Global Credit Data
by banks for banks

LGD REPORT 2020

LARGE CORPORATE BORROWERS

MAY 2020

BASED ON A COMPREHENSIVE LGD TOOLBOX FOR MODELLING CREDIT RISK LOSSES, INCLUDING COMPLETE DATA COVERING THE RIPPLE EFFECTS OF THE LAST TWO FINANCIAL CRISES

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ABOUT GLOBAL CREDIT DATA

Global Credit Data (GCD) is a non-profit association owned by 50+ member banks with the simple mission to help banks better understand and measure their credit risks through data pooling and benchmarking activities. GCD's data pools support the key parameters of banks' credit risk modelling: Probability of Default (PD), Loss Given Default (LGD), Exposure at Default (EAD).

GCD started collecting historical loss data in 2004, offering exclusive access to its member banks. These banks receive the detailed anonymised database and can therefore confirm results and test them on customised sub-sets of data. The LGD database now totals over 195,000 non-retail defaulted loan facilities from around the world to more than 100,000 borrowers covering 11 Basel asset classes.

In 2009, GCD introduced a PD database which now has over 15 years of default rates and PDs. GCD also runs a name and cluster benchmarking database to help banks calibrate and benchmark their PD, LGD and EAD models.

GCD operates all databases on a "give to get" basis, meaning that members must supply high-quality data to receive data in return. The robustness of GCD's data collection infrastructure helps place GCD's databases as the global standard for credit risk data pooling.

www.globalcreditdata.org

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WHAT IS LOSS GIVEN DEFAULT?

Loss given default (LGD) reflects how much money a bank or other financial institution loses when a borrower defaults on a loan, expressed as a percentage of total exposure at the time of default. LGD is one of the key factors used to calculate expected credit losses and AIRB regulatory capital along with probability of default (PD) and exposure at default (EAD).

What's new with LGD?

Requirements for accurate credit loss and LGD modelling have been significantly increased by developments in regulation and standards over the last several years. Business usage of acute pricing information can also provide valuable insights in competitive markets. Both regulatory capital frameworks, impairment frameworks (such as IFRS 9 and CECL) and stress-testing frameworks (CCAR) created a massive need for detailed default and loss data. Investors, regulators and accountants require banks to be able to project expected and unexpected loss levels under different scenarios. Both banks' business as well as their capital holding strategies are significantly influenced by these calculations. Banks benefiting from GCD's consistent information exchange and wealth of data are also able to fine-tune their final estimates via benchmarking.

FOREWORD

As banks actively monitor their portfolios, factoring in the possible impacts of Covid-19 pandemic scenarios together with policy responses and the economic transmission mechanisms of credit risk in their core client segments, now is an interesting time to be presenting this, the Global Credit Data (GCD) Annual Report on Loss Given Default (LGD) for Large Corporates.

This extraordinary backdrop to our day-to-day activities is complex and evolving rapidly. Yet for risk managers, it is something that must be addressed and kept up with. Fortunately, despite the complexity of the current situation, the dynamics and drivers of credit risk can still be extracted from historical data and combined appropriately with risk measurement frameworks implemented by banks to produce as best an account as we can of the risks faced today.

Right now, banks need to upgrade existing risk models to account for the crisis context. They need to support adequate active portfolio and balance-sheet management, to sell underperforming assets, and to reduce portfolio-risk exposure, including by mobilizing collateral for refinancing at central banks.

They also need to re-examine key performance assumptions built into risk models. Stress scenarios must also be reviewed to match with Covid-19 realities.

As banks grapple with this new and very real scenario, this LGD report offers the latest numerical evidence of recoveries and losses incurred by banks from loans to large corporate borrowers – a clear and qualified set of data, containing replicable insights, based on verified, proven high-quality information collected over 15 years from more than 60 global or regional banks (and counting).

In this year's edition, we are particularly excited to announce that, after more than 10 years of collection, a large bulk of data from the financial crisis of 2008 is complete and available for analysis. The LGD report now contains complete data from two crisis periods – the tech crisis of 2001-2002 and the global financial crisis of 2008. Data on the more recent European sovereign debt crisis of 2011 and the oil-price crisis of 2014 are also included, though not all the related workouts have yet been completed. Delving into the robust data sets presented in this report, members and industry participants now have a comprehensive toolbox with which to analyse the effects of previous crises and train and adapt their existing models accordingly.

We are pleased to share our updated insights with you in the pages that follow and hope that they can help our members and enlighten other readers as we look to negotiate the difficult times ahead together.

