STATIC POOL ANALYSIS

CECL METHODOLOGY

The static pool analysis tracks a closed pool of loans for a configurable period of time and calculates a loss ratio on only those loans in the pool at the start date – losses to new originations in the period are not included. This is a simpler rate to calculate a N-year loss rate on a pool. If the life of loan is 2-years, then a static analysis over 2-years will yield a compliant estimation under CECL. Sometimes referred to as "cumulative."

ANALYSIS RESULTS

Include	Period Start Date	Total Loan Balance	Charge-offs	Recoveries	Loss Rate	Weight	View Data
☑	3/31/2013	$7,885,016.87	$10,792.50	$0.00	0.1369%	6.5919%	→
☑	6/30/2013	$7,802,400.23	$23,529.29	$6,736.79	0.2152%	6.5228%	→
☑	9/30/2013	$7,854,253.05	$23,529.29	$6,736.79	0.2138%	6.5661%	→
☑	12/31/2013	$7,578,801.54	$23,529.29	$6,736.79	0.2216%	6.3359%	→
☑	3/31/2014	$7,375,624.21	$12,736.79	$6,736.79	0.0813%	6.1660%	→
☑	6/30/2014	$7,032,509.90	$0.00	$0.00	0.0000%	5.8792%	→
☑	9/30/2014	$7,284,714.79	$95,414.09	$13,060.20	1.1305%	6.0900%	→

RECOMMENDED FOR

- Institutions without large loan pools or detailed loan level risk-maintenance data such as risk rating, delinquency, etc.
- If disaggregating a pool results in unsatisfactory counts and lack of statistical power, this approach can yield results.

NOT RECOMMENDED FOR

- Institutions that have changed underwriting standards for loans resulting in a significantly different year-over-year risk portfolio.
- Pools of long-lived loans (3 years as a rule of thumb) as the application of forecasts becomes untenable at this point.
- Pools without at least eight more quarters of loan-level data than the life of loan estimate (5 years for a 3 year asset). Can be difficult to apply R&S Forecasts without recessionary data periods.

Segment loans by...

Client-elected segmentation code, without regard for subpool risk characteristics.

41%

of respondents in Abrigo's CECL survey are considering this method.

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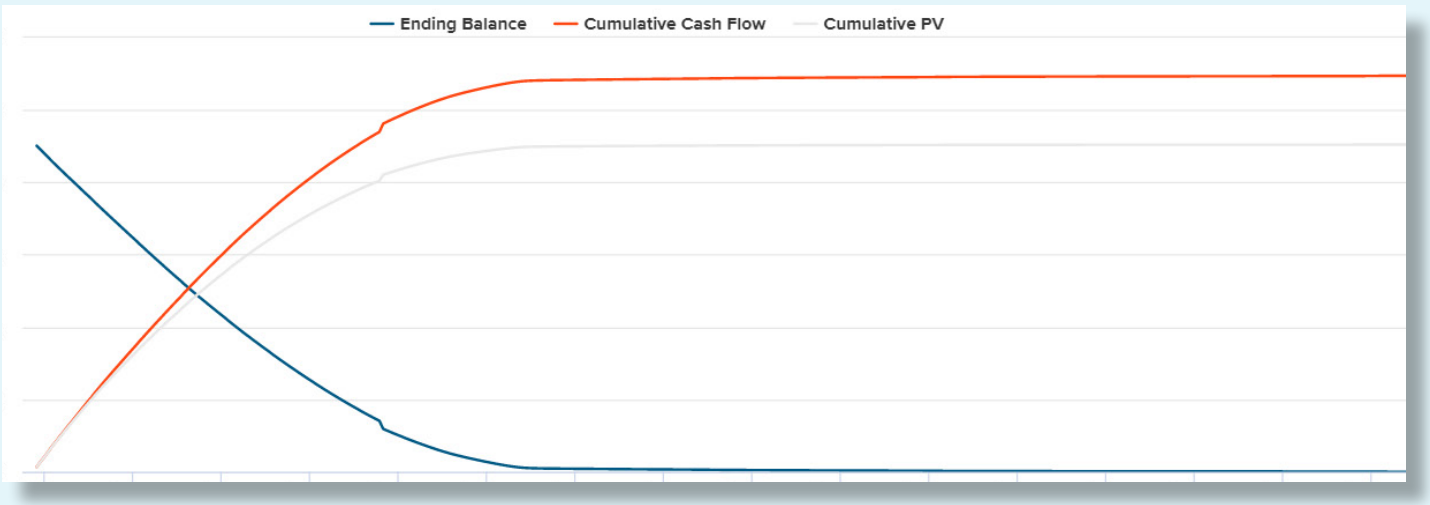
DISCOUNTED CASH FLOW

