



CECL: Current Expected Credit Loss

Business Issues Forum

May 1, 2018
Counselors of Real Estate Mid-Year
Meeting

- Accounting Standard Update 2016-13, issued by FASB in June 2016
- Replaces three separate accounting standards:
 - FAS 5 (ASC 450-20) – general reserve for performing loans. An incurred loss model. Issued in 1975
 - FAS 114 (ASC 310-10) – specific reserve for originated, non-performing assets (or TDRs). ECF or collateral value model.
 - SOP 03-3 (ASC310-30) – for purchase credit impaired assets. Incorporates a credit mark and ECF.

CECL – Why the change?

- Outgrowth of experience from the 2007/ 2008 financial crisis
- Experience showed that ***the incurred loss model was slow to change*** in rapidly changing markets
- Existing accounting standard ***explicitly prohibited firms*** from increasing reserve levels based on expectations, but the market was valuing companies based on those expectations.
- ***If lenders could have been more proactive in raising their reserves, there would have been fewer bank failures and the banks that did survive would have been healthier.***

CECL – What has changed?

- Accounting standard for reserving against credit losses from “incurred” to “expected”
- For commercial real estate, it applies to loans
- Lender must estimate credit losses on each asset
- Credit losses should reflect the expected life of the loans
- Reserve is the present value of the expected losses

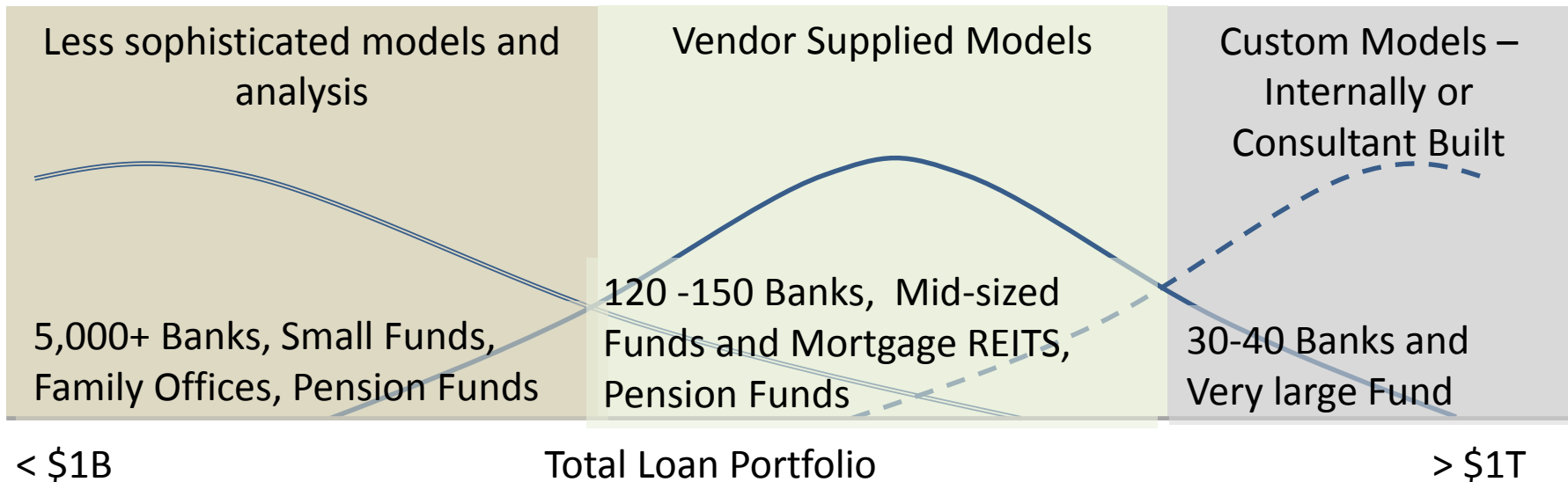
- Forecasting loan performance is data intensive and computationally complex.
- Historical loan performance data is needed and a lenders own history may not be enough.
- Forward looking models for stress testing are carried out over many weeks. Many firms close their books shortly after quarter end, and updating loss estimates will be an operational challenge.
- Credit loss reserves impact financial statements, which means publicly traded companies must consider Sarbanes/Oxley.

- CECL does not explicitly require use of complex, econometric models to forecast losses
- CECL does require that forecasts be done in a repeatable and defensible way.
- Smaller lenders that are accustomed to having a simple Excel spreadsheet for estimating their reserves will face a significant increase in complexity.
- Every lender must get its loan data organized.