Richard Crecel
Global Credit Data
Executive Director

2020 LGD REPORT FOR LARGE CORPORATE BORROWERS

EXECUTIVE SUMMARY

The following Loss Given Default (LGD) report covers a reference data set of 11,572 defaulted borrowers and 19,805 facilities from 58 lenders worldwide. The data set is specific to large corporate borrowers, defined by their sales or assets being above €50m. Results confirm that historical bank recoveries average 76%, equivalent to an overall average LGD of 24%.

Global Credit Data's data is detailed enough to develop and enhance internal LGD models and to be used for validation, calibration or benchmarking purposes. These models can be used to support the Advanced Internal Ratings-Based approach (AIRB), to fulfil the credit provisioning standards IFRS9 or CECL, as well as for stress-testing, economic capital and pricing, among other uses.

The results of our latest study demonstrate consistency over time when comparing to GCD's previous reports. More than 10 years after the global financial crisis of 2008-2009, the data contains the bulk of complete account of crises related losses and demonstrate that LGD is affected by and aligned with macroeconomic conditions during the workout period following default.

The analyses in this study offer an overall insight into LGD data on a global level and confirm the drivers, their direction and their levels shown in the 2019 and 2018 reports.

- Seniority and collateral are again confirmed as LGD drivers. Secured LGD is lower than unsecured LGD, particularly where a strong (primary) collateral is held. For unsecured LGD, seniority is confirmed as a driver – LGD is 26% for senior unsecured vs 38% for subordinated unsecured at obligor level. The total secured LGD is 22% and 20% for primary collateralized borrowers.

- After aggregating country-level data to regions, North America and Europe appear to have similar levels of LGD – 23% and 21% respectively.

Results are consistent and in line with previous reports, highlighting the data set's strong stability over time. The insights gained from these high-level analyses confirm the benefits of detailed and granular collection of post-default cash-flow data – critical for banks using data-driven credit risk modelling to understand and quantify LGD.

REFERENCE DATA SET

GCD recognises that there are different aggregation levels used by its members and therefore two reference data sets (RDS) are used in this study:

- Large Corporates aggregated on obligor level where loans for each borrower are aggregated
- Large Corporates aggregated on obligation level where each loan or facility is treated separately

Results are shown on both levels in the tables, even though the graphs are on obligor level. Obligation level results are so similar that they are not repeated in the graphs. Individual facility (loan) outcomes do vary greatly for each borrower, which may depend on contract conditions, collateral differences, laws or even bank policies. However, across many borrowers the outcome becomes even, both per year and over time.

Most of the facilities in the GCD data sets are loans of some type, e.g. term loans or overdrafts, however the data also includes significant numbers of contingent facilities, e.g. letters of credit or derivatives as well as some bonds and equity.

Only resolved defaults are included in the RDS, i.e. cases for which the workout is completed and submitted until November 2019. Cases with year of default from 2000 to 2016 were chosen due to completeness, one more year of coverage than in the last report. Pre-2000 defaults can be biased due to limited and therefore not representative data, while post-2016 defaults contain too high a mix of quick workout (cure) cases. For a detailed description of the RDS creation see the Appendix. The RDS contains 11,572 defaulted borrowers and 19,805 facilities (see Table 1). These defaults are from 58 lenders worldwide.

A significant portion of the data comes from completely unsecured situations (see definition in Appendix), which allows for a more detailed analysis. The data covers two clear downturns (see Exhibit 1), the 2001-2002 tech stock crisis, and 2008-2009 global financial crisis.

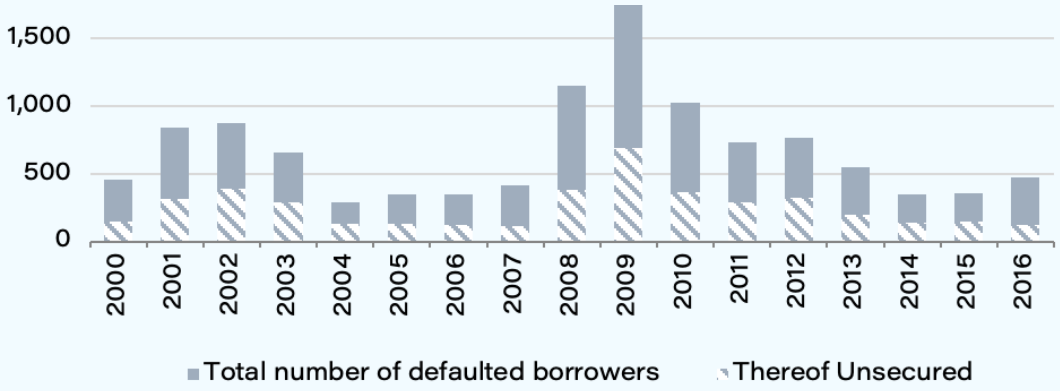
TABLE 1

REFERENCE DATA SET 2019

	NUMBER OF BORROWS	NUMBER OF FACILITIES
REFERENCE DATA SET (RDS)	11,527	19,805
RDS UNSECURED	4,266	8,385
EAD	215 bn EUR	
NUMBER OF LENDERS	58	

