claim Rate' (i.e. applying CCF to Loss Given Defaults)
Source: ICC Trade Register 2018

# THE FULL REPORT

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 and export finance transactions. The 2018 edition also begins the important process of expanding to cover high-growth SCF to address open account trade that now covers about 80% of merchandise trade flows.[2] 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 ICC Banking Commission has prepared this Report in collaboration with Global Credit Data (GCD) and Boston Consulting Group (BCG).

The Report draws on data from 25 trade finance and export finance banks[3] – a representative set of global trade finance and export finance transactions that amount to 24 million transactions in total and exposures in excess of USD 12 trillion. The combination of import letters of credit, export letters of credit, and performance guarantee exposures in the Trade Register for 2018 is equal to approximately 35% of global traditional trade finance flows.

The data is analysed by GCD, BCG, member bank specialists, and the ICC Banking Commission project team and senior project advisors. The methodology used is consistent with the approach used in past years and, over time, the Trade Register Project 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 Project 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 improve the understanding of trade finance and export finance, its importance

to global trade and its highly effective global risk mitigation capability to a broad range of parties

- 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 continues to reflect the finding from past years: Trade finance and export finance continue to represent a low-risk asset class.

## Report scope

- To continue its relevance and reliability, the scope of the ICC Trade Register Project 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 Approach. The 2018 edition has been expanded to include SCF payables finance to reflect its increasing importance in global trade

- Gathering representative data from a multitude of banks internationally is complex and, as a result, the Trade Register and Report focus on 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) – new in 2018.

  – Definitions of these products are outlined in Appendix A.

  – Export finance

- 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 2018, the project team has extended data collection to non-OECD Export Credit Agency-backed export finance

- For the purpose of the Report, export finance transactions are split into four asset categories (Sovereign, Financial Institutions, Corporate and Specialised; see appendix for definitions)

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. Significant improvements to data collection and methodology include:

- Probability of Default (PD) reported at an obligor level and can be compared with default rates at both exposure level and transaction level

- Loss Given Default (LGD) figures calculated per product group based on transactional data

- Increased insight into Exposure at Default (EAD), with further work be done to derive robust results for all products.

An important step in the 2018 Report has been to migrate to a new data collection methodology. This does not constitute a change to the analytical methodology or

definitions, but it has significantly improved the speed and efficacy of the data cleaning process and the integrity of the underlying data set. We observed a low response rate to many of the optional fields in this new interface; in particular, reducing the quantity of data for calculating CCFs for performance guarantees. To produce results that are as reliable and comparable as possible, we will look to increase response rates next year.

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, a number of limitations 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 erroneous 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

2. BCG Trade Finance Model
3. 22 member banks contributed to the Report in 2018, but the ICC Trade Register contains data from 25 banks in total across all years

Reported Expected Loss (EL) figures are consistent with the underlying Basel methodology for the calculation of EL across various asset classes (e.g. Sovereign, Bank, Corporates). In comparisons with other Basel-compliant data, care is needed when comparing the different weighting methods of obligor, transaction and volume. While exposure volume-weighted data gives a good insight into the effects of defaults and losses on the banking industry, the most common default rates, 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

There has been continued discussion during the last year 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. The ICC Trade Register is looking at ways to anonymise and return the detailed data to contributors to allow them to create customised reference data sets for their own purposes.

The ICC Trade Register is based on data pooled voluntarily by banks active in trade finance. Given that these banks represent a large proportion of global trade finance business, the data sets are globally representative, but may not be applicable to specific countries or regions.

# TRADE FINANCE: STATE OF THE MARKET

## Market trends in trade finance

**BCG's perspective, using the ICC Global Survey on trade finance and supply chain finance 2018, the BCG/SWIFT 'Pulse Check' on digital in trade finance and the BCG trade finance model**

### Market growth is strong but at risk

Growth in the (nominal) value of international trade continues to recover after its recent decline. In 2018 it reached a new peak of USD 18.5 trillion, surpassing the previous peak of USD 18.2 trillion in 2014 (Figure 4). This underpinned trade finance revenues which

grew to USD 48 billion in 2018 – still lower than their 2013 peak of USD 51 billion but 20% higher than 2016 (Figure 5).

Protectionism and political uncertainty may put continued growth at risk. And, even without these specific threats, a downturn in several major economies may be likely in the medium term, though the precise timing and nature are unpredictable. (See the feature article: Responding to a market downturn in trade on page 22). This uncertainty is reflected in a range of possible scenarios for future growth in global trade flows, with possible growth rates ranging from 0.8% to 5.6% per year over the next 10 years.

Figure 4:
**BCG trade finance Model Estimated Global Trade Flows, 2000-2027**
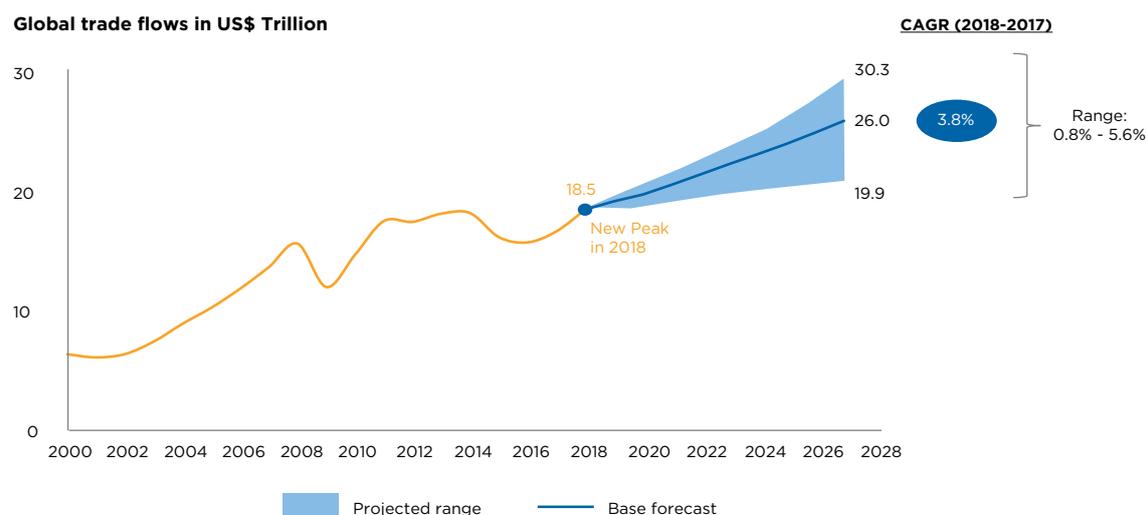


Note: Forecasts are at constant FX rates
Source: BCG Trade Finance Model 2018

### Product mix continues to shift to non-documentary trade

As observed in previous years, open account transactions continue to gain market share but traditional documentary trade finance remains material to the financing of international trade. The number of MT400, MT700 and MT760 transactions fell by 5% to 5.8 million in 2018. However, this decline in the number of transactions was offset by an increased average revenue per transaction, and total documentary trade revenues increased to USD 27 billion.

Companies trading on open account terms often use Supply Chain Finance (SCF) techniques to help with working capital management. SCF continues to grow strongly. In the ICC 2018 survey, banks processing the largest volumes of trade finance report more than 30% growth in SCF over the last year. BCG estimates that total open account trade revenues grew by 12% to USD 21 billion in 2018, representing 44% of total trade finance revenues.

Open account trade is expected to grow to more than 50% of revenues by 2021, driven in large part by banks expanding SCF solutions from large corporates to the mid-market corporates and non-banks also offering SCF. There may be a slight reversal in this mix if there is a market downturn, as demand for risk mitigating documentary trade products tends to be countercyclical. In addition, increased accessibility of traditional trade finance to SMEs may also drive an uptick in documentary trade revenues.

Figure 5:
**BCG trade finance model estimated global trade finance revenues, 2010-2027**



**Global Trade Finance Revenues US$ Billion**

**CAGR (2018-2027)**

2.7%  Range: 0.3% - 4.5%

Projected range     Base forecast
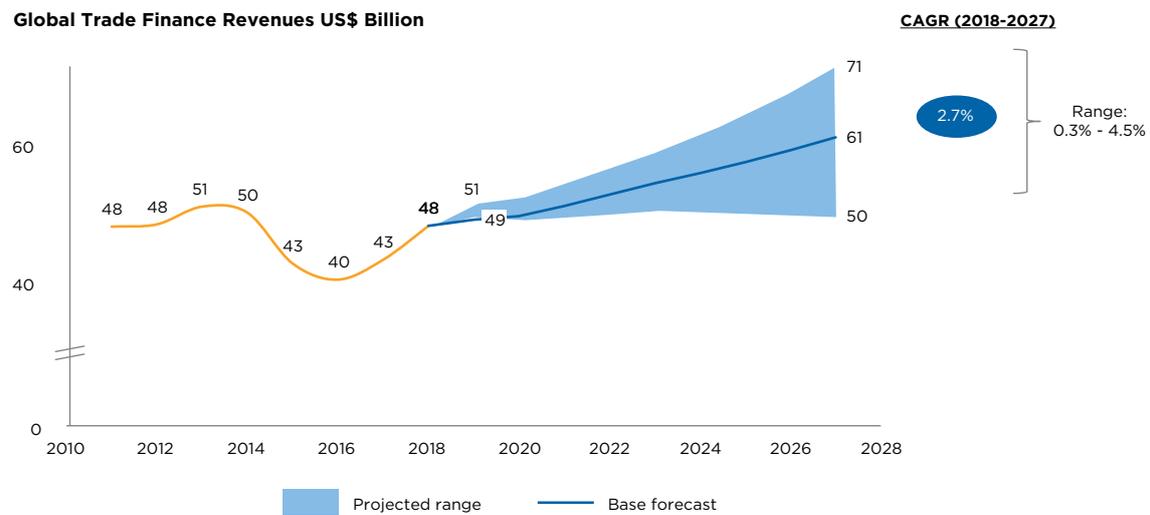
Note: Forecasts are at constant FX rates
Source: BCG trade finance Model 2018

**Banks continue to invest in digital**
Banks are investing in digital technology to improve the quality and efficiency of their operations. A recent BCG pulse check in collaboration with SWIFT indicated that 60% of banks have already invested in digitising channels and a further 30% are planning to do so in the next 12 months. Around 40% are already investing in Artificial Intelligence / Robotic Process Automation solutions in trade finance, with a further 25% planning to do so over the next 12 months.

Digitisation provides a wealth of opportunities for improving client propositions and driving down costs. It also gives banks the ability to improve risk management, as explained in the feature: What the digitisation of trade finance means for risk on page 24.

Despite these investments, the use of advanced digital technology remains low across the industry. The ICC Trade Finance Survey found that only 24% of banks use electronic documentation, and the same percentage use Optical Character Recognition (OCR). 52% of respondents indicate that no solution has been implemented to paper-based processes in document verification, a time-consuming and costly process.

However, 80% of respondents to the BCG pulse check believe there is very high or high opportunity in implementing OCR solutions for digitising trade documents, and 90% feel the same about digitising at the point of entry into digitised channels. This suggests that the adoption gap is driven by implementation challenges rather than scepticism.

In the last 12 months, banks have also been working on more disruptive innovations. For example, 30% of banks now report that they are investing in Distributed Ledger Technology (DLT) for trade and a further 48% plan to do so in the next 12 months. Much of the work is being conducted collaboratively across multi-bank ecosystems or consortia, such as with Voltron and Marco Polo. Cooperation is essential for these technologies, which rely on scale and network effects, to be commercially viable.

## Sustainability is becoming a goal in trade finance

Sustainable trade finance is defined as trade finance practices and techniques that support trade transactions to minimise negative impact and create environmental, social, and economic benefits for all stakeholders involved.[4] While many trade finance professionals believe sustainability matters, there is little evidence of it being incorporated into decision-making.

The first barrier to adoption is a lack of clarity. There is no repository of simple sustainability criteria for each commodity. Where criteria exist, they are complex and can involve dozens of certifications which are often incomplete or unreliable. A second barrier is the difficulty of accessing relevant information and then acquiring certification. A final barrier is the lack of commercial incentives (e.g. prudential, regulatory, or fiscal) for funding sustainable goods vs. non-sustainable goods.

Nevertheless, sustainable trade finance is gaining some traction. Several banks are assessing a supplier's general sustainability credentials as a proxy for the individual transactions, and support suppliers to move towards trading more sustainable goods.

Some banks are starting to rely on verified sourcing areas. Most importantly, the World Bank has developed a tool, the Global Map of Environmental and Social Risks in Agro-Commodity Production (GMAP), which is being piloted in combination with the ITC Standards Map. When a banker keys in a commodity and country combination, it returns the major risks (slavery, deforestation, etc.) and their severity. GMAP then suggests certifications (e.g. FSC) that cover against these risks. The banker can decide to proceed with the trade, not to proceed, or to proceed under the condition that the relevant standard or certificate is produced.

While more work is needed to develop single source sustainability information with a set of standards or certificates that signal that risks have been mitigated, some progress has been made. For example, OpenSC is a digital venture by BCG Digital Ventures and World Wildlife Fund which traces any food commodity using the Internet of Things (IoT) and blockchain. It has been piloted with wild shrimp and toothfish in Australia.

Progressive trade liberalisation since World War II and strong global economic growth have made trade finance a profitable business over the past 60 years. Both these underlying trends are at risk – perhaps not over the long run, but in the near to medium term. Banks can do little to affect these political and economic matters, but they can innovate to make their products more suited to the future and their operations more efficient and sustainable – and most are working to do so, even if progress remains outwardly slow.

**FEATURE:**

# Trends in Supply Chain Finance

**Christian Hausherr, Chairman of Global Supply Chain Finance Forum, ICC**

**Use of supply chain finance is growing and the Trade Register has expanded its scope to reflect this.**

Supply Chain Finance (SCF) is a key group of techniques to optimise the management of the working capital invested in supply chain processes and transactions.[5] While the exact scope of SCF remains a topic of debate, the existing ICC Standard Definitions for SCF defines eight techniques within the umbrella of SCF: receivables discounting; forfaiting; factoring; payables finance; loan/advance against receivables; distributor finance; loan/advance against Inventory; and pre-shipment finance. These techniques are nearly exclusively – but not always – applied to open account trade.

As explored in the 'State of the market' article on page 15, in recent years we have seen a global rise in open account trade and SCF – driven by the expansion of SCF to mid-market corporates (beyond large corporates) and investors beginning to see SCF as an investable

asset class. The global financial crisis shone a new spotlight on this method of financing and its value for effective working capital management. A combination of these factors has prompted increased attention in SCF from banks, accountants, rating firms and regulators.

Given the growing importance of SCF, the ICC Trade Register has expanded its scope to include SCF for the first time in 2018. Within the range of SCF techniques available, a single technique – payables finance – was used as a pilot candidate. This technique is a buyer-led programme in which suppliers can access finance through receivables purchase.[6] The choice of payables finance as the pilot technique reflects the interest the industry is taking in this SCF technique and the debate around the inherent credit risk that is seen behind it.

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Figure 6:

**Overview of payables finance SCF technique[7]**
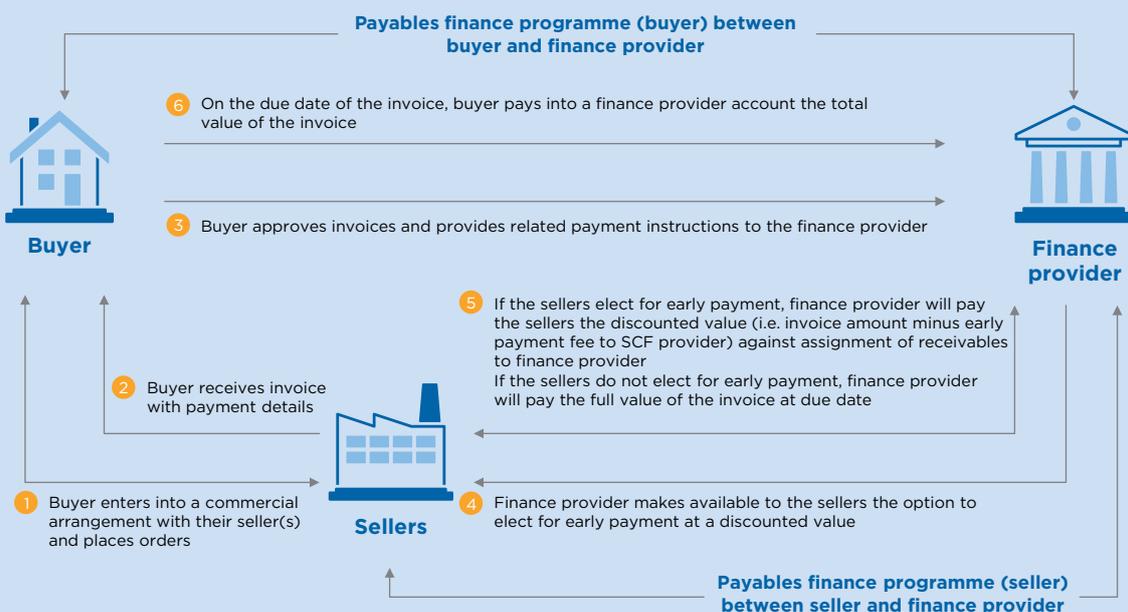


Source: Global SCF Forum

**Supply chain finance introduces new challenges, but progress is being made.**
While there are well-established procedures and rules for managing risk for traditional trade finance business, SCF is often seen as the new kid on the block when it comes to standard questions on, for example, Know Your Customer (KYC) or accounting. The overarching challenge for some SCF techniques, such as payables finance, is that they do not exactly fit into the patterns of traditional trade finance business that are experienced when following standard routines like KYC, deal structuring, credit modelling, and other procedures for existing trade finance products that have evolved over many years.

As a consequence, pockets of activity are developing across the industry to address gaps. For example, the challenges related to KYC in open account transactions are being tackled by adding an appendix on open account in the ICC BAFT Wolfsberg trade finance Principles.[8]

A particular challenge for SCF relates to accounting policies, which have been thrown into the spotlight by the high-profile financial issues of Abengoa in 2015 and the collapse of Carillion in 2018. The ratings agency Moody's published a report suggesting that Abengoa's reverse factoring had contributed to its pre-insolvency proceedings. These assertions were so serious that in a recent article ITFA commented on how it had to convince the ratings agency not to reclassify such programmes from trade payables to bank debt – a measure that would have had a major impact on the industry.

While this measure was not taken, there is still a significant focus on providing accounting guidance for SCF. For example, The Global Supply Chain Finance Forum[9] has recently initiated a working group to provide more clarity and guidance on this matter, due to its pivotal effect on the balance sheet of corporates using payables finance. A further work stream is looking at the possibility of formulating common rules for SCF techniques. This area is likely to receive ongoing attention and the trade register will provide invaluable data to give banks, investors and regulators visibility of the credit risks in SCF.

5.  See 'Standard Definitions for Techniques of Supply Chain Finance, 2016'
6.  See 'Standard Definitions for Techniques of Supply Chain Finance, 2016'
7.  Reproduced from diagram in 'Standard Definitions for Techniques of Supply Chain Finance, 2016'
8.  See Trade Finance Principles-Wolfsberg Group, ICC and BAFT, 2019 at https://www.wolfsberg-principles.com/publications/wolfsberg-standards
9.  See http://supplychainfinanceforum.org/

# Trends in ECAs

**Henri d'Ambrières,** Project Advisor, Medium-to-Long Term Trade Register
**Jonathan Joseph-Horne**, Global Export Finance Committee, ICC Banking Commission

When the export finance side of the Trade Register was launched, it focused on data relating to OECD Arrangement ECAs. At the time these ECAs formed a large portion of the global export finance market, but the market has evolved in recent years as has the important role that non-OECD Arrangement ECAs play in today's market. For the first time, the 2018 Trade Register Report includes eight new globally important ECAs, such as ABGF, ECGC, ECIC, Exiar, Mexim and Sinosure, and several Multilateral Credit Insurers. The ICC banking commission welcomes this addition and the positive impact it has on the relevance of the Trade Register.

The expansion of the export finance side of the Trade Register comes at an interesting time in the export finance industry. While many commentators continue to see overall robust deal flow, the landscape continues to evolve under the surface. ECA-backed export finance continues to be a product with strong relevance across economic cycles and continues to be well used by borrowers in developing and developed markets. For example, TXF reports that Europe was the largest borrower region for ECA finance in 2018, overtaking the Middle East that had held the top position for a few years.

The continued and consistent growth in the use of ECA finance in Africa is a welcome development, where it now matches levels seen in regions such as Asia Pacific and Latin America. Sector-wise, we continue to see strong focus in the oil & gas and power sectors, and infrastructure and transportation (especially cruise ships) remain strong users of ECA finance. The US dollar continues to be the most-often used currency, but Euro financing has grown significantly. While local currency borrowing is growing, it remains low overall.

One area of focus for the industry is the role of the OECD Arrangement and how to demonstrate and potentially enhance its relevance while ECA activity is growing outside the arrangement. In addition, a successor to the arrangement might emerge if the discussions maintained by 18 countries, led by China and the USA, at the IWG (International Working Group), are conclusive. Introducing new ECAs into the Trade Register, which do not participate in the OECD arrangement, may be useful.

To extend some of the recognition granted to the cover issued by OECD ECAs to other ECAs, regulators may appreciate the inclusion of data covering non-OECD ECAs and agencies in this Report, as they did for OECD ECAs in the past.

The need for a yearly report has been questioned as the guidelines of Basel III were defined in 2011 and the Finalization Report (d-424) published in 2017 does not affect the treatment of export credits. However, regulation may evolve, as could the interpretation and clarification of current regulation, and export finance as an asset class for participants and investors is new to the industry. These reasons make an annual Trade Register Report highly relevant. Keeping the analysis up-to-date ensures its ongoing relevance as a reference for the industry and its stakeholders. As has been seen recently, some regulators are discussing whether credit insurance complies with all the criteria of credit risk mitigants under the Basel regulations. Furthermore, discussion paper d-425, issued by the Basel Committee in 2017, on the treatment of sovereign risks, may have severe impacts on export finance if loans in currencies other than the domestic currency of the ECA and cover issued by delegated entities are penalised.

If the Basel Committee approves these rules, which is not certain, a regularly updated Trade Register would provide very useful input to support further analysis on the topic.

Turning to the future of the Trade Register, another extension to consider is to include loans covered by private insurers, which are increasingly active players for medium- and long-term finance, if sufficient data is available.

Finally, the links between the Trade Register and the ICC Global Export Finance Committee continue to strengthen.

The Global Export Finance Committee grew out of the efforts back in 2013 to include export finance in the Trade Register. Since this separate committee was formed in 2015, its membership has grown and the topics it covers have expanded. As participants in the export finance side of the Trade Register and the number of agencies grow, it will expand the breadth and depth of the market coverage.

# Responding to a market downturn in trade

**Sukand Ramachandran**, Partner, Boston Consulting Group
**Ravi Hanspal**, Project Leader, Boston Consulting Group
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The next economic downturn is always on its way. The only questions are when it will arrive and what form it will take. Businesses need to be prepared. Since the precise timing and nature of the downturn are unknown, preparations must be thoughtful and, for now, scenario-based. Businesses need to understand how they will be affected by various scenarios and how they will mitigate the losses (or even capitalise on opportunities) if they eventuate. And they don't only need to understand: they must be practically prepared to act.

These general principles are especially applicable to trade finance businesses, whose global reach exposes them to economic trends around the world but also gives them portfolio advantages in mitigating the impact of regional downturns.

Ten years on from the global financial crisis, negative pressures are building again. Some economies, such as the US, are hitting capacity constraints, potentially slowing growth and increasing inflationary pressures. Higher interest rates – the standard response to inflation – could further constrain consumption and investment, especially given already high levels of corporate and sovereign debt around the world. Global growth is also likely to slow from any return to trade protectionism. And, while interest rates are still at historically low levels, asset bubbles are always a risk.

Any downturn, however uncertain the cause or effect may be, is likely to have implications for trade finance:

- **Slowed growth in underlying trade:** A downturn may not reduce trade volumes, but it would slow the rate of growth. The reduction could be more pronounced in emerging economies, where consumption and investment are more volatile

- **Shifts in trade patterns:** Global economic downturns do not affect all countries equally, which is likely to be reflected in a shifting pattern of international trade

- **Shift in product mix:** Documentary trade is likely to increase as the economy worsens and demand for risk mitigation products increases. Demand for supply chain finance may also increase as corporates seek to support their (struggling) supply chains without taking on direct bank debt

- **Credit and fraud risk:** While trade finance is a relatively low-risk line of business, default rates are likely to rise in certain pockets of trade. Fraud also typically increases in times of stress

- **Supply and liquidity:** Increased credit risk may drive some banks to retrench, as in 2009, reducing liquidity in trade finance. However, demand for trade finance products is countercyclical and some players may decide to increase their allocation of capital and other resources to it, increasing competition in certain segments

- **Pricing:** Prices are likely to rise marginally as banks look to maintain margins in the face of increased risk and decreased liquidity

Despite such disruptions, trade finance is likely to be more robust than many other banking businesses, and generally suffers relatively low default rates. From 2008 to 2017, for example, the global default rate for documentary trade was only 6bps. Even at the peak of the financial crisis, the default rate on documentary trade rose to just 23bps.

