A DEEP DIVE ON VINTAGE AND ROLL-RATE METHODS

Perspective of CECL

CECL FOUNDATION

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261 : 23 : 34 : 59

DAYS   HOURS   MINUTES   SECONDS

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S E R I E S

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ESTIMATING CECL USING VINTAGE AND ROLL-RATE METHODS

Post the 2007-2008 financial crisis, the Allowance for Loan and Lease Losses (ALLL) method proved inadequate for the adjustment of reserve levels of financial institutions. It caused a massive wave of credit losses for banks. To rectify this situation, on June 16, 2016, the Financial Accounting Standards Board (FASB) formulated the Current Expected Credit Loss (CECL) to replace the ALLL standard. The CECL standard was designed to anticipate, and reserve against losses in a timely manner.

Under the CECL umbrella, the Vintage and the Roll-rate methods give us some of the best estimates when determining the expected credit loss model. Both these methods are detailed below:

Vintage Analysis: Vintage analysis draws its data from loss curves. Loss curves incorporate expectations of losses at every point in the life of a financial asset. The main change to the vintage analysis method under CECL is that the allowance will be reflected by the remaining area under the loss curve (which is the expected credit losses on the remaining life of the asset) instead of being reflected by a point on the loss curve.

The Vintage Methodology measures the expected loss calculation for future periods based on historical performance of loans with similar risk characteristics and life cycles. For this methodology, it is preferable to consider similar loans that follow comparable loss curves.

Under CECL, the Vintage Methodology measures the expected loss calculation for

future periods. This is based on historical performance by the origination period of loans with similar life cycles and risk characteristics. It is advantageous to pool similar loans. These loans create loss experience curves that can be seen predictive for future periods. To execute Vintage Methodology, some data elements must be included. Some of them are loan balance, loan number, maturity date, balance at origination, and renewal date. Implementation would include:

● Beginning with historical loss rates for each vintage.

● Analyzing the trends in recent vintage loss rates.

● Filling in the loss rates for future periods based upon historical trends.

● Considering changes to present conditions, and reasonable and supportable forecast periods.

● Separating adjustment factors that may be required for each vintage depending on the differences in their makeup.

● Depending on forecasted conditions, these adjustments could either be negative or positive.

When it is noticed that future years are no longer forecastable, it is advised to go back to adjusted historical averages. Adjustment or Qualitative (Q) factors need to be re-evaluated as economic landscapes shift.

Isolate and then apply the expected loss rates determined from the historical loss rates to the balance of each vintage pool as of the reporting date, to determine the Allowance for Credit Losses (ACL). The totals for each vintage are added to find out the current expected loss.

Credit portfolios, indirect auto loans, and other consumer loans work well with the Vintage model.

	Vintage	Roll Rate
Historical Calculations	Simple	Complex
Data Requirements	Limited	Robust
Use of Advanced Statistical Methods	Optional	No
Management Adjustments	Detail-level, Transparent	Detail-level, Lengthy
Insight & Control	Moderate	Moderate-High
Early Model Performance Indicators	Delayed	Yes
Loan-level Factors Considered	Segment-level forecasts can consider credit mix	Beginning loan status
Macroeconomic Factors Considered	Optionally yes	Optionally yes

Source: riskspan.com

Roll-rate Method (Migration Analysis): Roll-rate models based on risk ratings require regular and timely updates to credit risk ratings for all assets. Consequently, this model might not be the best predictive measure. With this method a financial institution will need to ascertain the primary attributes that predict loss most appropriately.

Various economic cycles are reflected by assembling default or loss migrations. These default migrations are tested through those cycles to assess the reliability of the model. To improve precision, limitations on time series length, population sizes, and data integrity may need to be combined with judgments and additionally calibrated over time.

Institutions will take time to make these final determinations before opting to implement such a methodology. Below are the several pros and cons to be considered before banks and financial institutions consider the Roll-rate method for implementing CECL.

Pros:
● Estimation based on this method is more accurate. This is done through granular analysis since an individual account's loan tracking is done over a period of time to assess its performance.

● Roll-rate method considers macroeconomic conditions or defaults while accommodating expected changes to transition rates.