EXHIBIT 1

BORROWERS BY YEAR OF DEFAULT



LGD CHARACTERISTICS

The LGDs in this report are observations of historical outcomes and not future estimates. They do not reflect specific portfolio alignment or addition of any statistical uncertainty add-ons or downturn adjustment (see From Observed to Estimated LGD). The LGDs are calculated using a risk-free discount rate.

A well-known characteristic of LGD is the bimodal left-skewed distribution (see Exhibit 2) which generates large variations when calculating average LGD. Note in the graph that the cures, which by definition have a nominal LGD of zero, are displayed separately from the LGD bucket <10%.

EXHIBIT 2

DFEAULTS BY LGD BUCKETS AND CURES

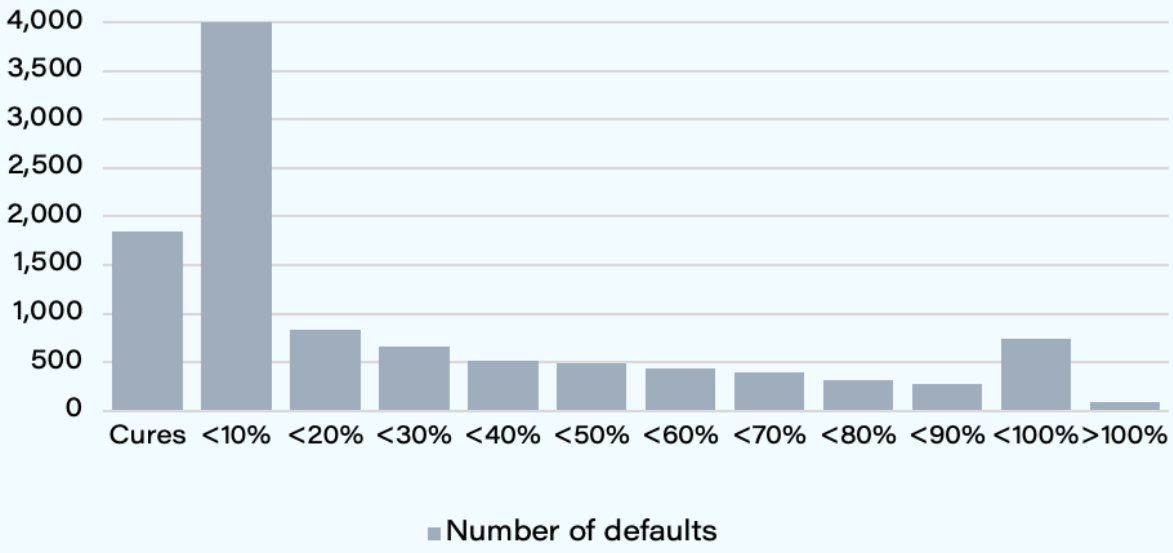


TABLE 2
SENIORITY AND COLLATERAL

	OBLIGOR LEVEL				OBLIGATION LEVEL			
	NUMBER OF DEFAULTS	LGD	TIME TO RESOLUTION [YEARS]	TIME TO RECOVERY [YEARS]	NUMBER OF FACILITIES	LGD	TIME TO RESOLUTION [YEARS]	TIME TO RECOVERY [YEARS]
TOTAL SECURED	7,261	22%	2.0	1.2	11,420	22%	1.9	1.2
THEREOF PRIMARY*	2,489	20%	2.1	1.2	3,836	19%	1.9	1.2
THEREOF SECONDARY*	4,772	23%	2.0	1.2	7,584	24%	1.9	1.2
TOTAL UNSECURED	4,266	27%	2.1	1.3	8,385	25%	2.0	1.2
THEREOF SENIOR	3,838	26%	2.0	1.3	7,728	24%	2.0	1.7
THEREOF SUBORDINATED	128	38%	2.0	1.2	274	36%	2.1	1.2
THEREOF OTHER/ UNKNOWN**	300	34%	2.3	1.5	383	36%	2.5	1.7
TOTAL	11,527	24%	2.0	1.2	19,805	23%	2.0	1.2

* Primary is here defined as secured by specifically identified collateral types Cash, Marketable Securities, Ships, Airplanes, Real Estate and Other Objects. Secondary is defined as all other collaterals such as All Assets Charge, Inventory or Accounts Receivable. At obligor level primary requires at least one primary collateral. Different defintion of Primary and Secondary could be built out to match specific needs.

