Looking at Historical CRE Losses for CECL

Banks and bank holding companies are beginning to assess their ability to comply with the impending CECL (Current Expected Credit Loss) accounting standard coming in 2019 for early adopters. CECL will change the way banks calculate reserves on some of their assets, such as financial instruments kept at amortized cost like loans, leases, and held-to-maturity debt securities.

Currently, banks use an incurred loss model to calculate their reserves. Under this model, a bank must estimate the amount of loss that has already occurred, but is not yet recognized in the balance sheet. So, a bank will estimate how many "probable" defaults exist in a pool of performing commercial real estate (CRE) loans, and calculate a reasonable estimate of loss that will occur over the bank's specific loss emergence period, usually one to two and a half years depending on the bank. The estimate must be based entirely on the current state of the loan at the time of estimation, and cannot take into account any forecasted expectations of changes at the macroeconomic or loan level. In an attempt to update this very old rule, the Financial Accounting Standards Board (FASB) introduced the concept of estimating losses over the entire life of the financial instrument. By removing the "incurred" and "probable" thresholds from reserve calculations and implementing an Allowance for Loan and Lease Losses (ALLL) estimate based on the "net amount expected to be collected" for each instrument, FASB is attempting to create a system that will help banks better predict and properly reserve for future losses.

Although there is no specific CECL calculation method required by FASB, a few options have been presented in the guidance released over the last few years:

- Loss Rate/Roll Rate: assign losses to different risk categories based on historical loss experience.
- Vintage Analysis: assign losses based on seasoning and vintage characteristics.

- Discounted Cash Flow (DCF): present value of expected future cash flows discounted at the loan's effective interest rate based on "reasonable and supportable assumptions and projections," after which reversion to mean estimation and historical loss rates are used.
- Probability of Default/Loss Given Default (PD/LGD) Modeling: regression models applied to either pools of loans, or on a loan-by-loan basis and likely combined with DCF to forecast future, loss-adjusted expected cash flows.

Banks will likely choose their method of CECL estimation based on asset size, loan type concentrations, and available manpower. Loss rate and vintage analysis may be simpler than DCF or statistical PD/LGD modeling, but all methods will require significant historical data and systems for capturing and reporting internal loan information. Most large banks have made notable strides in this area over the last several years due to Dodd-Frank stress testing mandates and increased internal focus on best practices for risk management. Some banks will use those data and systems already in place to generate CECL forecasts, while others will separate the tasks. Though stress testing and risk management are regulatory and loss mitigation exercises which may or may not influence earnings, CECL ALLL estimation will directly affect net income.

No matter the calculation method selected, historical, granular loss data will be necessary to generate supportable forecasts or average historical loss-based estimates. There is no benchmark allowance range provided by FASB and, technically, there is no rule against reserving zero for some loans (though it is highly unlikely a bank would do this for anything but the absolute safest government debt securities). Unfortunately, many banks have very little in the way of granular historical data, and a number of those that do have good data have taken few to no losses in their history. This has made it difficult for those banks to effectively model future losses.

Banks in this predicament may look to other sources of data to supplement their CECL processes. Banks with heavy commercial real estate exposure often look to the securitized market to augment their internal data, given the depth and breadth of historical information at the loan and property levels. Looking at historical losses in the CMBS market could provide valuable guidance to banks when calibrating and benchmarking CECL loss methodologies.

A top-level view of historical losses in Trepp's CRE history provides useful insight into general CRE loss levels by region, vintage, property type, and term performance over time. These numbers come from Trepp's historical CMBS data feed. Trepp did not adjust the dataset or perform any manipulations that banks might do on their own when looking for a relevant sample set within the larger data feed universe.

Looking at the entire universe of loans that were ever outstanding from January 1998 through March 2017, average loss rates come in at 3.52% for all loans disposed and still outstanding, and 5.39% for just loans that have been disposed. Unsurprisingly, disposed loans for retail properties incurred the highest losses (6.17%) after the "Other" property type, which is often a catch-all for multi-property and portfolio loans, some of which took very large losses during the economic downturn.

The office and industrial sectors were close to retail loss levels at 6.13% and 5.88%, respectively. Self-storage (1.52%) and co-op (0.10%) loan losses were the least severe compared to all other property types.

LOSS % BASED ON ORIGINAL BALANCE
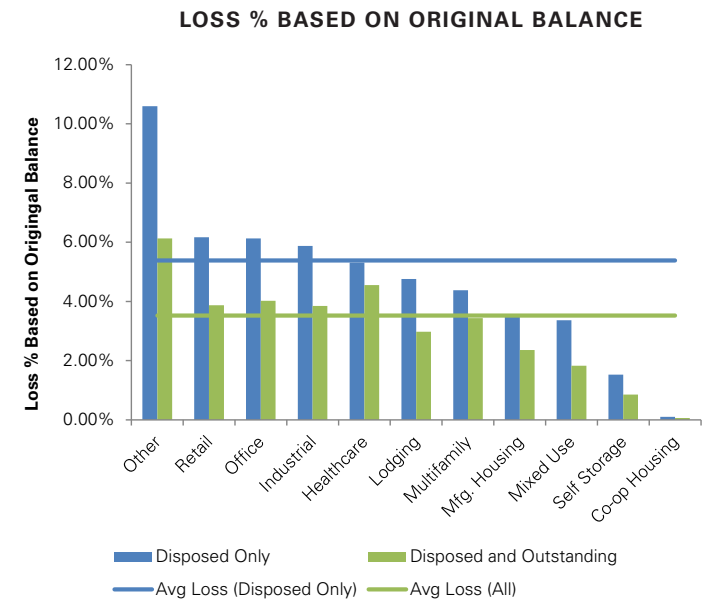
Source: Trepp