CECL METHODOLOGY

A DCF model implements a PD/LGD/EAD estimation with capabilities to account for lost interest, lost principal, vintage effects (roadmap), etc. A periodic tendency to default and absolute loss given default are applied to a projective model of the loan's cashflow, with consideration for prepayment and principal curtailment effects. This methodology is defensible and back-testable, as it produces time-bound expectations of loss and income components. This methodology can be applied with relatively little loan-level details (as little as 1 year).



RECOMMENDED FOR

- Institutions lacking sufficient historical data
- Institutions seeking to strongly justify forecast adjustments
- Institutions seeking to layer peer experience when no loss experience exists at the institution level.

NOT RECOMMENDED FOR

- Institutions without software to implement the calculation and controls around it.
- Institutions seeking to achieve a "benchmark" reserve level through methodological elections rather than qualitative adjustments.

Segment loans by...

Risk characteristic and risk sub-segment. No need to segment by terms unless terms are sufficiently predicitve of risk.

39%

of respondents in Abrigo's CECL survey are considering this method.

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MIGRATION ANALYSIS

CECL METHODOLOGY

A "Closed Cohort Migration to Loss" analysis with sub-segmentation calculations for ordinal risk characteristics (times delinquent, risk rating, ordinal risk descriptor). This methodology both describes a life-of-loan number and can accurately price the additional risk for deteriorated loans. Typically, "Pass" credits will remain with low reserve and immediately receive additional allocation on migration through the risk striations.

ANALYSIS RESULTS

Include	Period Start Date	Total Loan Balance	Charge-offs	Recoveries	Loss Rate	Weight	View Data
☑	3/31/2013	$7,885,016.87	$10,792.50	$0.00	0.1369%	6.5919%	
☑	6/30/2013	$7,802,400.23	$23,529.29	$6,736.79	0.2152%	6.5228%	
☑	9/30/2013	$7,854,253.05	$23,529.29	$6,736.79	0.2138%	6.5661%	
☑	12/31/2013	$7,578,801.54	$23,529.29	$6,736.79	0.2216%	6.3359%	
☑	3/31/2014	$7,375,624.21	$12,736.79	$6,736.79	0.0813%	6.1660%	
☑	6/30/2014	$7,032,509.90	$0.00	$0.00	0.0000%	5.8792%	
☑	9/30/2014	$7,284,714.79	$95,414.09	$13,060.20	1.1305%	6.0900%	

RECOMMENDED FOR

- Shorter lived (<3-years) pools with risk diversity and reconciled controls around that risk description.
- Typically sensible for renewing commercial credits.
- Note: Requires additional statistical power and loss experience.

NOT RECOMMENDED FOR

- Pools with insufficient history as above (at least 8 quarters beyond the life of pool)
- Longer-lived pools
- Pools with no risk monitoring
- Note: Can be difficult to apply R&S Forecasts without recessionary data periods.

Segment loans by...

Client-elected segmentation code, without regard for subpool risk characteristics, with additional sub-segmentation for an ordinal risk characteristic.

21%

of respondents in Abrigo's CECL survey are considering this method.

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TRANSITION MATRIX

CECL METHODOLOGY

Also known as Roll Rate Analysis, this methodology measures the tendency of a loan to transition from one state (e.g. commercial risk rating 4) to another state (e.g. commercial risk rating 5) over a period of time, and applies that tendency to project portfolio migration over a time period. As the loans migrate downward or upward adjustments in allocation are made.