**Exposure-weighted default rates for L/Cs, 2008-2017**

**Default rate by exposure, %**



■ Import L/Cs  ■ Export L/Cs
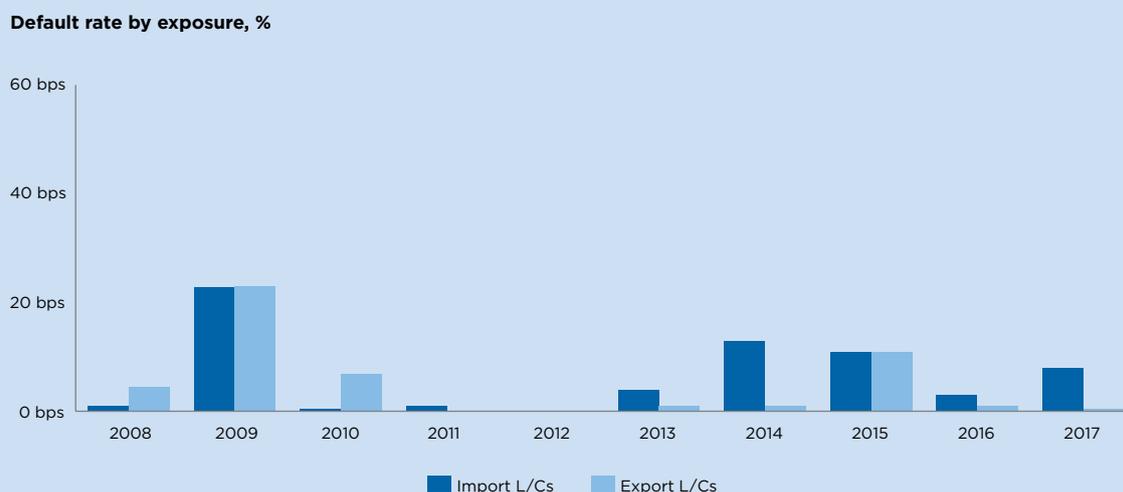
There is no cause for complacency though, as past crises are a poor guide to future crises. Even when the impact of a downturn is modest overall, it can be severe in places, causing material losses for exposed banks. Preparing for the next downturn requires trade finance businesses to think not in general terms, but of scenarios, and in which some scenarios hit them harder than others, and require responses tailored to their distinctive features.

A scenario-based approach to planning for a downturn has four steps:

**Step 1 – Develop scenarios for different kinds of downturn and outcomes for trade finance:** Scenarios provide structure to uncertainty by defining discrete visions of the future. These visions can be settled upon using a variety of approaches, including war gaming (running multiple simulations taking different decisions to define a set of possible outcomes) and a morphological approach (identifying representative options for major known dimensions of uncertainty, and develop scenarios by combining them). Whichever approach is taken, develop no more than five–eight scenarios that are sufficiently different and cover a broad spectrum of possibilities.

**Step 2 – Identify level of exposure for each scenario:** To understand the impact of any scenario on a bank's portfolios, the scenarios need to stress-test customer operations and financing structures, and their competitors. Identifying the exposure in each scenario will allow banks to prioritise risks for mitigation.

**Step 3 – Build resilience:** Banks can take no-regret measures to build the resilience required to withstand most types of downturn. These include setting up an early warning system based on customer-level data analytics, investing in advanced decision-making capabilities, taking a view on strategic priority customers and trade corridors, investing in systems agility (to allow rapid customer migrations and product changes), and reviewing exposures and pricing (especially long-term instruments such as performance guarantees).

**Step 4 – Design scenario-based action plans:** Banks must then design action plans for each scenario, aiming to differentiate responses and identify pockets of opportunity to grow or strengthen business. To develop effective scenario-contingent action plans, banks must do at least six things:

• over index on the front line to understand client issues and to deliver agreed interventions

- segment customers to develop a differentiated strategy for each scenario

- review product use and capital allocation across clients and trade corridors

- review pricing, differentiating by client type

- explore non-pricing risk-return levers such as increasing customer loyalty by helping them through the downturn

- review counterparty risk, with a view to ending relationships with second-tier banks where returns to do not justify potential risk.

Downturns always present risks for trade finance providers. But a scenario-based approach to preparation, combined with advanced data collection and analysis, can help banks to quickly identify trouble brewing and take steps to minimise losses. Banks that are well prepared may be able to turn the disruption of a downturn into an opportunity, and emerge in a stronger competitive position when better conditions return.

**FEATURE:**

# What the digitisation of trade means for risk

**Sukand Ramachandran**, Partner, Boston Consulting Group
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Trade finance is a notoriously laborious business. The end-to-end process can involve up to 20 documents and more than 100 pages, with the same data being entered several times along the way. Everyone involved in a transaction – exporters, importers, shipping companies and banks – spends hours, or even days, finding facts and filling in forms.

This explains the industry enthusiasm for a digital revolution in trade finance. Technologies such as optical character recognition (OCR), robotic process automation (RPA) and the Internet of Things (IoT) promise to radically streamline trade finance processes. And distributed ledger technology and Industry 4.0 could redefine operational processes altogether. The potential cost savings are estimated at between USD 2.5 billion and USD 6.0 billion globally, 20-35% of the total.

But operating efficiency is not the only gain on offer from digital technology. It also promises to materially improve risk management in trade finance. Banks will be better able to assess credit risk, identify fraud, and avoid human error, including those

that can result in fines or other legal action, such as violating international sanctions. The savings from improved risk management are harder to predict than operational savings, as they vary with the underlying economic environment.

Digital technology brings many benefits, but it will not be a risk management panacea. In the process of reducing old risks, new ones will emerge – and banks will need to become adept at minimising them. While digital can help banks to manage and respond to credit risk, the underlying credit risk will remain virtually unchanged given it depends primarily on the obligor's credit status and regulatory parameters.

Trade finance is, in essence, a credit risk business. By intermediating payments and providing guarantees, banks take on the importers' risk of non-payment and exporters' risk of non-delivery. Accurate risk assessment becomes fundamental to commercial success. Not only does it help banks avoid losses but it can allow them to compete better against less accurate rival businesses.

Digital technology promises to significantly improve the accuracy of credit risk assessment. The vast expansion of data it makes available at low cost is part of the reason. Digitised financial accounts, online financial journalism, online customer feedback and social media are turning even geographically remote firms into open books that can be read by machines rather than people. AI technologies such as machine learning can detect patterns in this data that no human could see and then translate them into credit risk scores.

This automation of credit risk assessment will be especially beneficial to small companies engaged in international trade. The cost to banks of the currently laborious risk management process is such a high percentage of their small transactions that they are often priced out of using trade finance. They must bear the risk themselves and face insolvency if things go wrong, or forgo the international business. By reducing the cost of risk assessment, digitisation will introduce many small firms to trade finance, promoting not only those firms' interests but global economic growth.

In the process of taking on the credit risks of importers and exporters, banks incur other risks. The cumbersome paper-based process increases the chance of human error – lost documents, incorrect data entry, or oversights in document checking – which can lead not only to losses on the transactions but to material remediation costs. Banks are also at risk of being defrauded by counterparties making false representations. And, perhaps most importantly, they face considerable regulatory risk: that is, the chance of fines and reputational damage attendant on failing to comply with financial regulations.

Know your customer (KYC) and Know your customer's supplier (KYCS) regulations are universal, but they are more demanding in trade finance given that the importer or exporter is often not a direct customer of the bank. Similarly, anti-money laundering regulation gets greater traction in trade finance given the potential for international transactions to be used for this purpose. A bank that processes a transaction with inaccurate information about the price, volume, nature or quality of the goods involved could inadvertently be helping to launder the proceeds of crime. And, of course, within banking, trade finance is vulnerable to violating international trade or investment sanctions.

As with credit risk, these operational, fraud and regulatory risks can be reduced by digital technology:

- Increased data availability allows banks to create a more complete picture of customers and their suppliers, helping them to detect fraud (for example, by spotting duplicate payments) and to screen for connections to sanctioned parties

- Combining the wealth of new data with RPA and AI allows banks to automate parts of the screening process. Not only does this minimise human error but, by cutting process costs, it also allows more checks per transaction and reduced operational losses. We estimate that, using currently available data, AI transaction screening can reduce false positives referred for further investigation by 20-50%, focusing efforts on truly high-risk transactions

- AI-based tools can also empower bank staff when manual intervention is needed. For example, AI can mimic human decision making for price/volume/weight verification processes and highlight suspicious transactions. This technology is already available. For example, Singaporean bank OCBC uses AI to analyse satellite imagery for collateral risk assessment.[10] They can quickly assess the physical status of collateral (such as the volume of oil in storage tanks) even when the assets are remote

- Distributed ledger technology (DLT) may also reduce the potential for fraud by providing decentralised and immutable transaction conformation. It is too early to know what form this technology will take in a commercial sense, but several consortia, such as Hyperledger (a blockchain platform to increase traceability for the diamond and jewellery industry), are exploring its potential

In October 2018 we undertook a Pulse Check of digital in trade finance with SWIFT. All the banks we surveyed agree on the goal of using digital technology to transform their trade finance operations, including risk management. However, they are following different paths to that destination, and their allocation of investment varies across three clusters of technology:

- **Value drivers:** Technologies such as digital channels, OCR and RPA, which digitise internal processes by replacing paper with digital alternatives. These are already delivering material value for many banks

- **Nascent unicorns:** Promising but less mature technologies that face barriers to implementation but have demonstrated clear potential in at-scale proofs of concept. Examples include AI and the IoT, plus some trade-specific product innovations such as BPO

- **Wild cards:** Technologies that are unproven at scale and depend on coordination and network effects yet could, nevertheless, transform trade finance... or turn out to be an empty promise. Examples are DLT and digital ecosystems

Despite these investments, the digital revolution in trade finance is proving to be a slow one. The lack of common legal, operational and data standards around the world (e.g. electronic bills of lading, BPOs, and DLT-based transactions need to legally recognised across markets to be of true value), combined with IT limitations and market fragmentation, create barriers to realising the promise of digital technology.

The technology, even if implemented, would not solve all the problems of risk management. For, while reducing old risks, it introduces new ones. Most obviously, it increases cyber risk. Less obviously, while reducing the chance of human error, it increases the risk of machine error. AI can do things that humans can't, but it still makes errors that no human would. Prudent managers today ask themselves: How much do I trust the competence and integrity of my staff? In future, they will also have to ask how much they trust their AI. Finally, there are new third-party risks where banks involved in consortia or ecosystems become reliant on - for example - the compliance processes of third parties.

To optimise digital risk management, banks will need staff who understand the strengths and weaknesses of digital technology, and new procedures for managing the risks that arise from it.

Digital trade finance will be quicker, cheaper and safer. But achieving it will take time.

10. Global Trade Review, 'Exclusive: OCBC to use deep learning satellite technology in oil financing', January 2018

# ANALYSIS OF TRADE FINANCE

## Overview of findings

The ICC Trade Register's filtered data set has expanded to contain over USD 12 trillion of exposures (Figure 8), and 24 million transactions (Figure 10) from 2008–2017 across the following trade finance products: import L/Cs, export L/Cs, loans for import/export, and performance guarantees. The data is used to carry out detailed analysis of the credit risk characteristics of these products.

This year's findings reinforce the findings of previous years: trade finance products present banks with low levels of credit risk.

Default rates from 2008–2017 are low across all products and all regions. Weighted by obligors, default rates are 0.37% for import L/Cs, 0.05% for export L/Cs, 0.76% for loans for import/export, and 0.47% for performance guarantees (Figure 9). As discussed later in this Report, these results extend the decline seen in 2016 into 2017, with particular reductions in obligor-weighted default rates for import L/Cs and loans for import/export. Many factors contribute to this result, but they may reflect continued strong, synchronised GDP growth in 2017 and the general de-risking approach taken by banks with regards to their balance sheets.

Figure 8:

### Total exposure and default rate by exposure, by product, 2008-2017

|  | Total Exposure (USD K) | Defaulting Exposure (USD K) | Exposure-weighted default rate (%) |
|---|---|---|---|
| Import L/C | 2,829,524,561 | 2,040,686 | 0.07% |
| Export L/C | 1,677,581,599 | 496,472 | 0.03% |
| Loans for Import/Export | 5,767,651,190 | 11,048,204 | 0.19% |
| Performance Guarantees | 2,163,013,401 | 5,314,511 | 0.25% |

Figure 9:

### Total obligors and default rate by obligor, by product, 2008-2017

|  | Total Obligors | Defaulting Obligors | Obligor-weighted default rate (%) |
|---|---|---|---|
| Import L/C | 226,488 | 840 | 0.37% |
| Export L/C | 151,454 | 70 | 0.05% |
| Loans for Import/Export | 292,922 | 2,215 | 0.76% |
| Performance Guarantees | 347,289 | 1,615 | 0.47% |

Figure 10:

### Total transactions and default rate by transaction, by product, 2008-2017

|  | Total Transactions | Defaulting Transactions | Transaction-weighted default rate (%) |
|---|---|---|---|
| Import L/C | 5,860,900 | 6,561 | 0.11% |
| Export L/C | 2,494,437 | 217 | 0.01% |
| Loans for Import/Export | 12,087,631 | 27,350 | 0.23% |
| Performance Guarantees | 3,473,197 | 5,894 | 0.17% |

From 2008–2017, Loss Given Default (LGD) rates are 29.9% for import L/Cs, 36.3% for export L/Cs, and 35.2% for loans for import/export. For performance guarantees the LGD is 41.3%, but in practice this is 3.1% when factoring in the low claim rate and negligible losses as a consequence.

An important observation is that time to recovery is much shorter for trade finance products – six months or less on average – compared with over one year for other asset classes (Figure 11). This is due to the inherent characteristics of trade finance products and the underlying collateral, and helps drive low LGD values for trade finance products.

Figure 11:

**Comparison of trade finance to other asset classes, 2008-2017**

| Product/Asset Class | Obligor-Weighted Default Rate | Loss Given Default | Obligor-Weighted Expected Loss | Time to Recovery |
|---|---|---|---|---|
| Import LC | 0.37% | 30% | 0.11% | 184 |
| Export LC | 0.05% | 36% | 0.02% | 111 |
| Loans for Import/Export | 0.76% | 36% | 0.27% | 123 |
| Performance Guarantees | 0.47% | 3%[1] | 0.01% | 61 |
| SME | 1.62% | 27% | 0.44% | 393 |
| Banks & FIs | 0.25% | 28% | 0.07% | 427 |
| Commodities Finance | 0.68% | 24% | 0.16% | 350 |

■ Trade Finance    ■ Other Asset Classes
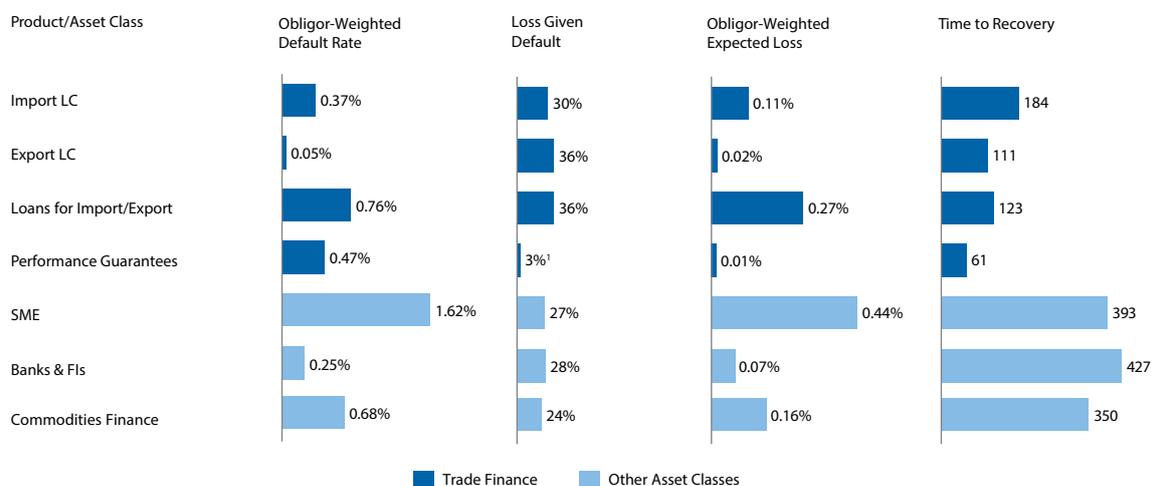
1. Accounts for 7.6% observed 'Claim Rate', using 7.6% claim rate value as determined in 2017 report. 2. Exposure LGD for trade products, obligor-weighted for other asset classes
   Note: LGD = [1-Recovery Rate] + [Cost of Recovery] + [Time to Recovery][Discount on recoveries].
   Source: ICC Trade Register 2018

Some care is needed when making comparisons between trade finance and other asset classes. While the comparison in the 2018 Trade Register Report is done at an obligor level, which is more comparable than the previously used exposure level comparison, the data comes from separate pools, and the underlying methodology varies somewhat. (See Benchmarking: Comparison of trade finance to other asset classes in Appendix A for further details). Nonetheless, the comparison provides a helpful reference point for contextualising the findings of the Trade Register.

Low LGDs and default rates result in low obligor-weighted expected losses for trade finance products. ELs are 0.11% for import L/Cs, 0.02% for export L/Cs, and 0.27% for loans for import/export and 0.01% for performance guarantees. These compare

favourably to obligor-weighted ELs of 0.44% for SME, 0.07% for banks and financial institutions and 0.16% for commodities finance (Figure 11).

Figure 12 shows the exposure-weighted default rate, LGD and Expected Loss by product. These ELs are 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 in line with the values in the 2017 Report.

As expected, exposure-weighted ELs are lower than obligor-weighted ELs driven by the higher default rates when weighting by obligors rather than exposures. To see why this is logical it is worth noting that the obligor-weighted default rate 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. Meanwhile, exposure-weighted and transaction-weighted default rates are measured at the transaction level and are counted as a default only when a specific transaction defaults – see Appendix A for full definitions. Based on these definitions it is mathematically likely that obligor-weighted default rates will typically exceed the

exposure-weighted and transaction-weighted rates.

Figure 12:

**Overview of exposure-weighted default rate, LGD and expected loss by product, 2008-2017**

| | Exposure-weighted Default Rate | Exposure at Default | LGD | Expected Loss |
|---|---|---|---|---|
| Import L/C | 0.07% | 100.0% | 29.9% | 0.02% |
| Export L/C | 0.03% | 100.0% | 36.3% | 0.01% |
| Loans for Import/Export | 0.19% | 100.0% | 36.2% | 0.07% |
| Performance Guarantees (Applying CCF to EAD) | 0.25% | 7.6% | 41.3% | 0.01% |
| Performance Guarantees (Applying CCF to LGD) | 0.25% | 100.0% | 3.1% | 0.01% |

Figure 13:

**Overview of obligor-weighted default rate, LGD and expected loss by product, 2008-2017**

| | Obligor-weighted Default Rate | Exposure at Default | LGD[11] | Expected Loss[12] |
|---|---|---|---|---|
| Import L/C | 0.37% | 100.0% | 29.9% | 0.11% |
| Export L/C | 0.05% | 100.0% | 36.3% | 0.02% |
| Loans for Import/Export | 0.76% | 100.0% | 36.2% | 0.27% |
| Performance Guarantees (Applying CCF to EAD) | 0.47% | 7.6% | 41.3% | 0.01% |
| Performance Guarantees (Applying CCF to LGD) | 0.47% | 100.0% | 3.1% | 0.01% |

As discussed in last year's report, it is worth noting that the Credit Conversion Factor (CCF) for letters of credit (L/C) and performance guarantees are 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. This may also be

interpreted to mean that for an L/C and a Guarantee of USD 100 each, one would 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 that) the 20% CCF applicable to L/Cs, the 3.1% LGD reported for performance guarantees with a notional value of 100

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11. These numbers are exposure-weighted, as per Figure 8. See Appendix A, Report Limitations, for further details.
12. Calculation of obligor-weighted expected loss uses exposure-weighted LGD.

is significantly lower than the 50% CCF banks are required to apply under current regulations. Given that the 50% CCF, when set initially by the Basel committee, made some allowance for maturity, and as maturity is measured independently under the IRB approach, there is a strong case for lowering the CCF to at least 20% for guarantees.

## 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.

By definition, short-term trade finance products have short contractual maturities and are often issued on a transaction-by-transaction basis (i.e. they are not revolving facilities). 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 114 days for import L/Cs, 131 days for export L/Cs, 144 days for loans for import/export, and 607 days for performance guarantees. There is however significant variation in the maturities within products, highlighting that banks are willing to underwrite a wide variety of business, even within individual products (Figure 14).

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, they are used by clients to execute tangible economic projects that could involve trade activity, and their risk is managed by banks in a similar fashion to other short-term trade finance products. For these reasons, performance guarantees are included in the Trade Register.

Figure 14:
**Average maturity by trade finance products, 2008-2017 (days)**

|  | Average Maturity | 10th Percentile | 90th Percentile |
| --- | --- | --- | --- |
| Import L/C | 113.5 | 71.6 | 163.9 |
| Export L/C | 131.4 | 72.7 | 182.2 |
| Loans for Import/Export | 144.0 | 71.8 | 309.4 |
| Performance Guarantees | 607.0 | 320.1 | 864.3 |

## Trends in default rates

Default rates in 2017 were largely the same or lower than those in 2016 across all weighting methodologies. Any decrease extends the trend seen in 2016 and is likely to be driven by a combination of continued strong, synchronised GDP growth and the general de-risking approach taken by banks with regards to their balance sheets.

Obligor-weighted default rates have fallen across all product types in 2017, most notably in loans for import/export. Exposure-weighted default rates have declined across all categories except Import L/Cs, with significant reductions in loans for import/export and performance guarantees. Similarly, default rates weighted by transactions have declined across all products except performance guarantees.

**Summary of default rate trends for trade finance, 2013-2017**
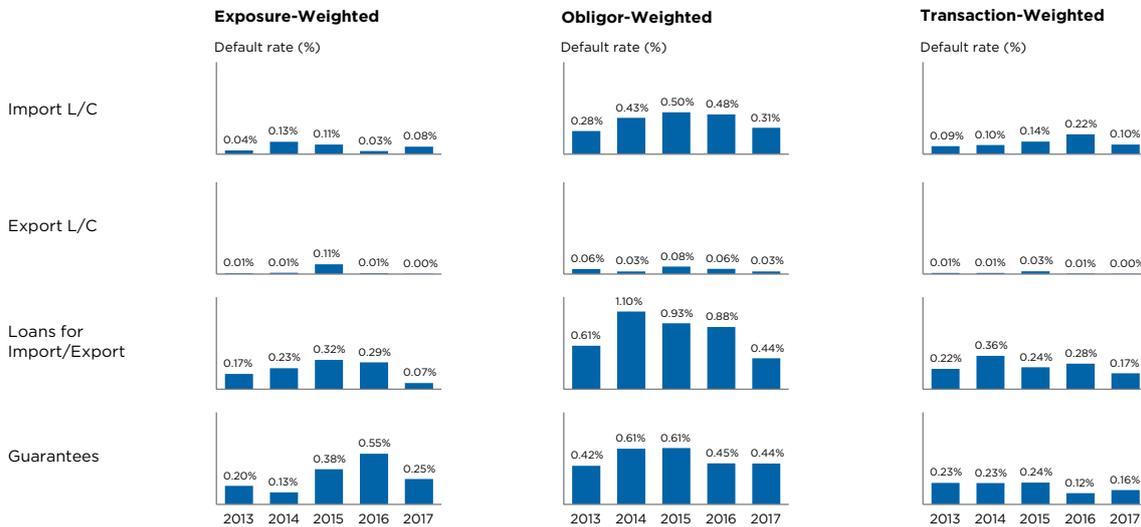


Source: ICC Trade Register 2018

## Import L/Cs

Default rates for import L/Cs have decreased since 2016 when weighted by obligors or transactions but risen when weighted by exposures (Figure 16).

Weighted by obligor, the default rate has decreased from 0.48% to 0.31%, largely driven by APAC and Middle East. This reduction may be attributed to the strong market performance in APAC, and stabilising oil prices that supported

lower defaults in the Middle East in 2017 relative to 2016. When weighted by transactions, the default rate has decreased from 0.22% to 0.10%, largely driven by a correction following an isolated incident in Europe in 2016 which affected a high volume of small transactions.

Weighted by exposure, the default rate has increased from 0.03% to 0.08%. The increase is mostly attributable to Europe and, to a lesser extent, APAC.

