

Date: 9/8/20

LIFE RISK-BASED CAPITAL (E) WORKING GROUP
Friday, September 11, 2020
1:00 p.m. ET / 12:00 p.m. CT / 11:00 a.m. MT / 10:00 a.m. PT
ROLL CALL

Philip Barlow, Chair	District of Columbia	John Robinson	Minnesota
Steve Ostlund	Alabama	William Leung	Missouri
Perry Kupferman	California	Rhonda Ahrens	Nebraska
Deborah Batista	Colorado	Seong-min Eom	New Jersey
Wanchin Chou	Connecticut	Bill Carmello	New York
Gilbert Moreau	Florida	Andy Schallhorn	Oklahoma
Vincent Tsang	Illinois	Mike Boerner	Texas
		Tomasz Serbinowski	Utah

NAIC Support Staff: Dave Fleming

AGENDA

1. Hear an Update from the American Academy of Actuaries' C2 Mortality Risk Work Group—*Philip Barlow (DC)* Attachment 1
2. Continue Discussion of Industry Request for Risk-Based Capital Mortgage Reporting Guidance—*Philip Barlow (DC)* Attachment 2
3. Discuss Any Other Matters Brought Before the Working Group—*Philip Barlow (DC)*
4. Adjournment

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Academy C-2 Mortality Work Group Update

Ryan Fleming, MAAA, FSA
Member C-2 Mortality Work Group
American Academy of Actuaries



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Agenda

- Review C-2 overall approach and current risk-based capital (RBC) factors
- Seeking regulator feedback:
 - ▣ Adding a new catastrophe component for a sustained mortality increase from an unknown risk
 - ▣ Differentiating factors for individual life products
- Next steps
- Appendix:
 - ▣ Methodology, assumption, and risk distribution comparisons



C-2 Mortality Overall Approach

- C-2 requirement covers mortality risk up to the 95th percentile covering risk in excess of the risk covered in statutory reserves
- C-2 requirement includes mortality risks related to:
 - Volatility Risk—natural statistical deviations in experienced mortality
 - Level Risk—error in base mortality assumption
 - Trend Risk—adverse mortality trend
 - Catastrophe Risk
 - Large temporary mortality increase from a severe event such as a pandemic or terrorism
 - ***New: sustained mortality increase from an unknown risk***
- Evaluate mortality risks using Monte Carlo simulation of projected statutory losses
- Discount pre-tax cash flows (current assumption is 5%)
- Express capital requirement using a factor-based approach (e.g., factor applied to Net Amount at Risk)



C-2 Life Mortality Risk-Based Capital

Per \$1000 of NAR	Current Pre-Tax RBC Factors	
	Individual	Group
First \$500M	2.23	1.75
Next \$4.5B	1.46	1.16
Next \$20B	1.17	0.87
>\$25B	0.87	0.78



