

# Presentation to NAIC Property and Casualty Risk-Based Capital (E) Working Group

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Committee

Discussion of Preliminary Results – For Discussion Only



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# Preliminaries

- This material is a work in progress
- Results may change, perhaps materially, based on input from this meeting and further review by this Committee
- This material relates to premium risk only. An analysis of reserve risk is underway.
- The analysis uses Annual Statement, primarily Schedule P, data and summaries of Confidential RBC Filing data evaluated at year ends through December 31, 2017. We also consider economic data through June 30, 2021.



# Background - Committee Work Status

- This discussion relates to Committee work on the Investment Income Adjustment (IIA) Factors, Line 8 (Reserve Risk) and Line 7 (Premium Risk) in the Reserve and Premium Risk pages (PR017 and PR018) of the RBC Formula.
- The analysis underlying this report uses the approach described in the April 2021, Committee Report to the Working Group that presented indicated Line of Business (“LOB”) risk factors, “Line 4” in the Reserve and Premium Risk pages (PR017 and PR018) of the RBC Formula.



# Background - IIAs

- In the RBC Formula, the Investment Income Adjustments (IIAs) reflect the fact that, in addition to capital, investment income on assets corresponding to loss reserves and future premium will be available to provide for adverse loss reserve development and/or inadequate premiums.
- The effect of the IIAs is to reduce the reserve and premium risk charges by the amount of such investment income.
- This is the first review of the interest rate element of the IIAs since the RBC Formula was implemented in 1996.



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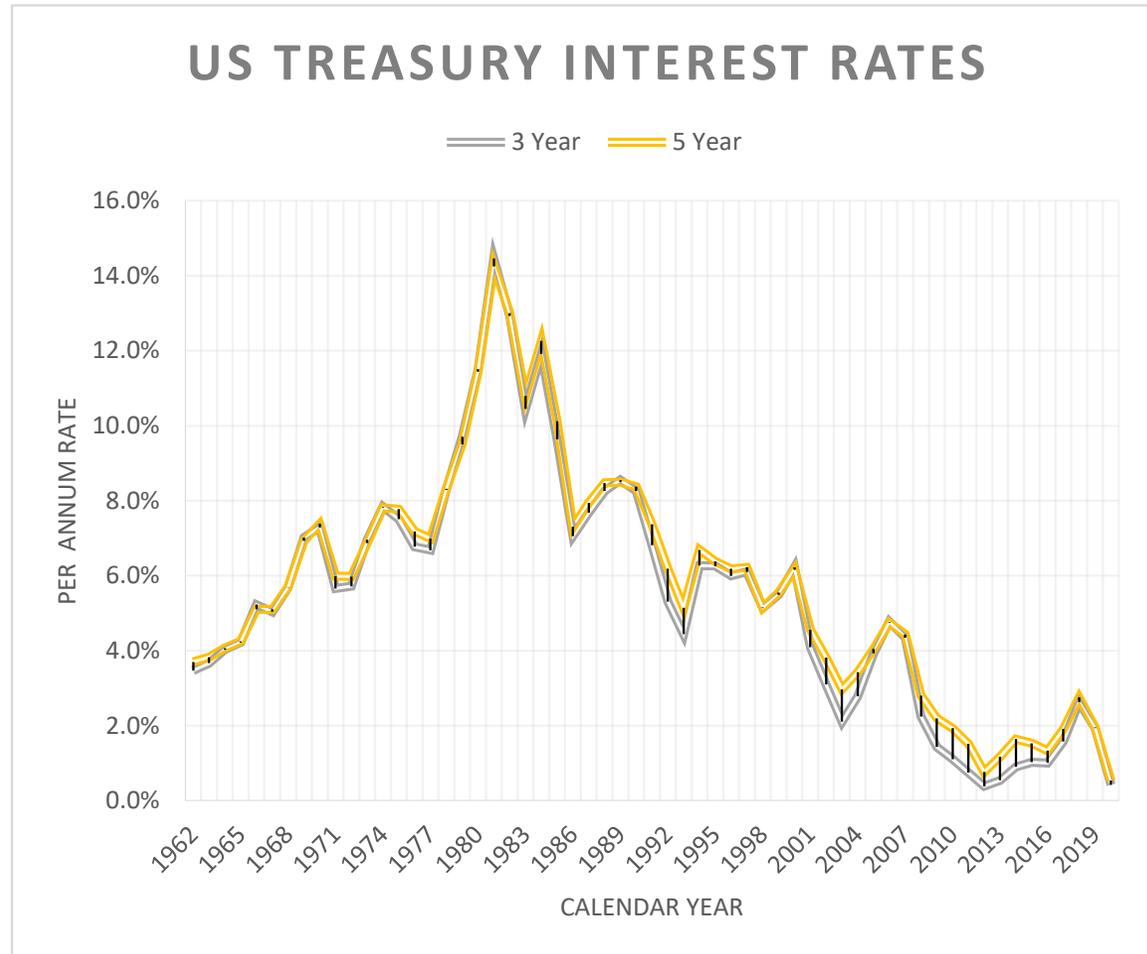
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# Definitions