Geographically, the loss results are similarly intuitive. Among the 50 states, loans behind Michigan and Ohio properties suffered the highest losses historically, with Iowa, Nevada, Tennessee, and Arizona not far behind.

AVERAGE LOSS RATES		
Property Type	Disposed Only	Disposed and Outstanding
Other	10.60%	6.12%
Retail	6.17%	3.87%
Office	6.13%	4.02%
Industrial	5.88%	3.84%
Healthcare	5.31%	4.55%
Lodging	4.76%	2.98%
Multifamily	4.38%	3.44%
Mfg. Housing	3.53%	2.36%
Mixed Use	3.37%	1.83%
Self-Storage	1.52%	0.86%
Co-op Housing	0.10%	0.07%
TOTAL	**5.39%**	**3.52%**

Source: Trepp

AVERAGE LOSS RATES		
State	Disposed Only	Disposed and Outstanding
Michigan	17.24%	10.36%
Ohio	14.01%	8.46%
Iowa	12.12%	7.95%
Nevada	11.77%	8.17%
Tennessee	11.56%	7.05%
Arizona	10.87%	7.90%
Georgia	10.85%	7.33%
Vermont	10.73%	7.44%
Akansas	9.87%	5.96%
Indiana	9.85%	6.39%
TOTAL	**5.38%**	**3.52%**

Source: Trepp

AVERAGE LOSS RATES		
Region	Disposed Only	Disposed and Outstanding
Northeast Central	10.33%	6.56%
Mountain	9.24%	6.43%
Southeast Central	9.93%	6.07%
Northwest Central	7.86%	5.07%
South Atlantic	6.99%	4.76%
Southwest Central	6.11%	3.86%
New England	5.16%	3.58%
Middle Atlantic	3.71%	2.24%
Pacific	2.78%	1.95%
Various	2.60%	1.67%
TOTAL	5.38%	3.52%

Source: Trepp

State level analysis can lead to outliers in smaller states where a few large losses can shift the averages significantly. Zooming out to the regional level, the Pacific and Middle Atlantic segments have fared best over the years, driven primarily by the strength of CRE performance in California and New York.

Another aspect of loan loss forecasting involved in CECL is modeling the timing of losses. The majority of loans in the CMBS data feed are ten-year terms, with a chunk of five and seven-year loans sprinkled in as well. Given the strong lockout, defeasance, and prepayment penalty provisions incorporated into CMBS loans, most notes that are disposed well before maturity stem from defaults leading to an eventual liquidation with loss. Looking at the "Disposed Only" column below, the five, seven, and ten-year buckets are all relatively low compared to the other disposition years because of the high volume of maturing loans that paid off with no loss in those years. Loan dispositions in other years are more likely to come from defaulted loans and therefore have higher losses. The "Disposed with Loss Only" column can be viewed more as a proxy for Loss Given Default (LGD) since it only counts loans that were disposed and had positive losses associated with their disposition. Without digging further into the details, the discernible trend here is the very quick ascent from years one to three, and then a slow decline and plateau in loss severity around the 40% range. The ten-year bucket shows a decrease to 26.29%, likely attributable to loans taking nominal losses at maturity due to servicer fees or other non-default related items.
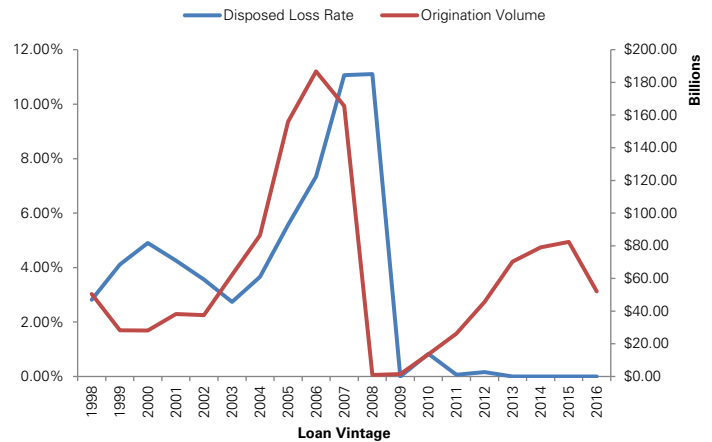

