

# CUNA 2019 Current Expected Credit Loss (CECL) eSchool

## *Industry Data and Calibration Options*

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# Agenda

1. The Case for Using Industry Data in CECL
2. The Case for Calibration to Lender-Specific Portfolios
3. Applying What We Learn to the Portfolio

# CECL 101

CECL requires consideration of :

**Historical Losses X Current Conditions X Future Conditions**

Industry data can be leveraged for all 3 requirements!

# The Case for Using Industry Data in CECL

## 1. When lender-specific data is not adequate to produce a CECL estimate

Small number of defaults

Lack of sensitivity to macro variables

Lack of data for seasoned loans

Lack of data for borrower attributes (like FICO)

Small number of observations for LGD

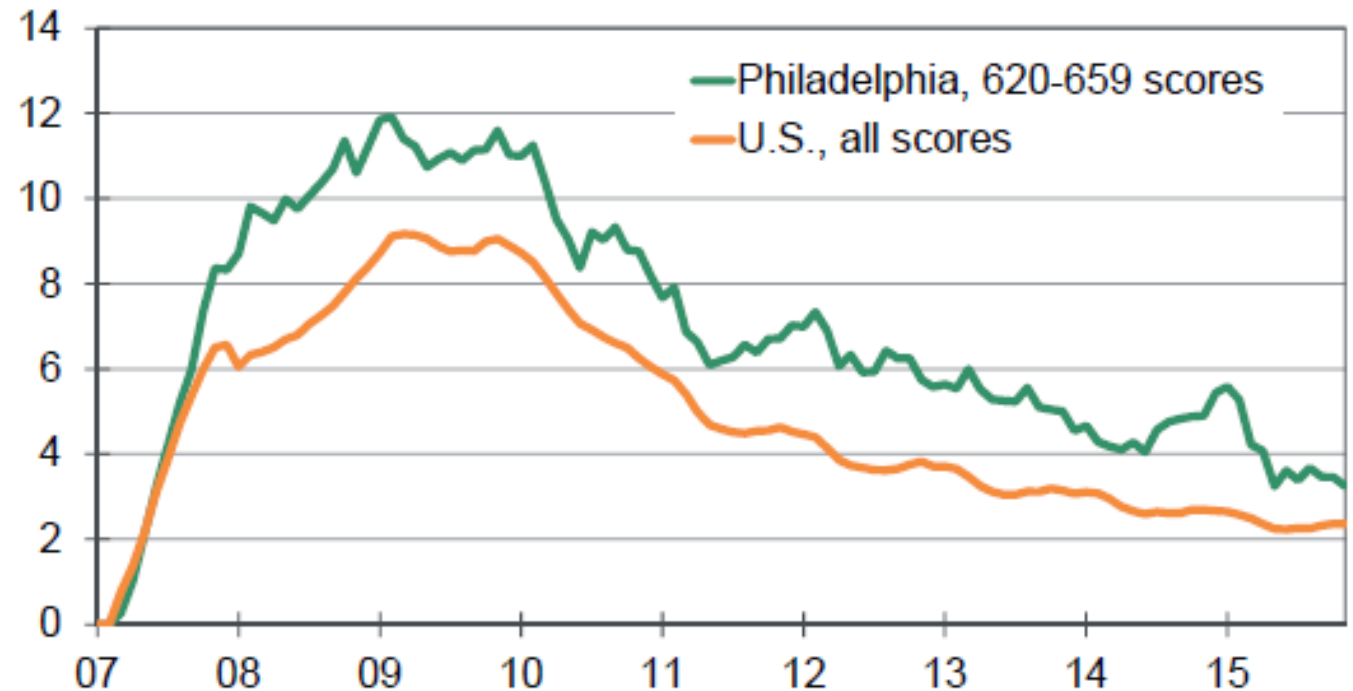
Volatile noisy data, no clear trends

Especially true for credit unions – they are small and have low to zero defaults.