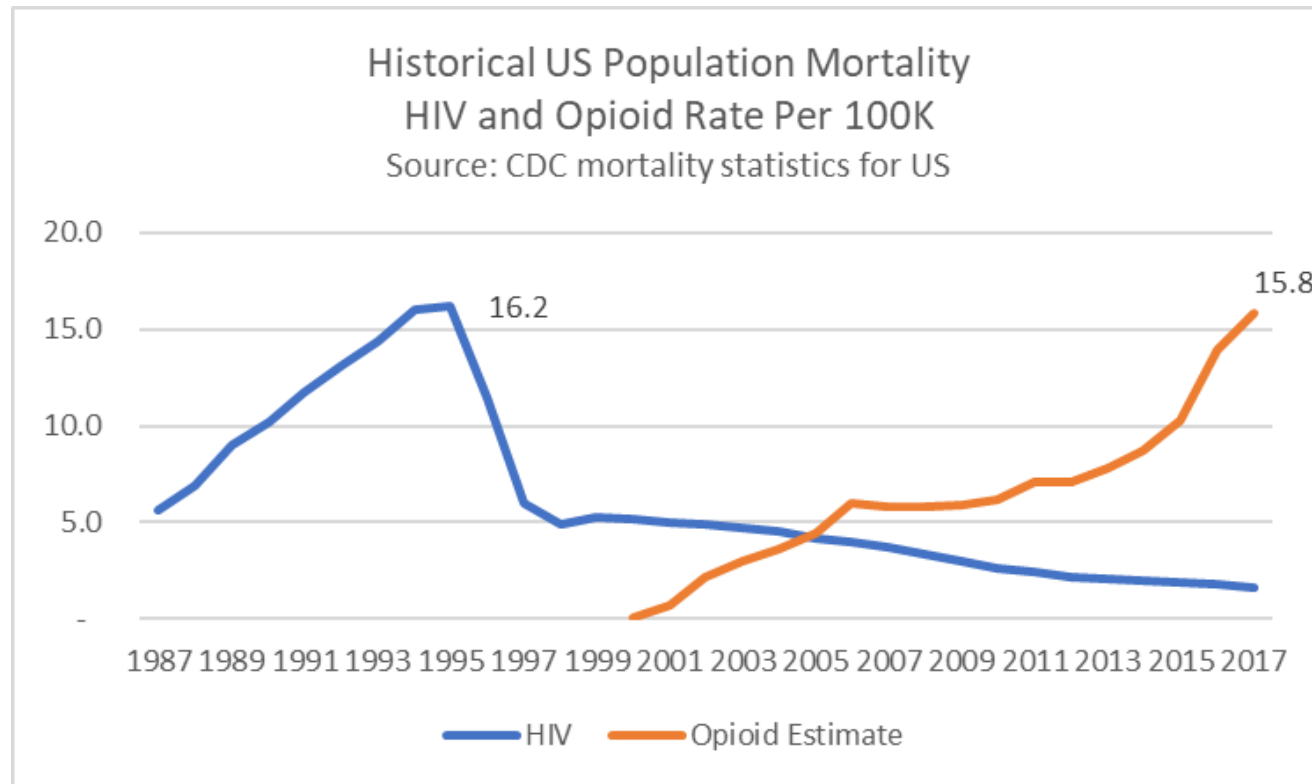
New Catastrophe Component for an Unknown Risk

- As shared at the [LRBCWG meeting](#) during the December 2019 NAIC National Meeting, preliminary modeling indicates an estimated decline in factors versus current
- Feedback from that meeting was that the C-2 Mortality Work Group should consider an additional catastrophe component for an unknown risk
- C-2 Mortality Work Group developed a new catastrophe component informed by historical health events impacting the U.S. population
 - Component is intended to cover unknown risks that could materialize in the insured population
 - Conceptually, the component assumes a low annual probability of a sustained severe mortality increase



New Catastrophe Component for an Unknown Risk—Attachment 1

Historical Events



- HIV and opioid abuse are two historical events impacting the U.S. population that can inform the development of a catastrophic unknown risk event
- The impact of these events to insured population mortality has been lower than general population mortality



New Catastrophe Component for an Unknown Risk

Description (source: CDC mortality statistics for US)	% Incr. to US Population Mortality	Death rate per 100K
HIV mortality in peak year—1995, all ages	+1.9%	16.4
HIV mortality in peak year—1995, ages 35-44	+5.0%	44.4
Estimated opioids mortality in highest year—2017, all ages	+1.8%	15.8
Drug-induced mortality in highest year —2017, ages 35-44	+4.7%	40.6

- Probability: assumed to be a 2.5% annual likelihood of the event occurring
 - Provides for the likelihood of 1 sustained event over a 40-year period
 - While the impact of HIV and opioids abuse have occurred in the US population in the last 40 years, neither of these translated to an increase in insured population mortality at the magnitude assumed.
- Magnitude: if the event occurs, assumed to be a 5% immediate and sustained mortality increase
 - HIV (1995) and opioids (2017) both increased U.S. population mortality by 2% across all ages.
 - However, life insurers would most be affected by an increase in mortality at younger ages. The ages 35-44 data became the basis, representing the most severe impact to insurers.