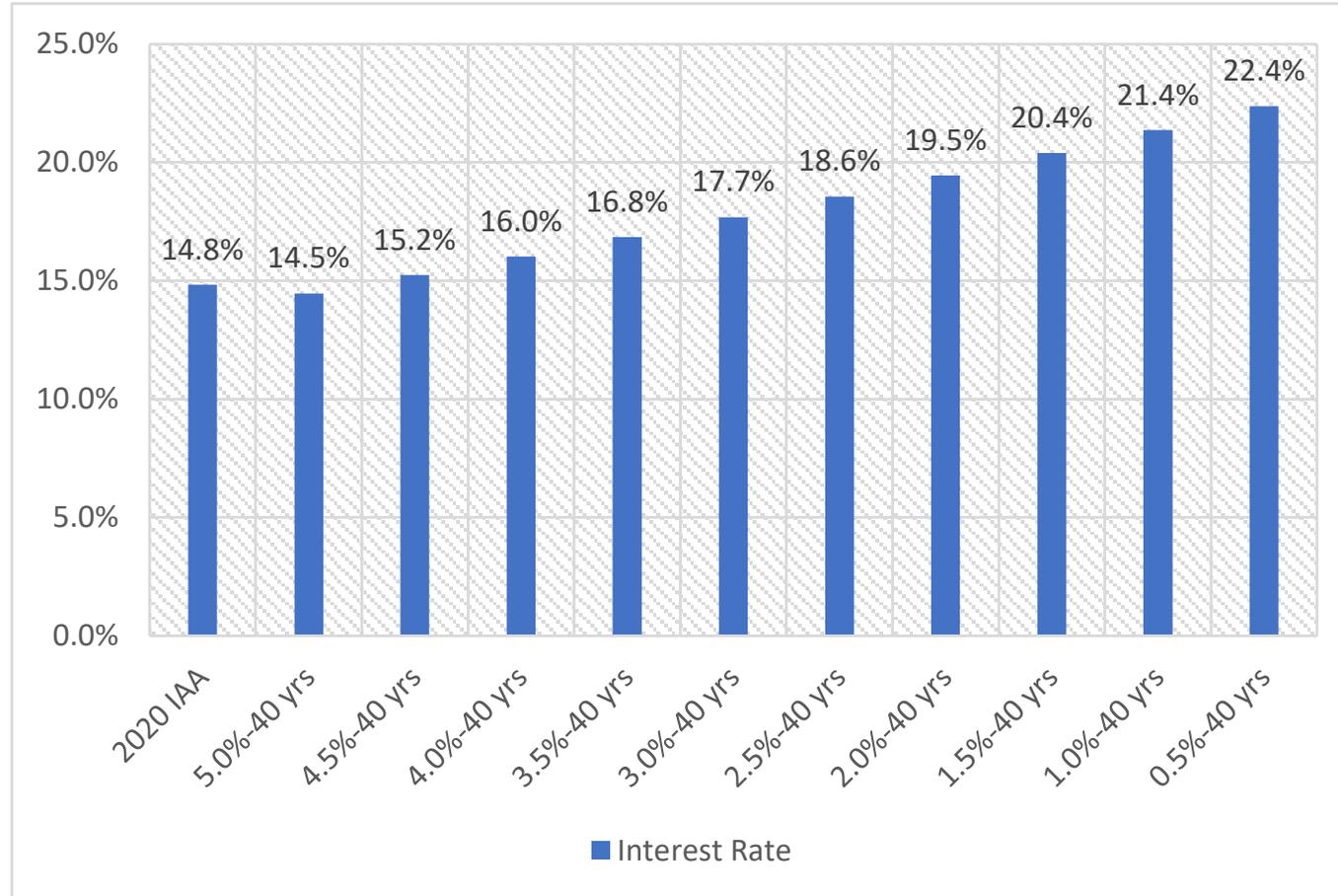
- Risk charge means the 87.5<sup>th</sup> percentile loss ratio plus 2017 expenses minus 100%, i.e., the 87.5<sup>th</sup> percentile operating ratio.
- “Committee” = American Academy of Actuaries Property and Casualty Risk-Based Capital Committee.
- “Working Group” = National Association of Insurance Commissioners (NAIC) Property and Casualty (P&C) Risk-Based Capital (E) Working Group