# The Case for Using Industry Data in CECL

2. To compare, benchmark individual lender's performance to market to provide context

30-day+ delinquency rate for 2007Q1 originations, % of \$



Sources: Equifax, Moody's Analytics

# The Case for Calibration

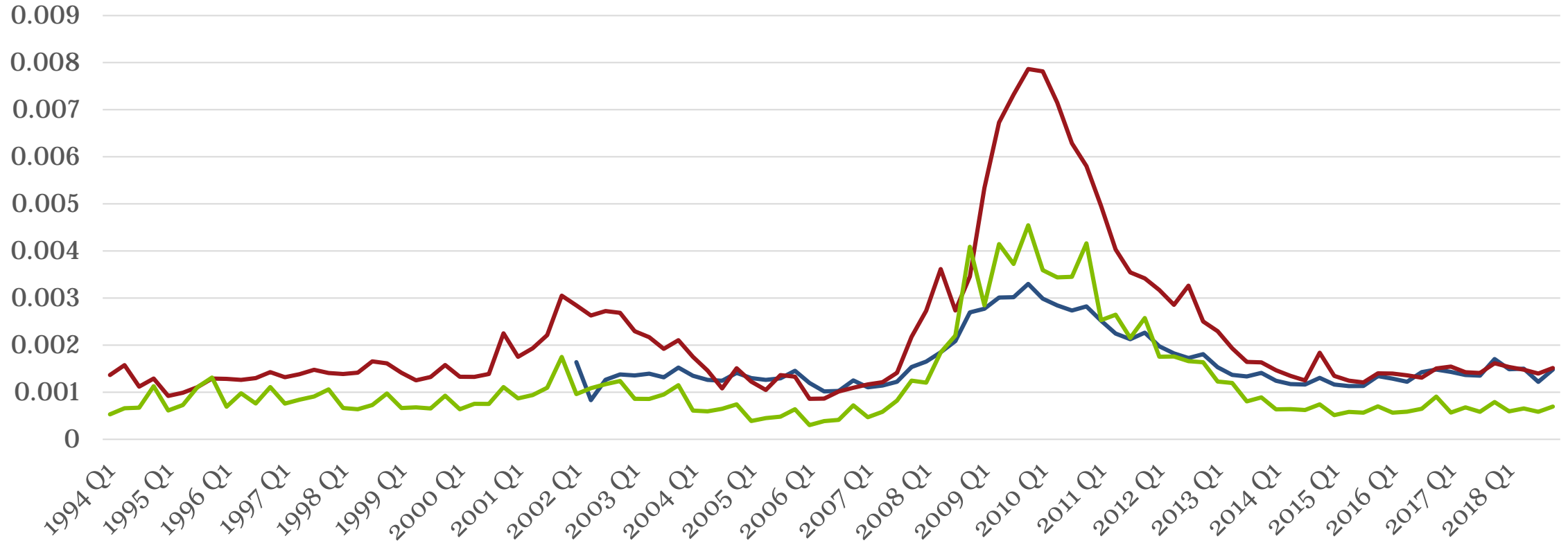
However, simply using industry data will not provide good CECL estimates if –

Individual lender's historical performance has been significantly different from industry performance due to difference in portfolios, geo footprint, lending strategies etc.

Example: Small credit unions with localized footprint.

# CU Losses vs Bank Losses

## Net Charge-Off Rates



Sources: NCUA Call Report, FDIC Call Report

— Credit Unions

— Big Banks

— Small Banks

# Calibration Options

**Approach 1**: Estimate the **relationship/multiplier** between the lender-specific portfolio and the industry using available data.

