

# Don't Veer Into Default Mode. Proactively Evaluate Loss Given Default.

**Loss given default (LGD) is an estimate of the portion of an exposure (bond or loan equivalent) that will likely not be recovered in the event of default.**

The Dot-com bust of the late 1990's and the great financial crises of 2007/2008 are just two examples showing that defaults will occur and, often, at times when exposures are at the highest (relative) levels. So why doesn't LGD get more attention?

Banks and insurers are often required to use prescribed LGD values that are stipulated by regulators for calculating loss-absorbing regulatory capital for most asset classes. Other organizations are often not required to estimate LGD at all. Many organizations rely solely on credit ratings and associated probabilities of default (PDs) for processes unrelated to regulatory capital calculations. This includes pricing, risk-adjusted measures of return, limit-setting, provision setting (under IFRS9), portfolio management, bond/loan trading, and investment decision-making. This may be due to the fact that LGD is often considered to be disproportionately resource intensive, given that PD analysis is typically undertaken at an entity level and LGD analysis at an exposure level, with potentially multiple exposures per counterparty.

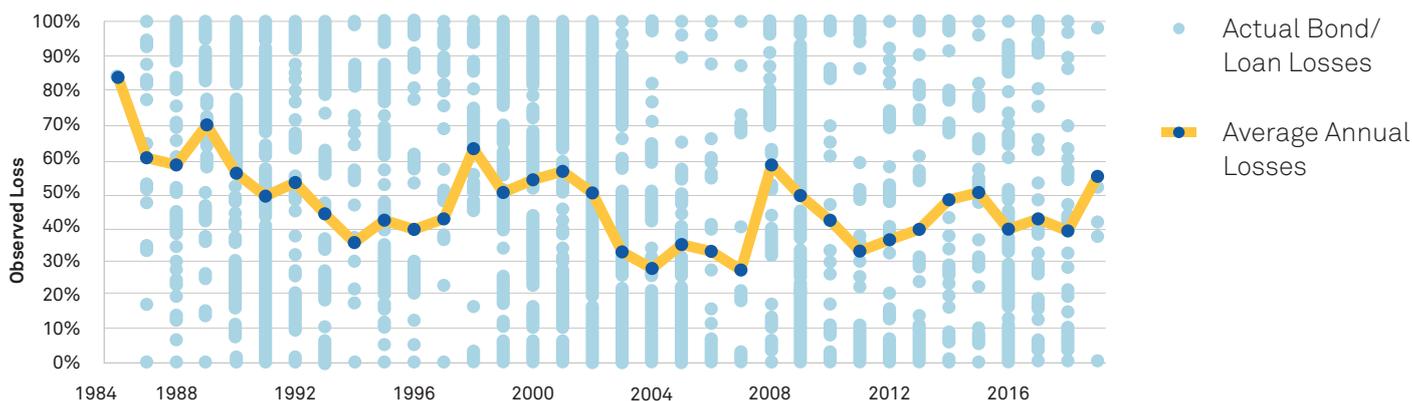
This reliance on credit ratings and PDs as a single measure of credit risk may be too simplistic, however, and place organizations at strategic disadvantages to peers/competitors.

## The Importance of LGD

The use of PDs alone only provides a partial view of risk, while combining PDs and LGD gives a more complete view of the depth and breadth of potential expected credit losses. After all, if an investment has a high PD but a low LGD, the principal could still be whole after a default. Conversely, if it has a low PD but a high LGD, there could be losses.

Naturally, actual losses on bonds and loans will vary from one investment to the next. Looking at the 7,000+ defaulted corporate bonds and loans for which S&P Global Market Intelligence captures actual loss data,<sup>1</sup> one can see that losses on individual bonds and loans vary from 0% to 100%, as shown by the blue dots in Figure 1 below. Another striking trend revealed by this data is that the average loss also varies from year to year, from a high of 85% to a low of 25%.

Figure 1: Actual and Average Annual Losses on Bonds/Loans 1984-2019



Source: CreditPro™, S&P Global Market Intelligence, September 11, 2019

<sup>1</sup>Data as of September 11, 2019

According to “Default, Transition, and Recovery: 2018 Annual Infrastructure Default and Rating Transition Study” published by S&P Global Ratings on November 20, 2018, the median loss for defaulted projects was in the 30% to 40% range. However, individual project-related losses varied across the entire loss spectrum, with almost 17% of projects realizing losses greater than 90%, and 20% realizing losses less than 10%. Further examples are available for other prominent asset classes, such as defaulted sovereign bonds.