CECL – Three approaches to estimating losses



- Three key segments with different approaches for calculation
 - Very Large Lenders: Seek to leverage internal team to build proprietary models
 - Mid-sized lenders: Leverage third-party credit loss model
 - Small lenders: Scorecards and other analytics tools
- Delineation between segments more about sophistication than total assets



CECL

Trepp's Approach



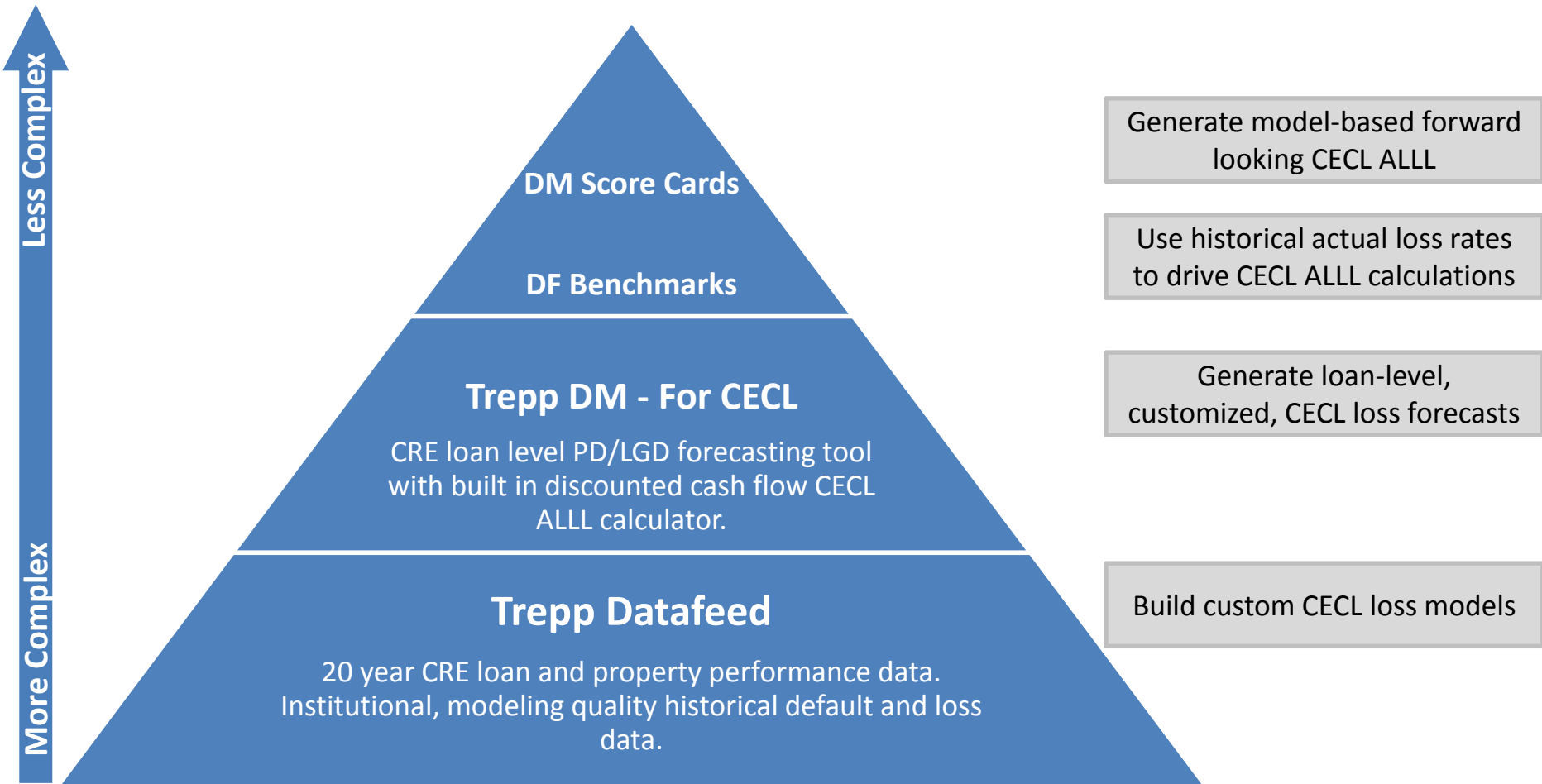
Trepp CECL Solutions



Complexity

Trepp Solutions

CECL Benefits



Trepp-DM Scorecards



Some banks may wish to use econometric forward looking models at a “risk cohort” level instead of on a loan-by-loan basis.

Trepp-DM Scorecards provide CECL loss rates generated by the Trepp-DM for different classes of loans stratified by vintage, property type, region, loan type, LTV, and DSCR cohorts.