Figure 16:

**Import L/Cs default rates by region (weighted), 2013–2017**
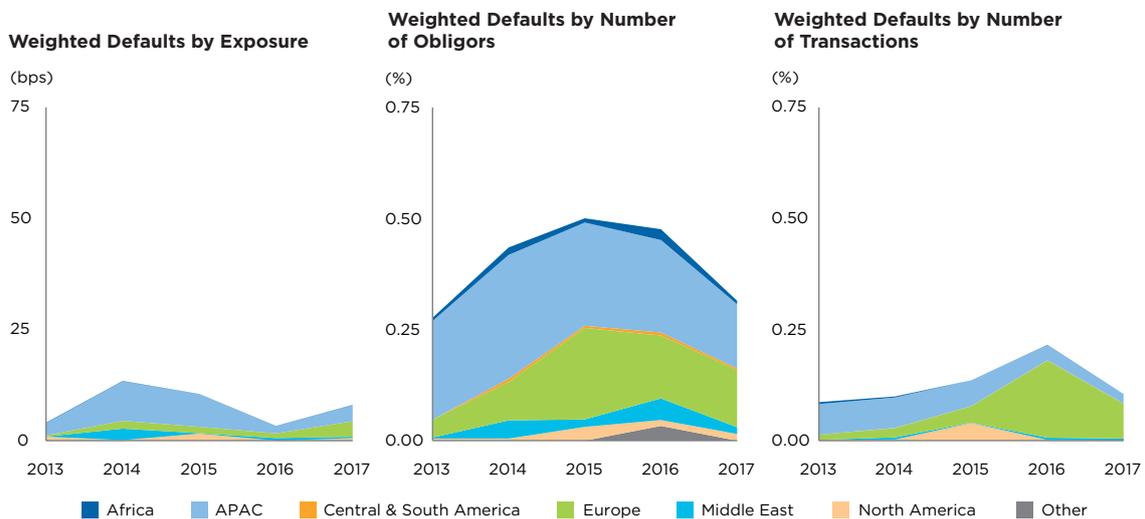


Note: Regions and Countries reflect those of risk holder
Source: ICC Trade Register 2018

Figure 17:

**Import L/Cs default rates by region (absolute), 2013-2017**
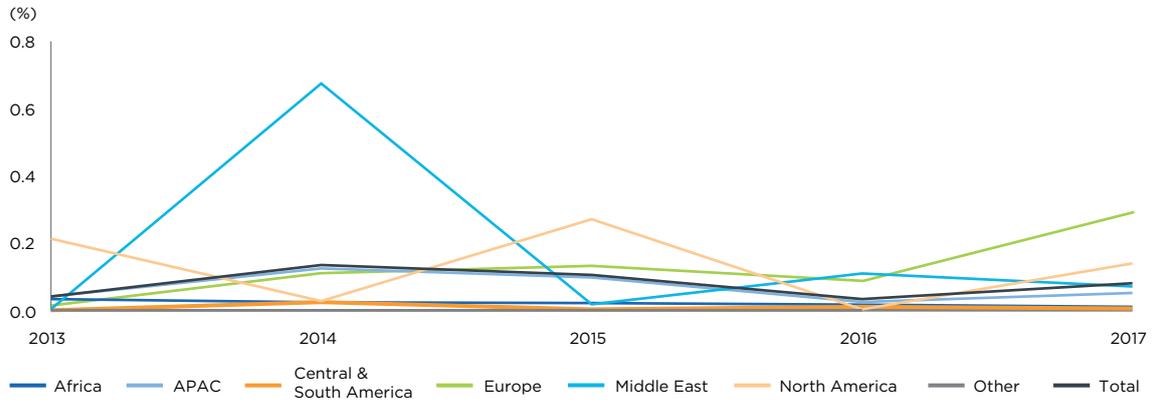
**Defaults by Exposure**

(%)



Note: Regions and Countries reflect those of risk holder
Source: ICC Trade Register 2018

**Defaults by number of Obligors**

(%)



Note: Regions and Countries reflect those of risk holder
Source: ICC Trade Register 2018

**Defaults by number of Transactions**

(%)
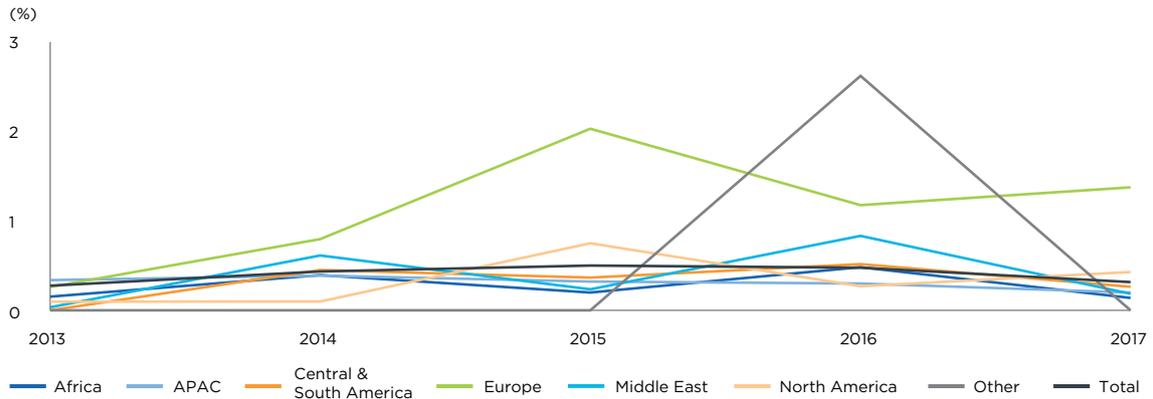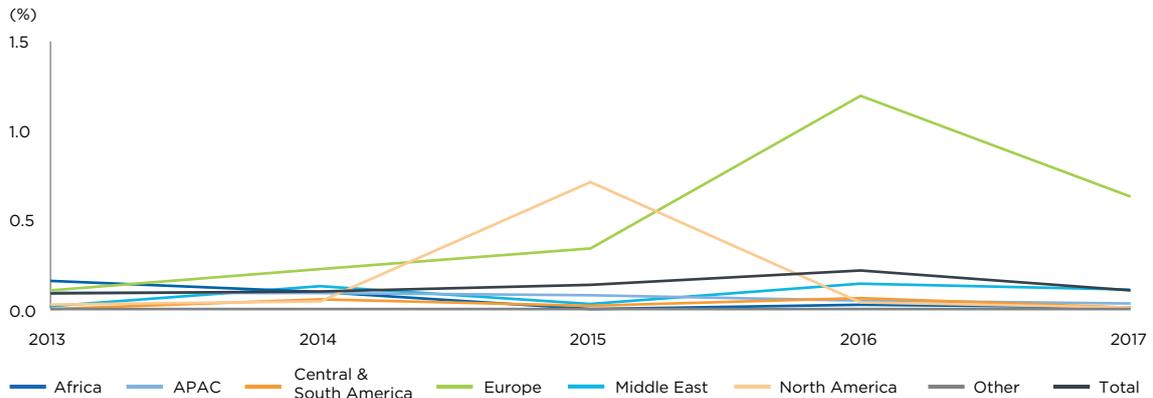


Note: Regions and Countries reflect those of risk holder
Source: ICC Trade Register 2018

**Import L/Cs total and defaulted volumes by region, 2013-2017**
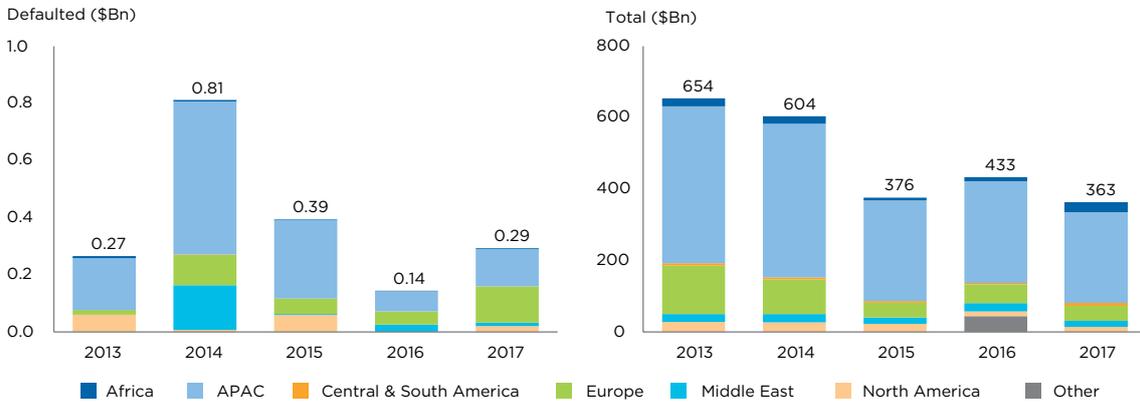
**Exposure**



Note: Regions and Countries reflect those of risk holder
Source: ICC Trade Register 2018

**Obligors**
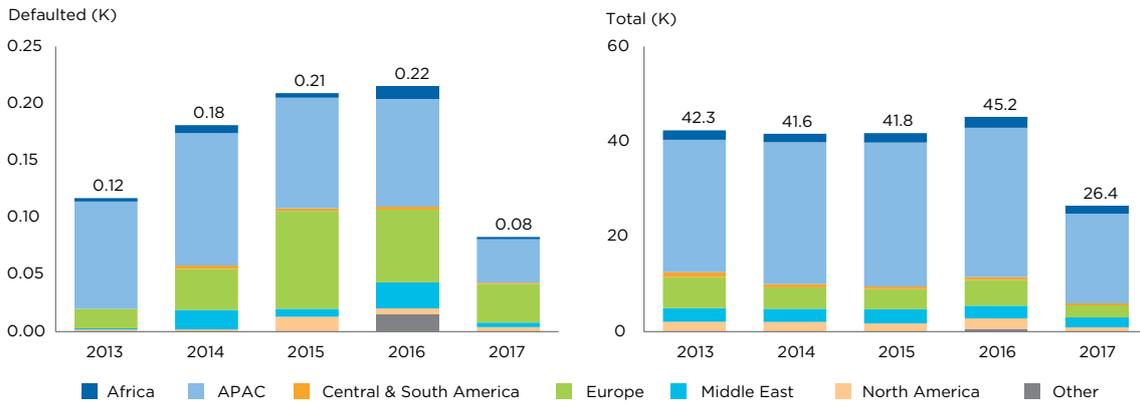


Note: Regions and Countries reflect those of risk holder
Source: ICC Trade Register 2018
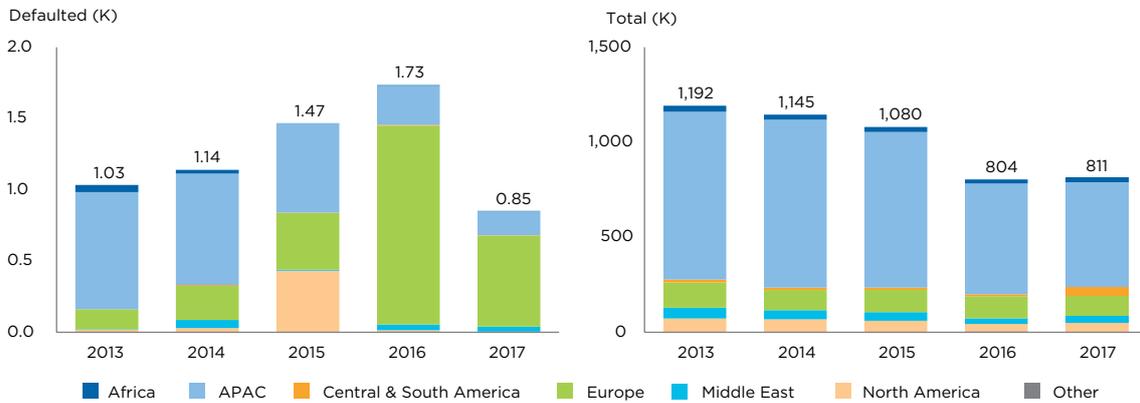
**Transactions**



Note: Regions and Countries reflect those of risk holder
Source: ICC Trade Register 2018

Europe's import L/C default rates diverged across exposures, obligors, and transactions in 2017 (Figure 19). The transaction-weighted default rate has halved to 0.63% in 2017, largely reversing the spike seen in 2016. Meanwhile obligor-weighted default rates have marginally increased to 1.38%, well below the peak of 2.03% in 2015 but still higher than the global average of 0.31%. The exposure-weighted default rate has increased to 0.29% from 0.09% in 2016, higher than the 0.08% global average.

The UK and France are the main contributors to the European default rate trends, with the majority of fluctuations over the past five years driven by relatively few banks and customers.

Figure 19:

**Import L/Cs default rates in Europe (weighted), 2013-2017**

**Weighted Defaults by Exposure**

**Weighted Defaults by Number of Obligors**

**Weighted Defaults by Number of Transactions**



Legend: Spain, France, Germany, United Kingdom, Czech Republic, Switzerland, Other
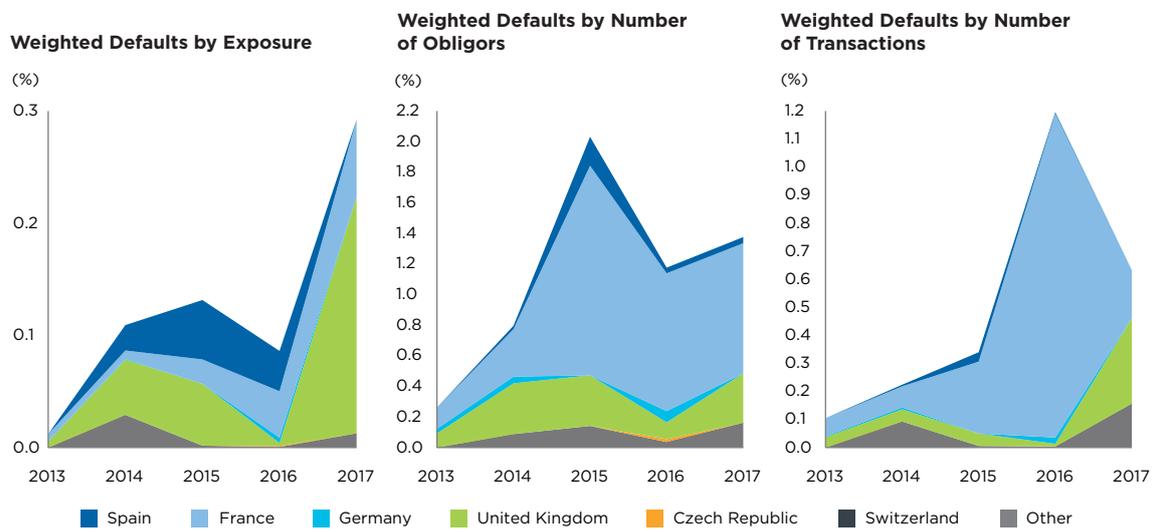
Note: Regions and Countries reflect those of risk holder
Source: ICC Trade Register 2018

**France** has seen some variation across the three measures between 2016 and 2017 (Figure 20). Transaction-weighted default rates have fallen to 0.87% and obligor-related default rates to 3.00%. In contrast, the exposure-weighted default rate increased to 0.77% in 2017 from 0.36% in 2016. This reflects an increase in the average exposure per defaulted obligor, up to USD 1.4 million from USD 0.4 million in 2016; however, it still remains well below the overall average of USD 5.6 million, indicating that defaults tend to come from smaller obligors. Indeed, the majority of defaults in France continued to come from a single bank, driven by a small number of corporates trading in France where several short-term deals took place with counterparties in default as part of a restructuring exercise.

## Figure 20:
### Import L/Cs default rates in France (absolute), 2013-2017

**Exposure-Weighted Defaults**

Default rate (%)



**Obligor-Weighted Defaults**

Default rate (%)



**Transaction-Weighted Defaults**

Default rate (%)



— Default rate (Global)     ■ Default rate (Local)
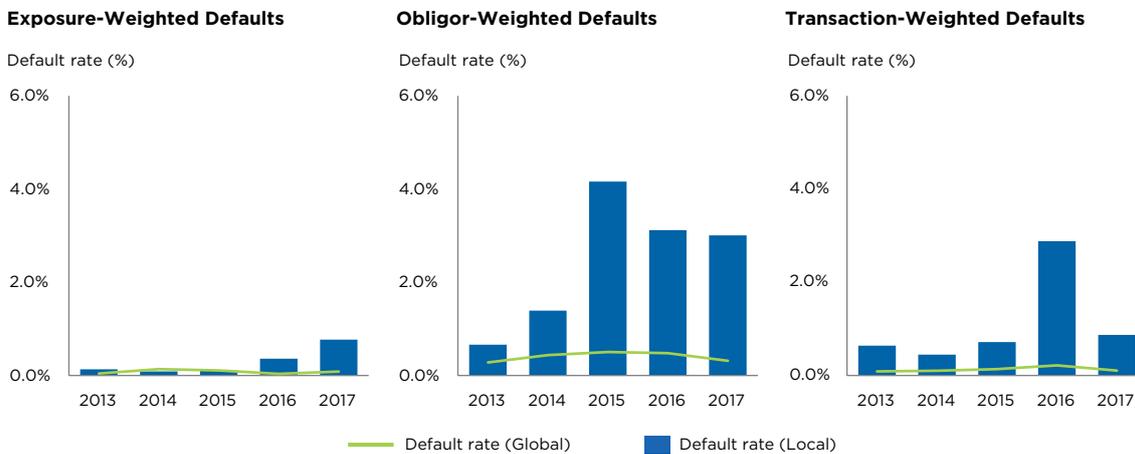
Note: Regions and Countries reflect those of Obligor.
Source: ICC Trade Register 2018

In the **UK**, all three default rate measures for import L/Cs increased. The exposure-weighted default rate increased significantly from 0.01% in 2016 to 0.42% in 2017. Similarly, the transaction-weighted default rate increased from 0.04% to 0.62% in 2017. The UK as a whole saw an increase in exposure per defaulted obligor rise from USD 0.2 million in 2016 to USD 11.4 million in 2017 – a material rise, but still lower than the total UK value of USD 26.8 million per obligor, indicating that smaller obligors continue to pose a higher risk. The increased UK default rates were driven by a single bank that saw a notable increase in defaults and exposure per default in the UK in 2017. It is possible that this was an early indication of more challenging UK trade conditions following the 2016 sterling exchange rate depreciation; however, it may also be a single-year event.

## Figure 21:
### Import L/Cs default rates in UK (absolute), 2013-2017

**Exposure-Weighted Defaults**

Default rate (%)



**Obligor-Weighted Defaults**

Default rate (%)



**Transaction-Weighted Defaults**

Default rate (%)



— Default rate (Global)     ■ Default rate (Local)
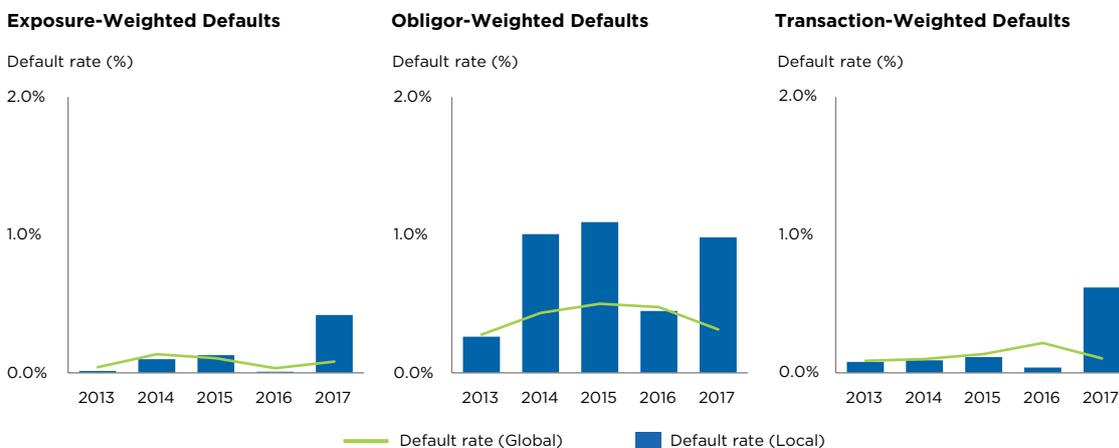
Note: Regions and Countries reflect those of Obligor.
Source: ICC Trade Register 2018

In **APAC**, obligor- and transaction-weighted default rates have decreased while exposure weighted rate has increased (Figure 22). Obligor-weighted defaults continued to fall, from 0.30% in 2016 to 0.20% in 2017, almost half the peak value of 0.39% seen in 2014. This fall was driven by multiple markets, notably Hong Kong and India (Figure 22). Similarly, the transaction-weighted default rate continued a consistent, multi-year downward trend that started in 2013, reaching 0.03% in 2017. Meanwhile, in 2017 the exposure-weighted default rate rose to 0.05% (from 0.02% in 2016), driven by China.

Figure 22:

**Import L/Cs default rates in APAC (weighted), 2013-2017**
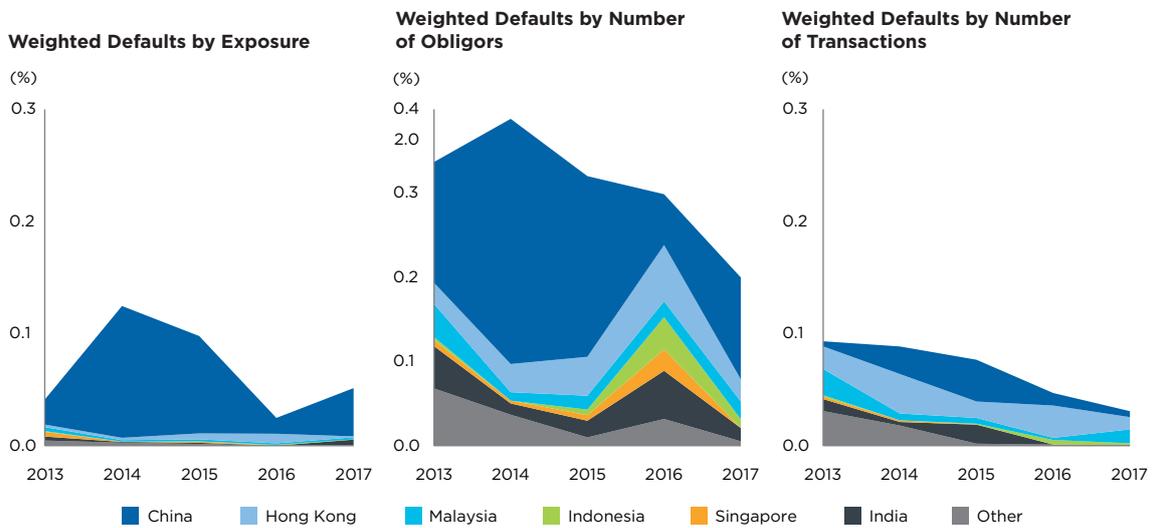


Note: Regions and Countries reflect those of risk holder.
Source: ICC Trade Register 2018

Figure 23:

**Import L/Cs default rates in China (absolute), 2013-2017**
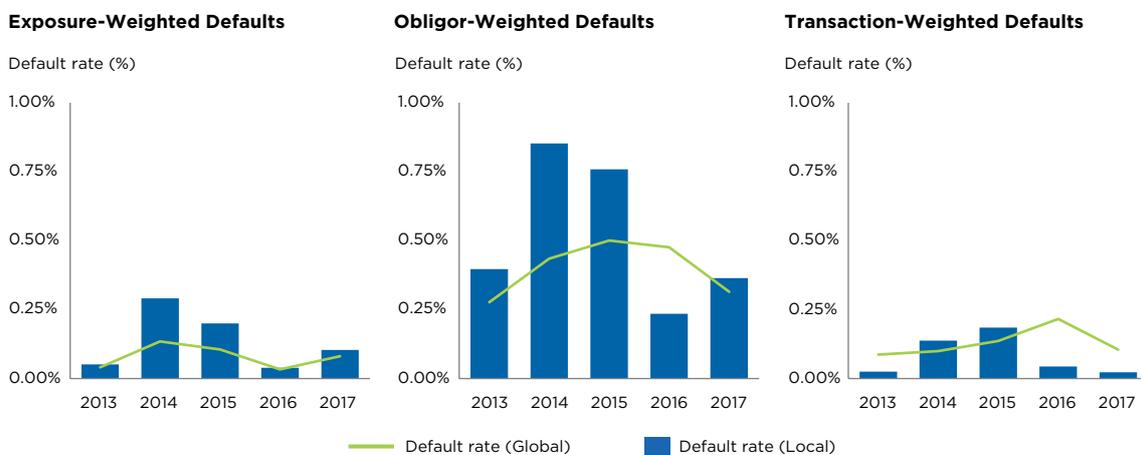


Note: Regions and Countries reflect those of Obligor.
Source: ICC Trade Register 2018

**China** has seen an increase in exposure- and obligor-weighted default rates. The exposure-weighted default rate increased from 0.04% to 0.10%, closely mapping the global average and reflecting China's importance as a driver of the global exposure-weighted value. Meanwhile, the obligor-weighted default rate in China increased from 0.23% to 0.36%, counter to the general decrease seen in the global data but appearing to correct for the very low value seen in 2016. In contrast, transaction-weighted default rates decreased to 0.02%, the lowest value since 2013 and significantly below the global average.

**Import L/Cs default rates in Hong Kong (absolute), 2013-2017**
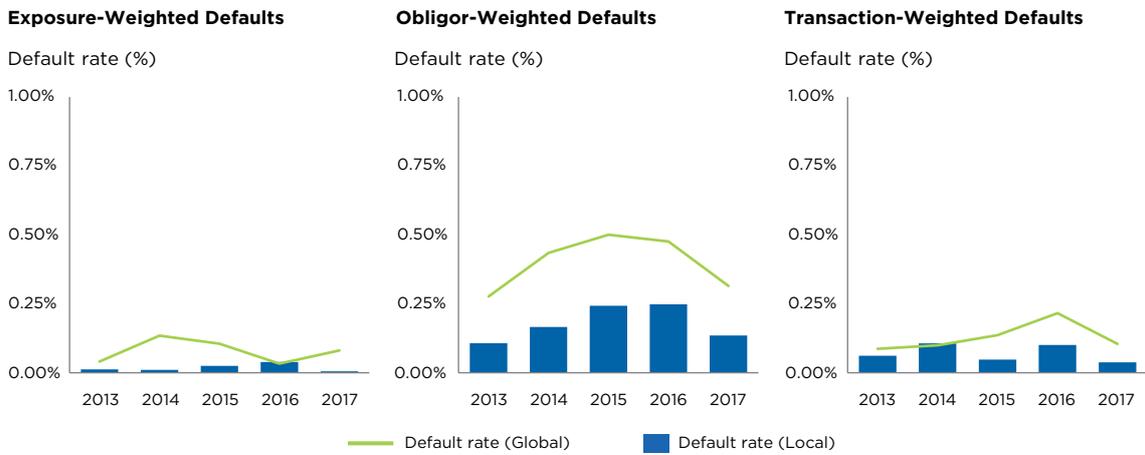


Note: Regions and Countries reflect those of Obligor.  Source: ICC Trade Register 2018

**Hong Kong** continues to see default rates well below the global average, with a decrease in default rates across all three weighting methodologies, possibly reflecting strong local market conditions in 2017. The exposure-weighted default rate decreased to 0.01%, the lowest value since 2013 and significantly below the global average of 0.08%. Further, obligor-weighted default rates decreased to 0.14% and transaction-weighted default rates 0.04% (Figure 24).