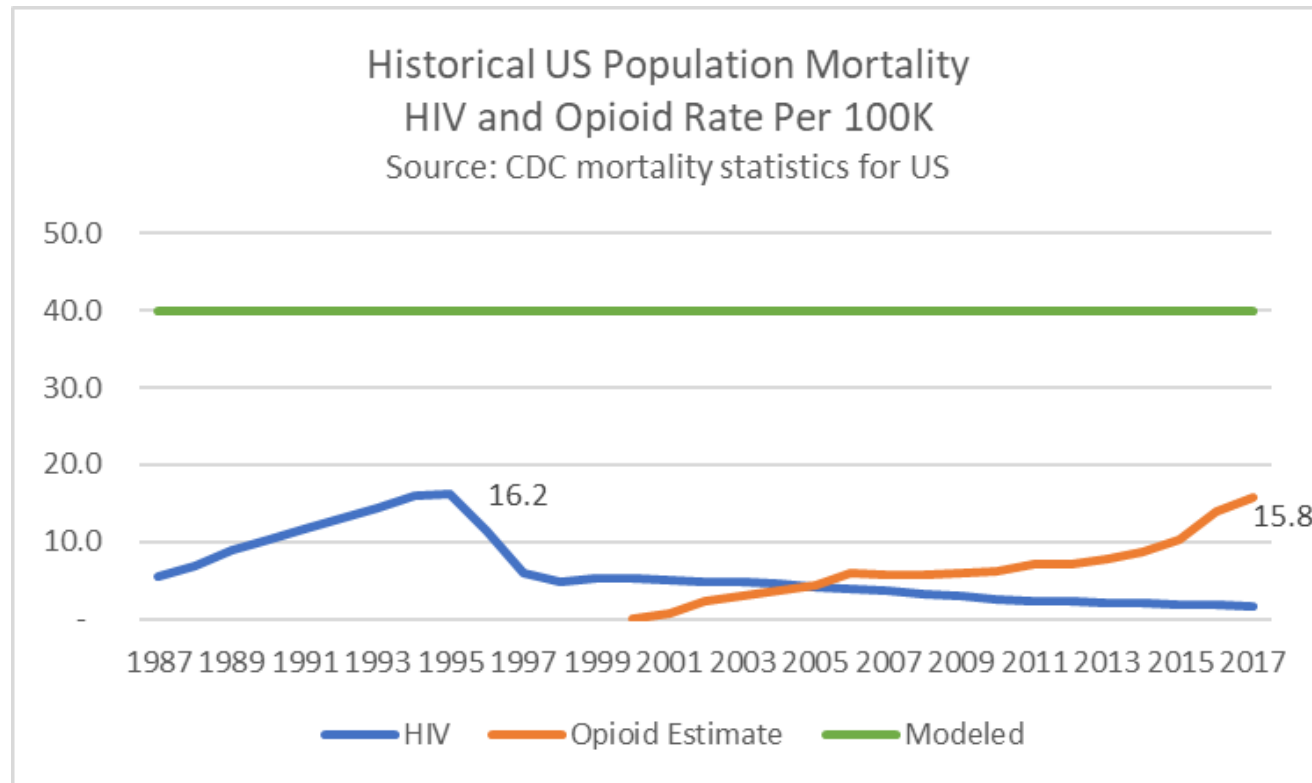
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New Catastrophe Component for an Unknown Risk—Attachment 1

Historical and Modeled



- Modeled catastrophe provides for deaths in excess of similar historical events due to assuming the impact at the worst age band



Individual Life Product Differentiation

- The C-2 Mortality Work Group is considering differentiating factors between products with near-term inforce pricing flexibility and those with minimal inforce pricing flexibility
- The impact on surplus is higher for products that have less inforce pricing flexibility
 - Products with less inforce pricing flexibility (e.g., longer level term and ULSG products)
 - Modeled with a 10-year projection period
 - Products with more inforce pricing flexibility (e.g., permanent whole life, current assumption universal life, and annually renewable term)
 - Modeled with a 5-year projection period
- Setting separate factors would require product specific data (e.g., face amount and reserves to derive net amount at risk) not currently reported at this level of detail in the annual statements



Next Steps for the C-2 Mortality Work Group

- ▣ Receive regulator feedback
 - Adding the unknown risk catastrophe component
 - Differentiating factors by individual life products
- ▣ Finalize model and assumptions
- ▣ Review group life premium stabilization reserve credit
- ▣ Review mortality capital requirements in other solvency regimes
- ▣ Review aggregate model output, complete documentation, and peer review
- ▣ Recommend updated factors to Life RBC