Vintage		2015																				
Rate		3.00																				
IO		No																				
Region		South Atlantic																				
		CECL ALLL % by Property Type, DSCR, LTV, and Original Term (Select Vintage, Rate, IO, Region)																				
Orig Term	DSCR ->	Industrial				Lodging				Multifamily				Office				Retail				Total
		0.50	1.00	1.50	2.00	0.50	1.00	1.50	2.00	0.50	1.00	1.50	2.00	0.50	1.00	1.50	2.00	0.50	1.00	1.50	2.00	
3 Years	LTV	0.7389%	0.2515%	0.0281%	0.0122%	0.4344%	0.1448%	0.0160%	0.0069%	0.7677%	0.2631%	0.0296%	0.0128%	0.5602%	0.1889%	0.0210%	0.0091%	0.5948%	0.2005%	0.0223%	0.0096%	0.2156%
	60.00	0.1886%	0.0625%	0.0069%	0.0030%	0.1076%	0.0353%	0.0039%	0.0017%	0.1929%	0.0641%	0.0071%	0.0031%	0.1386%	0.0457%	0.0050%	0.0022%	0.1524%	0.0503%	0.0055%	0.0024%	0.0539%
	70.00	0.4326%	0.1442%	0.0160%	0.0069%	0.2505%	0.0824%	0.0090%	0.0039%	0.4484%	0.1501%	0.0167%	0.0072%	0.3239%	0.1074%	0.0119%	0.0051%	0.3472%	0.1152%	0.0127%	0.0055%	0.1248%
	80.00	1.5953%	0.5477%	0.0615%	0.0266%	0.9451%	0.3167%	0.0350%	0.0150%	1.6619%	0.5750%	0.0649%	0.0282%	1.2180%	0.4137%	0.0462%	0.0199%	1.2847%	0.4361%	0.0487%	0.0210%	0.4681%
5 Years	LTV	1.1751%	0.4017%	0.0446%	0.0190%	0.6448%	0.2128%	0.0231%	0.0097%	1.3421%	0.4649%	0.0521%	0.0223%	0.8678%	0.2921%	0.0322%	0.0137%	0.9387%	0.3158%	0.0348%	0.0148%	0.3461%
	60.00	0.3071%	0.1006%	0.0110%	0.0047%	0.1612%	0.0519%	0.0056%	0.0023%	0.3574%	0.1177%	0.0129%	0.0055%	0.2174%	0.0707%	0.0077%	0.0033%	0.2455%	0.0799%	0.0087%	0.0037%	0.0887%
	70.00	0.7021%	0.2323%	0.0254%	0.0108%	0.3760%	0.1217%	0.0131%	0.0055%	0.8100%	0.2700%	0.0297%	0.0127%	0.5093%	0.1670%	0.0182%	0.0077%	0.5572%	0.1828%	0.0199%	0.0085%	0.2040%
	80.00	2.5160%	0.8722%	0.0975%	0.0416%	1.3972%	0.4647%	0.0506%	0.0213%	2.8588%	1.0069%	0.1136%	0.0487%	1.8768%	0.6387%	0.0706%	0.0300%	2.0134%	0.6848%	0.0757%	0.0322%	0.7456%
7 Years	LTV	4.0977%	1.6861%	0.2102%	0.0938%	3.3490%	1.3429%	0.1663%	0.0753%	4.8704%	2.0183%	0.2520%	0.1122%	3.5123%	1.4189%	0.1755%	0.0785%	3.6372%	1.4514%	0.1782%	0.0796%	1.4403%
	60.00	1.3958%	0.4941%	0.0570%	0.0253%	1.0819%	0.3833%	0.0446%	0.0208%	1.7511%	0.6203%	0.0715%	0.0317%	1.1496%	0.4059%	0.0469%	0.0209%	1.2012%	0.4222%	0.0486%	0.0216%	0.4647%
	70.00	2.8608%	1.0532%	0.1238%	0.0550%	2.2580%	0.8254%	0.0974%	0.0438%	3.4702%	1.2809%	0.1505%	0.0667%	2.3966%	0.8756%	0.1028%	0.0458%	2.4742%	0.8982%	0.1050%	0.0467%	0.9615%
	80.00	8.0365%	3.5111%	0.4499%	0.2011%	6.7071%	2.8201%	0.3568%	0.1613%	9.3898%	4.1536%	0.5339%	0.2381%	6.9909%	2.9751%	0.3767%	0.1689%	7.2363%	3.0340%	0.3809%	0.1704%	2.8946%
10 Years	LTV	5.0443%	2.2020%	0.2850%	0.1281%	4.3075%	1.8286%	0.2346%	0.1071%	6.1271%	2.6959%	0.3493%	0.1565%	4.3919%	1.8762%	0.2402%	0.1083%	4.5795%	1.9294%	0.2449%	0.1102%	1.8473%
	60.00	1.8056%	0.6514%	0.0761%	0.0339%	1.4501%	0.5234%	0.0616%	0.0289%	2.3532%	0.8502%	0.0991%	0.0441%	1.4977%	0.5382%	0.0629%	0.0282%	1.5794%	0.5649%	0.0658%	0.0294%	0.6172%
	70.00	3.6796%	1.3984%	0.1673%	0.0748%	3.0239%	1.1389%	0.1368%	0.0620%	4.5819%	1.7477%	0.2090%	0.0931%	3.1193%	1.1736%	0.1401%	0.0628%	3.2411%	1.2106%	0.1439%	0.0644%	1.2735%
	80.00	9.6478%	4.5562%	0.6116%	0.2755%	8.4485%	3.8234%	0.5054%	0.2305%	11.4463%	5.4897%	0.7397%	0.3323%	8.5586%	3.9167%	0.5177%	0.2339%	8.9180%	4.0127%	0.5251%	0.2367%	3.6513%
Total		2.7640%	1.1353%	0.1420%	0.0633%	2.1839%	0.8823%	0.1100%	0.0498%	3.2768%	1.3605%	0.1707%	0.0759%	2.3330%	0.9440%	0.1172%	0.0524%	2.4375%	0.9743%	0.1200%	0.0536%	0.9623%