# Interest Rate History



# Risk Charge Sensitivity to Interest Rates



# Alternative Payment Patterns – IIA at 5% Interest Rate

PREMIUM IIAs 5% interest rate	Set in 2010	Data through 2017				(6) Indicated change from current
	(1)	(2)	(3)	(4)	(5)	
Line	Current Prem IIA's	15-year 1986 FITL	15-year "academy" method	25-year 2017 FITL	40-year current method	
(1) Homeowners & Farmowners	0.954	0.958	0.958	0.958	0.958	0.36%
(2) Private Passenger Auto Liability	0.925	0.923	0.923	0.923	0.922	-0.26%
(3) Commercial Auto Liability	0.890	0.882	0.882	0.882	0.881	-0.87%
(4) Workers' Compensation	0.839	0.818	0.824	0.816	0.803	-3.62%
(5) Commercial Multiple Peril Medical Professional Liability	0.896	0.904	0.904	0.905	0.903	0.74%
(6) (Occurrence) Medical Professional Liability (Claims Made)	0.767	0.762	0.762	0.763	0.754	-1.33%
(7) Made)	0.827	0.837	0.837	0.838	0.834	0.74%
(8) Special Liability	0.898	0.910	0.910	0.911	0.908	1.00%
(9) Other Liability	0.816	0.809	0.809	0.810	0.803	-1.28%
(10) Special Property	0.949	0.947	0.947	0.947	0.947	-0.17%
(11) Auto Physical Damage	0.971	0.975	0.975	0.975	0.975	0.35%
(12) Fidelity & Surety	0.904	0.904	0.904	0.905	0.905	0.07%
(13) Other (Inc Credit, Accident & Health)	0.947	0.948	0.948	0.948	0.948	0.12%
(14) International Reinsurance: Nonproportional	0.905	0.911	0.913	0.907	0.908	0.35%
(15) Assumed Property/Financial Reinsurance: Nonproportional	0.893	0.902	0.903	0.903	0.902	0.86%
(16) Assumed Liability	0.777	0.791	0.794	0.792	0.775	-0.18%
(17) Product Liability	0.774	0.773	0.773	0.773	0.762	-1.18%
(18) Financial & Mortgage Guaranty	0.884	0.881	0.881	0.881	0.880	-0.39%
(19) Warranty	0.904	0.966	0.966	0.966	0.966	6.25%

