Use 70% - 110% LV

- Total counts increase from 955 to 1,263 (32% more).

- Majority of the count increase comes from Commerical Farm

- Impacted collateral:

  - Commercial/Farm Properties: -3.1%

  - Unsecured: -3.7%

primary_collateral_bl	70%-100%		70%-110%		Difference	
	N Obs	Mean	N Obs	Mean	Count	Mean
A/R - Margined	48	37.1%	51	38.1%	3	1.0%
A/R - Not Margined	4	3.0%	5	3.3%	1	0.3%
Blanket Lien (Assets < 10MM)	111	21.2%	111	21.2%	0	0.0%
Blanket Lien (Assets > 10MM)	32	25.0%	32	25.0%	0	0.0%
Blanket Lien	**143**	**22.1%**	**143**	**22.1%**	**0**	**0.0%**
Cash Equivalent	2	1.4%	2	1.4%	0	0.0%
Commercial/Farm Properties- 1st Charge	395	43.5%	577	39.6%	182	-3.9%
Commercial/Farm Properties- Other	17	10.0%	18	17.9%	1	7.8%
Commercial/Farm Properties	**412**	**42.1%**	**595**	**38.9%**	**183**	**-3.1%**
Fixed Assets/PP&E	26	16.2%	30	18.3%	4	2.0%
Government Guaranteed Loans	7	60.6%	9	48.7%	2	-11.9%
Inventories - Margined	11	24.9%	11	24.9%	0	0.0%
Inventories - Not Margined	2	14.3%	2	14.3%	0	0.0%
R/E Constr. Projects/ADS	162	47.8%	201	46.2%	39	-1.5%
Residential Real Estate- 1st Charge	43	45.0%	107	44.9%	64	0.0%
Residential Real Estate- Other	1	44.0%	4	49.4%	3	5.4%
Secured No Lending Value	4	7.6%	4	7.6%	0	0.0%
Unsecured	90	47.6%	99	43.9%	9	-3.7%
Total	**955**		**1,263**		**308**	

Relative Adjustment Factors – Regression approach

- Regression is ran on raw_elgd_05 with raw_elgd_10.

- raw_elgd_05 = -0.2%+0.85 * raw_elgd_10.

- This is equivalent to 15% discount.

The REG Procedure
Model: MODEL1
Dependent Variable: raw_elgd_05

Number of Observations Read	2343
Number of Observations Used	2209
Number of Observations with Missing Values	134

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	1	250.66772	250.66772	9568.05	<.0001
Error	2207	57.81988	0.02620		
Corrected Total	2208	308.48760			

Root MSE	0.16186	R-Square	0.8126
Dependent Mean	0.27733	Adj R-Sq	0.8125
Coeff Var	58.36266		

Parameter Estimates

Variable	DF	Parameter Estimate	Standard Error	t Value	Pr > |t|
Intercept	1	-0.00217	0.00447	-0.48	0.6278
raw_elgd_10	1	0.84623	0.00865	97.82	<.0001

Primary Collateral Type	DT LGD Factor	Downturn Adjustment + Data Uncertainty MoC	LR LGD Factor	Unadjusted LGD factor
A/R - Margined	55%	18.5%	37%	31%
A/R - Not Margined	60%	18.5%	42%	35%
Inventories - Margined	50%	18.5%	32%	27%
Inventories - Not Margined	55%	18.5%	37%	31%
Performance LC – Developer (with Shared Construction Collateral)	55%	5.8%	49%	42%
Commercial/Farm Properties- 1st Charge	55%	9.3%	46%	39%
Commercial/Farm Properties- Other	60%	9.3%	51%	43%
Blanket Lien (Assets < 10MM)	40%	10.8%	29%	25%
Blanket Lien (Assets >= 10MM)	35%	10.8%	24%	21%
Fixed Assets/PP&E	45%	7.3%	38%	32%
R/E Constr. Projects/ADS	55%	5.8%	49%	42%
Residential Real Estate- 1st Charge	55%	12.4%	43%	36%
Residential Real Estate- Other	60%	12.4%	48%	40%
Unsecured	65%	16.6%	48%	41%
Secured No Lending Value	65%	16.6%	48%	41%
Government Guaranteed	35%		35%	30%

Relative Adjustment Factors – Simple average

- Facilities are grouped by collateral type and raw_elgd_05 for each collateral type is calculated using simple average.

- collateral type with more than 15 counts are highlighted.

- Ranking orders are not intuitive for some collateral types, i.e. A/R margined vs. Not margined. Unsecured vs. RE ADS.