Trepp-DM Scorecards



CECL loss rates provided in scorecard format and in lookup table format for easy application to loans or loan groups.

Scorecard

Use the scorecards to find model generated losses for different risk cohorts. Good for reporting and loan scoring at origination.

Vintage		2015			
Rate		6.00			
IO		No			
Region		Mid Atlantic			
		Industrial			
Orig Term	DSCR ->	0.50	1.00	1.50	2.00
3 Years	LTV	2.2841%	0.8399%	0.0975%	0.0423%
	60.00	0.6383%	0.2152%	0.0240%	0.0104%
	70.00	1.4331%	0.4935%	0.0555%	0.0240%
	80.00	4.7808%	1.8111%	0.2130%	0.0925%
5 Years	LTV	3.4631%	1.3365%	0.1575%	0.0674%
	60.00	1.0423%	0.3514%	0.0388%	0.0165%
	70.00	2.3012%	0.8032%	0.0900%	0.0384%
	80.00	7.0457%	2.8550%	0.3436%	0.1474%
7 Years	LTV	8.4102%	4.8514%	0.7822%	0.3571%
	60.00	4.2963%	1.7419%	0.2148%	0.0959%
	70.00	7.6427%	3.5373%	0.4682%	0.2100%
	80.00	13.2914%	9.2750%	1.6637%	0.7653%
10 Years	LTV	9.3844%	5.9338%	1.0706%	0.4964%
	60.00	5.3298%	2.2915%	0.2921%	0.1313%
	70.00	9.0240%	4.5888%	0.6446%	0.2917%
	80.00	13.7995%	10.9210%	2.2752%	1.0662%
Total		5.8854%	3.2404%	0.5270%	0.2408%