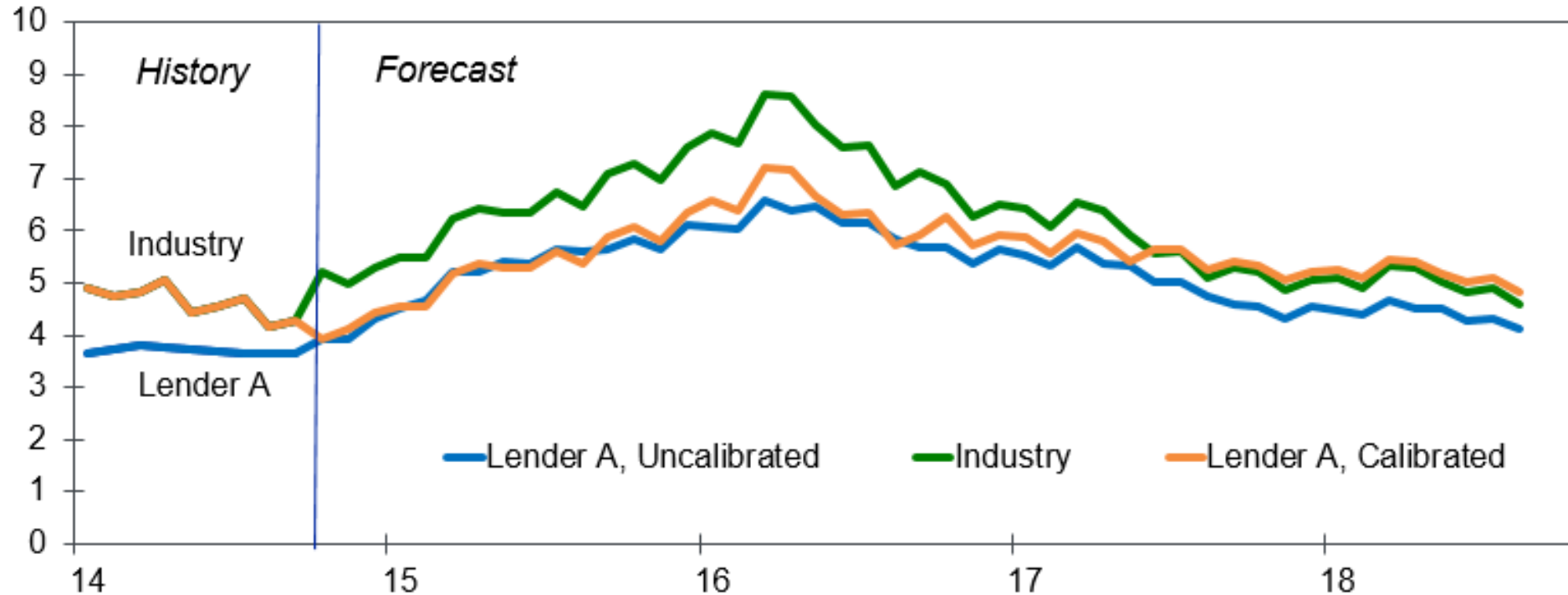
$$\textit{Individual lender default rate} = \alpha + \beta * \textit{industry default rate}$$

- Multiplier is analogous to the Beta concept in stock market returns
- Depending on data availability, perform this exercise at the **account** or **cohort** or **portfolio** level
- Apply the estimated parameters to the industry forecasts to obtain calibrated forecasts for an individual lender