**Import L/Cs default rates in Middle East (weighted), 2013-2017**
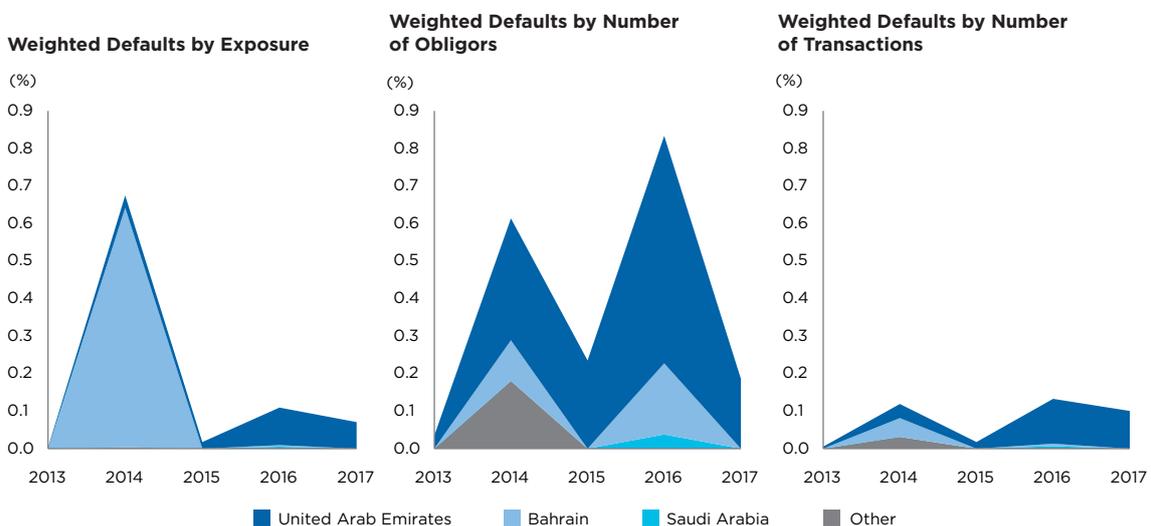


Note: Regions and Countries reflect those of risk holder.  Source: ICC Trade Register 2018

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The **Middle East** has seen a decrease in all of exposure-, obligor-, and transaction-weighted default rates. Obligor-weighted rates have decreased from a spike of 0.83% in 2016 to 0.19% in 2017, lower than the global average of 0.31% (Figure 25). This reduction is representative of similar regional fluctuations in previous years. They may be driven by one-off events within a small number of obligors, or the volatility of oil prices in 2016 and subsequent stabilisation in 2017 may also account for the low rates in 2017. Similarly, the exposure-weighted default rate decreased from 0.11% to 0.07%, while the transaction-weighted default rate decreased from 0.13% to 0.10%.

**Import L/Cs default rates in UAE (absolute), 2013-2017**



**Exposure-Weighted Defaults**

**Obligor-Weighted Defaults**

**Transaction-Weighted Defaults**

Default rate (Global)    Default rate (Local)
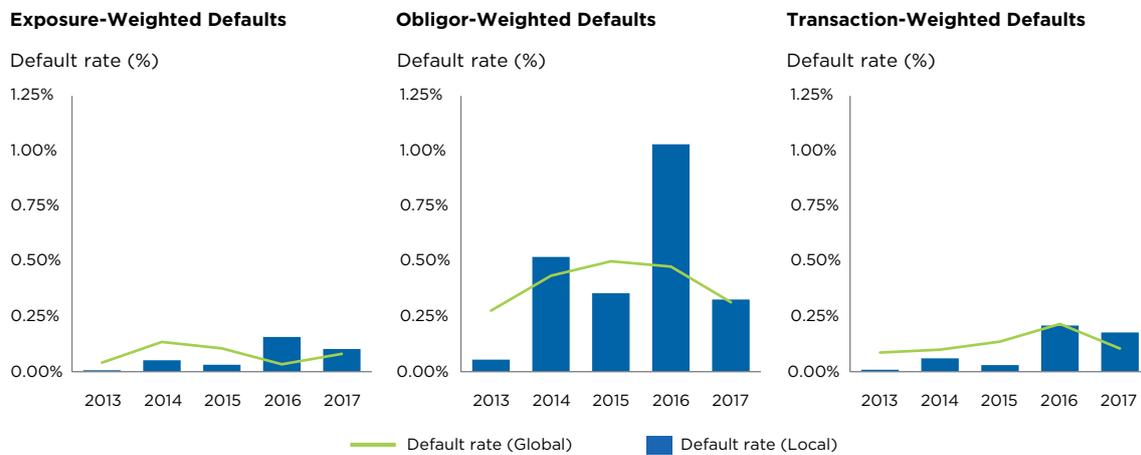
Note: Regions and Countries reflect those of Obligor
Source: ICC Trade Register 2018

The **UAE** is the largest trade location in the Middle East, accounting for 70% of the total import L/C exposures recorded in 2017. It is no surprise that the default rates in UAE reflect substantially the same story as the region as a whole. The exposure-weighted default rate declined to 0.10% from 0.16% in 2016, the obligor-weighted default rate to 0.33% from 1.03% in 2016, and transaction-weighted default rate fell to 0.18% from 0.21% in 2016. These declines may indicate the relative stability of oil prices in 2017, but it is important to note that the absolute number of defaulting obligors remains extremely low (four in 2017) and, as such, default rate fluctuations may be driven by the impact of one-off events within a small data set.

## Confirmed Export L/Cs

Default rates for export L/Cs have continued to decrease in 2017. Exposure- and transaction-weighted default rates fell to <0.01%, and the obligor-weighted default rate fell to 0.03%. These default rates are the lowest of the trade finance products in the Trade Register, with the low relative risk resulting from the fact that the exposure in the case of export L/Cs is to the bank in the importing country rather than to the importing business itself. As such, defaults are extremely unlikely and will only occur when either (a) the bank of the importer defaults, or (b) a technical default occurs.

In 2017, just six defaulting transactions were seen from five defaulting obligors, reflecting the extremely low probability of default for export L/Cs. It is possible that the actual number of obligors defaulting could be fewer than five, given that separate banks may record the same default, which could result in double counting at the obligor level. This possibility is discussed further in Appendix A: Report Limitations.

The largest reduction in default rate is seen in Africa, where the exposure-weighted default rate dropped from 0.59% to 0.05% and the obligor-weighted rate decreased from 0.07% to 0.01%.

However, some caution is needed when interpreting regional data. In the Trade Register, the region reflects the location of the obligor, which is typically the 'region of risk'. For an import L/C, this would be the country of the customer opening the product. However, for an export L/C, the risk lies on the other side of the transaction (i.e. the importer's bank), and hence the region refers to the region of the importer.

Figure 27:

### Export L/Cs default rates by region (weighted), 2013-2017
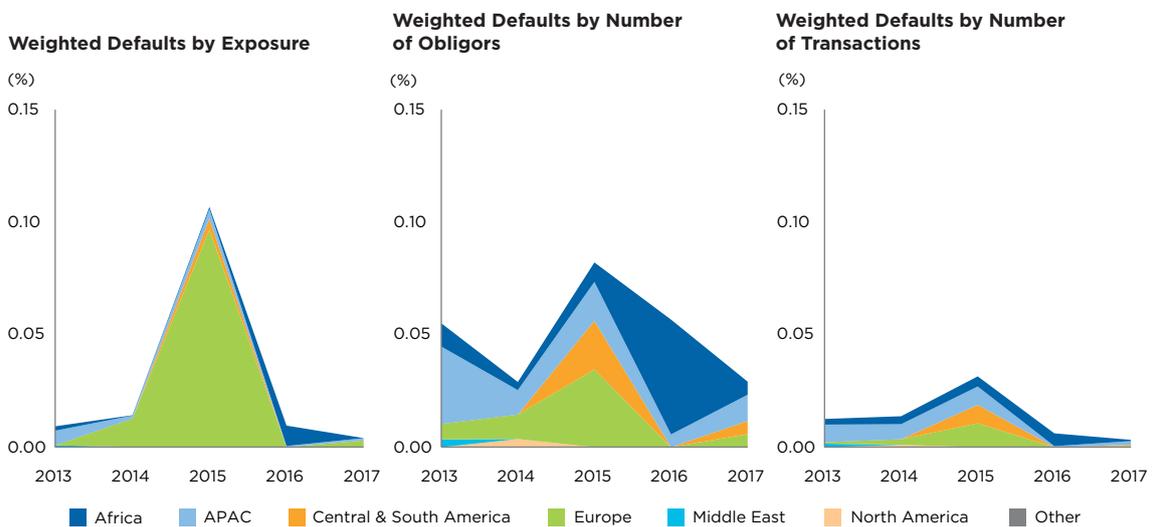


**Weighted Defaults by Exposure**

**Weighted Defaults by Number of Obligors**

**Weighted Defaults by Number of Transactions**

Note: Regions and Countries reflect those of risk holder
Source: ICC Trade Register 2018

Figure 28:

## Export L/Cs default rates by region (absolute), 2013-2017
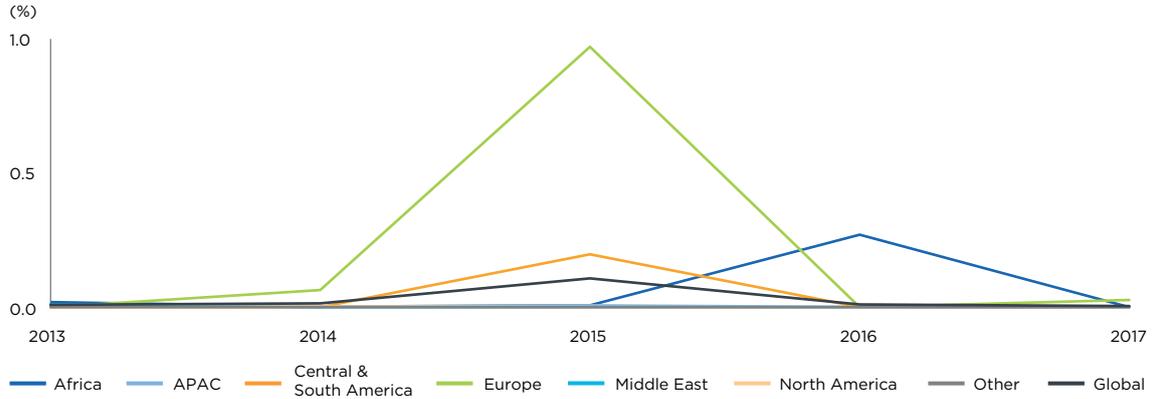
**Defaults by Exposure**

(%)



Note: Regions and Countries reflect those of risk holder
Source: ICC Trade Register 2018

**Defaults by number of Obligors**

(%)



Note: Regions and Countries reflect those of risk holder
Source: ICC Trade Register 2018

**Defaults by number of Transactions**

(%)
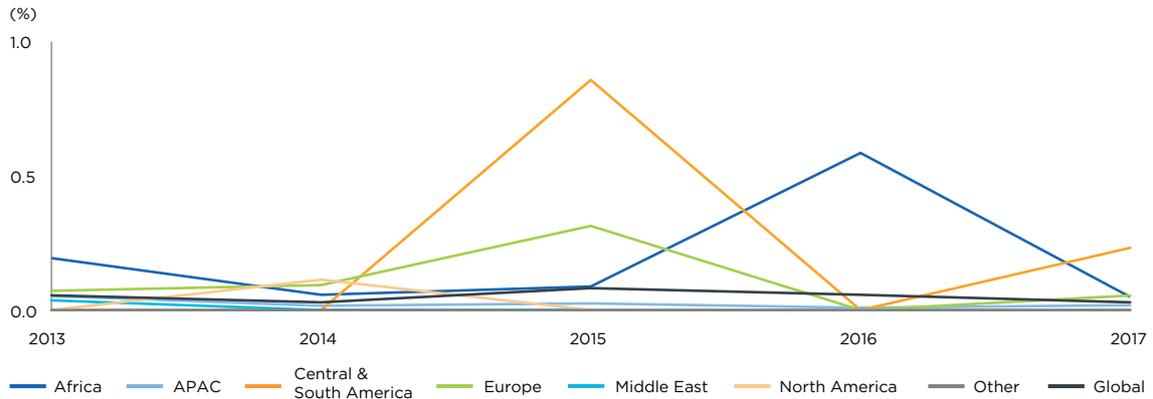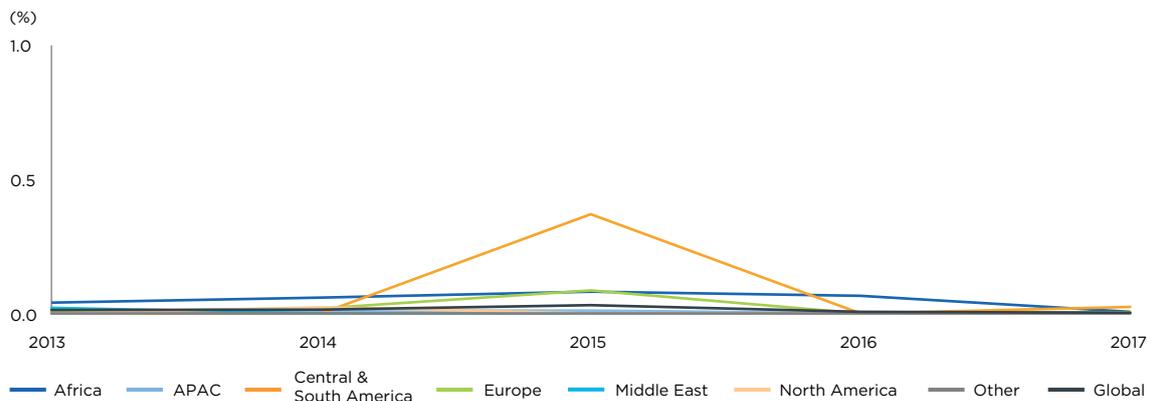


Note: Regions and Countries reflect those of risk holder
Source: ICC Trade Register 2018

## Figure 29:

## Export L/Cs total and defaulted volumes by region, 2013-2017
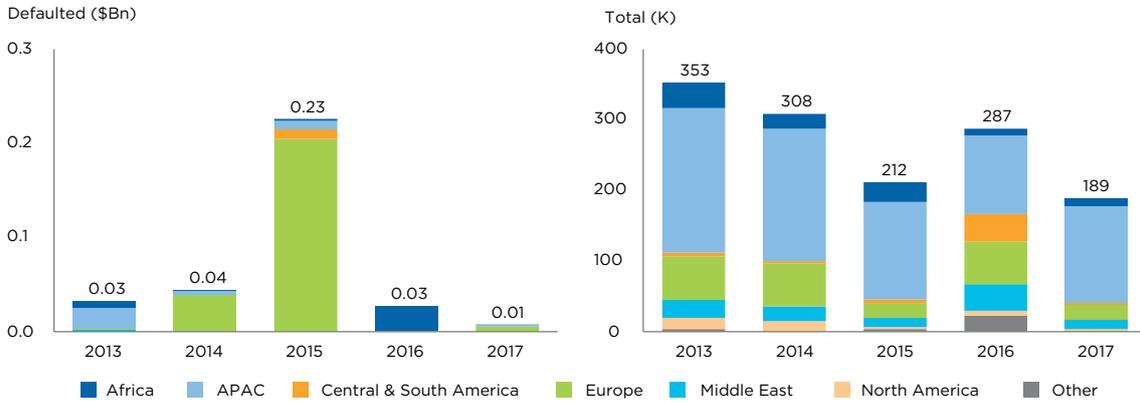
**Exposure**

Defaulted ($Bn)



Total (K)



Note: Regions and Countries reflect those of risk holder
Source: ICC Trade Register 2018

**Obligors**

Defaulted (K)



Total (K)



Note: Regions and Countries reflect those of risk holder
Source: ICC Trade Register 2018

**Transactions**

Defaulted (K)



Total (K)
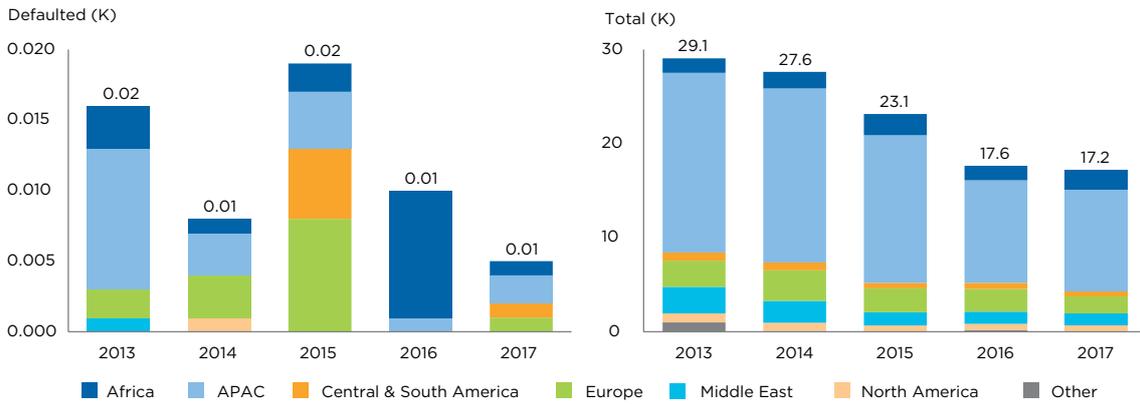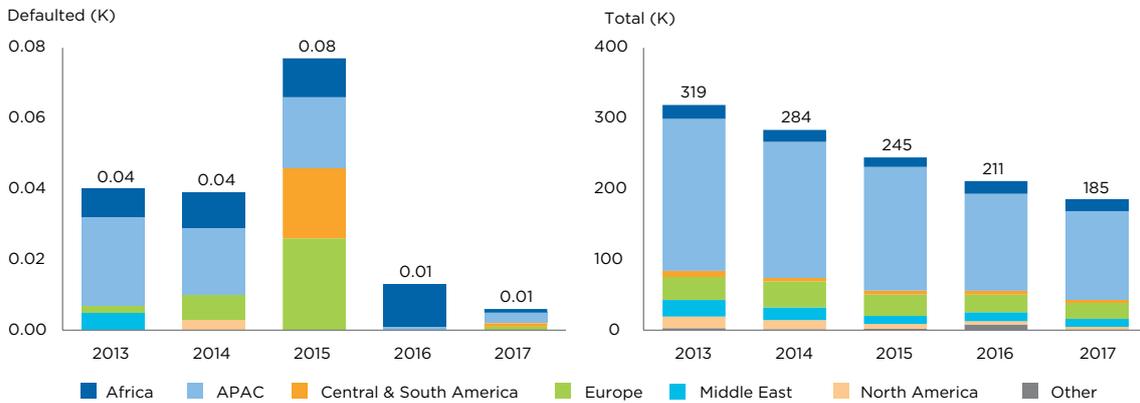


Note: Regions and Countries reflect those of risk holder
Source: ICC Trade Register 2018

## Loans for import/export

In 2018, default rates for loans for import/export declined significantly. Exposure-weighted default rates decreased for the second year in a row to 0.07% (from 0.29% in 2016). Obligor-weighted default rate fell to 0.44% from 0.88%, the third consecutive year of decline since a peak in 2014. Meanwhile the transaction-weighted default rate reversed the increase of 2016.

These decreases are evident across regions. APAC accounts for the majority of decrease from a weighted perspective (Figure 30), but Africa has the largest absolute decline where the exposure-weighted default rate fell from 1.19% in 2016 to 0.13% in 2017 (Figure 31). Many factors contribute to these results, but they may reflect continued strong, synchronised, global GDP growth in 2017 and the general de-risking approach taken by banks with regards to loans on their balance sheets. This combination has led to relatively benign conditions for borrowers and low overall levels of default.

Figure 30:

**Loans for import/export default rates by region (weighted), 2013-2017**
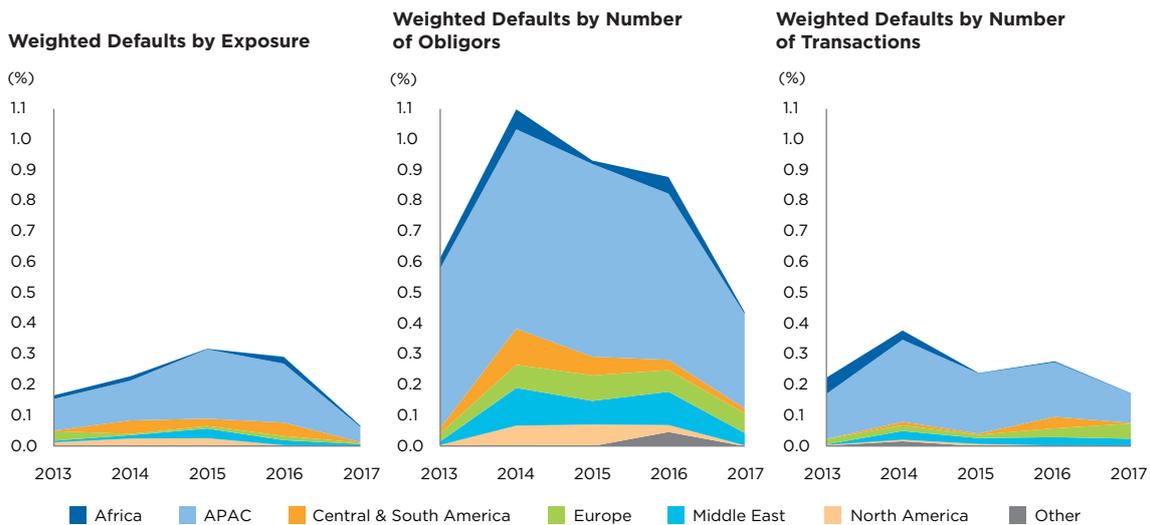


Note: Regions and Countries reflect those of risk holder
Source: ICC Trade Register 2018

Figure 31:
**Loans for import/export default rates by region (absolute), 2013-2017**
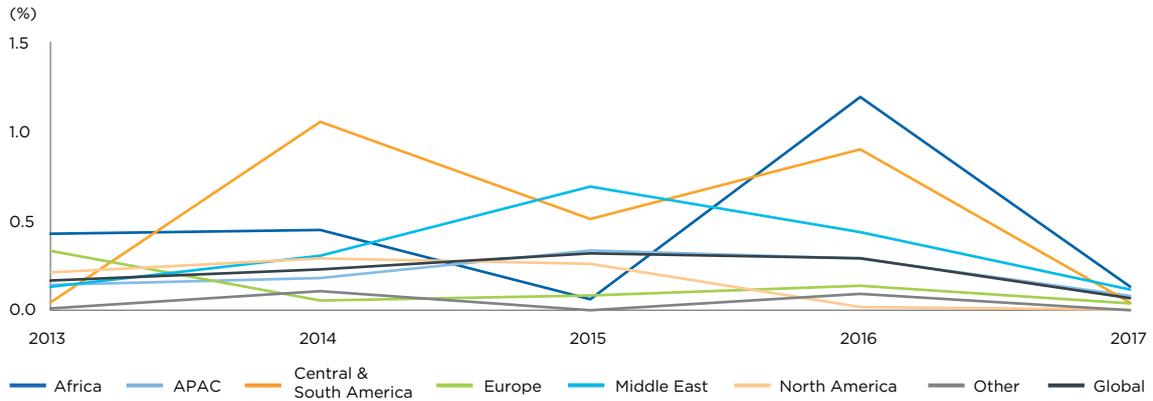
**Defaults by Exposure**



Note: Regions and Countries reflect those of risk holder
Source: ICC Trade Register 2018

**Defaults by Number of Obligors**
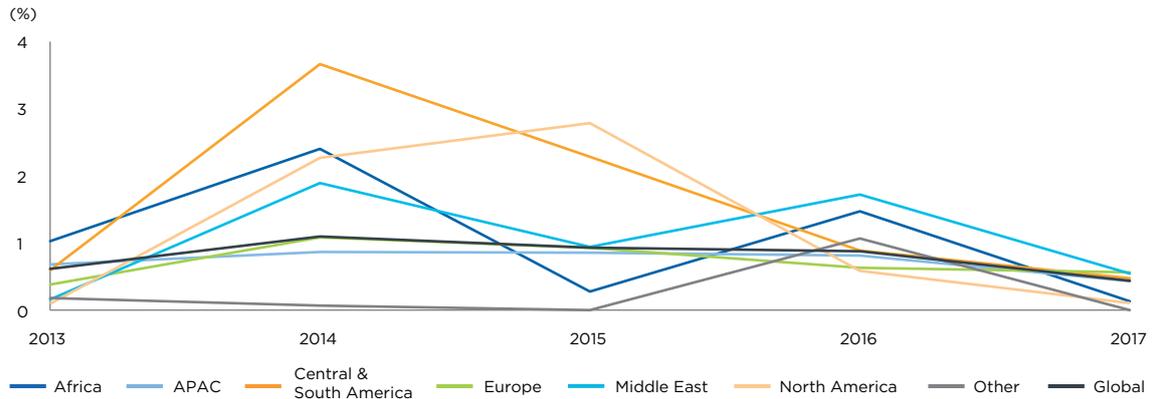


Note: Regions and Countries reflect those of risk holder
Source: ICC Trade Register 2018

**Defaults by Number of Transactions**
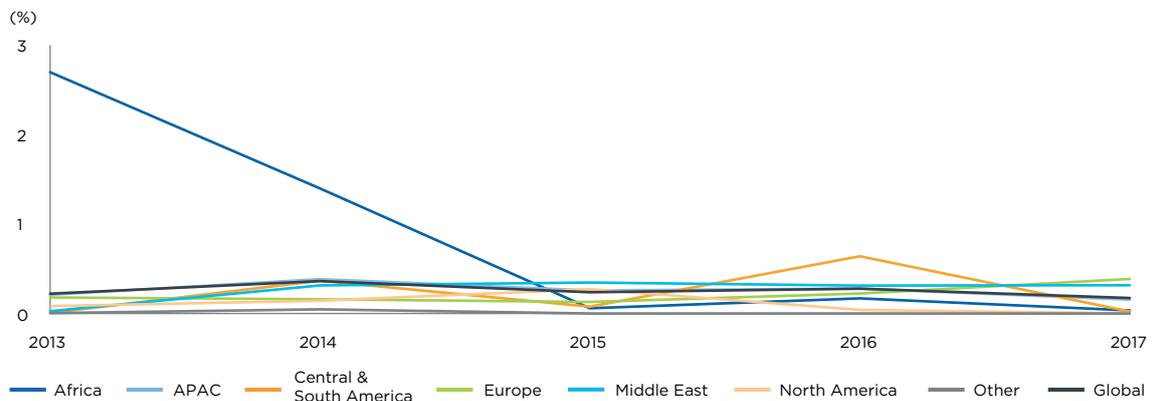


Note: Regions and Countries reflect those of risk holder
Source: ICC Trade Register 2018

