

LIFE OF LOAN ESTIMATION

Defining Forecast Horizon
for CECL Compliance

November 26, 2018

Written by

Vikas Sharma
Practice Lead, Banking Analytics

Varun Aggarwal
Vice President, Analytics

Manish Jain
Vice President, Analytics

Contributor

Tarannum Girdhar
Project Manager, Analytics

lookdeeper@exlservice.com

LIFE OF LOAN ESTIMATION

Defining Forecast Horizon for CECL Compliance

Measuring lifetime losses for a financial asset is unambiguously the biggest change for all financial institutions following the US GAAP changes for loss provisioning. In this paper, we discuss how to estimate the life of a loan under complex scenarios.

The Financial Accounting Standard Board (FASB) has amended the US GAAP for loss provisioning, switching financial institutions of all sizes from an incurred loss methodology to a forward-looking view. To form reasonable current expectations of future losses, the new accounting standard requires an entity to estimate expected credit losses over the contractual term of a financial asset. It is one of the biggest changes for all banks, saving associations and credit unions, as their loss forecast horizon broadens from a fixed 12-month performance window to the end of an asset's life. This creates two strategic questions:

1. How should forecast horizon be defined for different lending products in the first place?
2. How should credit loss forecasting methodology be changed due to the change in forecast horizon?

This paper focuses on the nuances of defining the credit loss forecast horizon. The idea is to inform and equip the US banking and financial institutions with systematic approaches to adapt to the life of loan concept and comply with CECL accounting standard.

The definition of credit loss forecast horizon varies with nature and term of the lending product:

- a) **Short term closed-end loans:** The contractual term is typically a good indicator of the asset's life

- b) **Long term closed-end loans:** The contractual term is too long for there to be any availability of historical information for developing reasonable forecasts
- c) **Revolving loans:** The balances fluctuate and do not have any contractual term

A. Short Term Closed-End Loans

For short term closed-end loans such as secured auto loans and unsecured personal loans, the remaining loan term (defined as difference between 'contractual term' and 'time since loan origination') can be used as the loss forecast horizon. However, the other two types of lending products require deeper analysis.



B. Long Term Closed-End Loans

Challenges

A closed-end loan, by definition, has a well-defined contractual term. However, long term loans such as 10-year student loans and 20-30 year mortgage loans pose three key challenges:

1. **Limited history:** When the loan term is too long, financial institutions have a small amount of historical data for full contractual term to analyze loss trends and patterns
2. **Low reliability of long term forecasts:** Even when the historical data is sufficiently available, longer term loss forecasts are less reliable due to a higher degree of uncertainty in the future
3. **Prepayments:** Long term loan borrowers tend to make advance payments to pay off debt before the completion of the loan term, meaning the contractual term may not reflect the true life of loan

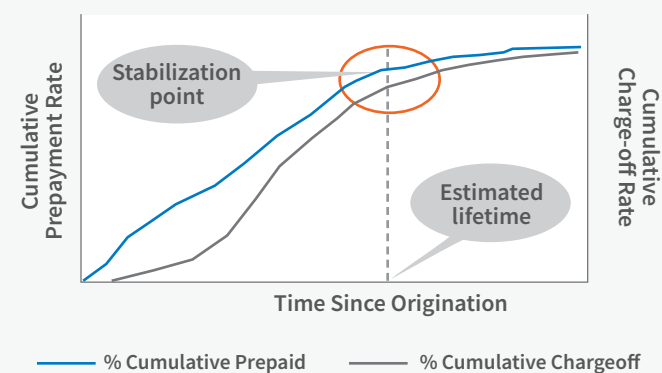
Solution

For long term loans, the prepayments by borrowers redefine the life of loan from contractual life to effective life. The effective life here is defined as the point of stabilization of the cumulative prepayment curve for the underlying homogenous group of loans.

Furthermore, the industry credit loss curves indicate that the majority of losses for long term loans are generally realized within first few years of loan origination. Consequently, it is not even required to forecast losses till the end of contractual term.

The life of a long term closed-end loan portfolio can be perceived as a function of contractual term, prepayment rate and default rate. The observed lifetime, thus defined, is the stabilization point of cumulative prepayment and cumulative charge-off curves.

Prepayment & Charge-off Curves



The loss forecasts should be prepared based on statistical models for the period leading to the stabilization point. Such models built on foreseeable performance window are more robust than those developed on a full contractual term window. For the remaining charged-off balance beyond the observed life, it is recommended to apply an overlay of loss reserves based on historical loss experience.