# Uncalibrated and Calibrated Loss Forecasts

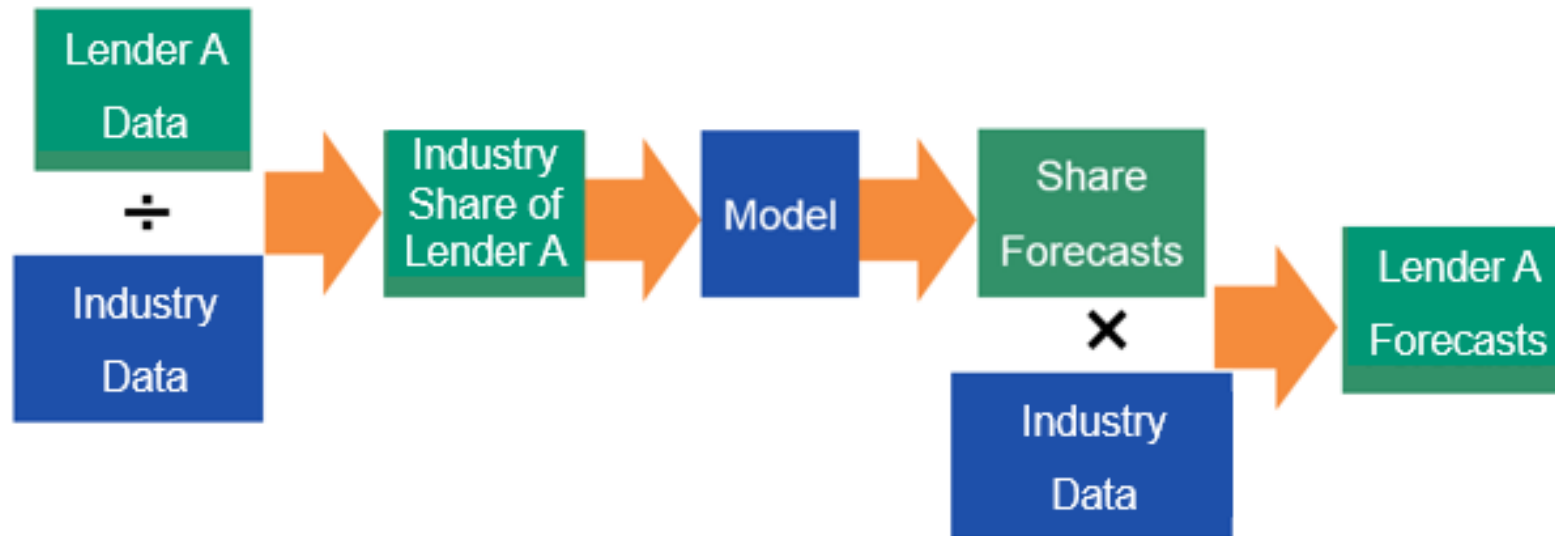
Conditional loss rate, % of balance, annualized



# Calibration Options

## Approach 2: Industry Share Analysis

Estimate the individual lender's losses based on **industry share**.