Figure 32:

**Loans for import/export total and defaulted volumes by region, 2013-2017**
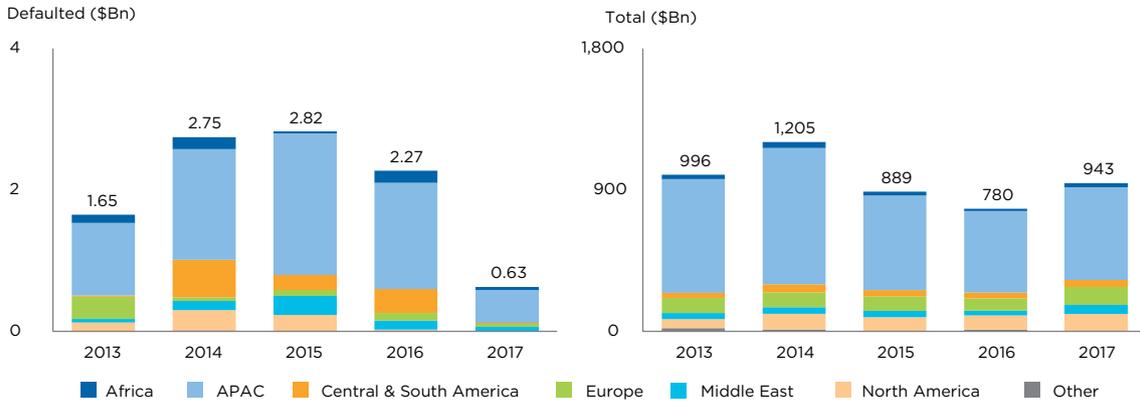
**Exposure**

Defaulted ($Bn)



| 2013 | 2014 | 2015 | 2016 | 2017 |
|------|------|------|------|------|
| 1.65 | 2.75 | 2.82 | 2.27 | 0.63 |

Total ($Bn)



| 2013 | 2014 | 2015 | 2016 | 2017 |
|------|------|------|------|------|
| 996 | 1,205 | 889 | 780 | 943 |

■ Africa ■ APAC ■ Central & South America ■ Europe ■ Middle East ■ North America ■ Other

Note: Regions and Countries reflect those of risk holder
Source: ICC Trade Register 2018

**Obligors**

Defaulted (K)



| 2013 | 2014 | 2015 | 2016 | 2017 |
|------|------|------|------|------|
| 0.33 | 0.63 | 0.58 | 0.42 | 0.16 |

Total (K)



| 2013 | 2014 | 2015 | 2016 | 2017 |
|------|------|------|------|------|
| 52.9 | 56.9 | 62.4 | 48.0 | 37.3 |

■ Africa ■ APAC ■ Central & South America ■ Europe ■ Middle East ■ North America ■ Other

Note: Regions and Countries reflect those of risk holder
Source: ICC Trade Register 2018

**Transactions**

Defaulted (K)



| 2013 | 2014 | 2015 | 2016 | 2017 |
|------|------|------|------|------|
| 5.07 | 9.21 | 5.40 | 4.23 | 2.55 |

Total (K)



| 2013 | 2014 | 2015 | 2016 | 2017 |
|------|------|------|------|------|
| 2,290 | 2,544 | 2,265 | 1,529 | 1,476 |

■ Africa ■ APAC ■ Central & South America ■ Europe ■ Middle East ■ North America ■ Other
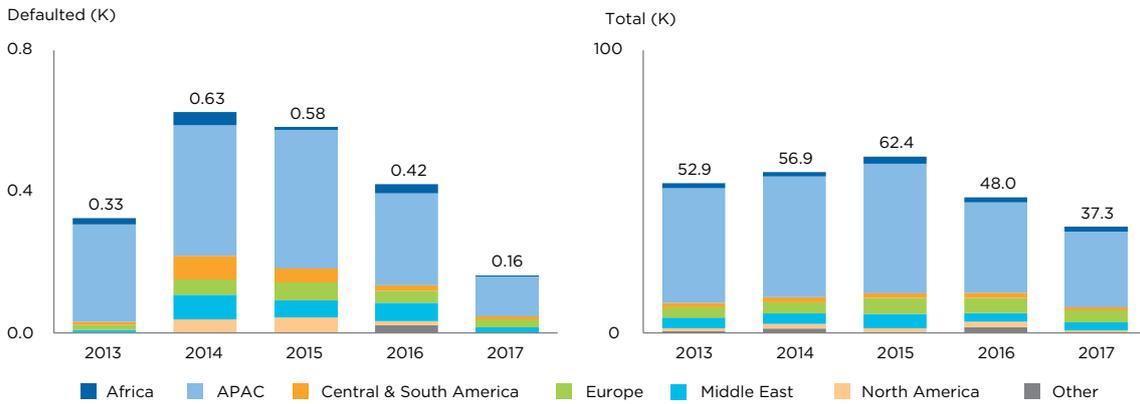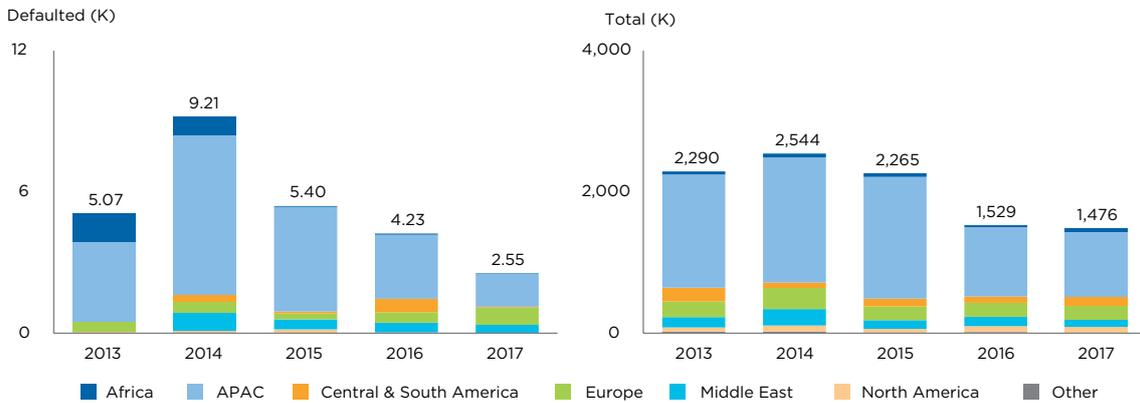
Note: Regions and Countries reflect those of risk holder
Source: ICC Trade Register 2018

## Performance guarantees

Performance guarantees (including standby L/Cs) have the highest exposure- and obligor-weighted default rates of the trade finance products in the Trade Register in 2017. This is in line with observations in previous years.

The exposure-weighted default rate decreased in 2017 to 0.25% down from a peak of 0.55% in 2016. In spite of this, obligor-weighted default rates have remained broadly flat at 0.44% in 2017, down from 0.45% in 2016, while transaction-weighted default rates have increased in 2017 to 0.16% from 0.12% in 2016.

The drop in exposure-weighted default rates are driven, almost exclusively, by the

US where the rate fell to 0.56% in 2017 from 1.76% in 2016. The high 2016 value was driven by one obligor in particular, who was assigned non-accrual status at the regulator's request and was subsequently downgraded internally to a default rating; as such, 2017 represents a return to the baseline following this relatively uncommon event.

Default rates in APAC increased slightly in 2017. Exposure weighted grew to 0.26% in 2017 from 0.17% in 2016. This increase is driven predominantly by China whose exposure-weighted default rate increased from 0.14% to 0.26% across the year.

Figure 33:

**Performance guarantees default rates by region (weighted), 2013-2017**
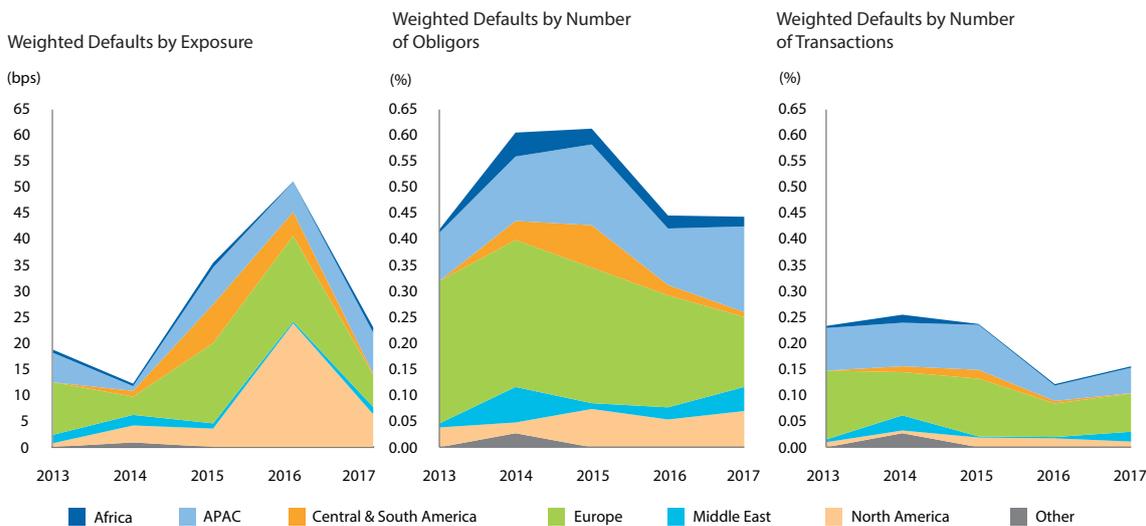


Note: Regions and Countries reflect those of risk holder
Source: ICC Trade Register 2018

Figure 34:

**Performance guarantees default rates by region (absolute), 2013-2017**

**Defaults by Exposure**
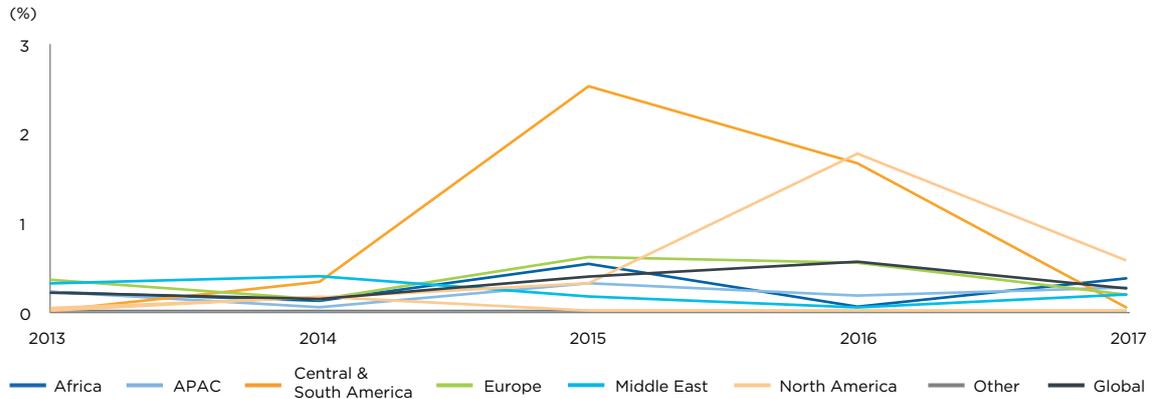


Note: Regions and Countries reflect those of risk holder
Source: ICC Trade Register 2018

**Defaults by Number of Obligors**
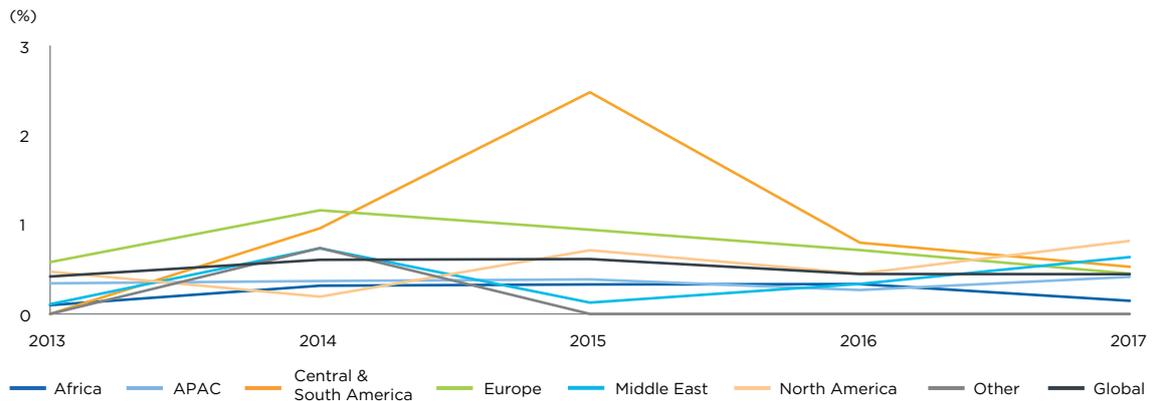


Note: Regions and Countries reflect those of risk holder
Source: ICC Trade Register 2018

**Defaults by Number of Transactions**
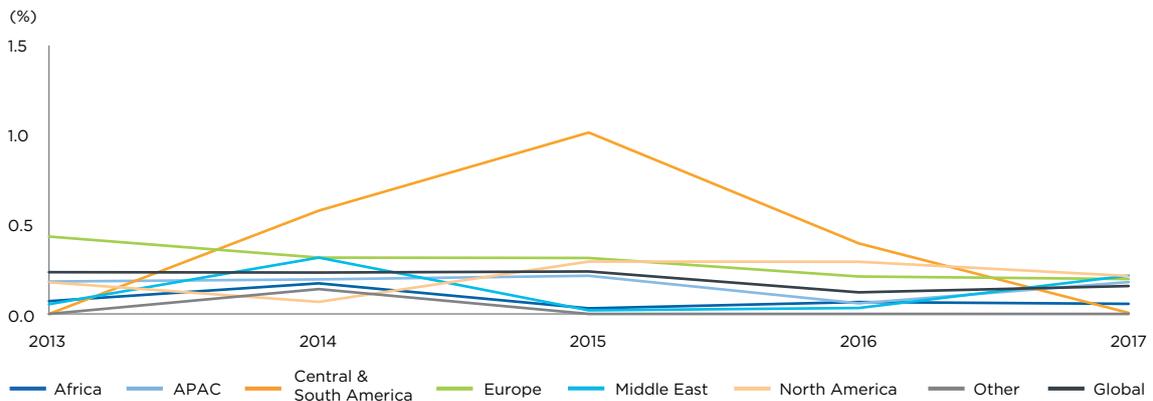


Note: Regions and Countries reflect those of risk holder
Source: ICC Trade Register 2018

## Figure 35:

### Performance guarantees total and defaulted volumes by region, 2013-2017
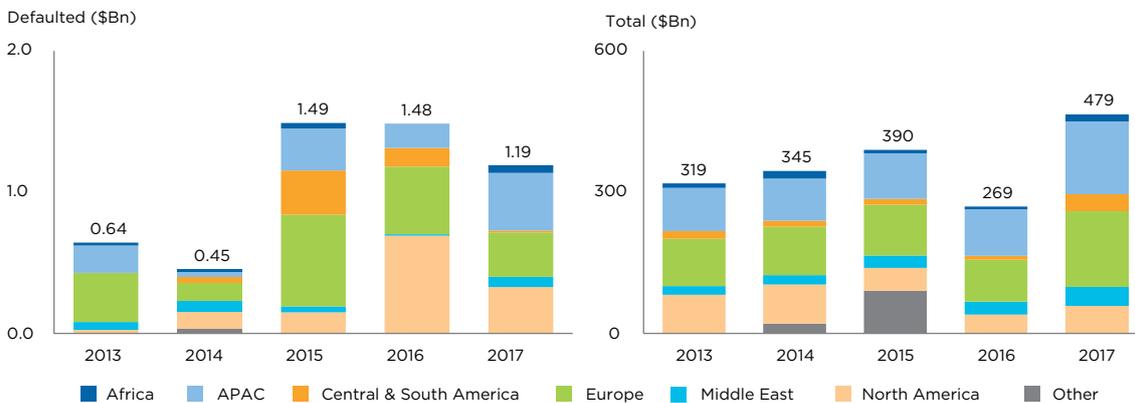
**Exposure**



Defaulted ($Bn)

Total ($Bn)

Legend: Africa | APAC | Central & South America | Europe | Middle East | North America | Other

Note: Regions and Countries reflect those of risk holder
Source: ICC Trade Register 2018

**Obligors**



Defaulted (K)

Total (K)

Legend: Africa | APAC | Central & South America | Europe | Middle East | North America | Other

Note: Regions and Countries reflect those of risk holder
Source: ICC Trade Register 2018

**Transactions**



Defaulted (K)

Total (K)

Legend: Africa | APAC | Central & South America | Europe | Middle East | North America | Other
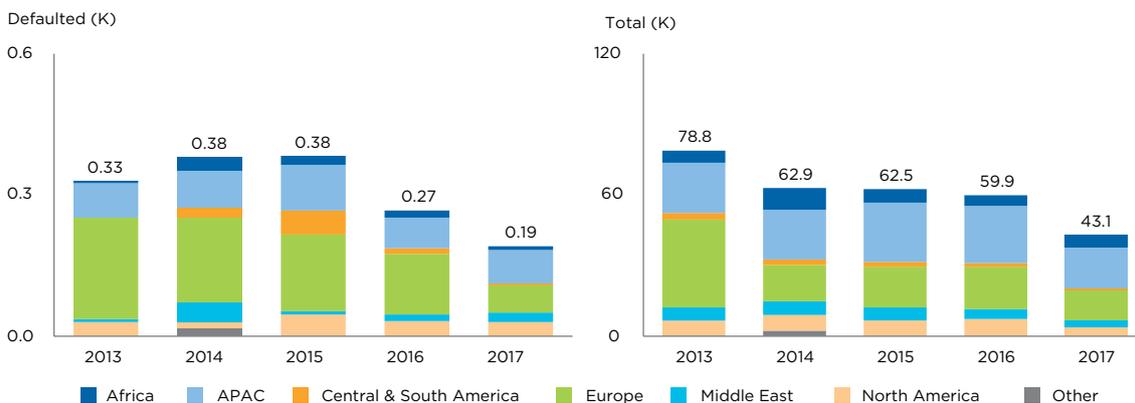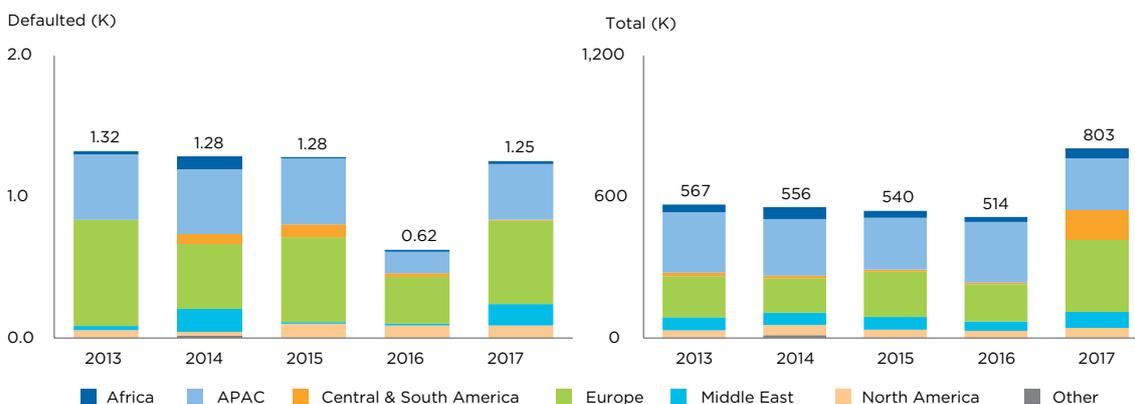
Note: Regions and Countries reflect those of risk holder
Source: ICC Trade Register 2018

## Trends in loss given default and expected loss analysis

Trade finance products continue to have low Expected Losses (EL). 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. These results are similar to those shown last year with slight declines seen in EL for performance guarantees driven by lower loss given default (LGD).

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 36.

As done in previous versions of the Trade Register, we use two alternate methods to calculate EL for performance guarantees. In the first methodology, we apply the claim rate – the number of successful claims that are made on performance guarantee transactions – to the exposure at default (EAD) which results in a higher LGD. In the second method we apply the claim rate to the LGD, resulting in a higher EAD and a low LGD.

The claim rate for the 2018 report was 7.6%, based on all data from 2008–2017. This is the same as the value from the 2017 report (2008–2016), in part driven by the limited additional data provided by contributing banks in 2017. More detail on the claim rate calculation and the differences between these methodologies can be found in Appendix A.

**Expected loss breakdown for trade finance products, 2008-2017**
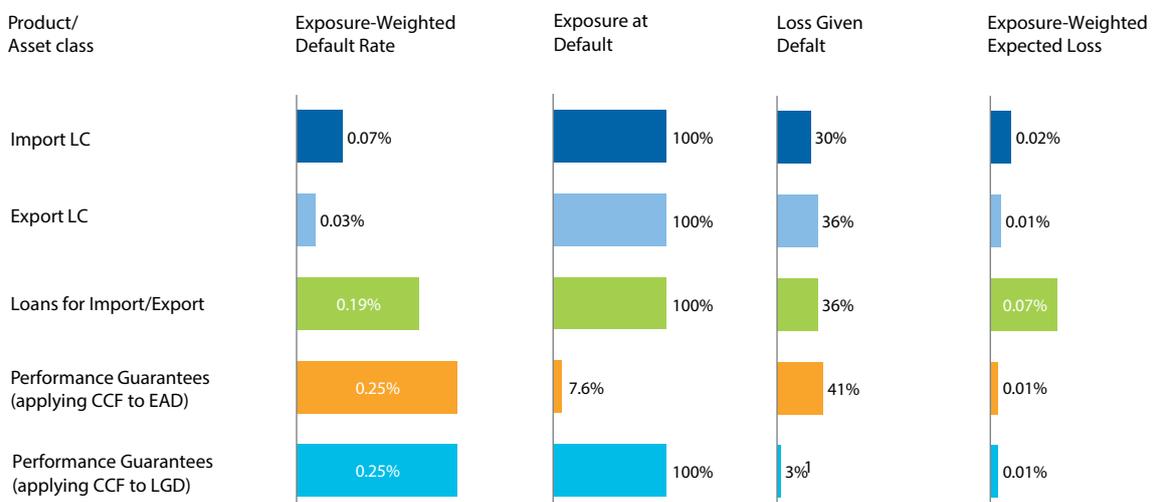
| Product/ Asset class | Exposure-Weighted Default Rate | Exposure at Default | Loss Given Defalt | Exposure-Weighted Expected Loss |
|---|---|---|---|---|
| Import LC | 0.07% | 100% | 30% | 0.02% |
| Export LC | 0.03% | 100% | 36% | 0.01% |
| Loans for Import/Export | 0.19% | 100% | 36% | 0.07% |
| Performance Guarantees (applying CCF to EAD) | 0.25% | 7.6% | 41% | 0.01% |
| Performance Guarantees (applying CCF to LGD) | 0.25% | 100% | 3%[1] | 0.01% |

1. Accounts for 7.6% observed 'Claim Rate'
Note: LGD = [1-Recovery Rate] + [Cost of Recovery] + [Time to Recovery][Discount on recoveries].
Regions and Countries reflect those of Obligor
Source: ICC Trade Register 2018

LGD rates for 2008–2017 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 37).

The LGD for import L/Cs and loans for import/export increased by 4% points to 30% and 2% points to 36% respectively when viewed for 2008–2017 vs. the values shown last year (for 2008–2016). These increases were driven by significantly lower recovery rates in 2017 for these products (Figure 38). While recovery rates show fluctuation year-to-year, this is in part an artefact of the high impact of
one-off events in a small data set. The data is

most representative when averaged across years, which is the approach used in the Trade Register.

In contrast, the LGD for performance guarantees decreased to 41.3% in 2017 from 60.3% in 2016. This decrease is driven by two main factors: firstly, a bounce back from historically low recovery rates driven by major losses across Ukraine and South Africa from 2013–2015. Secondly, the number of data points in 2017 was significantly higher than previously available in the Trade Register, increasing the reliability of results and the overall average.