Lookup Table

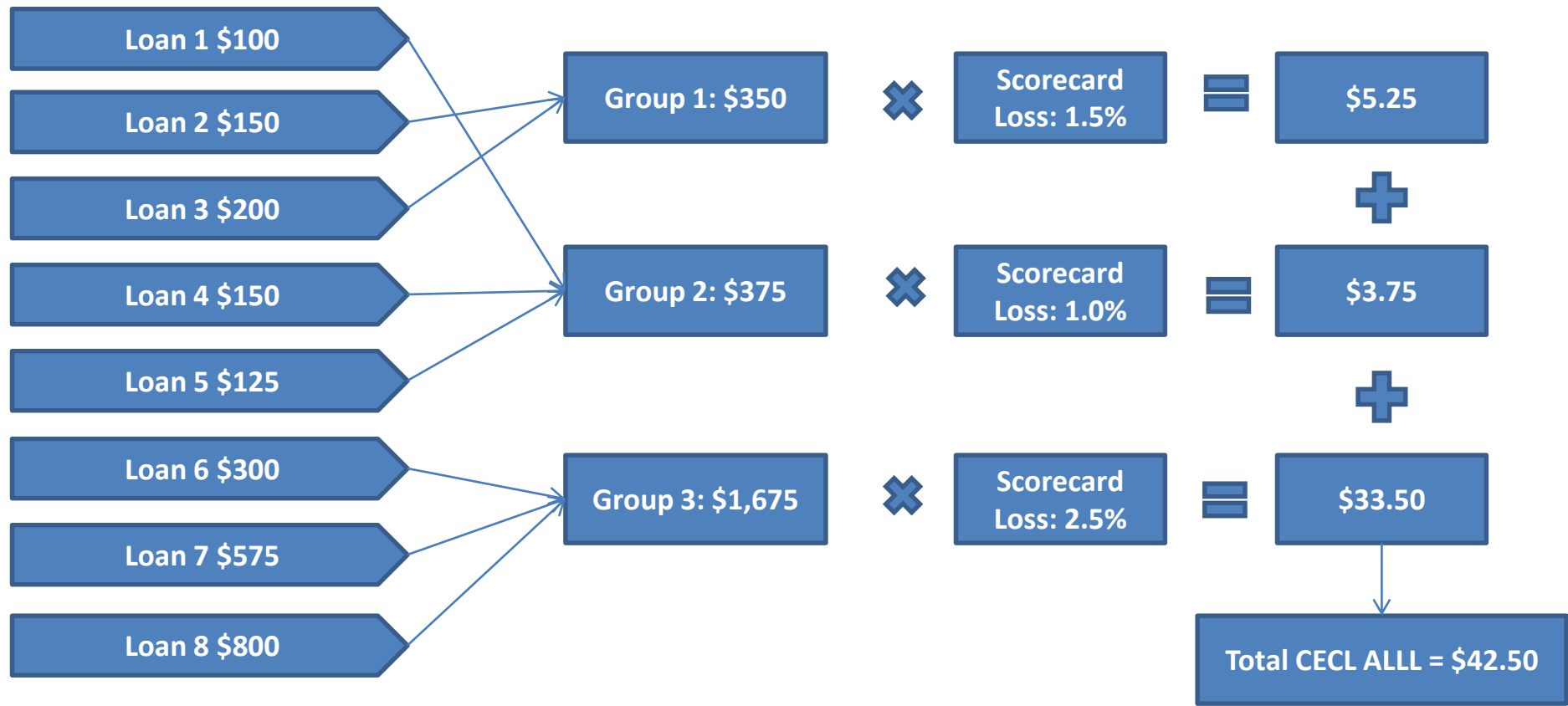
Download the look up table to easily apply CECL loss rates to loans or loan groups based on the risk cohort attributes (LTV, DSCR, Region, Vintage, Term etc.) Use the loss rates to apply CECL reserves to loans at origination and during quarterly financial reporting.

Vintage	Property Type	Rate	IO	Region	DSCR	LTV	Rem Term	ALLL%
2015	Industrial	4.00	Yes	Mid Atlantic	1.00	60	3y	2.50%
2014	Industrial	5.00	No	East South Central	1.50	70	5y	1.50%
2015	Retail	4.00	No	New England	2.00	80	3y	1.25%
2013	Multifamily	3.50	Yes	East North Central	1.00	85	10y	2.75%
2015	Industrial	4.00	Yes	Mid Atlantic	1.00	60	3y	2.50%
2014	Industrial	5.00	No	East South Central	1.50	70	5y	1.50%
2015	Retail	4.00	No	New England	2.00	80	3y	1.25%
2013	Multifamily	3.50	Yes	East North Central	1.00	85	10y	2.75%
2015	Industrial	4.00	Yes	Mid Atlantic	1.00	60	3y	2.50%
2014	Industrial	5.00	No	East South Central	1.50	70	5y	1.50%
2015	Retail	4.00	No	New England	2.00	80	3y	1.25%
2013	Multifamily	3.50	Yes	East North Central	1.00	85	10y	2.75%
2015	Retail	4.00	No	New England	2.00	80	3y	1.25%
2013	Multifamily	3.50	Yes	East North Central	1.00	85	10y	2.75%

Trepp-DM Scorecards



Banks can use the scorecards to apply CECL loss rates to loan groups in the CRE portfolio.



Trepp-DF Benchmarks



Some banks may wish to use historic loss rates to generate, inform, or benchmark their CECL loss projections.

Trepp-DF Benchmarks provide actual historical CRE loss rates observed in the Trepp-Data Feed for different classes of loans stratified by vintage, property type, region, loan type, LTV, and DSCR cohorts.

