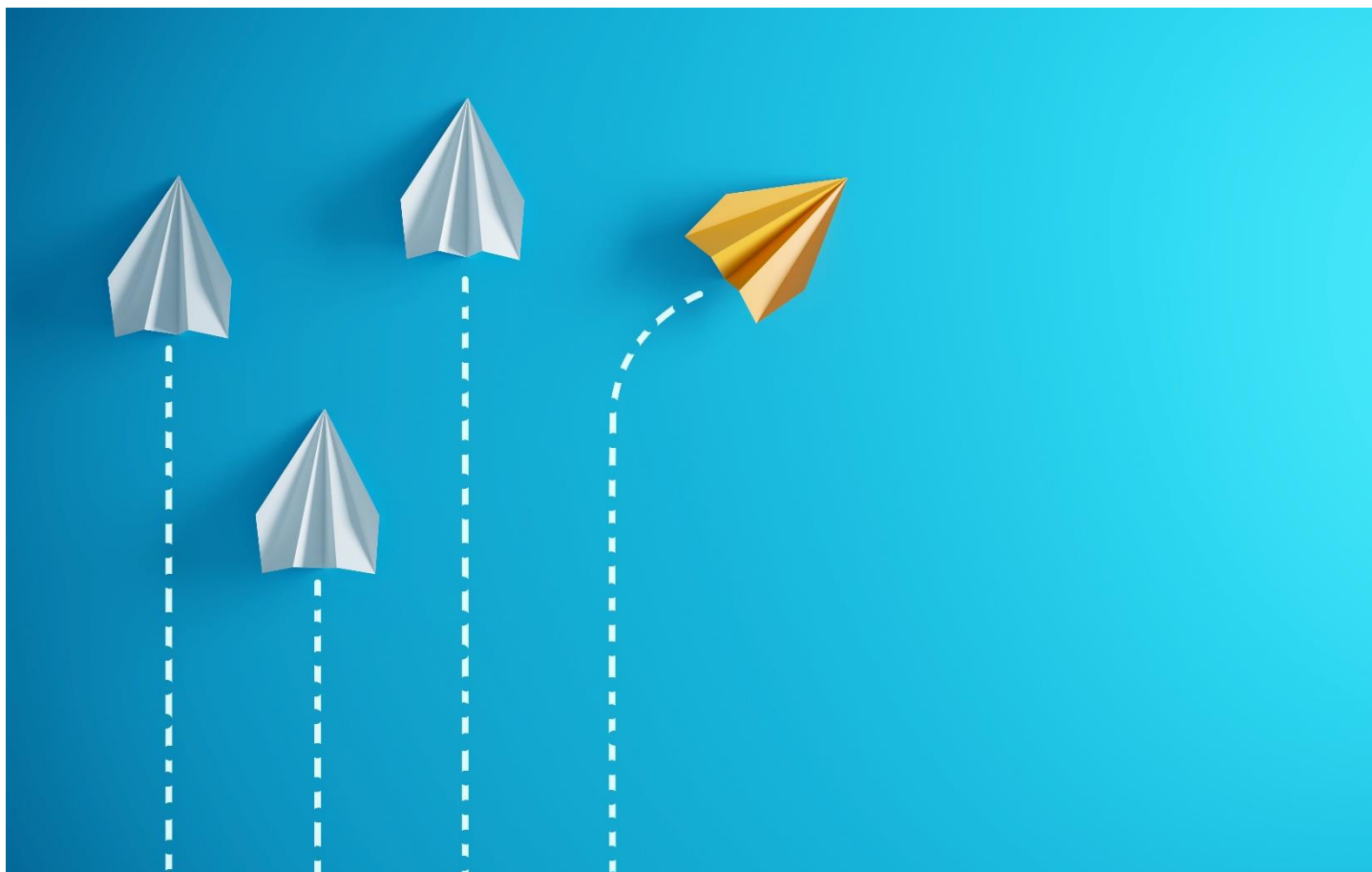# The hour to rejuvenate credit-risk data models

Covid-19 pandemic presents lenders an opportunity to retune their data collection processes

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Executive summary

The Covid-19 pandemic is taking a terrible toll on lives and the global economy. With growth plunging and unemployment levels darting up, the world is marching towards a recession.