Figure 37:

**LGD calculation for trade finance products, 2008-2017**
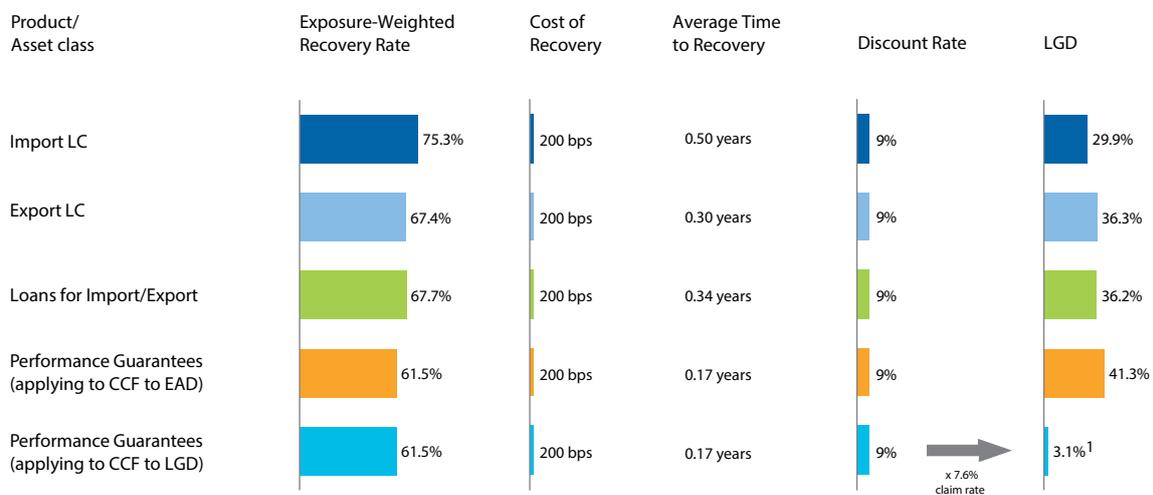
| Product/Asset class | Exposure-Weighted Recovery Rate | Cost of Recovery | Average Time to Recovery | Discount Rate | LGD |
|---|---|---|---|---|---|
| Import LC | 75.3% | 200 bps | 0.50 years | 9% | 29.9% |
| Export LC | 67.4% | 200 bps | 0.30 years | 9% | 36.3% |
| Loans for Import/Export | 67.7% | 200 bps | 0.34 years | 9% | 36.2% |
| Performance Guarantees (applying to CCF to EAD) | 61.5% | 200 bps | 0.17 years | 9% | 41.3% |
| Performance Guarantees (applying to CCF to LGD) | 61.5% | 200 bps | 0.17 years | 9% → x 7.6% claim rate | 3.1%[1] |

1. Accounts for 7.6% observed 'Claim Rate'
Note: LGD = [1-Recovery Rate] + [Cost of Recovery] + [Time to Recovery][Discount on recoveries].
Regions and Countries reflect those of Obligor
Source: ICC Trade Register 2018

Figure 38:

**Average exposure-weighted recovery rates for trade finance products, 2008-2017**
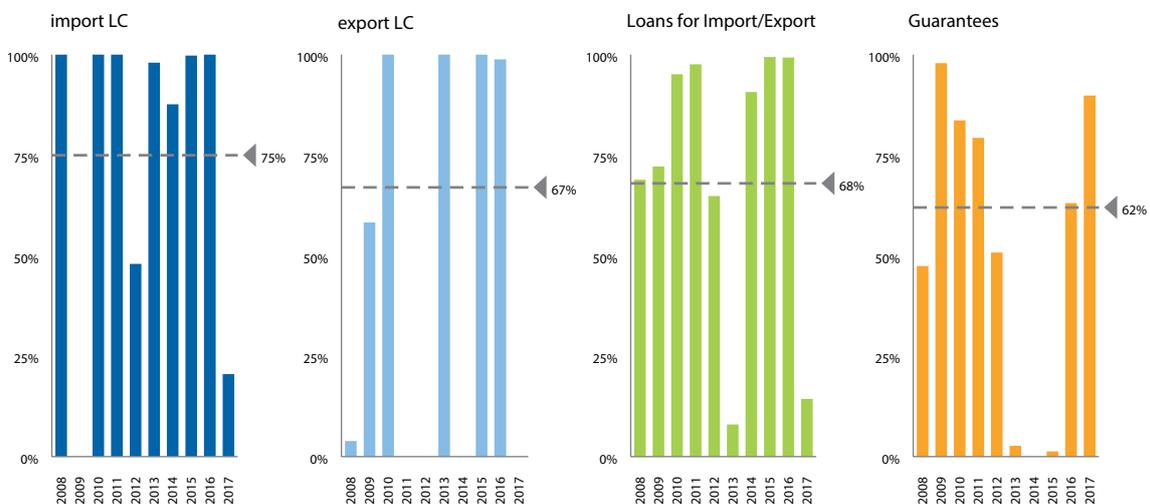


Source: ICC Trade Register 2018

The distribution of recovery rates (Figure 39) shows how a significant majority of transactions have greater than 80% recovery rates – particularly for L/Cs. Indeed for import L/Cs 91% of transactions have recovery rates above 80%, while the number for export L/Cs is 81%. Loans for import/export have more bimodal distribution in recovery rates with around 50% of transactions having 100% recovery rates but concurrently nearly one-third of transactions have recovery rates below 20%. In aggregate this results in an average loans for import/export recovery rate of 68%; however, this does mask some of the underlying variability.

Figure 39:

**Distribution of recovery rates across trade finance products, 2008-2017**

Recovery Rates

| | 0% | 1-20% | 21-40% | 41-60% | 61-80% | 81-99% | 100% | 100+% |
|---|---|---|---|---|---|---|---|---|
| **Share of total (%)** | | | | | | | | |
| Import LC | 0.5% | 7.0% | 0.0% | 1.1% | 0.1% | 15.1% | 73.1% | 3.1% |
| Export LC | 6.9% | 0.0% | 0.0% | 0.0% | 12.1% | 15.5% | 53.4% | 12.1% |
| Loans for Import/Export | 8.4% | 21.4% | 14.3% | 0.3% | 3.6% | 4.1% | 47.6% | 0.4% |
| Performance Guarantees | 5.9% | 0.0% | 1.1% | 10.4% | 7.9% | 4.0% | 70.5% | 0.2% |
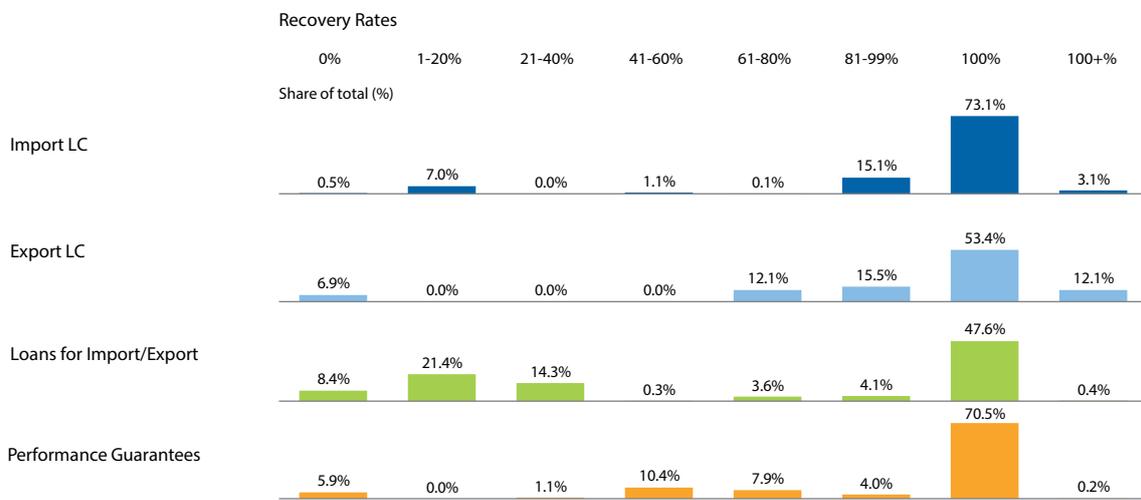
Source: ICC Trade Register 2018

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 lower the LGD. Trade finance products have significantly lower time to recovery than other comparable asset classes (Figure 40).

One possible explanation is that banks can take ownership of underlying goods for trade finance products and sell them quickly, depending on the product. This results in the

exposure being held on the balance sheet for a short time. By contrast, for term-loans or other products, there may be a longer period of arbitration before value can be recovered. However, some caution is needed when comparing data between the Trade Register and other asset class benchmarks (see Appendix A for further details).

Figure 40:

**Average time to recovery between trade finance and other asset classes, 2008-2017**

Product/Asset Class        Time to Recovery, 2008-2017 (Days)



| Product/Asset Class | Time to Recovery, 2008-2017 (Days) |
|---|---|
| import LC | 184 |
| export LC | 111 |
| Loans for Import/Export | 123 |
| Performance Guarantees | 61 |
| SME | 393 |
| Banks & FIs | 427 |
| Commodities Finance | 350 |
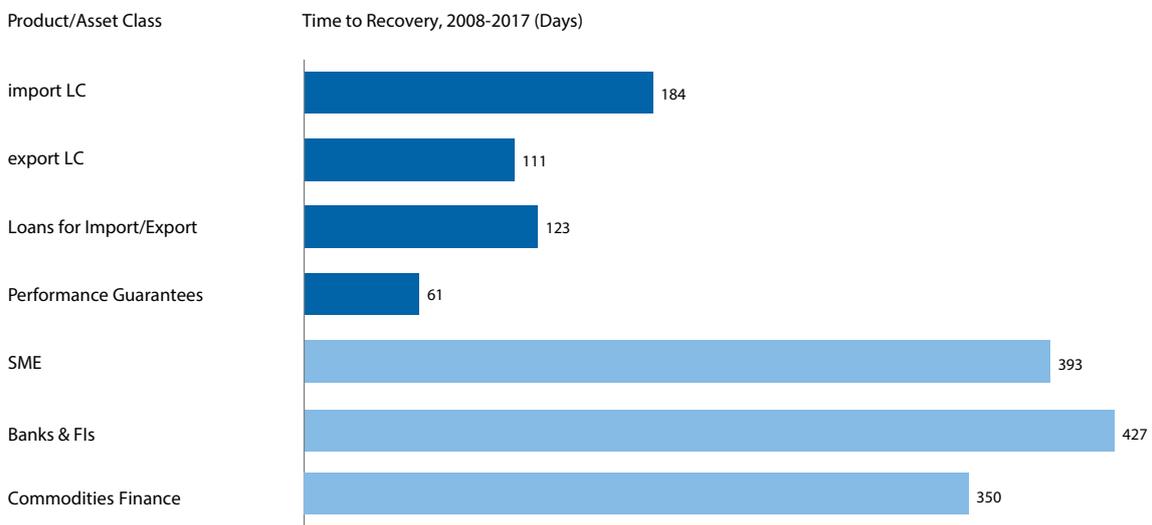
Source: ICC Trade Register 2018

# ANALYSIS OF SUPPLY CHAIN FINANCE

The 2018 edition of the Trade Register report marks an important step in its history with the first inclusion of Supply Chain Finance (SCF) data.

SCF and other open account trading products are becoming increasingly important in trade finance (as discussed in the State of the market section). In addition, the regulatory teatment 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 introduce adverse, unintended consequences into the trade system.

These factors highlight the need for data-driven insights into the risk associated with SCF.

The Trade Register has gathered data on USD 55 billion in exposures and 1.7 million transactions for the first year that SCF is

included in the Trade Register. While this data set is small relative to that on trade finance products, it is an important first step in the expansion of the scope of the Report.

Exposure-weighted default rates for SCF in 2017 were 0.11%, comparable to the long-term average for trade finance products of 0.15%. Meanwhile, the obligor-weighted default rate is also 0.11% – below all trade finance products except for export L/Cs. Looking forward we plan to also add a transaction-weighted view.

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

Figure 41:

**Summary of default rates for SCF (2017) vs. trade finance products (2008-2017)**
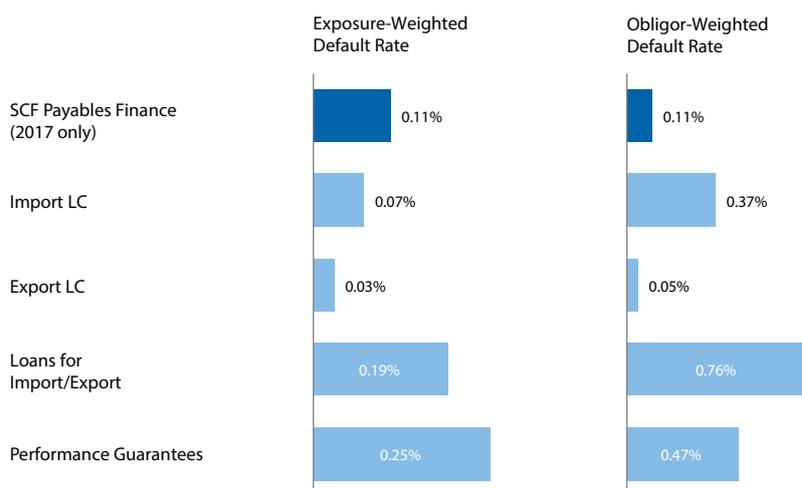


Source: ICC Trade Register 2018

# ANALYSIS OF EXPORT FINANCE

## Overview of findings

The ICC Trade Register draws from a data set comprising nearly 43,500 data points (this is higher than # Transactions given that a single long-term export finance transaction is likely to appear multiple times across different years in the sample) spanning from 2007–2017. This large data set allows us to conduct meaningful analysis on the Probability of Default (PD), Loss Given Default (LGD), and thereby Expected Loss (EL) in export finance.

The findings in this year's report corroborate the long-running conclusion that export finance presents a low risk for banks. This finding is due to its low EL, which derives from a combination of low LGD and PD comparable to below-investment grade project finance and corporate finance assets. Export finance has a particularly low LGD in the Trade Register's data, mostly because most transactions are covered by Export Credit Agencies (ECAs) at nearly 95% of their value, which grants the banks the capacity to be indemnified by an ECA for 95% of an unpaid instalment. LGD is sufficiently low for PD to not significantly affect EL.

Looking at completed[13] cases from 2007–2017, the exposure-weighted default rate is 0.58% with an LGD of 3.5%, resulting in an expected loss of 0.021%. This is a fractionally higher EL than reported in 2007–2016 due to an increase in the exposure-weighted default rate from 0.50% to 0.58% – this reflects a long-term trend of increased exposure-weighted default rates in export finance in the Trade Register.

When completed/accelerated[14] and partial completed cases are included, LGD is 6.2%, resulting in EL of 0.036%. These higher values are driven by incomplete recoveries in partially completed cases which lower the recovery rate and 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 a high-income OECD member-based ECA, representing the full faith and credit of their respective governments. In addition, for the first time, the scope of products considered in the 2018 edition has expanded to include non-OECD ECAs to reflect their growing importance in export finance. While the number of data points collected on non-OECD ECAs is relatively low, their addition is important for the ongoing relevance of the Trade Register.

The in-scope export finance transactions have a very low risk profile with both low default rates and, importantly, very low LGD.

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 investment grade OECDs). 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

- direct costs associated with recovery from the customer (including, for example, legal fees)

As previously discussed, this year the Trade Register has expanded to include ECAs of some non-OECD countries. The impact of these on ELs will need to be assessed in the

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13. A completed case is a file where all the payments expected from the ECA were made and where the bank considers that all potential recoveries from the original borrower were achieved; hence the file is classified.
14. Normally, in case of a default, an ECA indemnifies instalment by instalment according to the original repayment schedule agreed with the borrower. In some cases, ECAs accept to accelerate their indemnification with a global and unique repayment of the whole outstanding amount of the defaulted loan.

coming years.

While the average level of cover in our data from 2007–2017 is 94%, it varies slightly across products and regions (Figure 42). 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 complies late with 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.

**Average ECA insurance coverage rate by asset category and region, 2007-2017**
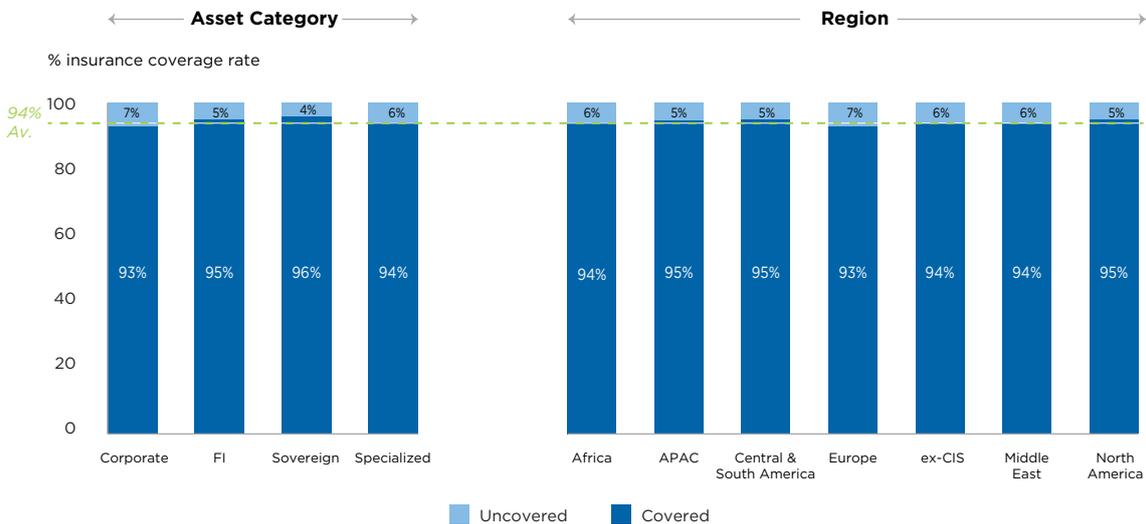


Note: Regions and Countries reflect those of Obligor
Source: ICC Trade Register 2018

## Observed average maturity

Export finance products (sometimes referred to as medium to long term products) have, as one might expect, 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.

Financial Institutions borrowers continue to have the widest spread of maturities with 22% of transactions having maturities of five

years or less and 17% with maturities of 15 years or more, the highest of any asset class in each respective time bracket. 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.

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 43:

**Average maturity by asset category, 2007–2017**

| Asset Class | 5 years or less | 5 – 10 years | 10 – 15 years | 15yrs or more | Unweighted average tenor | Exposure weighted average tenor |
|---|---|---|---|---|---|---|
| Corporate | 13% | 38% | 43% | 5% | 10.0 | 11.7 |
| FI | 22% | 37% | 24% | 17% | 10.2 | 11.5 |
| Sovereign | 3% | 26% | 55% | 16% | 12.4 | 13.0 |
| Specialised | 2% | 21% | 72% | 6% | 11.8 | 12.3 |
| **Total** | **11%** | **33%** | **46%** | **10%** | **11.1** | **12.2** |

Note: Average tenor refers to average tenor at transaction origination

## Trends in default rates

Default rates from 2007–2017 have risen slightly across all weighting methodologies when compared to average rates from 2007–2016. Obligor-weighted default rates have risen to 0.99% from 0.95%; similarly exposure-weighted default rates have risen to 0.58% and transaction-weighted default rates to 0.88% (Figure 44).

The increases in the average 2007–2017 default rates reflect a consistent upward trend in the year-on-year default rates evident since 2013 (Figure 45). No single driver appears to contribute to the overall increase, and the main contributing regions have varied year-on-year – the Middle East was the major contributor in 2012, Central and South America in 2016 and North America in 2017. This variation in contributing region may - in some but certainly not all cases - be driven by the stochastic nature

of Export Finance defaults, which tend to be driven by idiosyncratic shocks such as political conflicts and sanctions. Indeed ECA-backed trade transactions frequently involve higher-risk markets, which make these findings unsurprising.

In 2017, average obligor-weighted default rates have risen from 1.03% to 1.13% for corporate assets and increased marginally from 0.43% to 0.44% for sovereign assets. Conversely, specialised assets default rates fell from 0.60% to 0.53%. The picture is similar for exposure- and transaction-weighted default rates.

Financial institution assets have seen relatively stable default rates, with obligor-weighted default rates remaining flat at 1.37%. Meanwhile, exposure-weighted rates have increased marginally to 1.21% and transaction-weighted rates to 1.41%.

Figure 44:

**Asset category export finance defaults by obligor, transaction and exposure, 2007-2017 (vs. 2007-2016)**

| Asset | Defaults by Obligor | | Defaults by Exposure | | Defaults by Transaction | |
|---|---|---|---|---|---|---|
| | 2007-2016 | 2007-2017 | 2007-2016 | 2007-2017 | 2007-2016 | 2007-2017 |
| Corporate | 1.03% | 1.13% | 0.55% | 0.68% | 0.84% | 0.97% |
| FI | 1.37% | 1.37% | 1.17% | 1.21% | 1.36% | 1.41% |
| Sovereign | 0.43% | 0.44% | 0.14% | 0.28% | 0.30% | 0.34% |
| Specialised | 0.60% | 0.53% | 0.43% | 0.39% | 0.67% | 0.62% |
| **Total** | **0.95%** | **0.99%** | **0.50%** | **0.58%** | **0.82%** | **0.88%** |

Figure 45:

**Export finance exposure-weighted default rates by region, 2007-2017**

**Default Rate by Exposure**
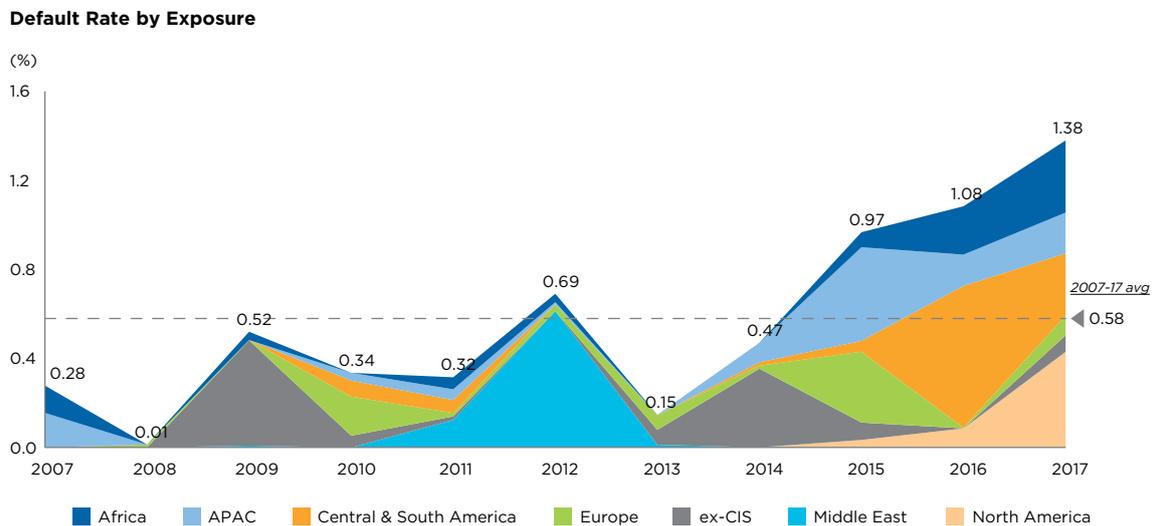


Note: Regions and Countries reflect those of Obligor
Source: ICC Trade Register 2018

As in last year's report, North America saw the largest increase in default rates with obligor-weighted rates jumping from 0.47% to 0.66% and, more significantly, exposure-weighted rates increasing from 0.11% to 0.49%. This was driven by a single default in the US with high exposure.

The Middle East continues to have the highest overall obligor default rate of 2.32%. While this is lower than last year's of 2.44%, it is around four times higher than APAC, which has the lowest obligor-weighted default rate

of 0.57%. The Middle East also has the highest transaction-weighted default rate at 2.07%, also slightly lower than 2.16% reported last year but still nearly four times higher than APAC, which has the lowest default rate of 0.56% (Figure 46).

From an exposure-weighted perspective, ex-Commonwealth of Independent States (ex-CIS) countries have the highest default rate at 1.01% and Europe has the lowest at 0.35%.

Figure 46:

**Regional export finance defaults by obligor, transaction and exposure, 2007-2017 (vs. 2007-2016)**

| Region | Defaults by Obligor | | Defaults by Exposure | | Defaults by Transaction | |
|---|---|---|---|---|---|---|
| | 2007-2016 | 2007-2017 | 2007-2016 | 2007-2017 | 2007-2016 | 2007-2017 |
| Africa | 0.89% | 0.93% | 0.41% | 0.64% | 0.76% | 0.80% |
| APAC | 0.60% | 0.57% | 0.37% | 0.41% | 0.39% | 0.56% |
| Central & South America | 1.00% | 1.16% | 0.55% | 0.68% | 0.62% | 0.74% |
| Europe | 0.55% | 0.66% | 0.34% | 0.35% | 0.55% | 0.58% |
| ex-CIS | 1.23% | 1.23% | 0.99% | 1.01% | 1.23% | 1.28% |
| Middle East | 2.44% | 2.32% | 1.01% | 0.91% | 2.16% | 2.07% |
| North America | 0.47% | 0.66% | 0.11% | 0.49% | 0.56% | 0.63% |
| **Total** | **0.95%** | **0.99%** | **0.50%** | **0.58%** | **0.82%** | **0.88%** |

## Trends in loss given default and expected loss analysis

### Observed recovery rate

The 2018 Trade Register shows an observed recovery rate of 96.1% for completed/accelerated and partial completed cases from 2007–2017 (Figure 47), down slightly from 96.9% in 2007–2016. As in prior years, this recovery rate remains well above 95% as ECA recovery amounts include coverage for principal, interest, and costs.

The overall level of recoveries before and after customer recoveries are attributed to the ECA (Figure 47), and subsequent tables show recoveries post-attribution.

Figure 47:

**Export finance observed recovery, 2007-2017, pre- and post-attribution of customer recoveries for ECA completed/accelerated and partial completed cases**

|  | Exposure (USD M) | ECA Recovery (USD M) | Customer Recovery (USD M) | Total Recoveries % |
|---|---|---|---|---|
| Pre-attribution of Customer Recoveries | 1,718 | 1,387 | 264 | 96.1% |
| Post-attribution of Customer Recoveries (observed recovery rate) | 1,718 | 1,637 | 14 | 96.1% |

## Loss given default

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 6.2% for ECA completed/accelerated and partially completed cases (Figure 48), higher than 5.3% reported last year, driven by lower ECA recoveries and a slightly higher loss rate (3.9% vs. 3.1% last year).

For completed cases from 2007–2017, the LGD of 3.5% is below last year's LGD of 3.8%. This is expected as looking at completed cases strips out recent defaults for which recovery activities have not been completed, and explains the lower LGD.

Figure 48:

**Recoveries and estimated LGD for partially completed and fully completed cases, 2007-2017**

|  | ECA Recoveries | Customer Recoveries | Total Recoveries | Loss Rate | Discounting | Costs | LGD |
|---|---|---|---|---|---|---|---|
| ECA completed/ accelerated and partial completed cases | 95.3% | 0.8% | 96.1% | 3.9% | 1.3% | 1.0% | 6.2% |
| ECA Completed and Customer Completed Cases | 98.3% | 1.6% | 99.9% | 0.1% | 2.5% | 1.0% | 3.5% |

## Expected loss

The expected loss for ECA completed/ accelerated and partially completed ECA cases in 2007–2017 is 0.036% (Figure 49), up from 0.026% in 2007–2016. This is driven mostly by the exposure-weighted default rate growing from 0.50% in 2007–2016 to 0.58% in 2007–2017. In addition LGD increased from 5.3% to 6.2%. The EL for fully completed cases is 0.021%, slightly higher than 0.019% reported last year.