		Final Assigned Rating								
	Risk Rating	1	2	3	4	5	6	7	8	9
Scorecard Rating	1	100%	0%	0%	0%	0%	0%	0%	0%	0%
	2	0%	93%	5%	2%	0%	0%	0%	0%	0%
	3	0%	0%	99%	0%	0%	0%	0%	0%	0%
	4	0%	0%	3%	94%	2%	1%	1%	0%	0%
	5	0%	0%	19%	8%	48%	12%	13%	0%	0%
	6	0%	0%	11%	16%	17%	37%	20%	0%	0%
	7	0%	0%	4%	0%	1%	6%	89%	0%	0%
	8	0%	0%	0%	0%	0%	0%	0%	80%	20%
	9	0%	0%	0%	0%	0%	0%	0%	0%	100%

RECOMMENDED FOR

- Institutions lacking a deep data history who do not wish to perform a DCF analysis
- Institutions already leveraging this analysis

NOT RECOMMENDED FOR

- Simpler institutions without sufficient statistical power justify this form of analysis.
- Note: Can be difficult to construct/apply framework for R&S forecasts without a deep data set.

Segment loans by...

Risk characteristics and some ordinal risk grade.

21%

of respondents in Abrigo's CECL survey are considering this method.

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VINTAGE ANALYSIS

CECL METHODOLOGY

A powerful and predictive loss model for pools that are homogeneized by risk characteristics and also loan structure. The approach will calculate a loss rate that is sensitive to loan seasoning. There should be a loss curve by vintage year before applying this form of analysis. Vintage effects can be measured and included in other forms of analysis, such as a DCF model. The guidance's requirement for vintage credit quality disclosure is not symmetrical to forward-looking vintage loss rate estimation.

VINTAGE ANALYSIS RESULTS

			Years since origination					
Include	Originations Ending	Forecast Comparison Results	1	2	3	4	5	Remaining Expected Loss %
☑	2015		0.0000%	0.0000%	0.0018%	0.0124%	0.0000%	0.0000%
☑	2016		0.0000%	0.3682%	0.1157%	0.0000%	0.0000%	0.0000%
☑	2017		0.0000%	0.0000%	0.0000%	0.0062%	0.0000%	0.0062%
☑	2018		0.0042%	0.0000%	0.0392%	0.0062%	0.0000%	0.0454%
☑	2019		0.0000%	0.0921%	0.0392%	0.0062%	0.0000%	0.1375%
		Average:	0.0008%	0.0921%	0.0392%	0.0062%	0.0000%	
		Adjusted Average:	0.0008%	0.0921%	0.0392%	0.0062%	0.0000%	

RECOMMENDED FOR

- Homogeneous installment loans and mortgages.

NOT RECOMMENDED FOR

- Inappropriate for revolvers, frequently renewing credits, balloons, etc.
- Note: Can be difficult to justify application of R&S forecasts.

Segment loans by...

Homogeneous installment loans, mortgages

39%

of respondents in Abrigo's CECL survey are considering this method.

