DEEP DIVE INTO THE WARM METHOD AND AVERAGING EFFECTS ON OUTLIERS

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CECL COUNTDOWN SERIES

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CECL AND THE WARM METHOD

The Financial Accounting Standards Board (FASB) recommended the Current Expected Credit Loss (CECL) accounting standard for more timely recognition of credit losses to avoid any financial crisis-like situation in the banking industry. The CECL model is now based on expected losses and not on incurred losses. The FASB does not mandate any specific method when measuring credit losses under the CECL standard. One of the methods allowed is the Weighted-Average Remaining Maturity (WARM) method. In this article, we are going to dive deeper into the WARM method, explore its pros and cons, and why it is important to consider the granularity of portfolios when calculating CECL results.

Understanding WARM method

It has been observed that the WARM method is one of the more preferred methods of small US financial institutions as they work towards becoming CECL compliant. The WARM methodology lets financial institutions use the same average annual loss rate unlike most other CECL methodologies that calculate a specific lifetime loss rate.

WARM method features

- Calculation of the average annual loss rate
- Based on estimated prepayments and contractual maturities, estimating future outstanding balances
- Multiplication of the estimated outstanding balance by the average annual loss rate during future reporting periods
- Aggregating the estimated losses for each of these periods

WARM method example

There is a loan portfolio with 150,000 dollars outstanding at the end of 2021 in this example as shown in the table below. The average annual loss rate for this loan pool has been calculated at 30 basis points. Under CECL, it has been forecasted that the entire loan portfolio will be paid down by 2024. To calculate lifetime losses, we sum them at the end of each year.

Example table

Year end	Paydown estimates	Balance projected	Annual loss rate	Loss estimate under CECL
2021		1,50,000	0.30%	45,000
2022	65000	85000	0.30%	25,500
2023	45000	40,000	0.30%	12,000
2024	40000	0	0.30%	0
				82,500

The historical lifetime loss rate = 82,500 / 1,50,000 = 0.55%

Primary challenges under the WARM method

1. Qualitative factors (Q-Factors) need to be considered while using the WARM method. The historical loss rate will be adjusted for current and forecasted economic conditions.

2. Forecasting adjustments can be challenging for some entities as it involves key economic indicators such as the consumer confidence index, unemployment data, and housing price index.

3. The WARM method does not use loan-level information in the same constructive way as other methods do and does not allow banks to utilize the full potential of their data and analytics capabilities as they implement CECL.

Importance of loan portfolio granularity under CECL

Loan pools or segmentations should possess the same risk characteristics and should be as granular as possible. As the pools shrink in size based on their granularity, they might lose their size and statistical significance.

We can have a generic default loss rate number for the pool, or we can split the loan pool into:

- Pass
- Special mention
- Sub-standard
- Doubtful

This split ensures we have a different default for each one of them. The loss rate is different for each of them as the chance of default is higher for a sub-standard loan than a passing loan, and so on. If we do not separate these loans and just allow them to average into the WARM method, and if we take the bigger loss numbers that exist in the lower ratings and put them into one bucket, we lose the outliers and those outlying loss values.

There are institutions that, by just using the call reports, try to arrive at a CECL number. But, there are drivers within the WARM method, which is the loss rate factor that goes into it, plus the average maturities that will change that method. We have to be able to understand the difference in riskiness. We can do the weighted average using the portfolio, but we also need to split by the delinquency level of the loan as this will give us a different value. Hence, we get a matrix of values of different risk ratings of the loan and different maturities. We can do that by the default or we can do it with Q-Factors. However, if we do that with Q-Factors, we still have to be able to differentiate between passing loans, sub-standard loans, etc. We want to put different Q-Factors in to adjust for the higher riskiness. We can put a different default loss rating to drive it, or we can adjust it with Q-Factors. We have to do one or the other. We cannot simply take the

number of the call report and do the WARM method as, while we do that, we do not change its driving influences.

Trade-offs institutions face while opting for the WARM method

1. The WARM method cuts the computation time down as it does the averaging on the way in. But, we do not want to cut the computation time down to the point of losing the granularity of the portfolio.

2. What is the purpose of using the WARM method in that case? The reason the WARM method is used, especially by smaller institutions, is the lower computing power required to execute it.