# Peer Group Analysis

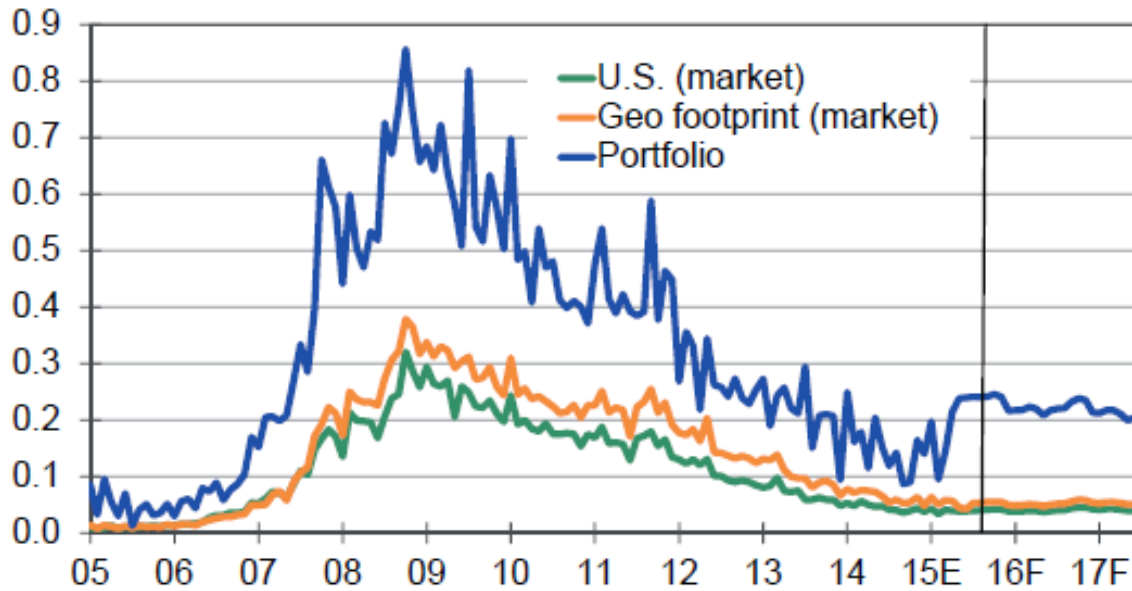
## **Approach 3: Peer Group Analysis**

- Benchmark to a peer group's performance, rather than to the industry's
- Select peer group based on size, similar product and geo concentration, lending strategies etc.

# Peer Group Selection

**NOT** controlling for credit score –  
less appropriate peer group

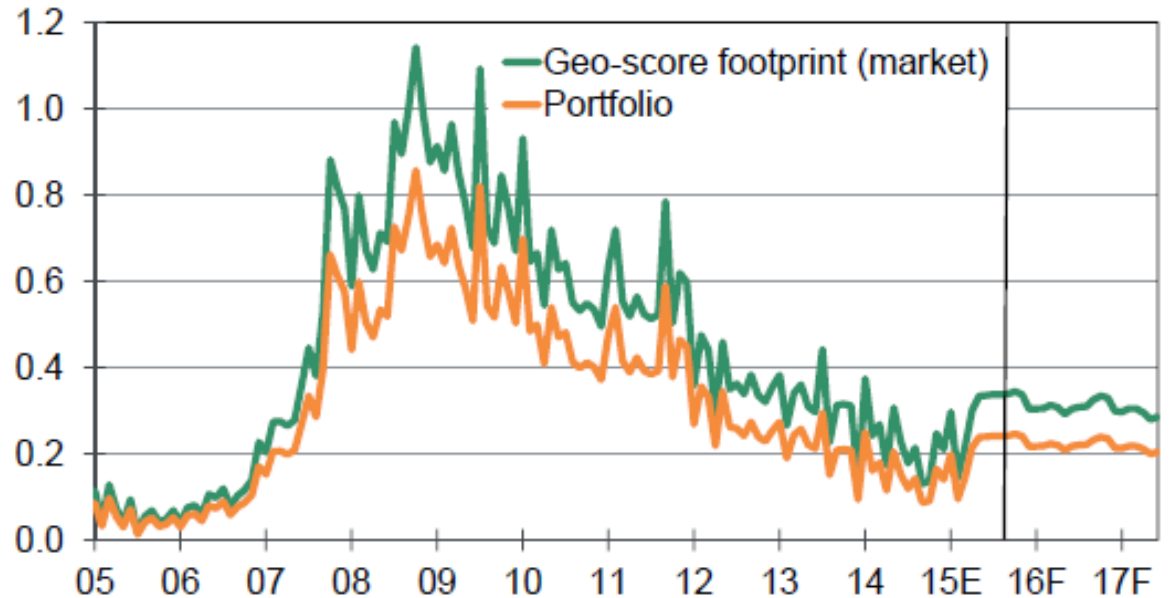
Conditional loss rates for HELOCs, % of balance