**Why consider LGD? As evidenced above, ignoring LGD or assuming a fixed average LGD may be misleading and potentially result in a misallocation of economic and regulatory capital, inefficient pricing, incorrect provisioning, and inappropriate limits.**

### LGD Estimation – A Unique Approach

S&P Global Market Intelligence LGD Scorecards were constructed over 17 years ago with the aim of estimating LGD at the exposure level. We believe LGD should be conditional on explanatory variables and exposure specifics, resulting in more reliable facility or bond-specific forward-looking estimates of loss for any exposure, secured and unsecured.

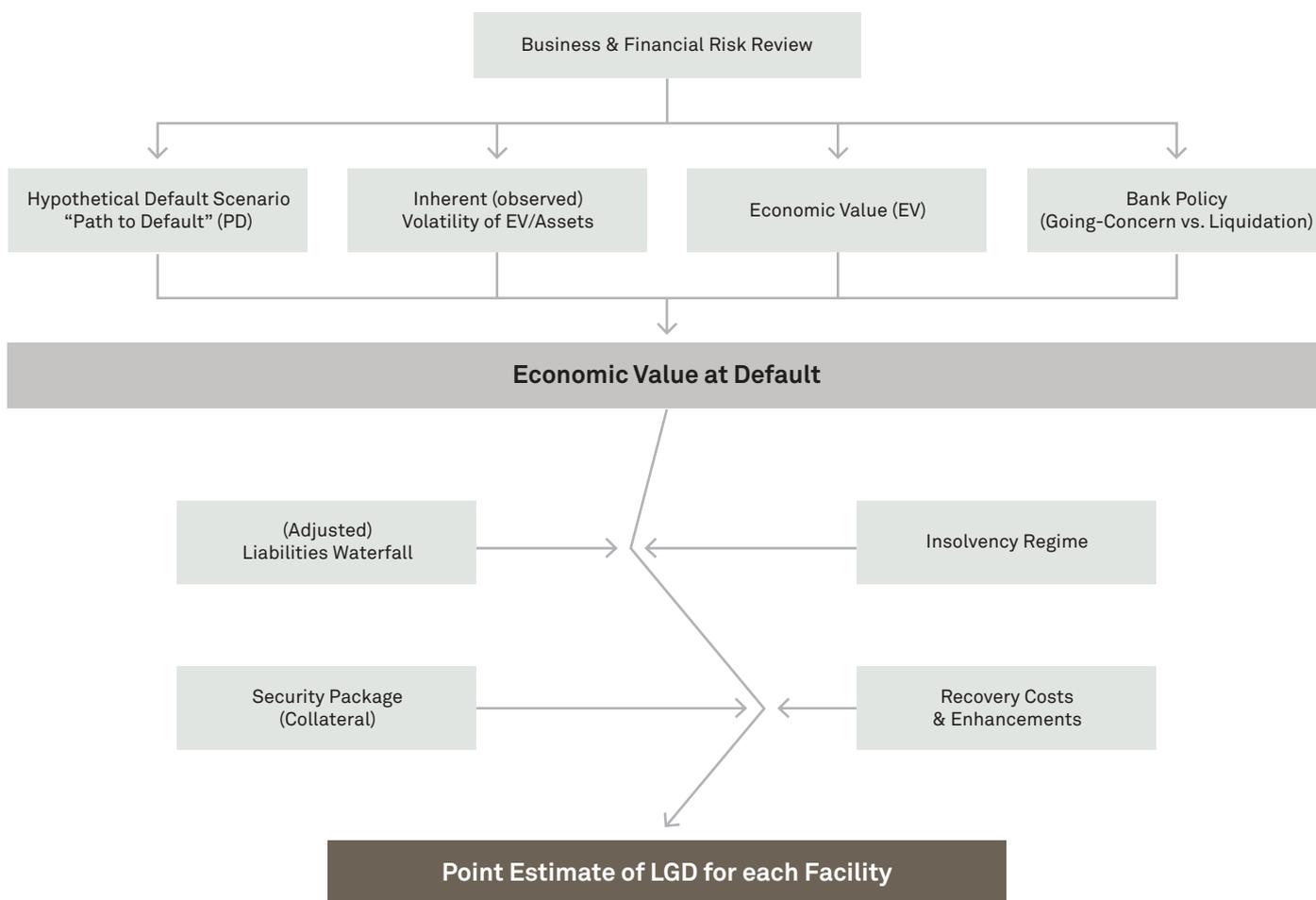
To achieve this, we undertook extensive research in order to identify possible explanatory variables, placing equal emphasis on both qualitative and quantitative factors.