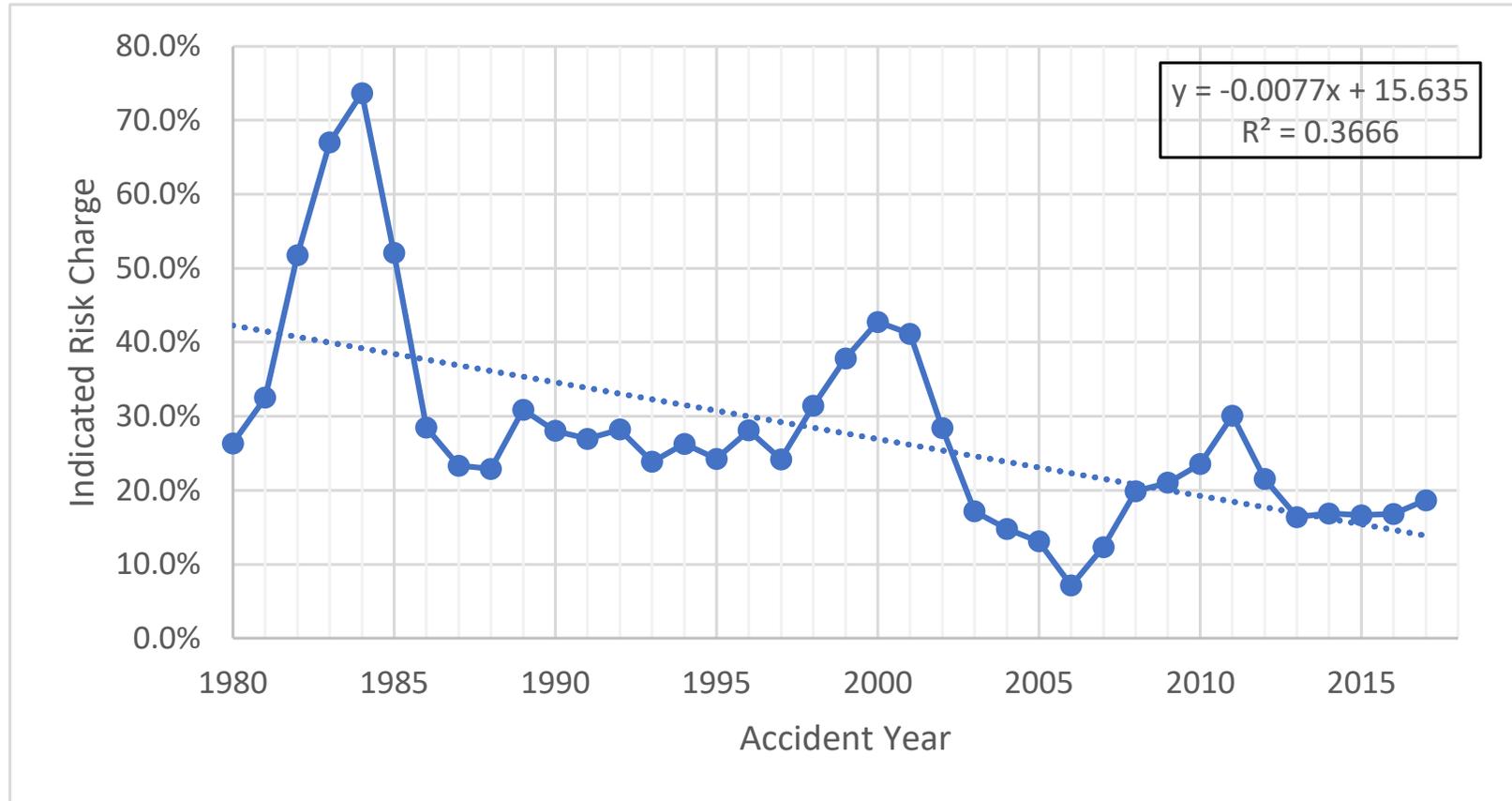


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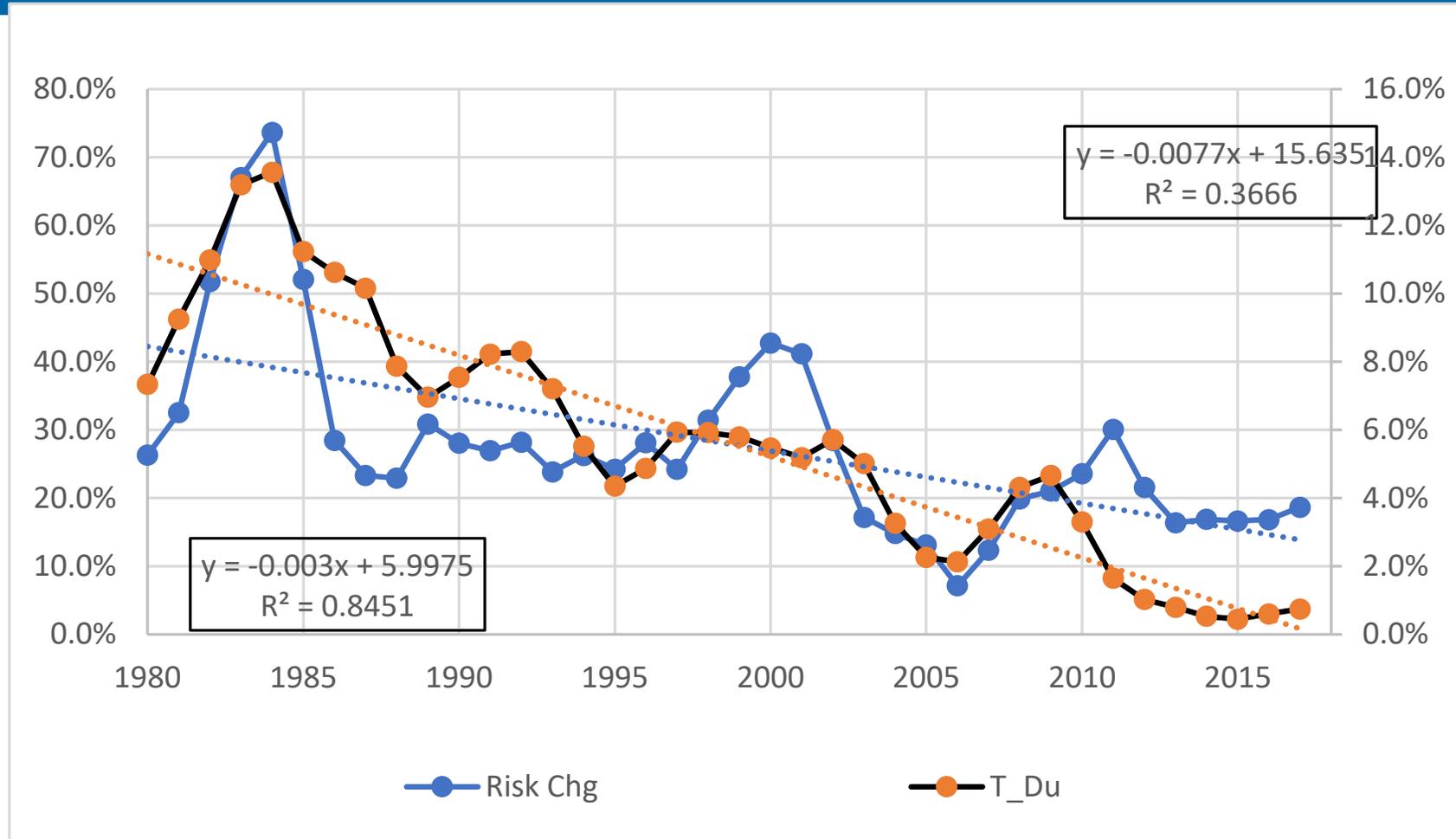