Appendix: Method and Assumption Comparison

Item	Original Work	Current Review - Preliminary
General Method	Monte Carlo Model – (Present Value (PV) of Death Benefits	Monte Carlo Model – PV of Statutory Losses <ul style="list-style-type: none"> Loss defined as death benefits minus reserves released
Capital Quantification	PV[95 th] – 105%*PV[Expected] <ul style="list-style-type: none"> 105% represents assumed margin available to offset losses in excess of expected 	GPVAD[95 th] <ul style="list-style-type: none"> Greatest present value of accumulated deficiencies (GPVAD) 5% margin/load assumed in reserve mortality
Projection Period	5 years (3 years for Group) <ul style="list-style-type: none"> Assumed exposure past 5 years could be offset through management actions (raise premium, etc.) 	5-10 years for Individual Life 3 years for Group Life
Discount rate	6% after tax	5% pre-tax (3.95% after tax)
Base Mortality	88% of 1975-1980 Male Basic Table <ul style="list-style-type: none"> 15Y Select & Ultimate Structure Male/Female not explicitly modelled Underwriting adjustments applied based on generation 	2017 Unloaded Commissioners' Standard Ordinary Table (CSO) for Individual Life <ul style="list-style-type: none"> 25Y Select & Ultimate structure Gender distinct – Male/Female 5 underwriting classes (3 non-smoker/2 smoker) SOA 2016 Group Life Experience Study for Group Life <ul style="list-style-type: none"> Gender distinct – Male/Female
Base Improvement	Unknown source <ul style="list-style-type: none"> 1.00% 	2017 Improvement Scale for AG-38 <ul style="list-style-type: none"> Varies by gender and age



Appendix: Risk Distribution Approach Comparison

Risk	Original Work	Current Review - Preliminary
Volatility	Binomial(Policies, q)	Binomial(Policies, q)
Level	Implicit from Discrete Scenarios: <ul style="list-style-type: none"> 7 <i>Competitive Pressures</i> scenarios – risk of overoptimistic pricing assumptions 15 AIDS scenarios – early 90's estimates of the impact of AIDS on insured mortality (could fit in level, trend, or catastrophe) 	$LR \sim N(0, \sigma_{Lev}); \sigma_{Lev} = \sqrt{\sigma_{Cred}^2 + \sigma_{MVol}^2}$ <ul style="list-style-type: none"> Two independent components: <ul style="list-style-type: none"> Credibility/statistical sampling volatility (σ_{Cred}) True mortality volatility (σ_{MVol}) Continuous normal distribution
Trend	Discrete Distribution <ul style="list-style-type: none"> 7 scenarios adjust mortality improvement assumption 	$[MI_1, MI_2, \dots, MI_{C6}] \sim N(\mu, \Sigma)$ <ul style="list-style-type: none"> 6 gender/age group improvement variables (MI_n) Correlated normally distributed random variables
Catastrophe	Discrete Distribution <ul style="list-style-type: none"> Pandemic 	3 Discrete Distributions <ul style="list-style-type: none"> Pandemic – calibrated from multiple sources Terrorism – 5% probability of additional 0.05 / 1K Unknown Risk – calibrated from historic US population events



Questions?

Additional Questions, contact:

Khloe Greenwood, Life Policy Analyst
greenwood@actuary.org



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August 18, 2020

Philip A. Barlow, FSA, MAAA
Chair, Life Risk-Based Capital (E) Working Group
National Association of Insurance Commissioners
1100 Walnut Street, Suite 1500
Kansas City, MO 64106-2197

Re: Industry Recommendation for RBC Reporting of 2020 NOI

Dear Mr. Barlow:

The Mortgage Bankers Associations (MBA)¹ and the American Council of Life Insurers (ACLI),² on behalf of our respective member insurers, respectfully submit to the Life Risk-Based Capital Working Group of the National Association of Insurance Commissioners (NAIC) the attached materials for upcoming August 21, 2020 call, in support of the Working Group's consideration of industry's proposal for RBC reporting of 2020 Net Operating Income (NOI).

We want to thank you and other regulators, and NAIC staff, for your considerable time and attention to this request. Please feel free to contact Bruce Oliver at boliver@mba.org or 202-557-2840 or Mike Monahan at mikemonahan@acl.com or 202-624-2324 for any additional information.