Vintage: All		Property Type: All				State: All			Loan Term: All		
		LTV									
		60	65	70	75	80	85	90	95	100	105
DSCR	0.00	0.7807%	0.7688%	0.7246%	1.4106%	1.2735%	1.5732%	3.1760%	6.5321%	23.0944%	30.6845%
	0.25	0.0101%	0.5593%	0.7052%	1.0766%	1.6441%	2.0355%	3.0803%	4.4954%	18.2864%	24.9085%
	0.50	0.8426%	0.5676%	0.7762%	1.0773%	1.6587%	2.1241%	3.1061%	3.7110%	15.0427%	20.3873%
	0.75	0.2107%	0.7666%	0.8928%	0.9565%	1.0976%	1.4790%	2.5459%	2.8874%	13.3218%	17.8554%
	1.00	0.7236%	0.5016%	0.6034%	0.7282%	0.8313%	1.1921%	1.8383%	2.7490%	12.7584%	17.7548%
	1.25	0.0852%	0.3192%	0.3390%	0.3360%	0.5432%	0.7621%	1.2229%	1.8010%	13.0075%	18.6060%
	1.50	0.3168%	0.1483%	0.1911%	0.2515%	0.4549%	0.5805%	1.1860%	1.5434%	13.0961%	18.5846%
	1.75	0.0893%	0.1331%	0.1394%	0.2239%	0.3337%	1.1491%	2.6481%	2.6658%	13.0830%	17.1899%
	2.00	0.0515%	0.0601%	0.1052%	0.1543%	0.1907%	1.4632%	2.6740%	5.0982%	11.6771%	15.5782%
	2.25	0.0357%	0.0426%	0.0465%	0.0751%	0.0759%	1.3831%	2.4053%	4.9142%	9.0799%	11.9963%
2.50	0.0749%	0.0431%	0.0498%	0.0180%	0.0118%	0.7456%	0.7426%	4.4418%	7.2400%	10.8600%	

Trepp-DF Benchmarks

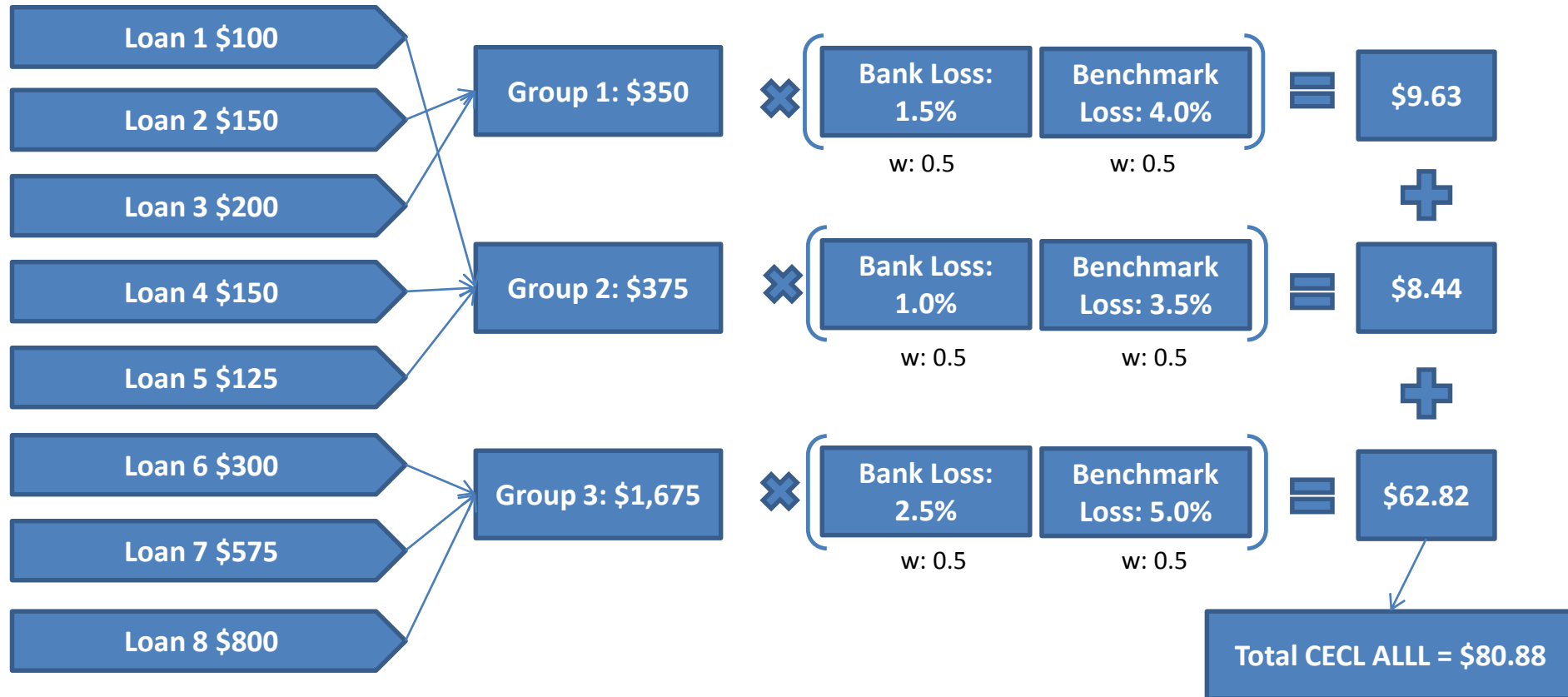


Banks can use the scorecards to apply CECL loss rates to loan groups in the CRE portfolio.