**Estimated expected loss for export finance products using exposure-weighted default rate, 2007-2017**

|  | Exposure-weighted Default Rate | Exposure at Default | LGD | Expected Loss |
|---|---|---|---|---|
| ECA Completed/Accelerated and Partial Completed Cases | 0.58% | 100.0% | 6.18% | 0.036% |
| ECA Completed and Customer Completed Cases | 0.58% | 100.0% | 3.55% | 0.021% |

As with trade finance products, obligor-weighted ELs are higher than exposure-weighted ELs (Figure 50), 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 favorably to the other asset classes shown in Figure 11 (SMEs at 0.44%, Banks & FIs at 0.07%, and Commodities Finance at 0.16%); this again corroborates the low risk nature of Export Finance.

**Estimated expected loss for export finance products using obligor-weighted default rate, 2007-2017**

|  | Obligor-weighted Default Rate | Exposure at Default | LGD [15] | Expected Loss |
|---|---|---|---|---|
| ECA Completed/Accelerated and Partial Completed Cases | 0.99% | 100.0% | 6.18% | 0.061% |
| ECA Completed and Customer Completed Cases | 0.99% | 100.0% | 3.55% | 0.035% |

15. These LGD numbers are exposure-weighted. See Appendix A, Report Limitations for further details.

# REGULATORY ENVIRONMENT

## Feature: Basel III Final Reforms

**Krishnan Ramadurai,** Chair of ICC Trade Register Project

An assessment of the Basel III: Finalising Post-Crisis Reforms by regulators, banks and market participants (i.e. analysts, rating agencies, accounting firms and consultants) indicates:

- A material reduction of Common Equity Tier (CET) 1 ratios for Group 1 and Group 2 banks[16] with estimates ranging from 178bps to 240bps. Consequently, banks will need to raise capital to make up the shortfall

- For Group 1 banks, increases in minimum capital required are influenced by the recalibration of the IRB approach for credit risk, the removal of the Advanced Measurement Approach (AMA), the recalibration of the standardised measurement approach for operational risk, and a fundamental rewrite of the market risk rules for Trading Book (FRTB) exposures

- For Group 2 banks, increases in minimum capital required are influenced primarily by the recalibration of the standardised approach for credit risk and operational risk

- The output floor, set at 72.5% of the standardised approach for banks on the Internal Ratings-Based Approach (IRB-A and IRB-F), will also be a material driver of increased capital requirements for all IRB banks.

- The overall impact summarised above hides wide variations across countries and individual banks, where these differences are driven primarily by the composition of the assets held. Scandinavian banks, for example, will experience the sharpest drop in capital ratios and need to raise additional capital because of their material exposure to residential mortgage

assets which currently benefit from very low risk weights under the existing IRB approach

- Banks will need to invest significant amounts of money in building the infrastructure required to implement these rules. To meet the capital output floor, banks will need to invest in creating a data and reporting infrastructure that covers the Standardised Approach and the IRB approach simultaneously

- Banks will also need to meet higher Total Loss Absorbing Capital (TLAC) requirements, as these are set as a fixed percentage of RWAs and, as RWAs increase, additional capital will be required

- The impact assessment studies completed to date do not take into account the additional capital held by European banks as part of a Pillar 2 buffer and the stressed capital buffer held by US banks. An unresolved question is whether these capital buffers will fall to compensate for the proposed increases in capital

### What impact will this assessment have on trade assets?
**Credit Risk: Internal Ratings Based – Advance and Foundation Approaches (IRB-A and F)** The recalibration of IRB risk parameters will have an impact on certain Trade Asset classes, and an analysis of these changes is summarised below.

**Probability of Default (PD):** The recalibration of the PD floor from 3bps to 5bps under IRB-A and F may result in a recalibration of the risk rating scales for some banks with a downstream impact on corporates with strong credit ratings and high credit quality.

Sovereign exposures are currently out of

16   Group 1 banks are defined as Banks with Tier 1 capital greater than EUR 3 billion and are internationally active, the rest are classified as Group 2 banks

scope of the latest Basel III Reforms as they are still the subject of discussion between regulators. When discussions are finalised by the regulators, we may see PD values for sovereigns also subject to a PD floor, unlike the current treatment. The introduction of a PD floor for sovereigns will result in increased capital charges for this portfolio.

From a trade perspective, the Export Credit Agency (ECA) portfolio, which currently benefits from external rating equivalent to that of the Sovereign, will see capital charges going up – albeit from current levels which are very favourable to this portfolio.

**Loss-Given-Default (LGD):** Large corporates (defined as corporate groups with consolidated annual revenues greater than EUR 500 million) will no longer be subject to IRB-A. Under IRB-F they will see unsecured LGD values reduced from 45% to 40%. Banks that currently have these large corporates on IRB-A approach, with unsecured LGD values less than 40%, will see increases in capital charges for these exposures. Conversely, banks currently using conservative unsecured LGD values of 45% or higher will benefit from this change. A critical assumption is that regulators will be amenable to reducing unsecured LGD values when they are considerably higher than the floor value of 40%. This will become an area of strategic focus for banks with unsecured LGD values in excess of 40%.

Corporates falling under the annual revenue threshold of EUR 500 million can continue to model LGD. With the floor set at 25%, there is a potential 15% reduction in LGD values, when compared to the 40% floor. To model LGD, banks will need a robust framework of collateral management and a loss data history that preferably spans more than seven years.

Secured LGD values in the foundation approach are set at lower levels ranging from 0% when supported by recognised financial collateral with appropriate haircuts, of 25% when supported by other physical collateral (i.e. a pledge over stocks and receivables) subject to a 40% haircut. Under the advanced approach, banks can come up with their own internal estimates of secured LGD values when supported by recognised collateral

subject to an LGD floor which varies between 0% when supported by financial collateral and 15% when supported by other physical collateral.

Key from a trade perspective is the LGD values of 20% for receivables finance under the foundation approach and an LGD value of 10% under the advanced approach. The sting in the tail, at least under IRB-F, is the collateral haircut of 40% which goes up from the current haircut of 25%. This will incentivise banks to push receivables finance as a working capital solution for its customers. On the advanced approach, LGD values for receivables finance can go down to 15% with haircuts being determined by internal invoice level data.

**Exposure-at-Default (EAD):** A significant change within the new regulations removes the 0% credit conversion factor (CCF) for facilities that are unconditionally cancellable, and replaces it with a 10% CCF. This will have a material impact on trade portfolios as guarantee and letter of credit facilities, in combination with other trade-related facilities, will attract a 10% CCF in place of the current 0%. Note this change is applicable to banks adopting the Standardised and IRB-F approach.

The proposed regulations provide some leeway in exempting commitments when they satisfy the following conditions:

- The bank receives no fees or commissions to establish or maintain these arrangements

- The client applies to the bank for initial and each subsequent drawdown

- The bank has full authority, regardless of the fulfilment by the client of all the conditions set out in the facility documentation, over the execution of each drawdown

- The bank's decision on the execution of each drawdown is only made after assessing the creditworthiness of the client prior to drawdown

As this exemption is left to national discretion, there is a case for arguing that as trade facilities in general meet all the four conditions outlined above, they should be exempt from the 10% CCF and continue to receive a 0% CCF. Consequently banks under different regulatory regimes may see different charges applied.

While banks under IRB-A can come up with their own estimates of CCF, many of them may well choose to use the fallback CCF values applicable under IRB-F. In this context, the European Banking Authority (EBA) has clarified that off-balance sheet products like Letters of Credit (L/C) and Guarantees (GTE) should not be modelled, even under IRB-A.

**Maturity Floor Waiver (MFW):** The proposed regulations extend the maturity floor waiver to trade finance transactions such as L/Cs. Extending the MFW to other trade products is a matter for national discretion, as exists within the Capital Requirements Regulation (CRR) in Europe and the US regulations. Importantly it is unclear whether the MFW will be extended to trade finance transactions for large corporates which are slated for the foundation approach.

There is a strong case for arguing that MFW be extended to all trade finance transactions. However, this will require engaging local regulators to ensure that the Basel rules, when implemented locally, do extend the scope to all trade finance transactions. Not all regulators have chosen to extend the scope of MFW to all trade transactions.

To extend the MFW to IRB-F, local regulators will need to be engaged to ensure the MFW is incorporated within the boundaries of the foundation approach. In this context, the UK's Prudential Regulation Authority (PRA) has issued guidelines that the MFW is applicable to IRB-F.

**Operational Risk:** The removal of the Advanced Measurement Approach (AMA) and the use of a modified Standardised Measurement Approach (SMA) will result in higher operational capital charges for most banks in Europe and Asia. However, for banks in the US it will remain flat or even decline marginally. The impact will vary significantly

across firms as historical operational losses are incorporated into the SMA, which signifies that banks with past large losses will be subject to higher operational risk charges. When combined with the higher business indicator component and high marginal coefficients assigned to larger banks in G-SIB buckets 2 and 3, we expect operational risk charges for large banks to increase. This also partially due to the more complex business models of larger banks which tend to have a larger proportion of income in the form of fees.

The national discretion given to local regulators to set the Internal Loss Multiplier (ILM), which is the second component of the SMA approach, runs the risk of creating an uneven playing field for jurisdictions that do not exercise that discretion, and will potentially penalise firms with no, or minimal, loss history.

For trade finance the impact is likely to be negative as trade is an operationally intensive business and capital charges are likely to go up.

**Scaling Factor:** Removal of the 1.06 scaling factor for IRB credit risk models is likely to offset some of the increases from the recalibration of risk parameters discussed above.

**Credit Risk Standardised Approach:** Several impact analyses done by the market indicate that the recalibration of the standardised approach risk weights will translate into higher risk weights for corporates, banks, specialised lending, commercial real estate and equities.

The significant increases shown under the standardised approach are important as they have a knock-on impact on the output floor calculations (see below). In the treatment of unrated corporate exposures in jurisdictions where external ratings were previously allowed, the revised standardised approach now assigns a 100% risk weight for externally unrated corporate exposures. An unintended consequence of the regulation is that unrated subsidiaries of corporates with an investment grade external rating of the parent company will also attract a 100% risk weighting.

The impact will be significant for European and Asian banks where corporate external ratings are far less common.

Given that many corporates use trade finance facilities, trade as an asset class is also affected. There is a strong case for arguing that where the parent company is externally rated, their unrated subsidiaries should be assigned a notched rating from the parent, or a risk weight of 65% if it is deemed to be an investment grade corporate in line with internal bank criteria set for investment grade companies.

**Output Floor:**

Output Floor: The new regulations introduce capital floors to limit the risk weighted asset (RWA) reduction that can be achieved using IRB credit risk models (Figure 51). This will incentivise banks to be judicious in the use of internal risk models.

Figure 51:

**Comparison of risk weighted assets (RWA) between IRB and Basel**
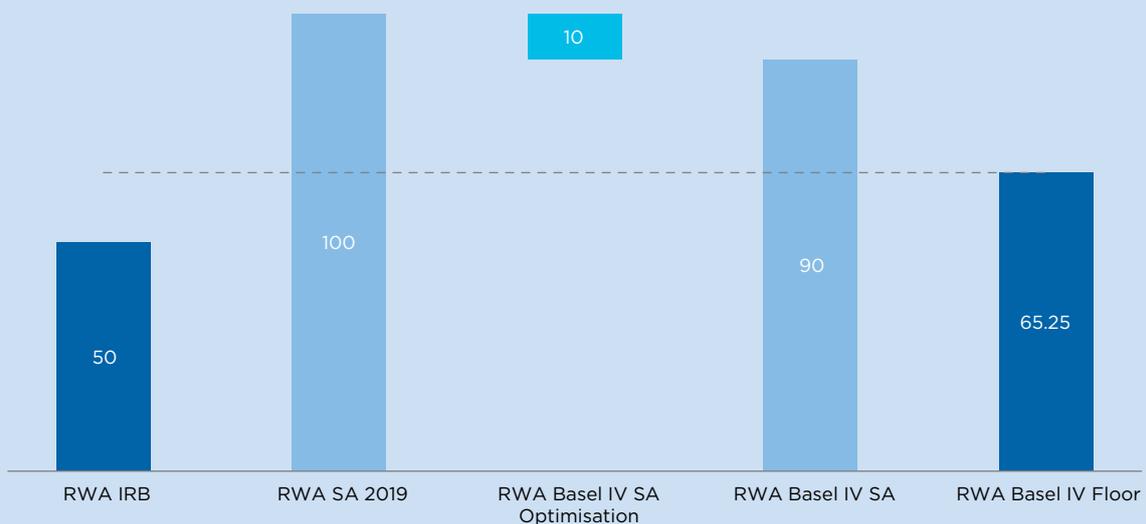


The implementation of the output floor raises a number of strategic questions which are outlined below:

– As the floor is at the entity level, will the floor be at group, subsidiary or branch/country level?

– If applicable at subsidiary level (assumed to be the operating level), will the floor be held centrally or will it be cascaded down to the business level?

– If cascaded down to the business level, how will this be applied across portfolios (e.g. residential mortgages, credit card, other retail portfolios, sovereigns, banks, corporates, SMEs and specialised lending)?

– Will product design and pricing need to change?

The output floor will be a game changer for many banks. It will force a strategic rethink of products and services offered to customers, and trade as an asset class is not immune from the impact of the output floor.

# LOOKING AHEAD: EVOLUTION OF THE TRADE REGISTER

The objective of the ICC Trade Register continues to be to engage global, regional and national regulators in a fact-based, data-supported dialogue and advocacy process related to the credit risk characteristics of trade finance and export finance.

The Register is acknowledged by regulatory authorities around the world as a credible source of data. The methodology and the collected data continue to improve, resulting in a compelling illustration of the robustness, health and favourable credit risk profile of trade finance.

By necessity, the Trade Register is an evolving project. In the coming years our team will focus on four areas to continue to best support the industry: methodological improvements, data set growth, scope expansion, and regulatory authority engagement.

## Methodology improvements
The new GCD data collection portal has materially improved data quality and reliability. Over the coming years the new data collection methodology will enhance data integration from GCD, making the data a better input into LGD risk models to inform regulation, capital allocation and accounting practices.

To support ongoing data collection and integration, we will continue to work closely with contributing banks to make sure that the data collection operations are as streamlined as possible.

## Data set growth
In order to provide increasingly representative data at both a global and regional level, we will continue to actively expand participation in the Trade Register to grow the underlying data set. In particular, we will aim to enhance the data set used for CCF and LGD calculations. While this data can be challenging for banks to extract, these data points are an important part of credit risk calculations.

## Scope expansion
In 2018, the scope of the Trade Register was expanded to include supply chain finance

payables finance – a first step in better reflecting open account products. Looking forward we will aim to expand the scope of data collected on SCF to enable the estimation of LGD for payables finance, and grow the underlying data set for calculating default rates at regional level. In addition, outside of SCF, we will analyse the feasibility of expanding the Trade Register to cover receivable finance.

In the longer term we will explore ways to expand the scope to include operational and fraud risks, in addition to credit risk.

## Regulatory authority engagement
The Trade Register was initially designed to support a data-driven dialogue on the credit risk characteristics of trade finance and export finance. This remains the case, and we will continue to work with regulatory authorities to ensure that trade receives consistent, risk-aligned capital treatment across all jurisdictions.

## Delivering greater value for members from a technical and internal banking perspective
Under Advanced IRB rules, banks can segment their borrower portfolios in as much detail as they like, with the usual practical limitation of the amount of data available. By pooling detailed trade finance data using the ICC Trade Register templates, banks can understand their trade finance risks in detail, and price and model these risks more accurately.

The ICC Trade Register has already provided sufficient default rate data to allow banks to calibrate the PD scales of trade finance portfolios for guarantees, import L/Cs and export L/Cs customers. To demonstrate the effect of using the trade finance default rates obtained in the data collection, we simulated a typical trade finance portfolio, modelled as both normal corporate and trade finance. The results show that banks with access to detailed Trade Register PD data may be able to calibrate PD models at lower levels that, allowing for conservatism, may result in an RWA reduction of 10%–35%.

The ICC Trade Register Collection portal also contains sufficient fields to calculate specific trade finance LGDs and CCFs. For the data return to be meaningful each contributing bank needs to invest the necessary resources to collect and provide their own data to the pooling effort. If no or poor data are provided by banks, only poor data can be pooled and returned back. As more data is collected in the future, these parameters will continue to improve. To truly unlock the benefits of data pooling for member banks, data quality needs to continue to improve, which will allow the Trade Register to return detailed data to banks that can be used in their credit risk modelling. This risk modelling will also help banks to build and calibrate their IFRS 9 models, with a comparable reduction in IFRS 9 reserve charges coming from Bucket 2 and Bucket 3 assets.

As part of the evolution of the Trade Register, at this point we continue the sharing of limited data returns with banks as initiated last year, after the publication of this report. We will then, over time, work to increase the scope, breadth, and accuracy of these returns to support our members further in their credit risk modelling.

# CONCLUSIONS

Trade finance and export finance act as essential lubrication in the engine 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. Trade finance and export finance are also significant 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.

The Trade Register will remain a particularly important source of information as banks assess the implications of Basel III reforms on the Standardised Approach.

The 2018 findings show that trade finance and export finance both remain low-risk products for banks. Trade finance default rates broadly declined in 2017 and maturities remain short. Expected Loss percentages are below or similar to comparable asset classes such as SME lending. While export finance default rates increased slightly in 2017, export finance continues to be very low risk, particularly when considering fully completed recovery cases. And early indications are that payables finance default rates are comparable with those of traditional trade finance products.

The 2018 Trade Register marks a big step in improving the value it delivers to industry participants with a number of methodological and scope improvements:

- Increased scope to include supply chain finance payables finance to reflect the shift in trade finance revenue pools from documentary trade towards open account terms

- Increased scope to include non-OECD ECAs for export finance products to reflect increasing importance of non-OECD Arrangement ECAs

- Improved data collection methodology to include validation at point of entry, improving the usability and integrity of the underlying data set

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 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

APPENDICES

# APPENDIX A: APPROACH TO ANALYSIS AND DEFINITIONS

## Report limitations

- **Data quality and completeness:** ICC collects data from member banks at the most granular level of detail, resulting in large numbers of fields for each transaction and many thousands or hundreds of thousands of transactions per bank. This volume of data is both 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, for the 2018 Report we implemented a new digital submission process which automatically performs a number of these validation checks at source

  In addition, we perform a number of manual checks to ensure accuracy. For example, the number and percentage of defaulted obligors per facility type per year is compared between each bank to look for outliers. If a bank's initial input data suggests a default rate 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 in all years

- **Consistency of definition of default:** The bank-declared defaults that contribute to this database are in line with Basel methodology, in which defaults are counted whenever an obligor is declared "in default" by the reporting bank. The definitions prescribed require the bank to identify borrowers with overdue payments of 90 days or more, and also other borrowers judged by the bank as "unlikely

to pay". This element of judgement will always result in differences 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 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 includes 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 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. In addition, if a given customer or transaction is in default across 2 separate banks, this would count as 2 separate defaults. This conservative approach is in part driven by confidentiality, in so far as banks are unable to disclose client names (or LEIs) for use in de-duplication. This means that: (i) summing the defaults in each country will slightly overstate the true global total number of obligors or transactions in default; 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 increased proportionally

- **Obligor-weighted expected loss:** Due to limitations of obligor-level recovery data provided by some banks, obligor-weighted Expected Loss (EL) is calculated using exposure-weighted Loss Given Default (LGD)

The data template for the trade finance 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 Credit Conversion Factors (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. Sample sizes of obligors, exposures and transactions are shown in Figures 55 and 56.

## Trade Finance

### Scope of trade finance products

Figure 52:
**Definitions of trade finance products**

| Trade Finance Products | Definition |
|---|---|
| Issued Import Letters of Credit (Referred to as Import L/Cs) | Documentary Letter of Credit issued by the participating bank, covering the movement of goods or services. |
| Confirmed Export Letters of Credit (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, 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 Letters of Credit (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 programme within which sellers in the buyer's supply chain are able to access finance by means of Receivables Purchase. |

For the purpose of the ICC Trade Register participating banks are requested to submit data for five trade finance product categories (Figure 52).

## 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 letter of credit (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 (EAD) measures a bank's exposure to a counterparty at the time of default. It is defined as the gross exposure, including an estimate of undrawn or unutilised facilities. L/C and performance guarantee exposures are contingent on an act that must be performed before the exposure is created. For example, trade documentation must be presented and accepted to trigger a valid claim under an L/C.

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

In many cases, the amount requested for payment of the default is lower than the limit on a facility over the course of a transaction's lifecycle. This occurs where a reduction in

volumes reduces the total exposure level, as in the case of a partial shipment under an L/C. A total exposure often comes by way of multiple transactions. For example, a customer may have a limit and contingent exposure of 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 EL 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 CCFs.

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, in this Report a CCF of 100% was used to estimate an EAD figure for Import L/Cs, Export L/Cs and loans for import/export. As discussed in previous editions, the Project will continue building the database 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 claim rate is expected. As with L/Cs, the Trade Register has been collecting data since 2013 to better determine CCFs for performance guarantees. Only a few data points can be collected, and limited additional data points were submitted by banks for 2017. Using the data collected, the claim rate has been calculated (and

assumed CCF) as 7.6% (Figure 53), with observations from individual banks in the range of 0% to 34%. This value is the same as that calculated in last year's report – in part due to the limited additional data available. It is important to note that the 7.6% 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 7.6% claim 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 7.6% of the limit), which made the Trade Register's historical methodology of applying the claim rate to EAD incorrect. The more correct alternative would be to apply this 7.6% to LGD, and assume EAD to be 100% as is done so for L/Cs and loans for import/export. Of the member bank representatives surveyed, 75% preferred this approach.

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.

The following CCFs have been used to reflect EAD for trade finance products in this Report.

Figure 53:

**Assumed CCFs by trade finance product**

**Credit Conversion Factor (CFF), %**
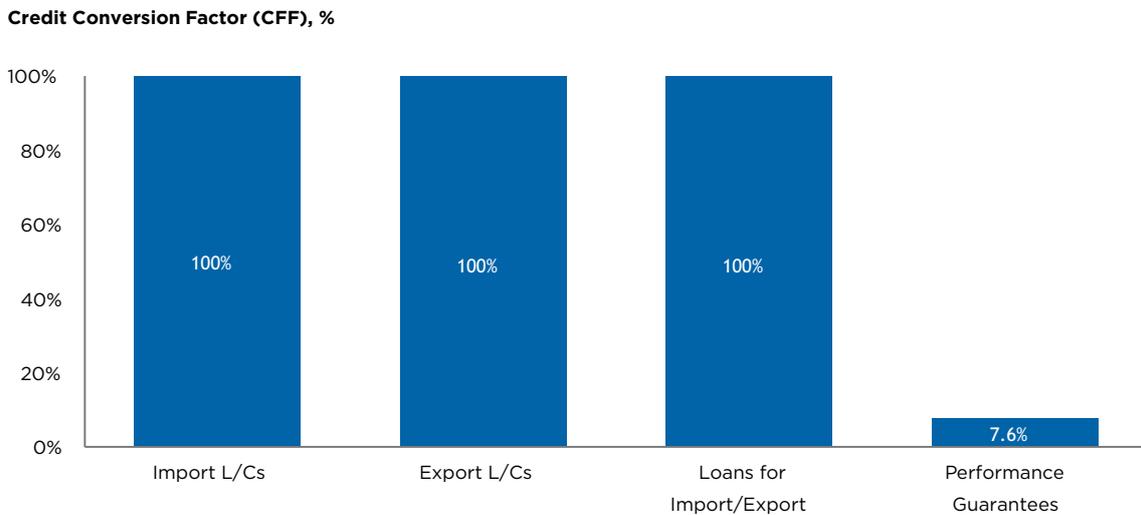
## Loss given default and expected loss

Loss given default (LGD) measures the loss incurred by a bank in relation to the overall exposure of the bank at the time 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 core components:

• Observed recovery rates, as a percentage of the Exposure at Default (EAD)

• 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 EL 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, the following caveats apply:

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 LGD, meaning that the underlying data effectively comes from four different data pools. Each pool is supplied by an overlapping but not perfectly consistent set of lenders.

2. For each of the trade finance and other asset class pools, the defaulted borrowers in the default rate calculation are not completely consistent with the defaulted borrowers used in the LGD calculation.

3. The trade finance default rate data is obligor-weighted, while the LGD data is exposure-weighted. The GCD comparative other asset class data is obligor-weighted for both default rate and LGD data.

4. The discount rate for LGD has been applied at a consistent 9%.

5. Borrower size, borrower industry and country profile differ between trade finance and other asset class data pools.

6. The data templates differ between ICC Trade Register and GCD. The ICC Trade Register LGD collection of short-term data receives exposure amounts at the time of default and the final loss or recovery, meaning that the recoveries are delivered net and aggregated before discounting. GCD collects detailed cash flows tagged by date and source and uses this to compute a discounted recovery rate and LGD.

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

# Credit Conversion Factors (CCFs)

The Credit Conversion Factor (CCF) estimates the likelihood of an undrawn trade facility being drawn down and is a key input in the calculation of Exposure at Default (EAD). 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. letters of credit (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 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 challenge because: 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 (e.g. 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 before a default, a claim on the trade finance product could not be constituted

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

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

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

  – Both these approaches result in the same expected loss

For a precise CCF calculation, transaction/product level data is critical to reconcile the transaction lifecycle of a trade finance product. The ICC Trade Register Project is considering collecting this data in the future. Given the practical challenges in reporting data consistently on product level and across the full life cycle (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 (Figure 54).

FIGURE 54:

**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<br>• The cash flow generated by the collateral is the loan's sole or almost exclusive source of repayment<br>• The subject loan represents a significant liability in the borrower's capital structure<br>• 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<br>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 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 rate can be calculated for closer alignment to the Basel methodology. All transactions are reported by four major asset categories – Corporate, Financial Institutions, 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 2008–2017; 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.