C. Revolving Loans

Challenges

Revolving loans, such as credit cards, exhibit a higher level of complexity in defining the forecast horizon due to their intrinsic characteristics.

1. **Undefined end term:** Unlike closed-end loans, revolving loans do not even have any defined contractual term that may act as the starting point for determining an effective life of loan



- 2. **Balances fluctuate:** Borrowers have the flexibility to make minimum, partial or full payment, as well as to draw more credit in the future, subject to credit limit
- 3. **Unknown APRs for future draws:** There is uncertainty about future withdrawals and their corresponding APRs, making payment allocation extremely complex

- **Step 2:** Create homogeneous segments of loans with similar risk characteristics
- **Step 3:** Liquidate the outstanding balance for each segment and create amortization schedule for estimating the life of loan

There are multiple approaches for allocating future payments to current outstanding balance.

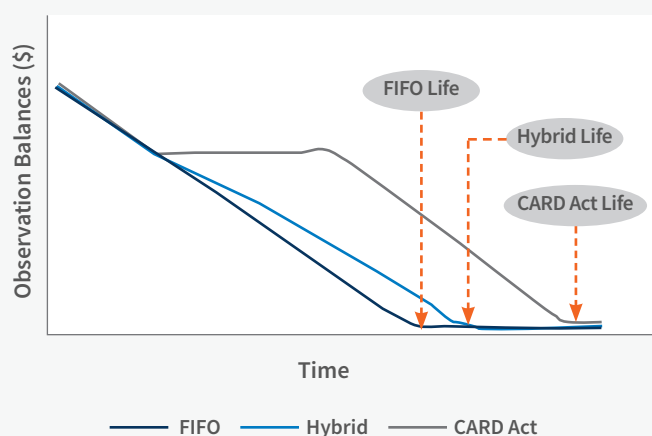
Solution

Though the credit limit is defined for revolving loans, credit utilization is subjective. Moreover, there is no fixed installment that a borrower may be expected to pay at regular intervals. The purchases (credit use) and payments (pay-offs) are therefore dynamic in nature.

Consequently, revolving loans demand a more sophisticated framework for determining effective life.

- **Step 1:** Identify the total outstanding loan balance at an observation point when loan loss allowances are to be provisioned

Balance Liquidation Curve



- **First-In First-Out (FIFO):** Settle observation balance first
- **CARD Act Simulation:** Settle balances with higher APR first
- **Hybrid Approach:** Partially settle observation balance considering future draws and payments

CARD Act simulation requires lots more information, such as future payments, future draws and their categorization by type and APR, compared to prerequisites for FIFO, only future payments, and a hybrid approach, which requires future payments and draws.

Conclusion

Extending the loss allowance period from one year to the lifetime of a financial asset is one of the most disruptive changes in credit loss accounting standards in recent times. While contractual term could be a good indicator of asset life for short term closed-end loans, more sophisticated approaches are required for other loan types. The effective life of long term closed-end loans should be determined in the light of prepayments and charge-offs. Revolving loans, on the other hand, require the creation of an amortization schedule for liquidating balance.

RELEVANT THOUGHT LEADERSHIP

For a high-level primer on CECL, read this paper:

<https://www.exlservice.com/current-expected-credit-loss-cecl-planning-and-moving-forward>

For a deep dive into credit card challenges, read this paper:

<https://www.exlservice.com/cecl-considerations-for-credit-cards>

To learn more about EXL's CECL solutions, visit us at:

www.exlservice.com/cecl

EXL (NASDAQ: EXLS) is a leading operations management and analytics company that designs and enables agile, customer-centric operating models to help clients improve their revenue growth and profitability. Our delivery model provides market-leading business outcomes using EXL's proprietary Business EXLerator Framework®, cutting-edge analytics, digital transformation and domain expertise. At EXL, we look deeper to help companies improve global operations, enhance data-driven insights, increase customer satisfaction, and manage risk and compliance. EXL serves the insurance, healthcare, banking and financial services, utilities, travel, transportation and logistics industries. Headquartered in New York, New York, EXL has more than 28,000 professionals in locations throughout the United States, Europe, Asia (primarily India and Philippines), South America, Australia and South Africa.

© 2018 ExlService Holdings, Inc. All Rights Reserved.
For more information, see www.exlservice.com/legal-disclaimer



GLOBAL HEADQUARTERS

280 Park Avenue, 38th Floor

New York, New York 10017

T +1 212.277.7100 F +1 212.771.7111

United States • United Kingdom • Czech
Republic • Romania • Bulgaria • India •
Philippines • Colombia • South Africa

EXLSERVICE.COM

lookdeeper@exlservice.com