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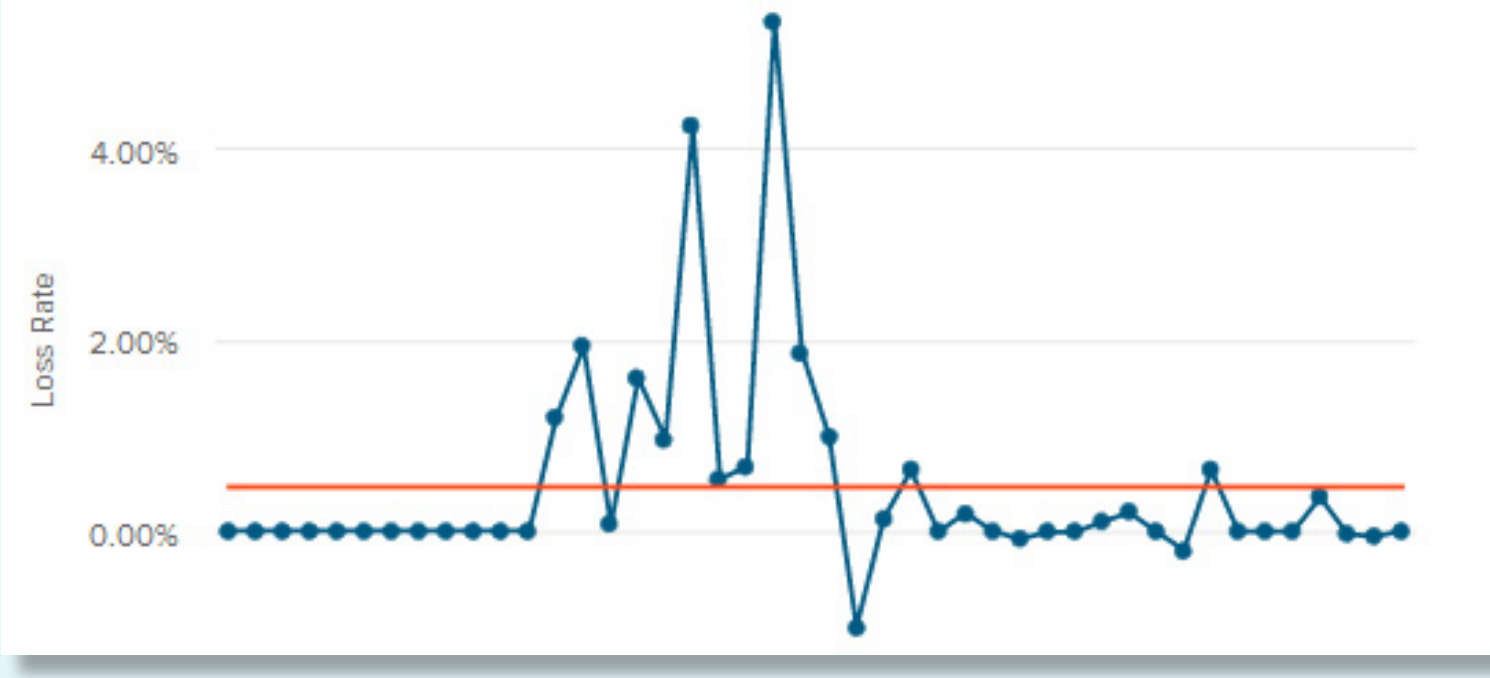
WARM/REMAINING LIFE

CECL METHODOLOGY

An implementation of WARM/WARL uses periodic charge-off rates and applies those rates to a projection of balances over the remaining life of an instrument. Users have latitude in the level of complexity applied in adjusting those rates for anticipated economic conditions.



RECOMMENDED FOR

- Adaptable to situations where data, or loss experience, can be lacking.
- For shorter duration (1-year) assets, simpler methodologies may be more appropriate.
- Note: Even when more sophisticated approaches such as DCF are elected, a remaining life measurement can provide information quickly. It is conceptually aligned with the standard and applicable to a variety of asset classes.

NOT RECOMMENDED FOR

- Leaning too heavily on remaining life, where loan-level data needs aren't as high.
- Note: May lead an institution to under invest in data capture that's needed for other methodologies

Segment loans by...

Common risk characteristics, such as risk rating and credit risk grade. Call report codes are also an option.

32%

of respondents in Abrigo's CECL survey are considering this method.

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PROBABILITY OF DEFAULT/LOSS GIVEN DEFAULT (PD/LGD)

CECL METHODOLOGY

PD, LD, and EAD (exposure-at-default) metrics can be included in many other methodologies. For example, a DCF model applies a periodic PD to the loan's terms over time to calculate an EAD and applies an LGD estimation. Commonly, an instutition will have 1-year PD numbers at a loan level or pool level (or seek to measure same) and leverage this in a CECL calculation. Translation from 1-year to lifetime PD numbers is not a simple or easily justifiable matter.

FORECAST COMPARISON

ADD FORECAST COMPARISON

Include	Period Start Date	Number of Loans Available to Default	Number of Defaulted Loans	Probability of Default	Weight	View Data
☑	5/31/2017	643	1	0.1555%	33.7002%	→
☑	5/31/2016	637	0	0.0000%	33.3857%	→
☑	5/31/2015	628	2	0.3185%	32.9140%	→

RECOMMENDED FOR

- Shorter-lived credits
- High-count, low-dollar segments
- Institutions that can separately calculate life-of-loan PDs using conditional/regression models

NOT RECOMMENDED FOR

- Pools with insufficient history as above (at least 8 quarters beyond the life of pool)
- Longer-lived pools
- Pools with no risk monitoring
- Note: Can be difficult to apply R&S Forecasts without recessionary data periods

Segment loans by...

Common risk characteristics and subcharacteristics.

29%

of respondents in Abrigo's CECL survey are considering this method.

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