While we can apply customer- and transaction-level unique identifiers for each bank, with our current methodology we are unable to link transactions across different banks. This will therefore cause some data duplication in the case of customer- and transaction-level defaults in syndicated deals. As mentioned above, given that this impacts both the numerator and denominator when calculating these default rates, we envisage the impact to be relatively minor.

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 2008–2017.

### Loss given default
#### Overview
As detailed in the trade finance analysis, LGD is a measure of the loss incurred by a bank in relation to the overall exposure of the bank at the time 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 the Tarde Register 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, the ECA would be given USD 95,000 (95%) and the bank would retain USD 5,000 (5%). The bank's overall recovery is USD 955,000.

### Discounting

For Basel LGD 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 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 (2017 was the first year for which data was collected 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 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).

APPENDICES

**Expected Loss (EL)**

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 Trade Register. In some instances this coverage is higher, up to 100%, and the EL will vary by case.

APPENDICES

# APPENDIX B: DATA COLLECTION & FILTERING

## Data availability

Data collection under the revised methodology is now in its fifth year (covering six years of data from 2012–2017) 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 2018 Report

Even with these 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/loss given default (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 2018 dataset shows continued improvement in quality and quantity over the datasets used in earlier editions of this Report.

For trade finance, 91% of the transactions now included in the Trade Register have successfully passed the data-filtering process. This compares to 89% in last year's 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 include approximately 83% of available data points. This results in 43,235 data points available for analysis, which is a 7% increase on the 2017 data set.

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 55 and 56 show the unfiltered data set that comprises the Trade Register. The following sections are provided as additional detail and are not a comprehensive overview of all aspects of the analysis contained in this Report.

Figure 55:

**Unfiltered data sample for trade finance, 2008–2017**

|  | Banks in sample | # Transactions | # Customers | Exposure (USD B) |
|---|---|---|---|---|
| Submitted data | 25 | 28,241,632 | 1,170,545 | 14,379 |
| Default rate analysis | 23 | 25,621,120 | 1,020,972 | 10,465 |
| Recovery Rate Analysis | 12 | 7,851 | 479 | 2 |

Figure 56:

**Unfiltered data sample for export finance, 2007–2017**

|  | Banks in sample | # Data Points | # Customers | Exposure (USD B) |
|---|---|---|---|---|
| Submitted data | 18 | 52,041 | 6,305 | 806 |
| Default rate analysis | 17 | 43,235 | 5,090 | 746 |
| Recovery Rate Analysis | 13 | 222 | 141 | 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 Trade Register, the filtering criteria that lead to most exclusions are linked to the requirement for each bank to be able to submit obligor, transaction and exposure level information on a consistent basis. This is reflected in the customer and transaction filters (e.g. if a bank cannot provide customer information it would be reflected in the customer filter). The transaction filter also includes transactions excluded due to other data quality issues that could not be resolved over the course of the data collection process.

The customer filter and transactional filter can be applied independently to derive the customer level default rate and the transaction level default rate. On the one hand this would create a larger sample set, but on the other hand this approach would lead to two different subsamples to analyse. When compared, these subsamples would always have inherent differences and could lead to incorrect conclusions. As a result, a smaller, more comparable dataset has been produced for the purposes of the overall default rate analysis, using only data where both customer and transaction information was available. However, this filter has been relaxed where possible for other analyses such as maturity and loss given default. The unavoidable result of this difference in filtering is that the EL 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 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 the scope of the Export Finance 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 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 into cleansing to arrive at a consistent year-after-year data set for individual transactions. Ultimately a coherent data set covering export finance data from 2007–2017 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 57:

**Total customers and default rate by loan sub-product, 2008–2017**

| Loan Sub-Product | Obligors | Defaulting Obligors | Default Rate |
|---|---|---|---|
| Loans for Import/Export (Bank & Corp.) | 292,921 | 2,214 | 0.756% |
| Loans for Import (Bank & Corp.) | 124,183 | 1,168 | 0.941% |
| Loans for Export (Bank & Corp.) | 108,482 | 782 | 0.721% |
| Loans for Import/Export (Bank) | 61,625 | 67 | 0.109% |
| Loans for Import/Export (Corp.) | 231,296 | 2,147 | 0.928% |

Figure 58:

**Variance of obligor default rates across banks by product, 2008–2017**

**Default Rate by Obligor, %**
*(1st quartile, median, 3rd quartile, max.)*
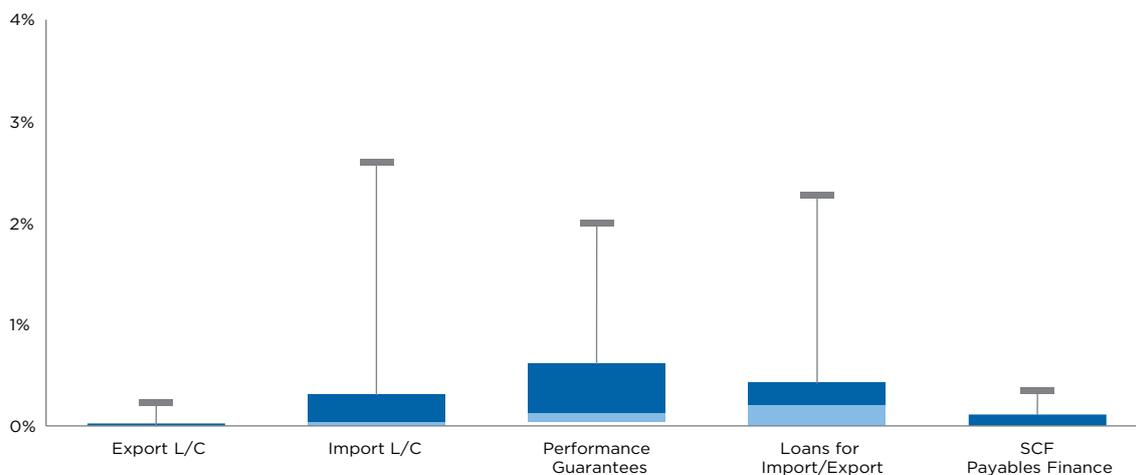


Source: ICC Trade Register 2018

Figure 59:

**Obligor-weighted default rates by product and region, 2008–2017**
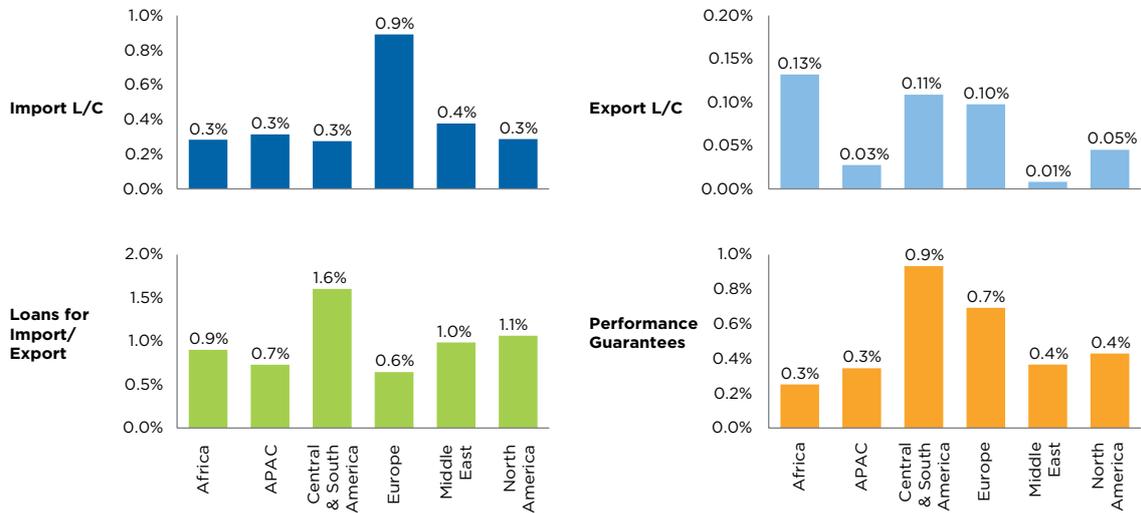


Note: Regions and Countries reflect those of Obligor
Source: ICC Trade Register 2018

Figure 60:

**Import L/Cs obligor-weighted default rates by region, 2013–2017**

| | 2013 | 2014 | 2015 | 2016 | 2017 |
|---|---|---|---|---|---|
| Africa | 0.15% | 0.39% | 0.20% | 0.48% | 0.14% |
| APAC | 0.34% | 0.39% | 0.32% | 0.30% | 0.20% |
| Central & South America | 0.00% | 0.45% | 0.37% | 0.52% | 0.26% |
| Europe | 0.26% | 0.80% | 2.03% | 1.18% | 1.38% |
| Middle East | 0.03% | 0.61% | 0.23% | 0.83% | 0.19% |
| North America | 0.10% | 0.10% | 0.75% | 0.27% | 0.43% |
| Other | 0.00% | 0.00% | 0.00% | 2.62% | 0.00% |
| **Total** | **0.28%** | **0.43%** | **0.50%** | **0.48%** | **0.31%** |

Figure 61:

**Import L/Cs exposure-weighted default rates by region, 2013–2017**

| | 2013 | 2014 | 2015 | 2016 | 2017 |
|---|---|---|---|---|---|
| Africa | 0.03% | 0.02% | 0.02% | 0.02% | 0.01% |
| APAC | 0.04% | 0.12% | 0.10% | 0.02% | 0.05% |
| Central & South America | 0.00% | 0.02% | 0.00% | 0.01% | 0.01% |
| Europe | 0.01% | 0.11% | 0.13% | 0.09% | 0.29% |
| Middle East | 0.00% | 0.67% | 0.02% | 0.11% | 0.07% |
| North America | 0.21% | 0.03% | 0.27% | 0.00% | 0.14% |
| Other | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% |
| **Total** | **0.04%** | **0.13%** | **0.11%** | **0.03%** | **0.08%** |

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Figure 62:

**Export L/Cs obligor-weighted default rates by region, 2013–2017**

|  | 2013 | 2014 | 2015 | 2016 | 2017 |
|---|---|---|---|---|---|
| Africa | 0.19% | 0.06% | 0.09% | 0.59% | 0.05% |
| APAC | 0.05% | 0.02% | 0.03% | 0.01% | 0.02% |
| Central & South America | 0.00% | 0.00% | 0.86% | 0.00% | 0.23% |
| Europe | 0.07% | 0.09% | 0.31% | 0.00% | 0.05% |
| Middle East | 0.04% | 0.00% | 0.00% | 0.00% | 0.00% |
| North America | 0.00% | 0.11% | 0.00% | 0.00% | 0.00% |
| Other | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% |
| **Total** | **0.06%** | **0.03%** | **0.08%** | **0.06%** | **0.03%** |

Figure 63:

**Export L/Cs exposure-weighted default rates by region, 2013–2017**

|  | 2013 | 2014 | 2015 | 2016 | 2017 |
|---|---|---|---|---|---|
| Africa | 0.02% | 0.00% | 0.01% | 0.27% | 0.00% |
| APAC | 0.01% | 0.00% | 0.01% | 0.00% | 0.00% |
| Central & South America | 0.00% | 0.00% | 0.20% | 0.00% | 0.00% |
| Europe | 0.00% | 0.06% | 0.97% | 0.00% | 0.03% |
| Middle East | 0.01% | 0.00% | 0.00% | 0.00% | 0.00% |
| North America | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% |
| Other | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% |
| **Total** | **0.01%** | **0.01%** | **0.11%** | **0.01%** | **0.00%** |

Figure 64:

**Loans for import/export obligor-weighted default rates by region, 2013–2017**

|  | 2013 | 2014 | 2015 | 2016 | 2017 |
|---|---|---|---|---|---|
| Africa | 1.03% | 2.40% | 0.28% | 1.47% | 0.13% |
| APAC | 0.68% | 0.87% | 0.85% | 0.81% | 0.43% |
| Central & South America | 0.60% | 3.67% | 2.29% | 0.89% | 0.47% |
| Europe | 0.38% | 1.08% | 0.93% | 0.63% | 0.56% |
| Middle East | 0.16% | 1.89% | 0.94% | 1.72% | 0.54% |
| North America | 0.09% | 2.27% | 2.79% | 0.58% | 0.10% |
| Other | 0.18% | 0.07% | 0.00% | 1.07% | 0.00% |
| **Total** | **0.61%** | **1.10%** | **0.93%** | **0.88%** | **0.44%** |

Figure 65:

**Loans for import/export exposure-weighted default rates by region, 2013–2017**

|  | **2013** | **2014** | **2015** | **2016** | **2017** |
|---|---|---|---|---|---|
| Africa | 0.43% | 0.45% | 0.06% | 1.19% | 0.13% |
| APAC | 0.14% | 0.18% | 0.33% | 0.29% | 0.08% |
| Central & South America | 0.04% | 1.05% | 0.51% | 0.90% | 0.04% |
| Europe | 0.33% | 0.05% | 0.08% | 0.14% | 0.04% |
| Middle East | 0.13% | 0.30% | 0.69% | 0.44% | 0.12% |
| North America | 0.21% | 0.29% | 0.26% | 0.02% | 0.00% |
| Other | 0.01% | 0.11% | 0.00% | 0.09% | 0.00% |
| **Total** | **0.17%** | **0.23%** | **0.32%** | **0.29%** | **0.07%** |

Figure 66:

**Performance guarantee obligor-weighted default rates by region, 2013–2017**

|  | **2013** | **2014** | **2015** | **2016** | **2017** |
|---|---|---|---|---|---|
| Africa | 0.10% | 0.32% | 0.33% | 0.33% | 0.15% |
| APAC | 0.34% | 0.37% | 0.39% | 0.27% | 0.41% |
| Central & South America | 0.00% | 0.96% | 2.48% | 0.80% | 0.53% |
| Europe | 0.58% | 1.16% | 0.94% | 0.71% | 0.45% |
| Middle East | 0.11% | 0.74% | 0.13% | 0.34% | 0.64% |
| North America | 0.47% | 0.19% | 0.71% | 0.45% | 0.82% |
| Other | 0.00% | 0.74% | 0.00% | 0.00% | 0.00% |
| **Total** | **0.42%** | **0.61%** | **0.61%** | **0.45%** | **0.44%** |

Figure 67:

**Performance guarantee exposure-weighted default rates by region, 2013–2017**

|  | **2013** | **2014** | **2015** | **2016** | **2017** |
|---|---|---|---|---|---|
| Africa | 0.21% | 0.11% | 0.52% | 0.04% | 0.36% |
| APAC | 0.21% | 0.04% | 0.31% | 0.17% | 0.26% |
| Central & South America | 0.00% | 0.32% | 2.52% | 1.65% | 0.04% |
| Europe | 0.34% | 0.13% | 0.60% | 0.54% | 0.18% |
| Middle East | 0.31% | 0.39% | 0.16% | 0.04% | 0.18% |
| North America | 0.03% | 0.15% | 0.31% | 1.76% | 0.56% |
| Other | 0.00% | 0.16% | 0.00% | 0.00% | 0.00% |
| **Total** | **0.20%** | **0.13%** | **0.38%** | **0.55%** | **0.25%** |

## Loss given default and expected loss analysis

Figure 68:

**Average "event likelihood" in the life of a performance guarantee, 2008-2017**
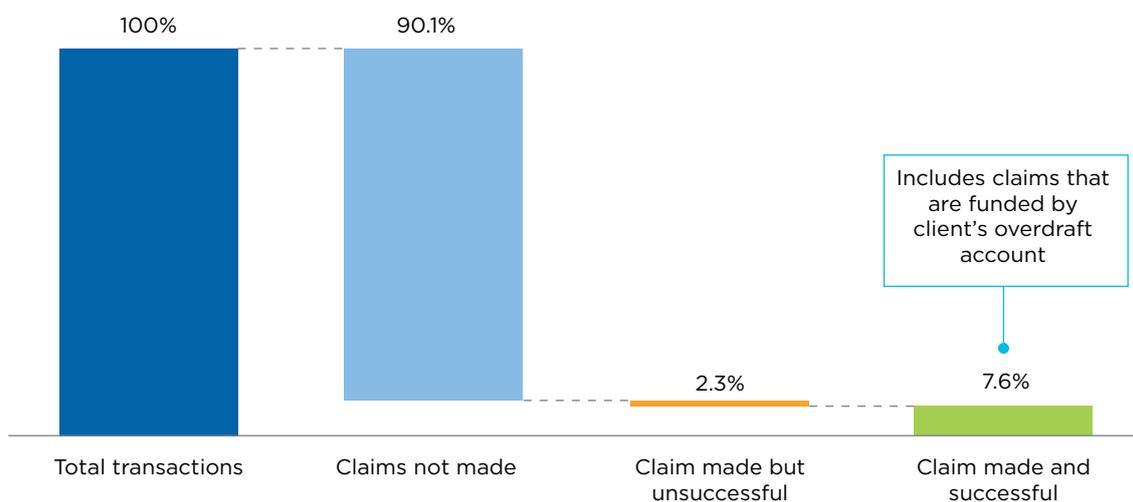


Source: ICC Trade Register 2018

Figure 69:

**Average time to recovery in days and years, 2008-2017**

| Product | Time to Recovery – Days | Time to Recovery – Years |
|---|---|---|
| Import L/C | 184 | 0.50 |
| Export L/C | 111 | 0.30 |
| Loans for Import/Export | 123 | 0.34 |
| Performance Guarantees | 61 | 0.17 |

Figure 70:

**Cumulative recoveries and exposure weighted recovery rates, 2008-2017**

| 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 | 804,660 | 1,188,151 | 68% |
| Performance Guarantees | 146,486 | 238,061 | 62% |

Figure 71:

**Exposure-weighted recovery rate range across banks, 2008-2017**

| Product | Minimum | Maximum |
|---|---|---|
| Export L/C | 0.5% | 100.0% |
| Import L/C | 51.3% | 100.0% |
| Performance Guarantees | 0.0% | 101.7% |
| Loans for Import/Export | 1.2% | 91.7% |

Figure 72:

**Transaction-weighted Recovery Rate, 2008-2017**

| Product | Recovery Rate |
|---|---|
| Export L/C | 81.7% |
| Import L/C | 92.7% |
| Performance Guarantees | 76.8% |
| Loans for Import/Export | 54.3% |

Figure 73:

**Exposure-weighted LGD by product (discount rate sensitivity adjusted), 2008-2017**

| Product | Recovery Rate | Tin to Recovery – Years | Discounted Recoveries & Costs (at 2%) | | | LGD | | |
|---|---|---|---|---|---|---|---|---|
| | | | 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 | 68% | 0.34 | 1.1% | 1.9% | 2.7% | 35.4% | 36.2% | 37.0% |
| Performance Guarantees | 62% | 0.17 | 0.5% | 0.9% | 1.2% | 41.0% | 41.3% | 41.7% |

Figure 74:

**Expected loss calculation by product, 2008-2017**

| Product | Default Rate | | | EAD | LGD (9% Discount Rate) | Expected Loss | | |
|---|---|---|---|---|---|---|---|---|
| | Exposure weighted | Obligor weighted | Transaction weighted | | | Exposure | Obligors | Transactions |
| Import L/C | 0.07% | 0.37% | 0.11% | 100.0% | 29.9% | 0.02% | 0.11% | 0.03% |
| Export L/C | 0.03% | 0.05% | 0.01% | 100.0% | 36.3% | 0.01% | 0.02% | 0.00% |
| Loans for Import/Export | 0.19% | 0.76% | 0.23% | 100.0% | 36.2% | 0.07% | 0.27% | 0.08% |
| Performance Guarantees | 0.25% | 0.47% | 0.17% | 7.6% | 41.3% | 0.01% | 0.01% | 0.01% |

APPENDICES

## Export Finance

### Default rate analysis: By asset category

Figure 75:
**Obligor default rates by asset category, 2007-2017**

| Asset | Total Obligors | Defaulting Obligors | Default Rate |
|---|---|---|---|
| Corporate | 9,619 | 109 | 1.13% |
| Financial Institutions | 3,713 | 51 | 1.37% |
| Sovereign | 2,261 | 10 | 0.44% |
| Specialised | 3,565 | 19 | 0.53% |
| **Total** | **19,158** | **189** | **0.99%** |

Figure 76:
**Transaction default rates by asset category, 2007-2017**

| Asset | Total Transactions | Defaulting Transactions | Default Rate |
|---|---|---|---|
| Corporate | 20,020 | 194 | 0.97% |
| Financial Institutions | 7,749 | 109 | 1.41% |
| Sovereign | 6,500 | 22 | 0.34% |
| Specialised | 9,241 | 57 | 0.62% |
| **Total** | **43,510** | **382** | **0.88%** |

Figure 77:
**Exposure weighted default rates by asset category, 2007-2017**

| Asset | Total Exposures (USD K) | Defaulting Exposures (USD K) | Default Rate |
|---|---|---|---|
| Corporate | 397,014,840 | 2,689,751 | 0.68% |
| Financial Institutions | 52,215,725 | 630,589 | 1.21% |
| Sovereign | 132,884,644 | 366,121 | 0.28% |
| Specialised | 163,897,952 | 645,285 | 0.39% |
| **Total** | **746,013,161** | **4,331,747** | **0.58%** |

## Default rate analysis: By region

### Figure 78:
**Obligor default rates by region of risk, 2007-2017**

| Region | Total Obligors | Defaulting Obligors | Default Rate |
|---|---|---|---|
| Africa | 1,943 | 18 | 0.93% |
| APAC | 3,528 | 20 | 0.57% |
| Central & South America | 2,323 | 27 | 1.16% |
| Europe | 3,806 | 25 | 0.66% |
| ex-CIS | 4,400 | 54 | 1.23% |
| Middle East | 1,467 | 34 | 2.32% |
| North America | 1,666 | 11 | 0.66% |
| **Total** | **19,133** | **189** | **0.99%** |

### Figure 79:
**Transaction default rates by region of risk, 2007-2017**

| Region | Total Transactions | Defaulting Transactions | Default Rate |
|---|---|---|---|
| Africa | 5,103 | 41 | 0.80% |
| APAC | 9,938 | 56 | 0.56% |
| Central & South America | 5,546 | 41 | 0.74% |
| Europe | 8,143 | 47 | 0.58% |
| ex-CIS | 7,203 | 92 | 1.28% |
| Middle East | 4,016 | 83 | 2.07% |
| North America | 3,520 | 22 | 0.63% |
| **Total** | **43,469** | **382** | **0.88%** |

### Figure 80:
**Exposure weighted default rates by region of risk, 2007-2017**

| Region | Total Exposures (USD K) | Defaulting Exposures (USD K) | Default Rate |
|---|---|---|---|
| Africa | 83,573,732 | 532,938 | 0.64% |
| APAC | 172,235,579 | 702,542 | 0.41% |
| Central & South America | 107,240,529 | 732,781 | 0.68% |
| Europe | 153,531,065 | 538,398 | 0.35% |
| ex-CIS | 77,221,806 | 779,907 | 1.01% |
| Middle East | 73,264,117 | 665,997 | 0.91% |
| North America | 77,507,797 | 379,184 | 0.49% |
| **Total** | **744,574,625** | **4,331,747** | **0.58%** |

# Appendix D: List of Acronyms

| | |
|---|---|
| **ADB** | Asian Development Bank |
| **A/F-IRB** | Advanced/Foundation Internal Ratings-Based Approach |
| **AMA** | Advanced Measurement Approach |
| **AML** | Anti-Money Laundering |
| **APAC** | Asia-Pacific |
| **ASEAN** | Association of Southeast Asian Nations |
| **BCBS** | Basel Committee on Banking Supervision |
| **BCG** | Boston Consulting Group |
| **BPS** | Basis Point(s) |
| **CCAR** | Comprehensive Capital Analysis and Review |
| **CCF** | Credit Conversion Factor |
| **CIS** | Commonwealth of Independent States |
| **DLT** | Distributed Ledger Technology |
| **EAD** | Exposure At Default |
| **ECA** | Export Credit Agency |
| **EL** | Expected Loss |
| **EU** | European Union |
| **ex-CIS** | ex-Commonwealth of Independent States |
| **FI** | Financial Institution |
| **GCD** | Boston Consulting Group |
| **GDP** | Gross Domestic Product |
| **GMAP** | Global Map of Environmental and Social Risks in Agro-Commodity Production |
| **G-SIB** | Global Systemically Important Bank |
| **GTE** | Performance Guarantee |
| **IFRS** | International Financial Reporting Standards |
| **IFRS9** | International Financial Reporting Standards 9 |

| | |
|---|---|
| **ICC** | International Chamber of Commerce |
| **ILM** | Internal Loss Multiplier |
| **IMF** | International Monetary Fund |
| **IRB-A** | Internal Ratings Based - Advance |
| **IRB-F** | Internal Ratings Based - Foundations |
| **IoT** | Internet of Things |
| **KYC** | Know Your Customer |
| **LEI** | Legal Entity Identifier |
| **L/C(s)** | Letter(s) of credit |
| **LGD** | Loss Given Default |
| **MENA** | Middle East and North Africa |
| **MFW** | Maturity Floor Waiver |
| **NAFTA** | North American Free Trade Agreement |
| **NSFR** | Net Stable Funding Ratio |
| **OECD** | Organisation for Economic Co-operation and Development |
| **OCR** | Optical Character Recognition |
| **PD** | Probability of Default |
| **RPA** | Robotic Process Automation |
| **RWA** | Risk Weighted Assets |
| **SCF** | Supply Chain Finance |
| **SMA** | Standardised Measurement Approach |
| **SME** | Small and Medium-Sized Enterprises |
| **UCC** | Unconditionally Cancellable Commitment |
| **UNGA** | United Nations General Assembly |
| **WTO** | World Trade Organization |

# ICC BANKING COMMISSION

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

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

### Rules

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

### Policymaking

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

### Publications and market intelligence

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

### Dispute resolution

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

### Education and certification

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

### Specialised training and events

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

### Strategic partnerships

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

**ICC** INTERNATIONAL CHAMBER OF COMMERCE @100 years

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