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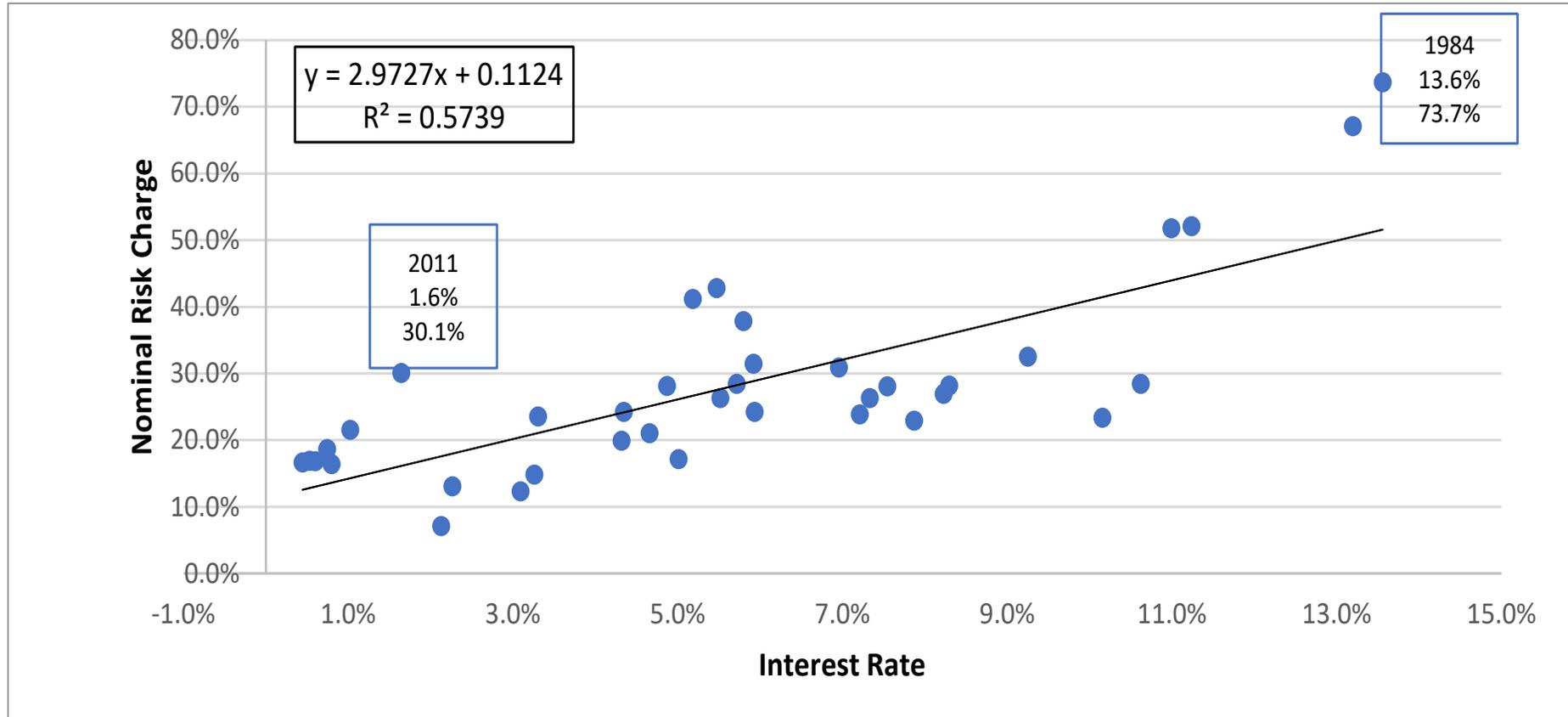
# Year-to-Year Variation in Risk Charges – Average of 11 LOBs