Sincerely,



Mike Flood



Paul Graham

Attachment: Industry Recommendation for RBC Reporting of 2020 NOI

cc: Dave Fleming, NAIC Senior Insurance Reporting Analyst

¹ The Mortgage Bankers Association (MBA) is the national association representing the real estate finance industry, an industry that employs more than 280,000 people in virtually every community in the country. Its membership of over 2,300 companies includes all elements of real estate finance: mortgage companies, mortgage brokers, commercial banks, credit unions, thrifts, REITs, Wall Street conduits, 70 life insurance companies engaged in real estate finance, and others in the mortgage lending field. For additional information, visit MBA's website: www.mba.org

² The American Council of Life Insurers (ACLI) is the leading trade association driving public policy and advocacy on behalf of the life insurance industry. 90 million American families rely on the life insurance industry for financial protection and retirement security. ACLI's member companies are dedicated to protecting consumers' financial wellbeing through life insurance, annuities, retirement plans, long-term care insurance, disability income insurance, reinsurance, and dental, vision and other supplemental benefits. ACLI's 280 member companies represent 94 percent of industry assets in the United States. Learn more at www.acli.com

INDUSTRY RBC RECOMMENDATION FOR 2020 NOI

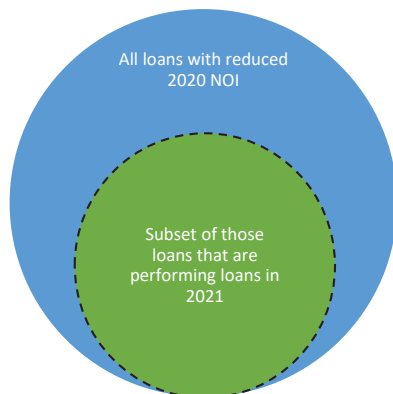
I. INTRODUCTION

Owners of certain properties that secure mortgage loans are experiencing decreases in 2020 income, including rent income, from mandatory shutdowns and other governmental actions taken to flatten the pandemic curve, and other impacts of the COVID-19 pandemic. This is especially the case for properties in the retail and hospitality sectors. As a result, their 2020 Net Operating Income (NOI) may be substantially lower than their 2019 NOI.

For at least some of those properties, however, that drop in income and NOI will prove to be temporary. As a result, loans secured by those properties will be performing loans in 2021, despite the 2020 drop in NOI.

The current treatment of 2020 NOI in life company RBC calculations for commercial mortgage loans (CMLs) does not contemplate such recovery and so it would generate an increase in RBC for loans that have recovered from 2020 that is not commensurate with their credit risk. Industry developed a proposed adjustment to the RBC reporting of 2020 NOI to better align RBC requirements for this set of loans with their credit risk in 2021, 2022, and 2023.

Notably, the proposal is intended to provide relief only to loans that were performing loans prior to the pandemic and that both (1) suffer a drop in NOI in 2020, and (2) are performing loans in 2021. The proposal is intended not to mask or shelter the increased riskiness of loans that suffer a severe drop in 2020 NOI that are **not** performing loans in 2021 or later years (e.g., loans that have become delinquent).



The proposal is designed to provide meaningful benefit only loans that suffer from reduced NOI for 2020 and are performing loans in 2021, 2022, and 2023.

II. DECISION ITEM: INDUSTRY RECOMMENDATION

To achieve the objectives described above, industry proposes the following adjustment to the RBC reporting of 2020 NOI:

- *Where RBC Reporting Instructions specify 2020 NOI as an input into the calculation of Rolling Average NOI for 2021, 2022, and 2023 RBC reporting, use the greater of—*
 - *2020 NOI; or*
 - *85% of 2019 NOI.*

INDUSTRY RBC RECOMMENDATION FOR 2020 NOI

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III. BACKGROUND: NOI and RBC reporting

NOI is the net of all operating income from a property, less all operating expenses. Operating expenses excludes principal and interest payments on loans.

For performing loans, the CM category is based on a matrix of Debt Service Coverage (DSC) and Loan to Value (LTV). NOI affects RBC reporting because NOI is an element of DSC.

$$DSC = \frac{\text{Net Operating Income (NOI)}}{\text{RBC Debt Service}}$$

In 2013, regulators determined to dampen the direct impact of changes in NOI on RBC reporting by adopting a weighted rolling-average approach to applying NOI values, as follows:

- 50% of preceding year NOI
- 30% of next preceding year NOI; and
- 20% of next preceding year NOI.