Gather Portfolio Loan Data

Group Loans Based on DSCR, LTV, Vintage etc.

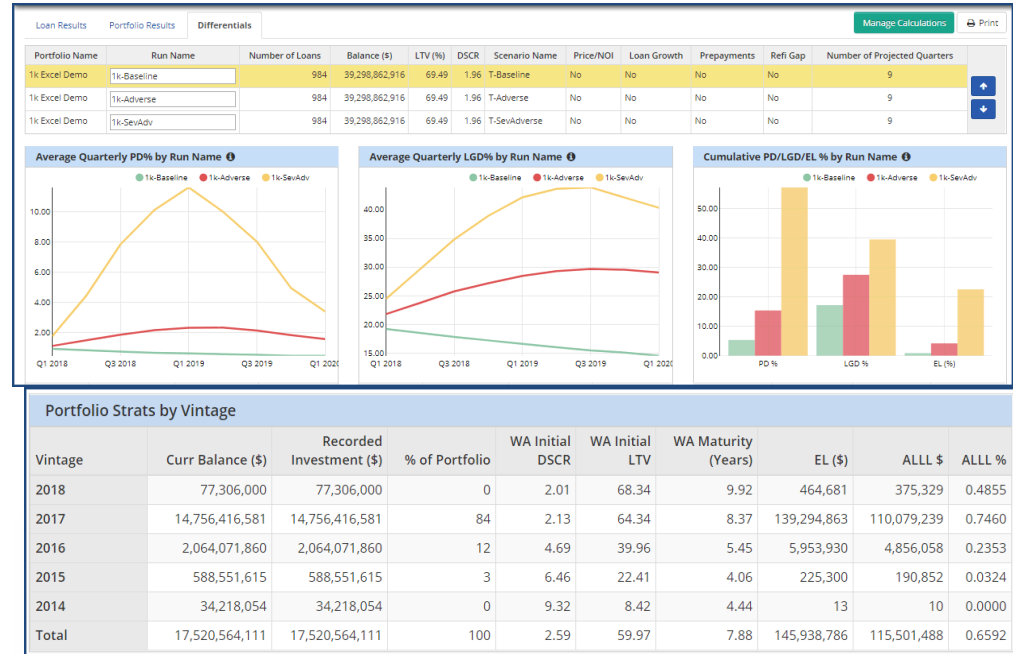
Apply Benchmark Loss % to Balance or Use to Benchmark Bank Loss Forecasts



Trepp CRE Default Model (DM)



- Platform based model for forecasting CRE PD, LGD, EL and CECL with an intuitive user interface for run configuration, execution, and results analysis.
- Loan level, bottom up model using loan and macroeconomic variables to forecast default and loss performance through DFAST, CCAR and custom macro scenarios.
- Capabilities include: custom treatment of maturity risk, group NOI/Value overrides, and new origination engine to forecast the effect of loan growth for stress testing.



Portfolio Strats by Vintage

Vintage	Curr Balance (\$)	Recorded Investment (\$)	% of Portfolio	WA Initial DSCR	WA Initial LTV	WA Maturity (Years)	EL (\$)	ALLL \$	ALLL %
2018	77,306,000	77,306,000	0	2.01	68.34	9.92	464,681	375,329	0.4855
2017	14,756,416,581	14,756,416,581	84	2.13	64.34	8.37	139,294,863	110,079,239	0.7460
2016	2,064,071,860	2,064,071,860	12	4.69	39.96	5.45	5,953,930	4,856,058	0.2353
2015	588,551,615	588,551,615	3	6.46	22.41	4.06	225,300	190,852	0.0324
2014	34,218,054	34,218,054	0	9.32	8.42	4.44	13	10	0.0000
Total	17,520,564,111	17,520,564,111	100	2.59	59.97	7.88	145,938,786	115,501,488	0.6592

Loan Projections

Projection	Q4 2015	Q1 2016	Q2 2016	Q3 2016	Q4 2016	Q1 2017	Q2 2017	Q3 2017	Q4 2017
PD %	0.0767	0.1409	0.2948	0.6525	1.3118	2.1126	2.7280	2.8034	2.9118
LGD %	24.1578	24.4761	26.3173	28.4990	29.1801	33.1225	34.2097	34.5048	35.4118
EL (\$)	719	1,332	2,982	7,110	14,563	26,483	35,136	36,225	33,118
DSCR	1.59	1.54	1.45	1.35	1.25	1.18	1.14	1.12	1.11
LTV (%)	66.17	67.83	71.62	76.57	82.06	86.80	89.39	90.29	89.39
Balance (\$)	3,881,496	3,862,467	3,843,278	3,823,926	3,804,410	3,784,729	3,764,882	3,744,867	3,724,851