Pacific 2.78%
Mountain 9.24%
Northwest Central 7.86%
Northeast Central 10.33%
New England 5.16%
Middle Atlantic 3.71%
Southwest Central 6.11%
Southeast Central 9.93%
South Atlantic 6.99%
Various 2.60%
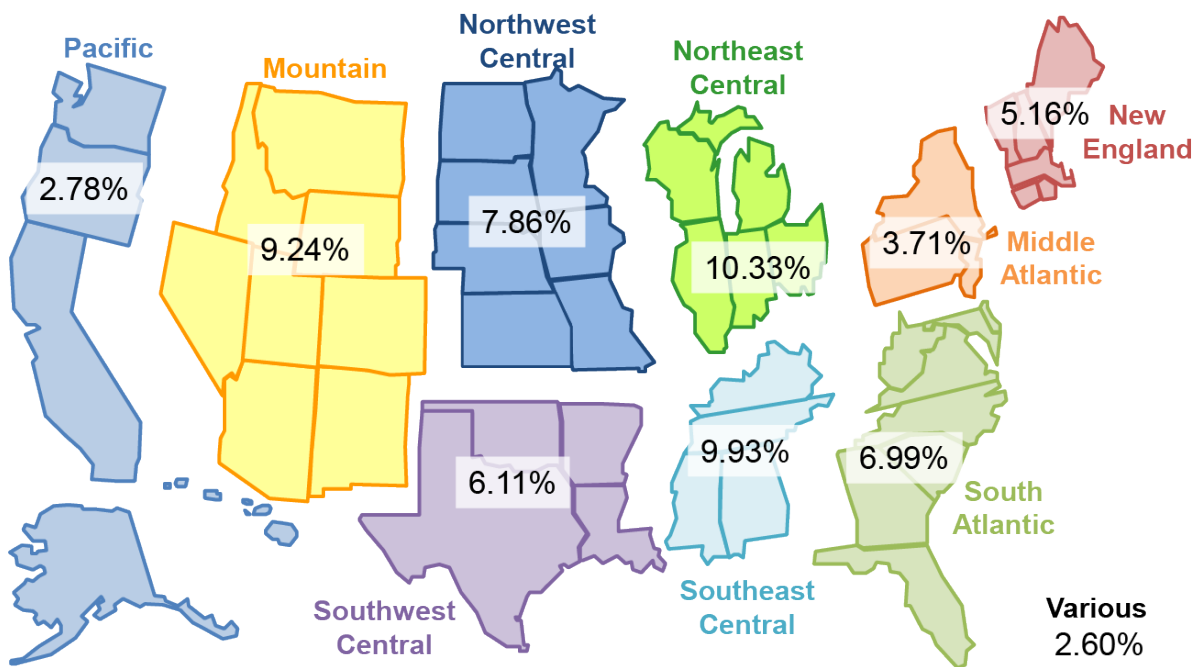
AVERAGE LOSS RATES		
Year of Disposition	Disposed Only	Disposed with Loss Only
1	0.02%	8.55%
2	0.38%	36.60%
3	5.91%	50.57%
4	18.85%	48.12%
5	6.36%	35.02%
6	16.95%	37.88%
7	8.38%	40.20%
8	16.84%	43.71%
9	12.08%	47.55%
10	0.99%	26.29%
11+	13.72%	41.78%
Disposed and Outstanding	**5.38%**	**39.35%**

Source: Trepp

LOSSES & ORIGINATION VOLUME

Source: Trepp

The other major data point in some banks' CECL calculations will be vintage, or year of origination. For loans originated since 1998, the curve of loss rates looks very similar to a curve of new origination volume in the run-up to the recession. Loans underwritten in the highly liquid times from 2004 through 2007 have taken higher losses over time. So far, losses have been muted to non-existent for post-recession loans. However, watch list and special servicing transfers are slowly starting to appear in the data, so loss rates for the 2012-2016 vintages will likely climb over the next several years. The difficult aspect of vintage modeling will be comparing older vintages with sufficient historical losses to newer vintages with little to no losses yet in order to create a reasonable estimate of future losses on those newer vintage loans. Predicting where the market is in the current cycle compared to the past is a difficult exercise since bubbles are only truly identified in hindsight.

Banks will likely use a combination of approaches, data sources, and forecasting methods to calculate CECL ALLL. Vintage, seasoning, property type, and geographic characteristics are just a few of the variables they will assess when performing either loan level modeling or similar risk characteristic cohort analysis. Underwriting measures like loan-to-value ratio (LTV), debt service coverage ratio (DSCR), debt yield, and internal risk ratings will also play a large part in deriving life of loan loss estimates. In making such a significant change to accounting processes, one that will affect earnings, banks will need to strike a balance between best practices and resource allocation. A large, ground-up modeling effort may be too much for smaller banks that are looking for more of an out-of-the-box solution. Larger banks may opt to build the more expensive and time-consuming internal model. Whatever the choice, finding solid, granular loss data will be essential to forecasting and justifying CECL compliant reserves.

For inquiries about the data analysis conducted in this research, contact press@trepp.com or 212-754-1010.
For more information about Trepp's commercial real estate data, contact info@trepp.com

About Trepp

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