** Borrowers are not always borrowing uniquely senior or subordinated. Where a bank provides facilities of differing seniority to one borrower, it is labelled as other. GCD also groups the small number of bond and equity defaults and unknowns here.

Banks recover from defaulted loans either most of the outstanding loan amount or almost zero. Receiving a partial repayment of the outstanding amount is less likely to be observed than observing either of these extremes, although it does occur. Indeed, when an average LGD is derived from an RDS, the calculated average LGD value usually falls into an LGD bucket which exhibits a lower frequency of loans such as: 20% to 30% or 30% to 40%. The bimodal distribution has implications for measures of spread such as standard deviation.

A simple standard deviation calculation will produce extreme values and larger amounts of data are required to stabilise the central tendency. The variation of the mean is shown here by bootstrap confidence intervals: a simple non-parametric method for constructing confidence intervals.

KEY LGD DRIVERS

On a single driver analysis, consistently over time, GCD data shows that collateralised loans and obligors produce visibly lower LGD than unsecured loans and obligors. This outcome supports common bank lending policies which assume that the taking of collateral will improve the bank's position versus unsecured creditors.

As shown in Exhibit 3, this effect is overall limited to 5%, as in the last year's report. One of the reasons may be these same policies requiring the lending bank to compensate for expected weak recoveries from less creditworthy borrowers by taking collateral.

When analysing secured defaults, the characteristics of the collateral are expected to strongly influence the LGD outcome. Table 2 shows that the presence of primary collateral such as Real Estate or Cash results in a lower LGD than secondary collateral such as All Assets Charge or Inventory and a more marked divergence from unsecured (20% vs 27% on obligor level).

GCD recognises that analysis of secured LGDs needs a deeper view with more details on the collateral such as collateral value and the Loan to Value ratio. GCD members can choose from a large selection of extra fields of collateral detail for further analysis.

LGD depends on both seniority and collateral. Unsecured defaults are a relatively homogeneous data set that should isolate the impact of seniority. As in previous reports, senior unsecured defaults have a visibly lower LGD than subordinated unsecured defaults (see Exhibit 4).

EXHIBIT 3
SECURED AND UNSECURED LGD

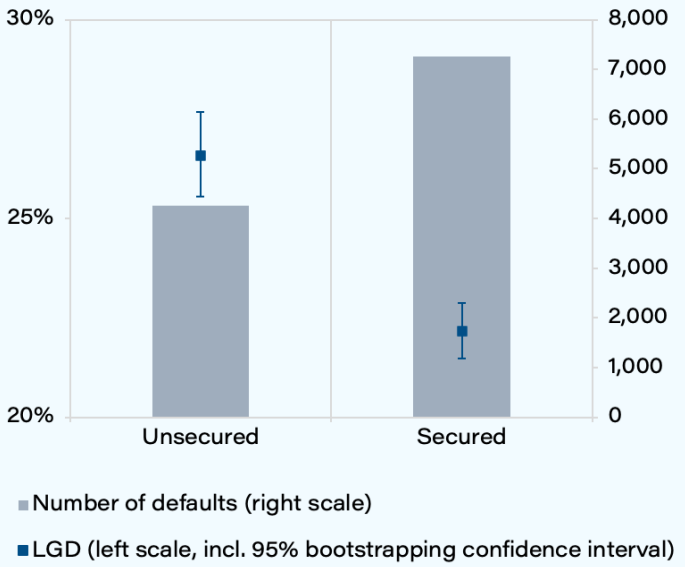
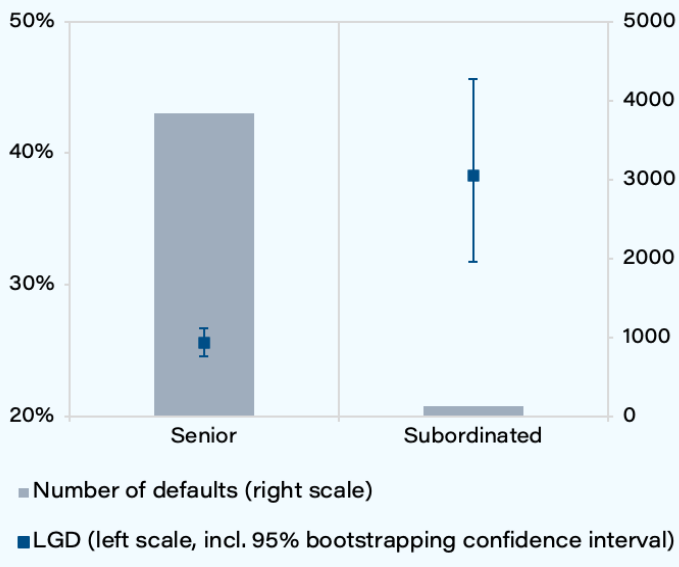