DM - Risk & CECL: Key Attributes



Built using the industry standard Trepp historical CRE loan performance data set used by CCAR and DFAST banks for risk management and stress testing model development

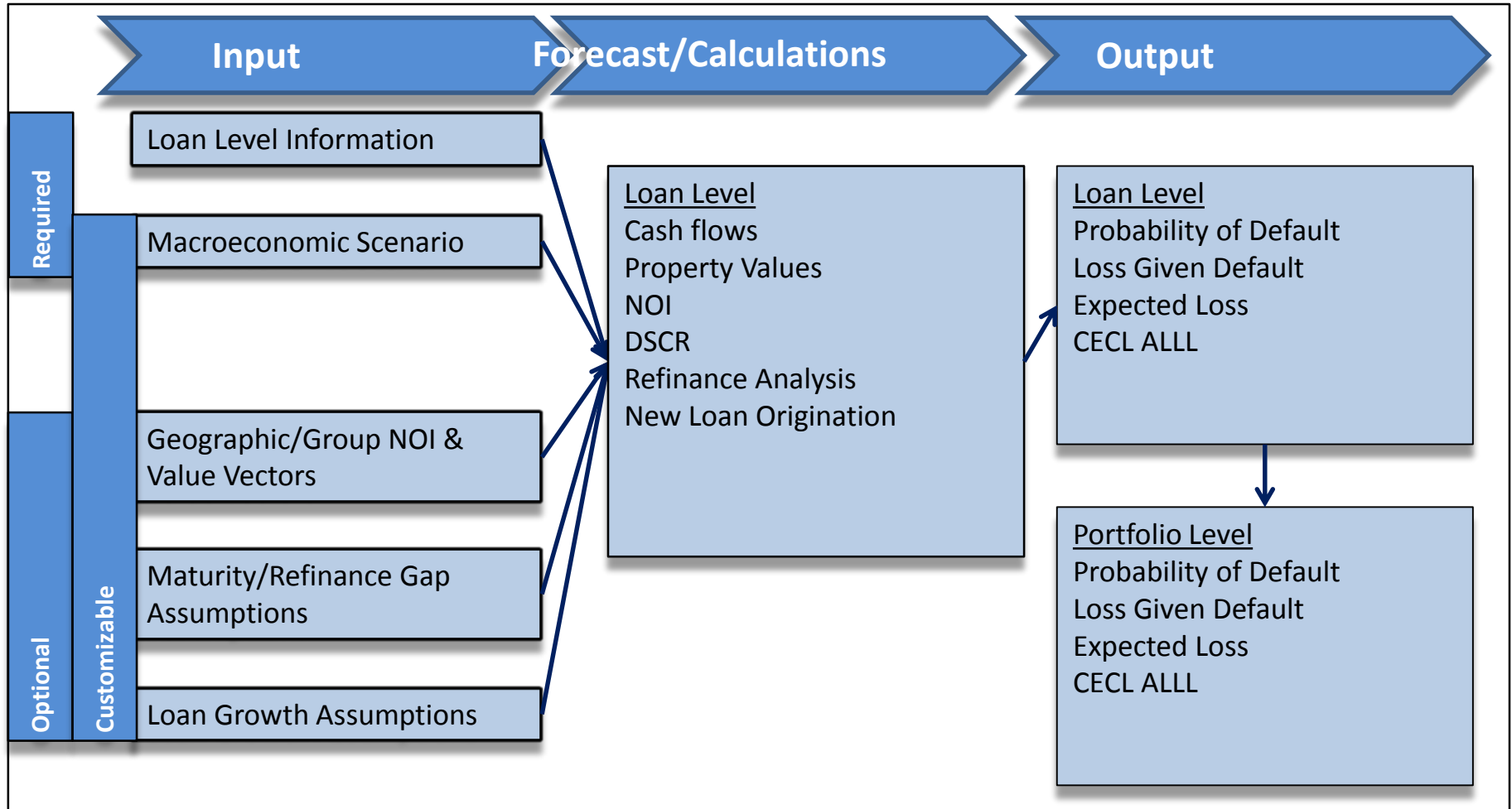


Includes thorough, comprehensive, and transparent model documentation with independent validation allowing banks to fully understand and justify their results



Provides results designed to facilitate flexibility in performing loan and portfolio level analytics with built in logs of all inputs that go into each calculation including portfolio, scenario, and override information

Trepp DM - Risk & CECL: Logical Process Flow





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