# Risk Charge vs. Interest Rate – Part 1

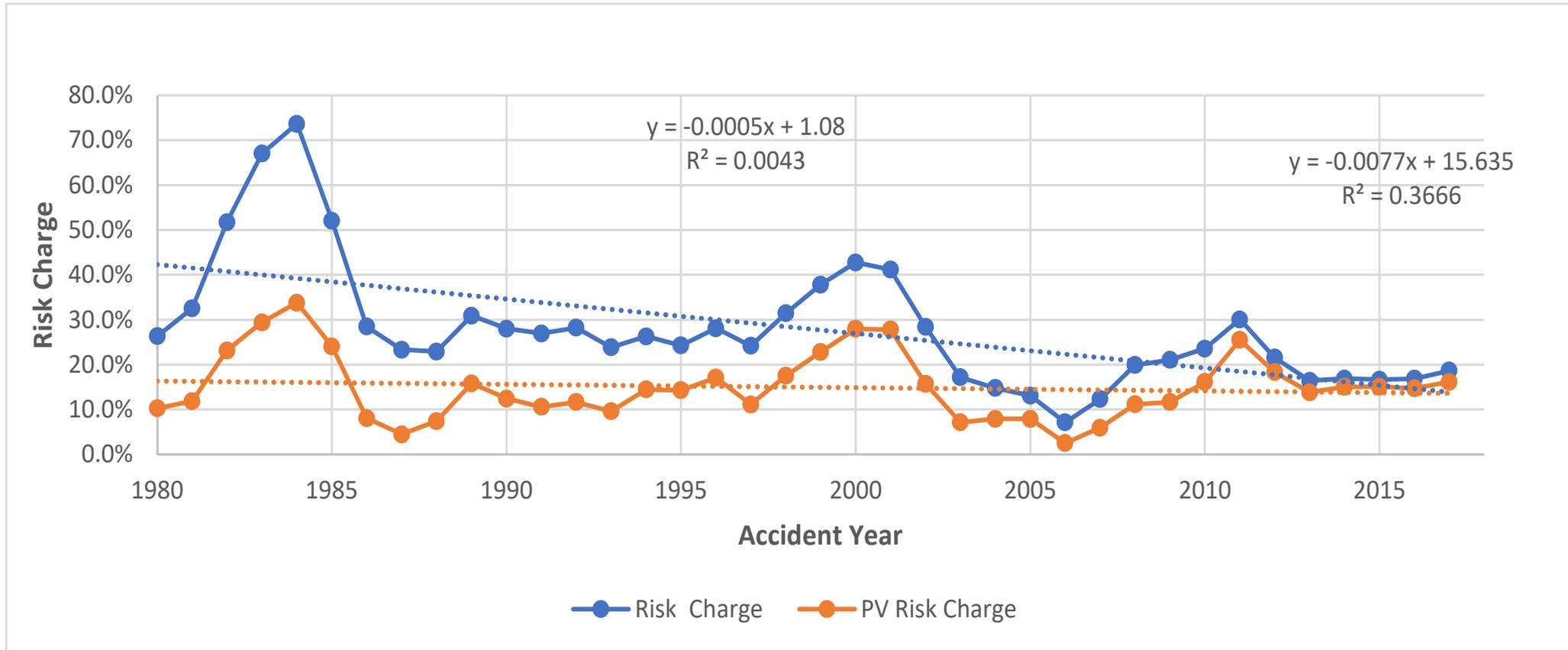


# Risk Charge