● When used with a separate probability of default method, the roll rate method generates a joint probability of loan migration from one bucket to another.

Cons:
● Since the movement of segments over time is modelled at a granular level, a large quantity of data is required.

● The Roll-rate method's performance is vastly impacted by the starting point of analysis.

● Beyond the near term, it is found that this method has weak predictive power.

CECL Express can help...

CECL Express is a turnkey solution that fully satisfies all elements of the new CECL accounting standard. The system provides all non-loan data, including:

> Yield curves and Fed data
> Linked reports on losses from the FFIEC and NCUA
> PD and LGD curves
> Macroeconomic data

Banks and credit unions need to only provide the underlying loan details for the system to provide fully auditable ECL results for multiple calculation methods, including:

> Vintage
> Roll Rate
> Discounted Cashflow
> WARM
> PD/LGD
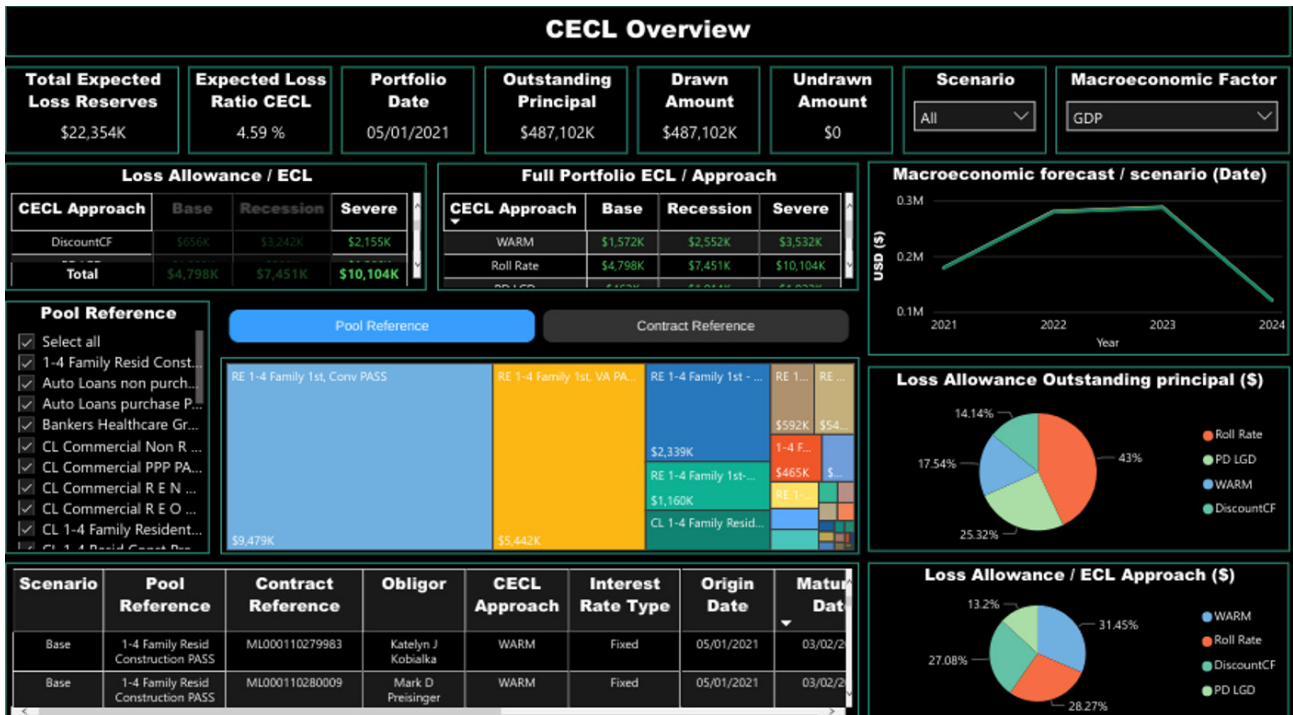
CECL Express provides more than valid ECL results. The system computes results for all methods and all loan pools, allowing the bank to optimize its CECL configuration and avoid the worst impacts of the new standard.

Visit ceclexpress.com for more information about the most efficient route to optimal CECL compliance.