3. If the constraint of computing power is removed, would small financial institutions still use the WARM method? Are they aware of the granularity and the accuracy they are losing in the process? Firstly, the portfolio has got to be split based on riskiness because otherwise, there is a chance of averaging away the risk that should otherwise be captured. Secondly, if the WARM method is only being used because of its computing power requirements, then is that really the right choice?

4. If banks and other financial institutions are going to choose the WARM method, they still have to subdivide their pools into riskiness since the pools will have different driving factors, whether they are default losses or Q-Factors.

5. The question then arises, why are these institutions doing WARM at all? There are methods that are arguably more accurate when it comes to calculating CECL estimates, such as Roll Rate, Discount Cash Flow, and PD/LGD. Roll Rate and Discount Cash Flow are computationally more expensive than WARM, but they are also more targeted. If institutions still want to opt for WARM after understanding all the pros and cons, then they have to subdivide the portfolio by riskiness to average the right pools.

If institutions are able to export the computing power cost associated with CECL calculations, then they should also be looking at a provider that offers more optionality in the methods. This way, they can choose a method that is actually right for their portfolio rather than choosing a method that has lower computational requirements.

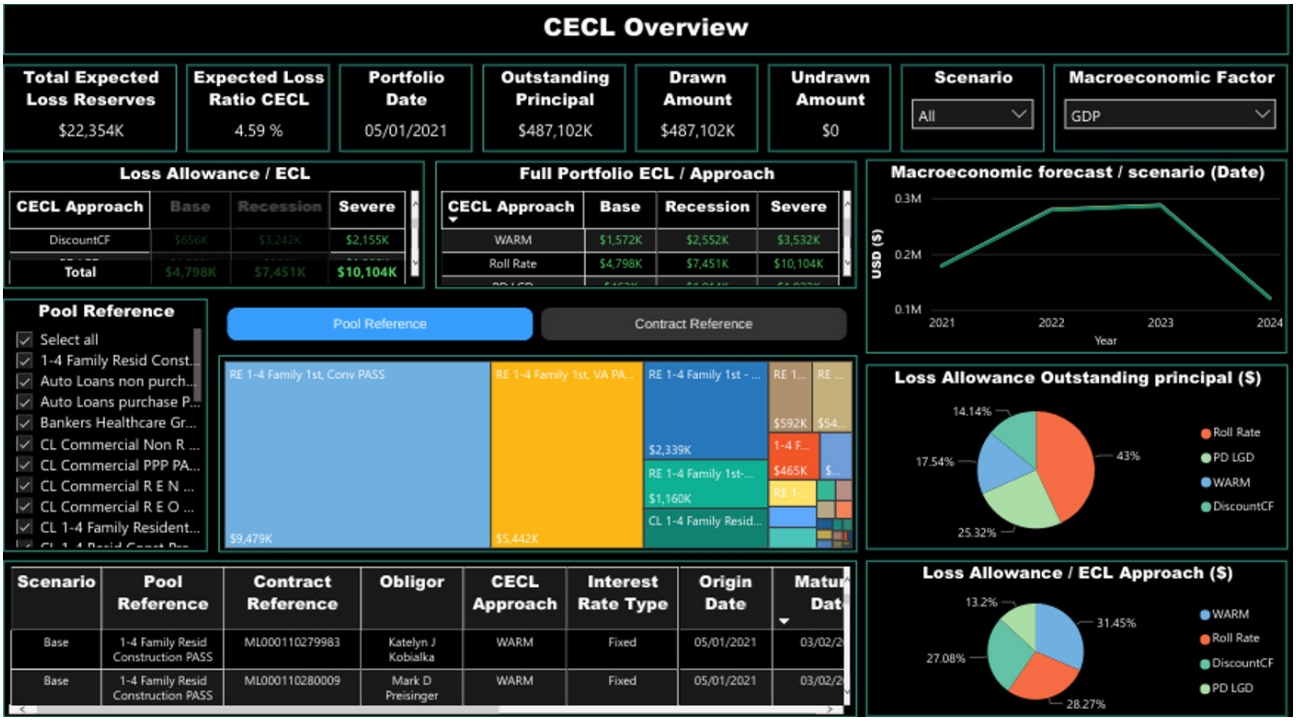
CECL Express can help...

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.

CECL COUNTDOWN SERIES

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> Financial

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 company by TÜV Nord, GreenPoint rigorously complies with ISO 9001:2015, ISO 27001:2013, and ISO 27701:2019 standards.

Marcus Cree

MANAGING DIRECTOR AND
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 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 studying 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.