vs. Interest Rate – Part 2

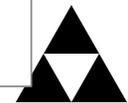
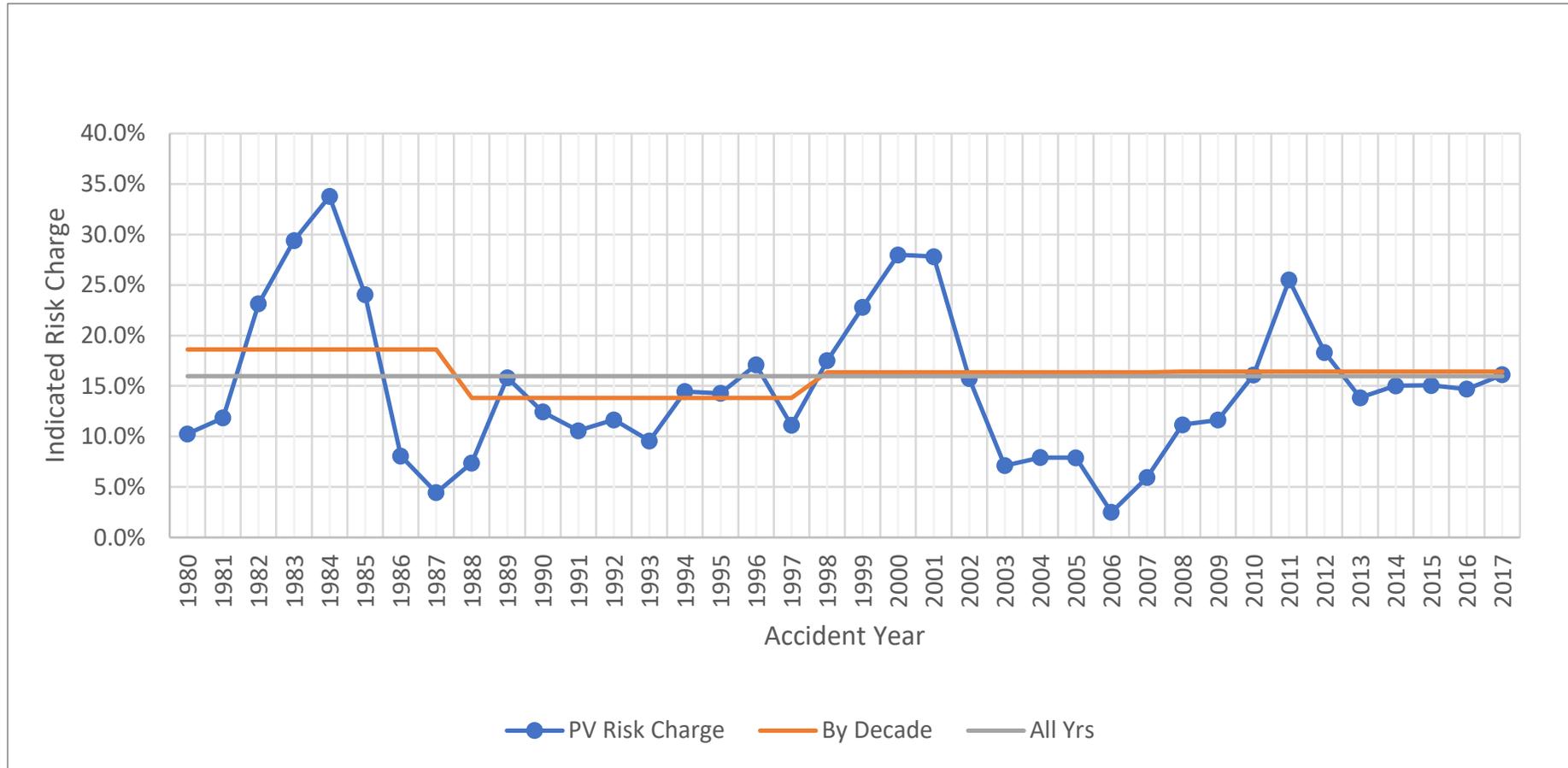