- Judgement needs to be applied for those don't have sufficient count.

primary_collateral_bl	N Obs	Mean
A/R - Margined	112	31.6%
A/R - Not Margined	35	21.1%
Agriculture Livestock - Margined	1	20.4%
Agriculture Livestock - Not Margined	2	23.9%
Blanket Lien	183	18.0%
Cash Equivalent	8	14.3%
Commercial/Farm Properties	1115	25.1%
Crop Production	4	3.9%
Crops - Not Margined	2	0.1%
Fixed Assets/PP&E	87	22.0%
Government Guaranteed Loans	12	39.9%
Inventories - Margined	28	16.6%
Inventories - Not Margined	14	1.8%
Marketable Securities - Not Margined	5	37.4%
Performance LC - Developer (Standalone)	2	60.8%
Performance LC - Developer (with Shared Construction Collateral)	8	48.8%
Preferred Shares	1	0.0%
R/E Constr. Projects/ADS	391	37.3%
Residential Real Estate- 1st Charge	220	28.2%
Residential Real Estate- Other	10	26.0%
Secured No Lending Value	4	1.1%
Unsecured	99	35.6%
Total	2343	

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Recalibration With Pre-Conversion M&I

- ## Calibrations scope:

  Q4F19 Performance Monitoring Dataset + F2017 M&I post-conversion facilities

	Add/Exclusion	Total
Total facilities		4,331
BSM	-1,548	2,783
TF	-55	2,728
Dealer Finance	-31	2,697
M&I Pre-conversion	1,738	4,435

Recalibration With Pre-Conversion M&I – 70-100%

- ## Calibrations scope:

Q4F19 Performance Monitoring Dataset + F2017 M&I post-conversion facilities

primary_collateral_bl_adjusted	BMO+MI_PRE		BMO		Difference	
	N Obs	Mean	N Obs	Mean	Count	Mean
A/R - Margined	49	36.4%	48	37.1%	1	-0.7%
A/R - Not Margined	4	3.0%	4	3.0%	0	0.0%
Blanket Lien	161	24.7%	143	22.1%	18	2.6%
Cash - Unmargined	2	67.0%				
Cash Equivalent	2	1.4%	2	1.4%	0	0.0%
Commercial/Farm Properties	498	43.6%	412	42.1%	86	1.6%
Fixed Assets/PP&E	32	19.1%	26	16.2%	6	2.9%
Government Guaranteed Loans	7	60.6%	7	60.6%	0	0.0%
Inventories - Margined	11	24.9%	11	24.9%	0	0.0%
Inventories - Not Margined	2	14.3%	2	14.3%	0	0.0%
R/E Constr. Projects/ADS	179	47.2%	162	47.8%	17	-0.6%
Residential Real Estate- 1st Charge	76	44.7%	43	45.0%	33	-0.3%
Residential Real Estate- Other	1	44.0%	1	44.0%	0	0.0%
Secured - Security has Indeterminate Value	27	50.6%				
Secured No Lending Value	4	7.6%	4	7.6%	0	0.0%
Unsecured	1,299	57.9%	90	47.6%	1,209	10.3%
Total	2,354		955	0	1,399	0.0%

Recalibration With Pre-Conversion M&I – Unresolved

- **Calibrations scope:**

  Q4F19 Performance Monitoring Dataset + F2017 M&I post-conversion facilities

Primary Collateral Group	F2019 Unres (with M&I)	F2019 Unres (BMO only)	F2018 Unres
A/R - Margined	0.0%	0.0%	0.0%
Blanket Lien (Assets >= 10MM)	6.7%	7.7%	1.6%
Commercial/Farm Properties	0.5%	0.6%	0.3%
Fixed Assets/PP&E	3.5%	3.8%	0.1%
R/E Constr. Projects/ADS	0.0%	0.0%	0.0%
Residential Real Estate- 1st Charge	0.1%	0.1%	0.3%
Unsecured	0.1%	2.7%	0.4%

Recalibration With Pre-Conversion M&I – Downturn

- Fixed assets and unsecured have negative DT adjustments

- One option is that we floor the DT adjustment to 0%.

Primary Collateral Group	LR LGD with Unresolved Impact	DT Realized LGD	DT Adjustment
A/R and Inventories - Margined	35.0%	46.4%	11.5%
Blanket Lien	32.1%	35.0%	2.9%
Commercial/Farm Properties	35.1%	40.5%	5.4%
Fixed Assets/PP&E	32.2%	29.6%	-2.6%
R/E Constr. Projects/ADS	45.0%	46.6%	1.5%
Residential Real Estate	35.9%	39.4%	3.5%
Unsecured	57.4%	52.5%	-4.9%

Recalibration With Pre-Conversion M&I – Uncertainty