2024 NAIC

NATIONAL MEETING
FALL / DENVER

NAIC | CENTER FOR INSURANCE POLICY AND RESEARCH

Commercial Real Estate: Assessing Insurers' Short-Term and Long-Term Exposure

NAIC 2024 FALL NATIONAL MEETING

TUESDAY NOVEMBER 19TH | 11:00 AM – 1:00 PM (MST)

Additional Times (Virtual Attendees)

10:00 AM–12:00 PM (PST) | 12:00–2:00 PM (CST) | 1:00–3:00 PM (EST)

NAIC

Event Learning Objectives:

- Identify the **breadth and depth of insurer real estate investments** through direct and indirect investment holdings
- Discuss and assess both **short- and long-term risks** associated with insurer commercial real estate exposure
- Understand how the insurance industry and regulators are **monitoring and evaluating** insurers' commercial real estate risks
- Highlight the significant role insurer real estate investments play in **community development**

Journal of Insurance Regulation (JIR)

- A Forum for Opinion and Discussion of Major Regulatory and Public Policy Issues in Insurance

- Strives to make state insurance departments more aware of the cutting-edge, high-quality research occurring in the regulatory arena

CENTER FOR INSURANCE POLICY AND RESEARCH
NAIC NATIONAL ASSOCIATION OF INSURANCE COMMISSIONERS

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Sectoral Asset Concentrations and Insurance Solvency Regulation

Fabian Regele
Helmut Gründl

Journal of Insurance Regulation: A Forum for Opinion and Discussion of Major Regulatory and Public Policy Issues in Insurance

The Journal of Insurance Regulation (JIR) strives to make state insurance departments more aware of the cutting-edge, high-quality research occurring in the regulatory arena. All authors having articles that deal with insurance regulation are invited to submit manuscripts to the Journal for review. Before appearing in the Journal, each article is rigorously evaluated by the JIR Editorial Review Board to ensure that all information provides a true benefit to its readers and is of the utmost quality. The ideas expressed in the Journal are not endorsed by the NAIC, CIPR, the Journal's editorial staff, or the Journal's board.

About the JIR

- Open access journal so we can quickly share current and relevant research on topics of interest to our stakeholders
- Publish approximately 10 articles a year
  - ***Please look for our JIR Journal Club webinar discussions***
- Contributors are academics, industry professionals, and regulators
- One article selected each year for the **Kimball Award**

Spencer L. Kimball Writing Award

- Spencer Kimball:
  - renowned scholar on insurance law and regulation
  - active member of the JIR Board of Directors for 15 years

- The Award:
  - Founded in 1993 as the JIR Writing Award
  - Renamed in 1996 to honor Dr. Kimball
  - ***Acknowledges and encourages outstanding contributions to the Journal of Insurance Regulation***.

Climate Risks in the Commercial Mortgage Portfolios of Life Insurers: A Focus on Sea Level Rise and Flood Risks

Xiao (Joyce) Lin
St. John's University

Kyeonghee Kim
Florida State University

Agenda

- 1. Motivation
- 2. Background
- 3. Sample and Data
- 4. Insurer-Level Loan-Portfolio Analysis
  - Case Studies
- 5. Regulatory Reforms in the 2010s
  - Change in RBC Charge
  - B-W Flood Insurance Reform Act
- 6. Conclusion and Next Steps

Motivation

- Life insurers
- Commercial mortgages as an asset class
- Climate risk capitalized in residential real estate and residential mortgages (Sea-Level-Rise and/or flood risk)
- Climate risk capitalized in commercial real estate (flood/temperature)
- Life insurers' climate risk exposure?