EXHIBIT 4
SENIOR AND SUBORDINATED UNSECURED LGD

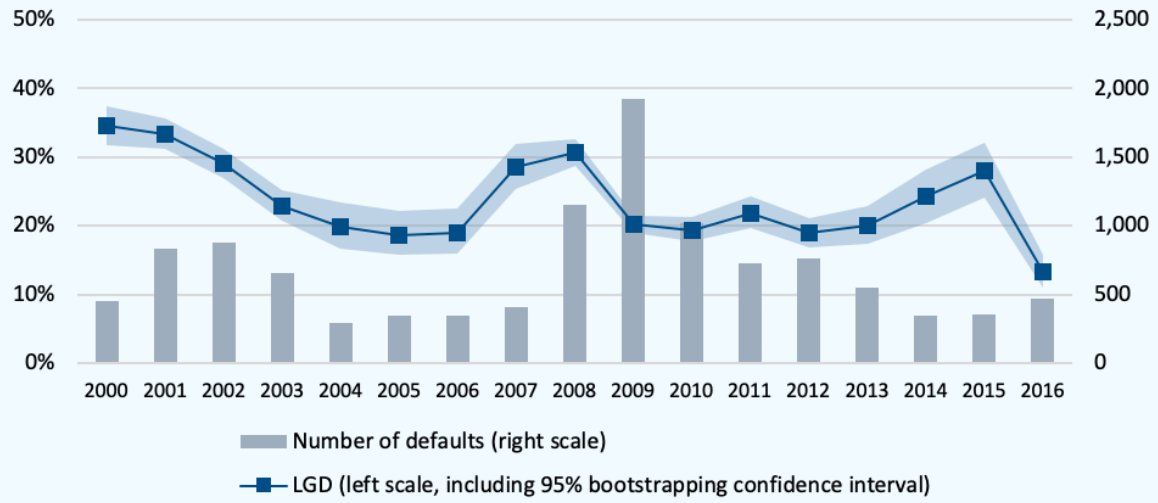


GCD DATA COMPLETE FOR 2008 FINANCIAL CRISIS

The observation of downturn effects in historical LGD data is typically complicated by short time series, few data points and the multitude of input parameters for LGD estimates. Requirements like IFRS9/CECL or stress-testing/CCAR create the need for more detailed default and loss modelling, especially in respect of term structure and macroeconomic dependency. To assess the variance over time the LGDs are plotted by year of default in Exhibit 5, with the corresponding numbers displayed in Table 3. The shape of the curve shows variance over time with higher LGDs in the early 2000s as well as in 2007/2008. Note that the loans that defaulted in 2007 were worked out by the banks in the downturn years 2008 and 2009.

Table 3 displays the volumes and LGD averages by year of default, aggregated at both obligor and obligation levels. Not surprisingly, the difference between these levels is small.

EXHIBIT 5
LGD BY YEAR OF DEFAULT



Results are consistent and in line with the 2019 report, highlighting the strong stability over time of the GCD database, as evidenced by the small number of cases added for the years before 2013 with no change in the average LGD. The data from the crisis era is now fully mature in the GCD database and can be used with confidence.

GCD has extensively analysed downturn effects on LGD especially including the distribution of cash flows over time.

The recovery cash flows are dispersed over varying periods of time. On average the workout period lasts 2 years but recoveries can be collected over a much longer period (see Exhibit 7) which is even longer if excluding cures.

Looking at the timing of the underlying cash flows, the evolution of LGD values over time can be analysed with respect to their co-movement with macroeconomic indicators. The results are published in GCD's Downturn LGD Study 2017.