IV. SUPPORT**A. The proposal would not shelter bad loans.**

Regulators have raised concerns about whether the proposal would shelter or mask bad loans. The hypothetical scenarios below illustrate that the proposal would provide limited relief to loans that have recovered from 2020 – and that it also would not shelter loans that have not recovered from 2020.¹ That is, loans that are delinquent would receive no benefit from the proposed adjustment to 2020 NOI.

Scenario 1: \$10 million CM1 loan with 25% reduction in 2020 NOI

2021 loan status	2021 RBC without adjustment	2021 RBC with adjustment
Performing loan	1.75%	0.90%
Delinquent – not in foreclosure	18.00%	18.00%
Delinquent – in foreclosure	23.00%	23.00%

Assumes 60% LTV loan with 1.70x starting debt service ratio falling to 1.44x with adjustment and 1.27x without adjustment.

Scenario 2: \$10 million CM2 loan with 50% reduction in 2020 NOI

2021 loan status	2021 RBC without adjustment	2021 RBC with adjustment
Performing loan	3.00%	1.75%
Delinquent – not in foreclosure	18.00%	18.00%
Delinquent – in foreclosure	23.00%	23.00%

Assumes 60% LTV loan with 1.25x starting debt service ratio falling to 1.06x with adjustment and 0.62x without adjustment.

¹ These are simplified hypothetical scenarios. Other factors, e.g., 2018 and 2019 NOI amounts, would affect results.

INDUSTRY RBC RECOMMENDATION FOR 2020 NOI

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B. The proposal would increase aggregate RBC requirements.

Regulators have expressed a concern that the proposal might ignore the impacts of reduced 2020 NOI. While the scenarios above illustrate how the proposed adjustment can provide a benefit to individual loans, not all loans will necessarily benefit in this way. That is, while in many cases, the adjustment would result in no increase in RBC, in other cases, loans would be subject to a large increase in RBC despite the adjustment. The difference in impacts across loans would be a function of how close any loan is to the threshold to the next CM category (e.g., a CM1 loan (0.9%) that is close to the threshold for CM2 may become a CM2 loan (1.75%) despite the NOI adjustment).

To determine the aggregate RBC impact of the impacts across individual loans, industry asked companies to apply a hypothetical 15 percent reduction in NOI across their entire respective portfolio. One way to think about this exercise is to view it as a rough estimate of the RBC impact of a 15% reduction in NOI to an "average" life company commercial mortgage.

Specifically, companies were asked to apply a hypothetical 15 percent NOI shock across their entire mortgage portfolios. Companies were asked to provide their best estimates of actual 2020 RBC levels, and of hypothetical 2020 RBC levels if all property 2020 NOIs declined 15% from their 2019 levels.

Based on reporting representing nearly 25 percent of CML outstanding, for the average loan for which NOI is reduced by 15 percent, the average RBC capital charge would increase an average of about 8 percent. This indicates that the proposal to limit the 2020 NOI shock to 15 percent NOI for loans would still generally result in an aggregate increase in CML RBC in the range of about 8 percent, for loans subject to the proposed 85 percent floor, and so would effectively impose an additional RBC charge for the 2020 reduction in NOI.

C. Quarterly NOI data is not readily available for RBC purposes.

In response to regulator questions in the Working Group call of July 30 about the feasibility of developing a proposed treatment of 2020 NOI based on quarterly NOI data, industry conducted a survey to determine the ready availability of such data.

The survey asked for the number of loans each insurer held in portfolio and approximately how many of those loans require the borrower to provide, and the company routinely collects, quarterly operating statements.

Responses by 27 companies, with a total of approximately 23,000 loans, showed that quarterly operational information is both required and routinely collected on only about 7 percent of loans outstanding. Accordingly, any approach that relied on the use of quarterly NOI would not be operationally feasible for the industry.

IV. CONCLUSION

Industry believes the proposed adjustment to 2020 NOI is necessary to strike the right balance of preventing RBC from overstating the credit risk of a loan that has recovered from a reduced NOI in 2020, and recognizing the increased credit risk of the loans that have not recovered from a reduced NOI in 2020.

If large numbers of properties recover strongly and remain financially strong in 2021, the adjustment may apply to a relatively large pool of loans. Alternatively, if smaller numbers of those properties recover, the adjustment would apply to a smaller pool of loans.