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ABOUT
CECL EXPRESS

> CECL Express is a turnkey, cloud-based solution, designed to provide banks and credit unions with optimized results and reporting that fully meet the 'Current Expected Credit Loss' accounting standards.

> CECL represents a major change in what is expected from financial institutions in their reporting of, and provisioning against potential credit losses.

> Smaller financial institutions are expected to implement forward-looking credit models to estimate losses they may experience.

> Selecting inappropriate 'Expected Credit Loss' (ECL) models will create a need to hold far more capital than is required, directly causing a loss of Profit and Loss (P&L). Data used within these models must also be reported for audit purposes.

> January 2023 will see the first official reporting period for the beginning of CECL. Banks and credit unions must have a framework in place, which is fully tested and reports results based on that data. In practice, this means selecting, implementing, and testing the system in the first half of 2022.

> For Finastra core systems, the integration has already been built. For customers with these systems, their CECL results are ready to be calculated and reported.

GreenPoint>
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ABOUT
GREENPOINT FINANCIAL

> GreenPoint Financial is a division of GreenPoint Global, which provides software-enabled services, content, process and technology services, to financial institutions and related industry segments.

> GreenPoint is partnering with Finastra across multiple technology and services platforms.

> Founded in 2006, GreenPoint has grown to over 500 employees with a global footprint. Our production and management teams are in the US, India, and Israel with access to subject matter experts.

> GreenPoint has a stable client base that ranges from small and medium-sized organizations to Fortune 1000 companies worldwide. We serve our clients through our deep resource pool of subject matter experts and process specialists across several domains.

> As an ISO certified by TUV SUD South Asia, GreenPoint rigorously complies with ISO 9001:2015 and ISO 27001:2013 standards.

Marcus Cree

MANAGING DIRECTOR AND
CO-HEAD OF FINANCIAL TECHNOLOGY AND SERVICES

Marcus has spent 25 years in financial risk management, working on both the buy and sell side of the industry. He has also worked on risk management projects in over 50 countries, gaining a unique perspective on the nuances and differences across regulatory regimes around the world.

As Managing Director, Marcus co-heads GreenPoint Financial Technology and Services and has been central in the initial design of GreenPoint products in the loan book risk area, including CECL and sustainability risk. This follows his extensive experience in the Finastra Risk Practice and as US Head of Risk Solutions for FIS. Marcus has also been a prolific conference speaker and writer on risk management, principally market, credit and liquidity risk. More recently, he has written and published papers on sustainability and green finance.

Marcus graduated from Leicester University in the UK, after studing Pure Mathematics, Phycology and Astronomy. Since graduation, Marcus has continually gained risk specific qualifications including the FRM (GARP's Financial Risk Manager) and the SCR(GARP's Sustainability and Climate Risk). Marcus's latest academic initiative is creating and teaching a course on Green Finance and Risk Management at NYU Tandon School of Engineering.

Sanjay Sharma, PhD

FOUNDER AND CHAIRMAN

Sanjay provides strategic and tactical guidance to GreenPoint senior management and serves as client ombudsman. His career in the financial services industry spans three decades during which he has held investment banking and C-level risk management positions at Royal Bank of Canada (RBC) Goldman Sachs, Merrill Lynch, Citigroup, Moody's, and Natixis. Sanjay is the author of "Risk Transparency" (Risk Books, 2013), Data Privacy and GDPR Handbook (Wiley, 2019), and co-author of "The Fundamental Review of Trading Book (or FRTB) - Impact and Implementation" (Risk Books, 2018).

Sanjay was the Founding Director of the RBC/Hass Fellowship Program at the University of California at Berkeley and has served as an advisor and a member of the Board of Directors of UPS Capital (a Division of UPS). He has also served on the Global Board of Directors for Professional Risk International Association (PRMIA).

Sanjay holds a PhD in Finance and International Business from New York University and an MBA from the Wharton School of Business and has undergraduate degrees in Physics and Marine Engineering. As well as being a regular speaker at conferences, Sanjay actively teaches postgraduate level courses in business and quantitative finance at EDHEC (NICE, France), Fordham, and Columbia Universities.