Source: Moody's Analytics

Controlling for credit score –  
more appropriate peer group

Conditional loss rates for HELOCs, % of balance, annualized



Source: Moody's Analytics

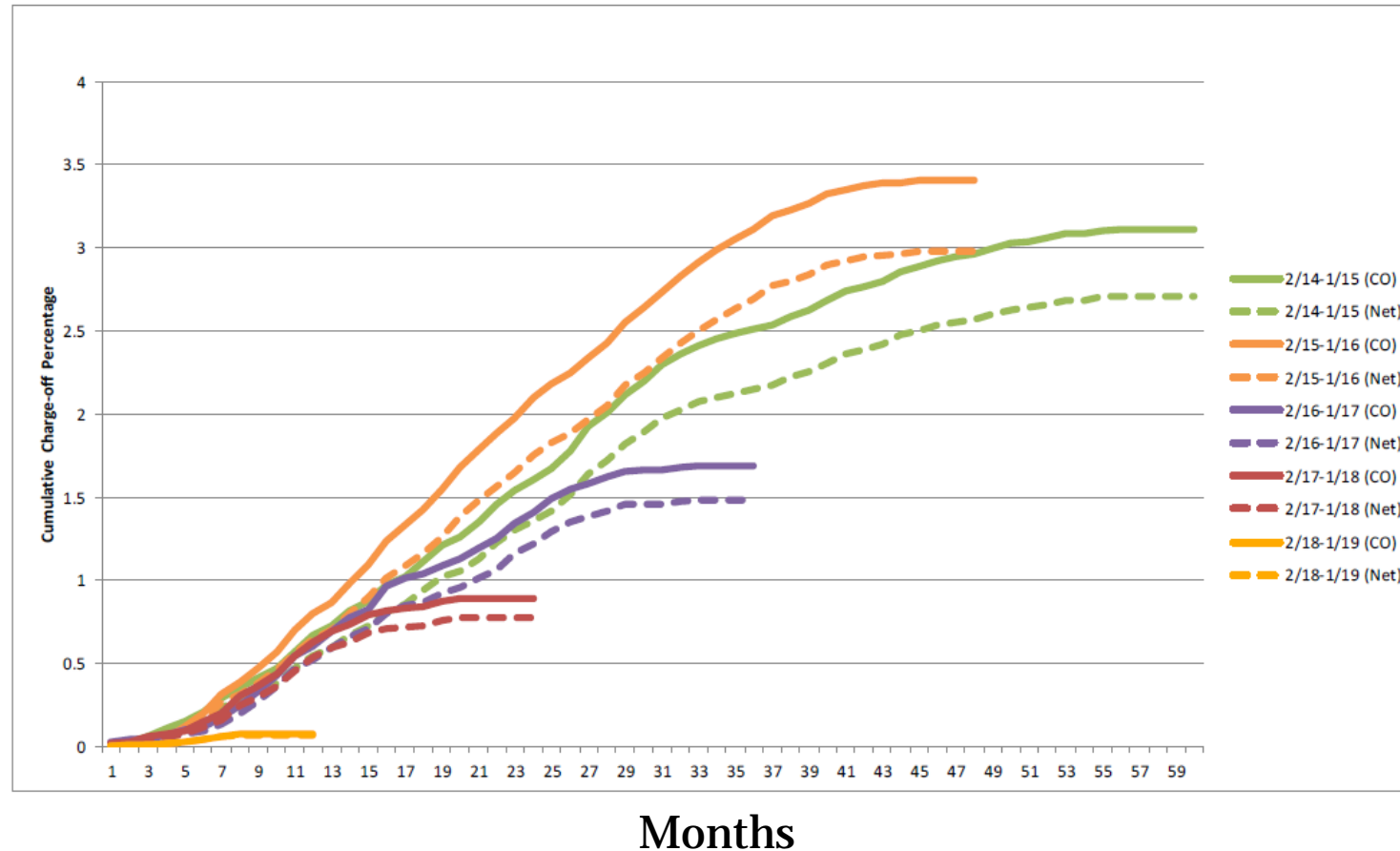
# Applying What We Learn

## Prepare for the future

- Start capturing the necessary data / history – TODAY!
- Based on your CECL estimate, work with your lending team to better serve your member
- How might this data make you a better lender?

# Applying What We Learn

1) Let's capture that "lender specific" historical data going forward



# Applying What We Learn

## 2) Let's apply it to your portfolio – better understand the risks

CECL calculations powered by Moody's ImpairmentStudio™.  
Documentation available upon request.