TABLE 3

LGD BY YEAR OF DEFAULT

	OBLIGOR LEVEL		OBLIGATION LEVEL	
YEAR OF DEFAULT	NUMBER OF DEFAULTS	LGD	NUMBER OF FACILITIES	LGD
2000	456	35%	742	35%
2001	837	33%	1,412	32%
2002	875	29%	1,363	27%
2003	654	23%	1,039	22%
2004	291	20%	491	17%
2005	344	19%	565	19%
2006	346	19%	535	20%
2007	412	29%	756	29%
2008	1,151	31%	2,000	30%
2009	1,926	20%	3,544	19%
2010	1,019	19%	1,833	19%
2011	727	22%	1,311	22%
2012	765	19%	1,418	22%
2013	549	20%	911	20%
2014	350	24%	602	23%
2015	351	28%	544	27%
2016	474	13%	739	15%
TOTAL	11,527	24%	19,805	23%

REGIONAL VARIATIONS

The country or region of the borrower is expected to be a driver of LGD, as lending practices, insolvency laws and regional economic differences should affect recoveries. The GCD data set offers country information on several levels: country of residence; country of jurisdiction; collateral country of jurisdiction. The impact is best analysed on country level, but granularity must be weighed against availability of a significant amount of data points. Reflecting the global membership base of GCD, there are over 140 countries reported in the data.

TABLE 4
LGD BY REGION

	OBLIGOR LEVEL				OBLIGATION LEVEL			
	NUMBER OF DEFAULTS	LGD	TIME TO RESOLUTION [YEARS]	TIME TO RECOVERY [YEARS]	NUMBER OF FACILITIES	LGD	TIME TO RESOLUTION [YEARS]	TIME TO RECOVERY [YEARS]
AFRICA & MIDDLE EAST	286	20%	2.1	1.5	419	0%	2.0	1.5
ASIA & OCEANIA	1,023	31%	1.8	1.2	1,813	28%	1.6	1.1
EUROPE	4,089	21%	2.1	1.2	8,007	21%	2.1	1.2
LATIN AMERICA	1,269	31%	2.1	1.4	2,067	30%	1.9	1.3
NORTH AMERICA	4,781	23%	1.9	1.2	7,356	23%	1.9	1.2
UNKNOWN	79	44%	3.4	1.8	143	44%	3.5	1.7
TOTAL	11,527	24%	2.0	1.2	19,805	23%	2.0	1.2

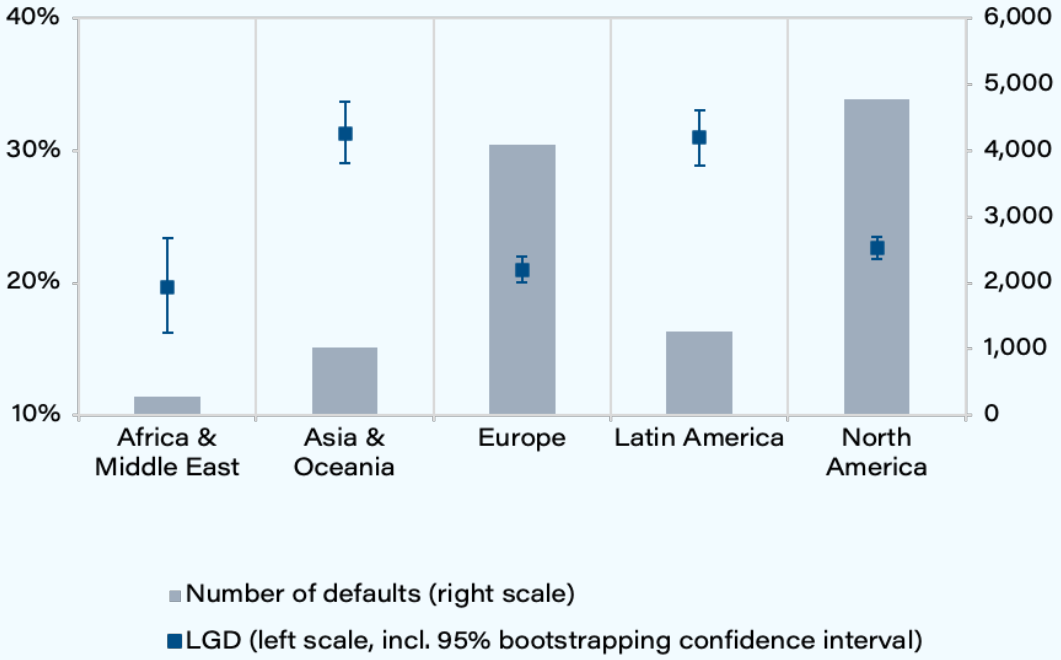
This study shows the LGD by region based on the country of residence of the defaulted borrower. Many of these companies have multi-country operations and participate in cross border trade, which could act to reduce the regional variation.