Financial markets have been walloped with ~$5 trillion wiped off global equities since the last week of February 2020. Supply chains have snapped in many places, and crude oil prices have plummeted. A material decline in demand will likely create cash flow problems across economic functions, even as central banks respond by slashing interest rates significantly and injecting liquidity. On March 20, 2020, the Bank of England rolled out a slew of measures to offset rising stress.

The uncertain milieu also has severe implications for credit markets, including a likely surge in defaults. To be sure, some steps have been taken by banks to protect mortgage borrowers by offering them payment holidays, and to companies by restructuring distressed loans or temporarily freezing repayments on credit facilities.

But all such mitigation efforts impact credit-risk data collection and modelling, with banks requiring to make changes to their systems, processes and governance mechanisms.

While this can challenge lenders, they need to view this as a great opportunity to enable more robust model calibration, spurred by potentially higher obligor defaults.

In this paper, we provide an overview of the impact of the pandemic on credit-risk data collection and modelling, with respect to the definition of default, International Financial Reporting Standard 9 (IFRS 9) provisioning, and internal ratings-based (IRB) modelling.

We focus on the steps banks need to take on credit-risk data collection, process and governance to ensure they continue to meet regulatory requirements. We believe the learnings will help banks create more robust models and ensure operational resilience both during and after the pandemic.

The pandemic and the definition of default

Payments postponed but still not to be treated as distressed restructuring

The European Banking Authority (EBA) has revised the guidelines on default definition, specifically with regard to the counting of days past due (DPD) to decide what constitutes default. These guidelines will come into effect on January 1, 2022[1]. As per the revised guidelines, default occurs when an obligor breaches absolute and relative materiality thresholds[2] for a consecutive 90-day period on a credit obligation. However, to mitigate the impact of the pandemic, institutions have allowed certain obligors in financial difficulty to postpone payments. For example, lenders in the United Kingdom are providing mortgage customers payment holidays of up to three months and no associated fees or charges, but with interest accruing over the period. From the point of view of requiring a moratorium not meeting the forbearance definition and thereby preventing customers from becoming classified

> **Impact of the definition of default**
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> Changes to:
>
> - The counting of DPD for default definition owing to revised payment schedules
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> - Systems and controls to monitor the timing of payment postponement and pandemic overrides
>
> - Data governance practices for banks in terms of customer forbearance identification
>
> - The capture of distressed restructuring and associated default definition

as defaulted, the moratorium should not be based on the creditworthiness of the obligors and should be applied to a broad range of obligors. For instance, it cannot be limited to non-performing obligors as this will qualify as a forbearance measure.

While the application of moratorium (resulting in a new payment schedule) does not lead to reclassification of exposures as forborne/distressed, it is imperative that Institutions continue to assess all the indicators of their obligors' unlikeliness to pay during and after the moratorium. This will ensure that institutions continue to present accurate quality of their portfolios to market participants and remain adequately capitalised.

With these changes in view, institutions need to take the following steps.

Factor in impact on credit-risk data collection, process and governance

The payment holiday will have ramifications on the credit-risk data collection process and governance of institutions. To address them, lenders will have to update their systems to factor in stretched payment schedules and ensure robust controls are in place to ensure that suspension of fees and charges (based on the original schedule) does not cause unnecessary impact on customer credit rating.

Furthermore, there should be an override mechanism to indicate that a customer has asked for a payment holiday owing to pandemic-related financial circumstances. If there is a detrimental impact on a customer's credit rating despite these steps, the error needs to be corrected immediately. Capturing the override frequency will be important since that will enable institutions to monitor whether the controls are designed appropriately and working effectively. Any control failure will likely have implications for institutions from a conduct-risk perspective, and may lead to regulatory penalties.

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[1] The original implementation date was January 1, 2021, which was postponed due to the pandemic
[2] EBA RTS thresholds are Retail: 1% relative and €100 absolute; Non-Retail: 1% relative and €500 absolute

It is also equally important to implement changes in a way that the DPD counting continues once payment holidays have lapsed, thereby satisfying the EBA guidelines. Furthermore, institutions should continue with risk assessments of an obligor's unlikeliness to pay by using appropriate indicators. Institutions should view this as a data collection opportunity since they will subsequently glean valuable inputs for their ratings models. From a governance perspective, institutions should see to it that checks on data quality are in place to clearly identify customers taking payment holidays.