Credit Score	# Loans	Current		WAC	Orig Term	Remain Term	DTI			Static				CECL Reserve	CECL Reserve Ratio
		Balance	Percent				LTV	Ratio	FICO	Basis	Yield	Loss	NET Yield		
1 - 559	209	2,615,220	0.17%	7.834	71	59	108	30	537	101.84	6.817	3.099	3.719	256,684	9.82%
560 - 579	188	2,329,842	0.15%	8.468	69	55	102	29	571	102.47	7.020	3.111	3.910	199,804	8.58%
580 - 599	450	5,908,273	0.38%	8.664	70	56	105	31	590	102.75	7.114	3.045	4.068	363,743	6.16%
600 - 619	1,007	14,160,795	0.90%	8.630	70	57	105	31	610	102.97	6.973	2.369	4.604	882,200	6.23%
620 - 639	2,204	31,165,857	1.99%	8.114	71	57	107	31	630	102.73	6.542	2.414	4.128	1,261,872	4.05%
640 - 659	3,763	56,086,260	3.58%	7.261	73	59	110	32	651	102.77	5.700	1.128	4.572	2,258,329	4.03%
660 - 679	7,961	124,960,553	7.98%	6.365	75	57	111	32	670	102.47	4.881	1.110	3.771	2,857,043	2.29%
680 - 699	10,421	162,708,223	10.39%	5.685	75	58	112	33	690	102.18	4.412	0.732	3.681	3,666,462	2.25%
700 - 719	13,122	206,393,035	13.18%	5.472	74	57	110	33	709	102.43	3.989	0.707	3.281	3,115,087	1.51%
720 - 739	11,918	191,822,240	12.25%	5.028	74	57	108	34	729	102.25	3.670	0.275	3.395	2,093,094	1.09%
740 - 759	11,121	178,535,315	11.40%	4.742	73	56	104	34	749	102.26	3.338	0.270	3.068	1,168,652	0.65%
760 - 779	9,799	160,490,108	10.25%	4.427	73	56	101	34	770	102.06	3.148	0.223	2.925	1,076,713	0.67%
780 - 799	8,861	141,717,292	9.05%	4.282	73	55	97	34	789	101.96	3.056	0.222	2.834	366,053	0.26%
800 - 819	8,361	130,493,664	8.34%	4.111	71	54	94	32	810	101.92	2.869	0.109	2.761	284,442	0.22%
820 - 839	7,124	109,628,785	7.00%	3.907	71	53	90	31	829	101.76	2.751	0.110	2.641	171,473	0.16%
840 - 849	2,662	42,133,764	2.69%	3.821	70	53	88	31	845	101.72	2.688	0.070	2.618	56,624	0.13%
850 - High	271	4,390,433	0.28%	3.585	71	54	86	32	850	101.47	2.609	0.067	2.542	5,652	0.13%
	<b>99,442</b>	<b>1,565,539,659</b>	<b>100.00%</b>	<b>5.106</b>	<b>73</b>	<b>56</b>	<b>104</b>	<b>33</b>	<b>740</b>	<b>102.20</b>	<b>3.761</b>	<b>0.515</b>	<b>3.246</b>	<b>20,083,927</b>	<b>1.28%</b>

# Applying What We Learn

## 3) Let's monitor how the portfolio changes over time

CECL calculations powered by Moody's ImpairmentStudio™.  
Documentation available upon request.