GCD data has its strongest database in Europe and North America, which register similar figures. Table 4 appears to show Africa and the Middle East with slightly lower LGD, however this is based on a much smaller data set compared to the other regions (see Exhibit 6) and is not yet significant.

Asia and Oceania appear to have a higher LGD. This data is comprised by a large number of different countries – most notably Australia, South Korea and China. The country-level LGDs for Australia, Japan, South Korea and New Zealand are more or less in line with the European and North American data, but other countries show higher LGDs – pushing up the region's average.

EXHIBIT 6

LGD BY REGION



TIME TO RECOVERY AND RESOLUTION

Time to resolution is on average around 2 years. Generally, a default can resolve because of three reasons. First, the borrower pays back all the debt. Second, the borrower returns to a non-defaulted status. Third, the bank decides to stop the recovery efforts and writes off the outstanding debt (or sells it). Only the first option depends entirely on the borrower while the other two are influenced by choices made by the bank involved. Continued forbearance is also under the control of the lending bank.

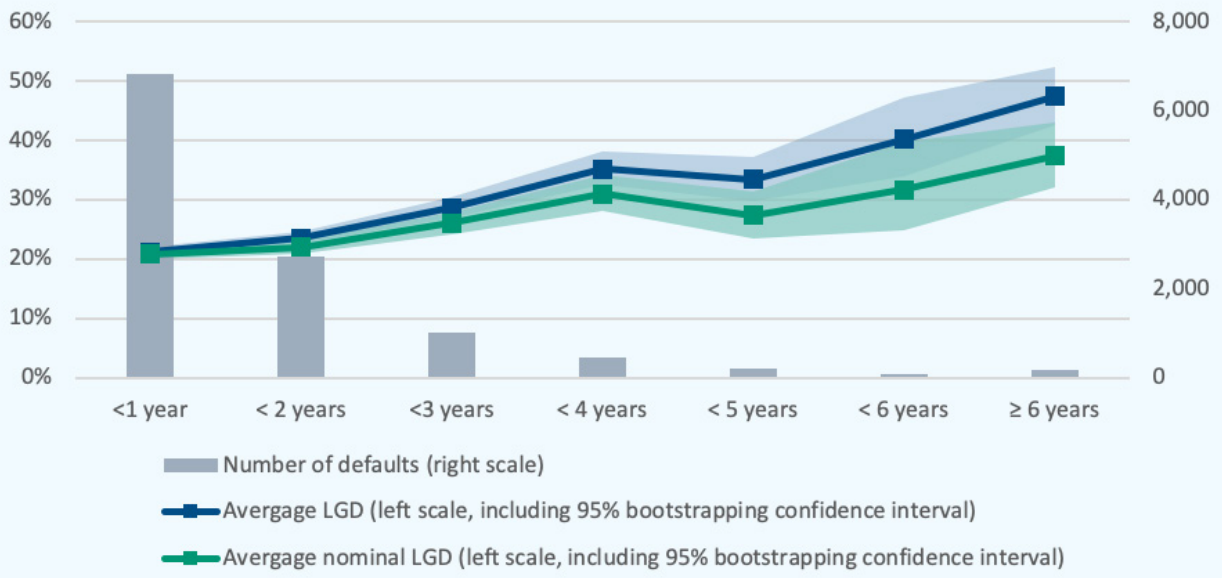
GCD therefore applies a different measure of the time in default that is more objective as it only depends on the timing of the cash flow. The Time to Recovery (TTRec) is the average period between default and cash flow payment weighted by the amount of the payment. TTRec is by definition shorter than or equal to the time to resolution. The outcome is remarkably similar for TTRec across differing collateral and seniority states.

As the TTRec represents the middle point of the cash flows, it is a good measure for understanding the effect of discount rates on the LGD. The cash flows are discounted on average for approximately 1.2 years and not the full 2 years of the average time to resolution.

Consistent with last year's results, Exhibit 7 shows a clear trend on how the workout period correlates with the LGD outcome. Average LGD levels based on TTRec buckets are displayed. The longer the TTRec the higher the LGD. Because this effect can be related to higher discounting effects in addition to the usual LGD which is discounted, nominal LGDs were added in the picture (green line).