Following our research, we identified six drivers of loss:

- Pre- and post-default value and risk of diminished cash flow/assets/economic value
- Seniority of exposure (e.g., senior bond)
- Jurisdiction
- Economic expectations
- Collateral and guarantees/insurance
- Recovery costs and workout policy (restructuring versus disposal)

These factors were ultimately quantified and combined to form the “engine” or “common base” for all our LGD Scorecards, as shown in Figure 2 below.

**Figure 2: Engine for the Scorecards**



The inputs to the engine are the same for all Scorecards, although each input is tailored to reflect asset-class specifics. For example, economic value is used in all LGD Scorecards, but the value is estimated differently for each asset class (e.g., net present value of expected cash flows for project finance transactions versus adjusted asset values for corporate exposures). We currently offer LGD Scorecards for the following sectors:

- Corporate and leverage finance – including over 60 corporate subsectors
- Asset finance – marine, aviation, and container leasing
- Project finance – infrastructure, energy (traditional/alternative), and natural resources
- Oil and gas – downstream, midstream, and upstream
- Sovereigns
- Local and regional governments
- Trade finance
- Financial institutions – banks, insurance, and non-bank financial institutions

### Demonstrated Predictive Power

We undertake an annual validation of our LGD Scorecards to reflect additional data availability and structural shifts in markets. As part of this effort, we conduct backtesting, which involves comparing

actual or realised bond or loan losses to those predicted by our LGD Scorecards. For example, if a bond defaulted in 2009 with an ultimate realised loss of 33%, we compare this loss to that predicted by our Scorecard based on financials from 2008.

As of December 2019, we tested our LGD Scorecards across all asset classes (including sovereigns, corporates, and banks) on 1,622 defaulted bonds and loans since 1999. Our LGD Scorecards have predicted the correct LGD loss range or bucket<sup>2</sup> for 67% of the sample, with an average difference across the sample of less than 1%. The LGD Scorecards are especially robust when predicting LGD for low and large losses, with the LGD Scorecards predicting the correct loss bucket (10% - 30%) in over 86% of cases and the correct bucket (90%-100%) in approximately 75% of cases. Furthermore, the performance of our LGD Scorecards is robust across both time and geography, including emerging markets and developed countries. Figure 3 below shows a detailed analysis.

### Maximizing Efficiency

Since many credit-sensitive institutions are exposed to a large number of bonds/loans, the LGD approach must be efficient. In order to enhance efficiencies, we have linked fundamental data for corporates, banks, insurance companies, and sovereigns to each of our asset-class specific Scorecards. Quite often, all that is required to generate a point estimate of loss is the bond ISIN,<sup>3</sup> thus enabling the speedy generation of robust LGD estimates for large portfolios

**Figure 3: Actual Loss versus Scorecard Prediction**

LGD Loss Bucket	0% - 10%	10% - 30%	30% - 50%	50% - 70%	70% - 90%	90% - 100%	Total
Exact Hits	69.7%	86.4%	38.9%	54.7%	60.8%	74%	<b>67.1%</b>
+/-1	83.3%	99.7%	83.9%	73.6%	97.9%	95.1%	<b>90.9%</b>
+/-2	97%	100%	100%	100%	98.6%	97.2%	<b>98.8%</b>
+/-3	100%	100%	100%	100%	99.7%	98.9%	<b>99.6%</b>
>= +/-4	100%	100%	100%	100%	100%	100%	<b>100%</b>
<b>Sample Count</b>	<b>66</b>	<b>339</b>	<b>149</b>	<b>311</b>	<b>288</b>	<b>469</b>	<b>1622</b>

Source: S&P Global Market Intelligence LGD Scorecard Backtesting Results, December 31, 2019

<sup>2</sup>Loss buckets are a discrete set of ranges to which actual losses can be mapped to enable easier comparison. For example, a loss of 34% would be placed in the 30% to 50% bucket.

<sup>3</sup>International Securities Identification Number.

## About S&P Global Market Intelligence

S&P Global Market Intelligence integrates financial and industry data, research, and news into tools that help track performance, generate alpha, identify investment ideas, understand competitive and industry dynamics, perform valuation, and assess risk.

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