Monthly Originations	# Loans	Current			Orig Term	Remain Term	DTI				Static		CECL Reserve	CECL Ratio	
		Balance	Percent	WAC			LTV	Ratio	FICO	Basis	Yield	Loss			NET Yield
* OLDER	39,276	440,839,710	28.16%	4.266	73	39	104	32	740	101.44	3.032	0.508	2.524	3,928,606	0.89%
2017-03	2,073	29,662,443	1.89%	4.608	71	49	102	33	742	101.96	3.245	0.501	2.745	342,091	1.15%
2017-04	1,947	28,481,353	1.82%	4.628	71	50	102	33	743	101.98	3.273	0.478	2.795	306,179	1.08%
2017-05	2,275	35,426,164	2.26%	4.620	73	52	104	33	745	101.98	3.299	0.463	2.836	371,621	1.05%
2017-06	2,936	50,530,442	3.23%	4.225	75	56	103	33	753	101.58	3.189	0.440	2.749	471,689	0.93%
2017-07	2,613	45,845,694	2.93%	4.377	75	56	102	33	754	101.76	3.253	0.426	2.827	511,899	1.12%
2017-08	3,116	53,894,592	3.44%	4.511	74	57	102	31	752	101.89	3.313	0.437	2.875	618,877	1.15%
2017-09	2,723	48,830,101	3.12%	4.324	75	59	102	31	757	101.77	3.232	0.412	2.820	526,005	1.08%
2017-10	2,799	50,485,118	3.22%	4.575	75	60	103	31	748	101.93	3.410	0.466	2.944	625,449	1.24%
2017-11	2,887	54,979,106	3.51%	4.652	75	61	103	32	746	102.00	3.468	0.489	2.980	728,177	1.32%
2017-12	2,223	40,832,384	2.61%	4.896	74	60	103	33	742	102.24	3.585	0.515	3.070	585,593	1.43%
2018-01	2,699	49,238,071	3.15%	5.098	73	61	104	34	741	102.34	3.757	0.524	3.233	630,697	1.28%
2018-02	2,324	42,127,614	2.69%	5.412	73	62	104	33	737	102.58	3.948	0.562	3.386	584,162	1.39%
2018-03	2,690	50,641,451	3.23%	5.511	73	63	103	34	736	102.63	4.051	0.568	3.483	725,475	1.43%
2018-04	2,804	54,367,193	3.47%	5.704	72	63	104	34	732	103.00	4.053	0.582	3.471	870,519	1.60%
2018-05	2,972	58,178,335	3.72%	5.618	72	64	102	34	736	102.80	4.088	0.540	3.548	857,166	1.47%
2018-06	3,413	68,771,692	4.39%	5.703	72	65	101	33	738	102.98	4.117	0.525	3.591	984,688	1.43%
2018-07	3,521	72,434,338	4.63%	5.837	72	66	104	34	736	102.90	4.322	0.521	3.802	1,055,055	1.46%
2018-08	3,702	76,918,739	4.91%	6.035	73	68	104	33	732	102.92	4.532	0.569	3.962	1,219,576	1.59%
2018-09	2,418	48,858,740	3.12%	6.677	73	69	107	33	730	103.03	5.137	0.566	4.571	765,514	1.57%
2018-10	2,208	44,178,065	2.82%	6.931	73	69	108	34	727	103.06	5.409	0.601	4.809	635,211	1.44%
2018-11	2,012	41,854,151	2.67%	6.794	73	71	106	34	726	103.05	5.303	0.577	4.726	600,810	1.44%
2018-12	1,821	38,559,208	2.46%	6.687	72	71	105	35	732	103.03	5.224	0.549	4.675	525,367	1.36%
2019-01	1,990	39,604,956	2.53%	6.996	72	72	108	35	733	103.17	5.483	0.576	4.907	1,613,501	4.07%
	<b>99,442</b>	<b>1,565,539,659</b>	<b>100.00%</b>	<b>5.106</b>	<b>73</b>	<b>56</b>	<b>104</b>	<b>33</b>	<b>740</b>	<b>102.20</b>	<b>3.761</b>	<b>0.515</b>	<b>3.246</b>	<b>20,083,927</b>	<b>1.28%</b>



# Applying What We Learn

Apply this information to see where risk is in the portfolio. Work in concert with your lending team to adjust rate sheets over time with an eye towards ROA and growth. This knowledge will help you optimize your portfolio, safely and soundly.

# Summary

- Industry data can be leveraged for CECL when lender-specific data is not complete
- Results from industry data can be calibrated to lender-specific portfolios
- Industry data combined with lender-specific data can help identify portfolio risks