Fool proof the distressed restructuring

Given the pandemic situation, a general payment moratoria (if applied industry-wide and broadly by financial institutions[3]) do not necessarily trigger forbearance classification and the assessment of distressed restructuring. However, ranging from assisting individual customers to extending concessions (as part of forbearance) to companies with current or expected financial difficulties, institutions should continue to apply their normal policies in evaluating indications of unlikeliness to pay. Notably, EBA GLs on moratoria has made clear that the provision of public guarantees as a credit risk mitigant in response to the pandemic also does not exempt any institution from performing the assessment of the obligor's unlikeliness to pay or affect the results of such an analysis.

Distressed restructuring is an unlikeliness-to-pay (UTP) indicator. The EBA guidelines state that if the net present value of the new obligation from distressed restructuring decreases by more than 1% (or a lower threshold set by the institution) then the obligation should be considered defaulted. Thereby, institutions should continue to capture data on distressed restructurings to facilitate a robust assessment of UTP. Doing so will ensure that institutions are identifying and measuring credit risk timely and accurately.

The pandemic and the IFRS 9 provisions

Economic Support and relief measures to affect IFRS 9 provisioning

With the pandemic triggering financial difficulties for many obligors, institutions have put in place relief programmes (payment holidays/moratoria, renegotiations, rollovers or rescheduling of cash flows) to give temporary assistance to customers through payment holidays or restructuring. This has implications in terms of IFRS 9 provisioning, especially from a stage allocation perspective. As a result, institutions need to ensure adherence to certain processes and governance standards.

> **IFRS 9 impact**
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> Changes to:
>
> - The stage allocation methodology for obligors; specifically in terms of what constitutes a significant increase in credit risk
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> - Credit risk systems to capture stage allocation and overrides correctly during the relief period
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> - Banks' credit impairment policies and procedures
>
> - The capture of ECL data lineage and critical data elements

Enable controls for correct IFRS 9 stage allocation and expected credit loss (ECL)

Under IFRS 9, credit obligations are allocated under three stages: Stage 1 (performing), Stage 2 (underperforming) and Stage 3 (impaired). On the reporting date, if there is no

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[3] See EBA GL on legislative and non-legislative moratoria on loan repayments applied in light of the COVID-19 crisis: https://eba.europa.eu/sites/default/documents/files/document_library/Publications/Guidelines/2020/Guidelines%20on%20legislative%20and%20non-legislative%20moratoria%20on%20loan%20repayments%20applied%20in%20the%20light%20of%20the%20COVID-19%20crisis/882537/EBA-GL-2020-02%20Guidelines%20on%20payment%20moratoria.pdf

significant deterioration found in credit risk since initial recognition, a 12-month ECL is recognised (Stage 1). If there is a significant increase in credit risk since the initial recognition, then a lifetime ECL is recognised (Stage 2). It is up to the institutions to define what constitutes a significant increase, capture ECL effectively and document these in policies and procedures.

The disruptions wrought by the outbreak will require institutions to revisit what constitutes a significant increase in credit risk. Credit obligations that would under normal circumstances move to Stage 2 will now come under pandemic relief programmes. That is, obligors impacted by will likely be kept at Stage 1 for a longer period as long as it can be assessed that their credit risk have not significantly increased and that measures forwarded to them only remediates any temporary liquidity constraint. Institutions need to put controls in place to ensure that this stage allocation is done correctly and the necessary analysis is captured, so that a 12-month ECL is recognised for these obligations and any volatility in provisions is minimised.

However, from a data governance perspective, this would count as an override and should be captured effectively. System related changes should be implemented by institutions to apply the stage allocation correctly for the forbearance period, with a reversion back to the original method once this period elapses.