EXHIBIT 7

LGD BY TIME TO RECOVERY



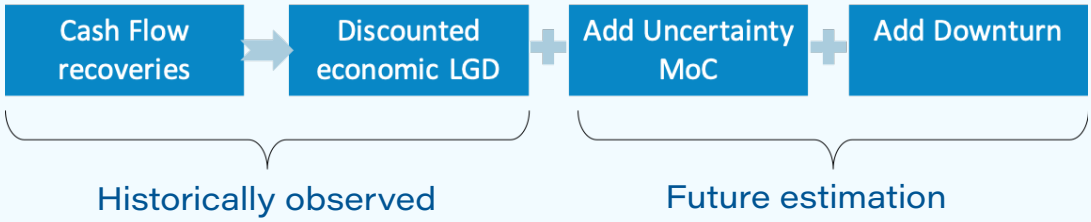
The nominal LGD is lower than the discounted numbers but still rises steadily. It may be that workouts which take more time due to their complexity, legal disputes or other factors just happen to have lower recoveries and higher LGD. Alternatively, banks may proceed more quickly in recovering cases where the prospects are strongest. TTRec is shown as it best relates to the cash flow timing. The distribution of the time to recovery buckets complements the information on the averages displayed in Tables 2 and 4.

For most cases the main cash flows occur in the first year after default. The number of defaults per bucket decrease steadily. Nevertheless, there are a number of data points with an over 6-year average recovery period which are grouped into one bucket.

FROM OBSERVED TO ESTIMATED LGD

It is not recommended to directly compare the LGD levels in this report to regulatory minima and standardised levels. At this stage, the LGDs in this report are observed average LGDs based on all closed defaulted observations in the RDS. The discount rate used is the 3-month EURIBOR. For EU regulatory LGD calibration, the discount rate is required to be the 3-month EURIBOR or a comparable liquid interest rate in the currency of the exposure increased by an add-on of 5%-points. Using that discount rate increases the LGDs presented in this report by roughly 3.5%. For example, the unsecured LGD at loan level increases from 25% to 28.6%.

To convert GCD's historical LGDs to future estimates further adjustments are needed including adding the unresolved defaults into the calculation for the long-run average LGD, add-ons for downturn, Margins of Conservatism (MoC) and indirect costs, (i.e. costs stemming from the running of the institution's recovery process – GCD already collects different types of direct costs associated with a default such as legal expenses or liquidation expenses).



CONCLUSIONS

The results presented here show consistency over time when comparing to previous GCD reports. The insights gained by these high-level analyses confirm the benefit of a detailed and granular collection of post-default cash flow data

- The data now reflects the bulk of the 2008-2009 global financial crisis related losses and align with economic downturns and upturns conditions during the workout period following default.
- Overall, the average historically observed LGD for Large Corporates remains stable at around 24%.
- Seniority and collateral are confirmed as LGD drivers. Secured LGD is lower than unsecured LGD, particularly where a strong (primary) collateral is held. For unsecured LGD, seniority is confirmed as a driver.
- After aggregating country level data to regions, North America and Europe appear to have similar levels of LGD, averaging 23% and 21% respectively.

While large corporate data was used for this study, similar analytics could be performed on other asset classes within the GCD databases. More focused reports on areas of specific interest such as real estate, specialised lending and other parameters could also be of use, to help banks using a data-driven credit risk estimation method to better understand and quantify LGD.

FAQS

Can I compare GCD's historical default rates with regulatory minima?

It is not recommended to directly compare the LGD levels in this report to regulatory minima and standardised levels. At this stage, the LGD figures in this report reflect an observed average LGD based on closed defaulted observations. To convert GCD's historical LGDs to future estimates suitable for regulatory purposes, further adjustments would be needed, including adding the unresolved defaults into the calculation for the long-run average LGD, add-ons for Downturn, Margins of Conservatism and indirect costs.

Why is GCD's LGD figure different from figures from other market participants?

Since GCD data comprises bank initiated and untraded loans, the data set differs significantly from most other studies. Hence the outcome can be compared - but should not be expected to be the same as - studies that focus on publicly recorded bond defaults, single country data or liquidation-only data.

It can, however be much more valuable for banks, as they typically do not hold the same risk on bonds as they do for loans. When using the data, we advice banks to first define a series of filters to create a customised sub-set of the data suitable for their portfolio and modeling purposes. The filters applied in this report are a consensus on using the GCD dataset and can serve as a starting point for internal reference data set creation.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