# “Present Value” (PV) and “Nominal Value” (NV)

## Risk Charges – 11 LOBs



# Stability of Present Value Risk Charges



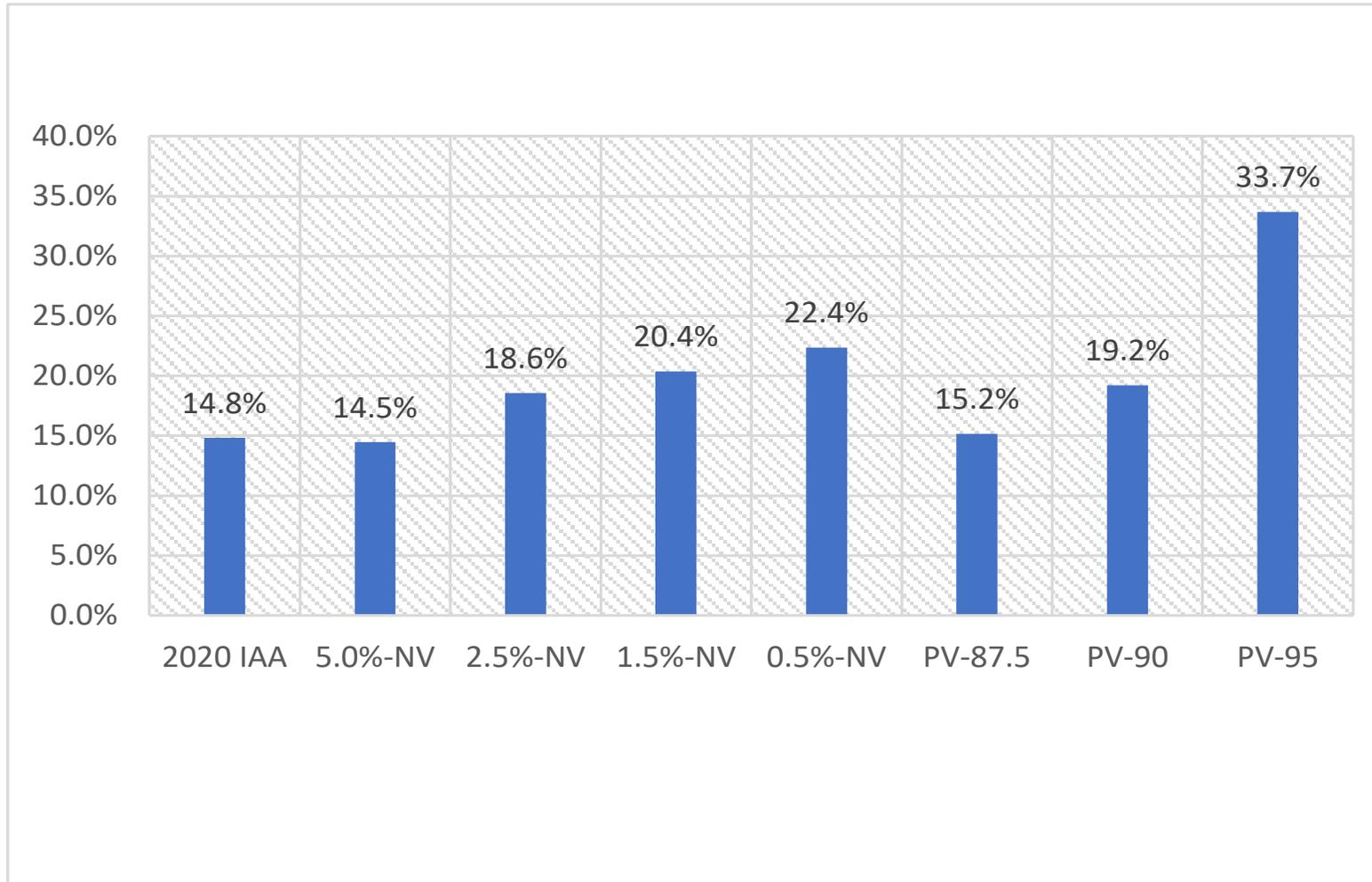
# Stability of PV and NV Indicated Risk Charges

(1)	(2)	(3)	(4)	(5)
Year Range	PV Indications		NV Indications	
	Indicated Risk charge	% vs. all Years	Indicated Risk charge	% vs. all Years
1980-1987	18.6%	16.7%	45.2%	51.2%
1988-1997	13.8%	-13.5%	27.9%	-6.9%
1998-2007	16.3%	2.5%	28.2%	-5.8%
2008-2017	16.4%	2.8%	21.0%	-30.0%
All Years	16.0%	0.0%	29.9%	0.0%
<b>B. Twenty-Year Ranges - 11 LOBs</b>				
1980-1998	15.6%	-2.0%	34.2%	14.3%
1999-2017	16.4%	2.8%	24.2%	-19.2%
All Years	16.0%	0.0%	29.9%	0.0%

Therefore, easier to forecast combined 87.5<sup>th</sup> percentile loss ratio and IIA, than it is to predict the 87.5<sup>th</sup> percentile loss ratio alone.



# Premium Risk Charge Sensitivity to Interest Rate/Calibration Method/Safety Margin



# Questions?

- Please contact Rob Fischer, Academy casualty analyst ([fischer@actuary.org](mailto:fischer@actuary.org)) with questions or if you wish to discuss further.