The transfer to Stage 2, where there is a significant deterioration of credit risk, needs to be considered from the point when a loan is granted. In any case, the goal should be to capture defaulting loans correctly, with Stage 2 being a transition state before default. The forward-looking information used to incorporate the impact of the pandemic on obligors into the ECL estimate needs to be reasonable and supportable for IFRS 9 purposes. Additionally, the impact to IFRS 9 provisions from the pandemic overrides should be carefully monitored, with senior management having visibility. Any flexibility in the use of the stage allocation criteria should be explained well in policy and procedure documents.

From a data collection perspective, this means institutions need to pay careful attention to improve current practices of capturing data lineage, critical data elements thereby augmenting the explain-ability of ECL. That, in turn, will provide better traceability and monitoring of stage allocations and pandemic overrides, enabling a better understanding of the key drivers of changes in credit impairments under this pronounced uncertainty.

The pandemic and the IRB credit models

Delays in implementing IRB model improvements

The pandemic resulted in regulators such as the Prudential Regulation Authority (PRA) delaying the implementation of improvements to the IRB model (as part of 'the EBA Roadmap') to January 1, 2022[4]. These improvements relate to the definition of default, probability of default (PD) and loss given default (LGD). Institutions can use this delay to collect data and if needed recalibrate models (at the minimum) with the intent to improve the accuracy of credit risk parameters.

Poorly performing PD models, increasing use of overrides and monitoring

Despite the relief measures such as mortgage payment holidays and distressed restructuring, the plunge in economic growth and rising unemployment could lead to a surge in defaults and credit migration. PD models that are largely driven by latest annual financials are quite unlikely to predict obligor ratings accurately as the financial statements

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[4] https://www.bankofengland.co.uk/news/2020/march/boe-announces-supervisory-and-prudential-policy-measures-to-address-the-challenges-of-covid-19?sf119474940=1&mod=article_inline

do not yet reflect the impact of the pandemic. So, as models fail to generate ratings reflective of the impact of the Covid-19 crisis, the use of increasing number of overrides may already be breaching any existing thresholds. Presence of high degree of uncertainty compounded by huge volume of effected obligors (exceeding operational capacity) makes the determination of scale of obligor-specific override quite challenging. This is going to put great burden on the model monitoring teams as they go about assessing the performance of the overrides.

Conduct impact analysis owing to rise in defaults and LGDs

From a PD model perspective, as new data gets collected, institutions should consider recalibrating their existing PD models as the central tendency of default rate is most likely to shift and not recalibrating could cause institutions to fail in their back-testing

From an LGD model point of view, institutions need to monitor their pool of collateral used to mitigate risk for their credit obligations. The value of this security when operating under the stress of default will have a significant bearing on recovery rates. . Also, as institutions collect more loss data resulting from this pandemic, they should put it use to increase the robustness LGD and downturn LGD unbiased estimates. Use of higher amount of data is also quite likely to reduce any existing Margin of Conservatism (MoC) related to model data deficiencies (Category A) and general estimation errors (Category C).

Improve data capture for improved RWA optimisation and pricing

More than ever before, the impact of Covid-19, has brought to the forefront the need for institutions to assess the impact of existing and new lending on their profitability and capital consumption. Despite the crisis, institutions are expected to provide liquidity in the market. Institutions are encouraged to continue granting new loans to new and existing clients. It is expected that in doing so institutions follow their normal credit policies and price loans based on the assessment of the creditworthiness of obligors.

While the full impact of the outbreak and of the related relief measures may take a long time to manifest, it is imperative that institutions conduct an impact analysis of potential increase in PDs, LGDs for their different credit portfolio segments on their RWAs and use this knowledge in pricing of new loans. The impact analysis require that institutions pay careful attention to data collection to improve the explainability and traceability of RWAs, provisions and return on capital. For many institutions, this may mean requiring significant improvements in capturing the data lineage and critical data elements for PD, LGD and exposure at default (EAD) models.

It is only with robust data quality management and governance that institutions can accurately understand the dynamic trade-off between revenue generation and capital consumption during and after the pandemic.

Future developments

Financial institutions should carefully monitor the pandemic situation and plan ahead so that changes can be made to credit risk systems, models, processes and governance mechanisms. It is important that institutions use the opportunity to collect data on defaults and recoveries to calibrate their IFRS 9 impairment and IRB models. Regulators are likely to pay close attention to operational resilience, with consumer protection and market integrity as its pillars.

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