Motivation

Background

Sample and Data

Insurer-level Loan-Portfolio Analysis

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B-W Flood Insurance Reform Act

Conclusion and Next Steps

Why life insurers (don't) care about climate risk in their CRE mortgage portfolio

- Sophisticated Investors
- Balance-sheet lenders
- Fixed-rate, long-term, large-sized, non-recourse, & I/O loans
- Economic damages may occur earlier because of uncertainty
- Regulatory concerns

- Simply don't care about very long-term risk (searching for yield)
- Well-diversified investment portfolio
- Financial strength
- Property insured

Life insurers as commercial mortgage lenders

- ~1/3 of assets held in mortgages in early 1900s (Huebner 1919)
- ~15 % of assets in mortgage loans by year-end 2021 (NAIC, 2022)
- Long duration of mortgages matches with the liability structure
- One of the main players in the market: ~14% of all outstanding commercial mortgages by year-end 2021 (MBA, 2022)

Motivation

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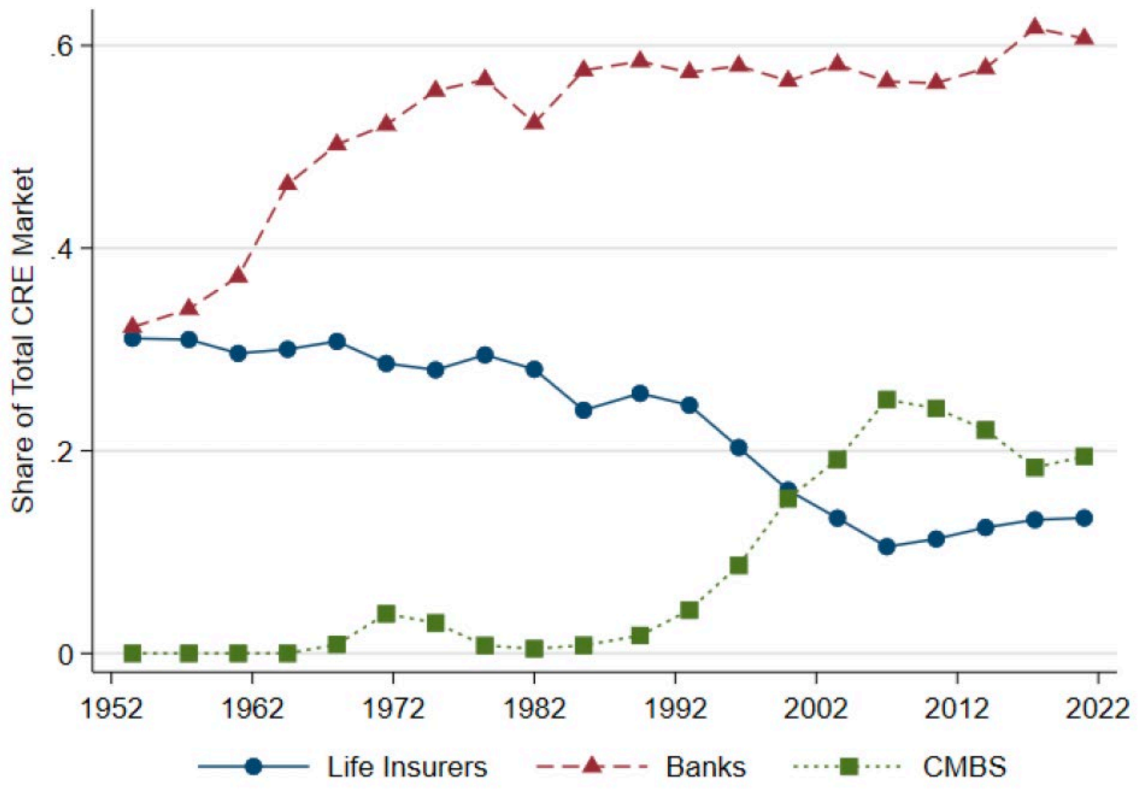
Life insurers as commercial mortgage lenders

Figure 1: U.S. Commercial Real Estate by Lender



Sample

- **New** loans originated by active stock or mutual life insurers with positive invested assets during **2012-2019**
  - (zip code and property type information first available in 2014; imputed information for 2012-2013)
- Minimum loan value of $100K and complete loan-level information
- Fixed rate loans (~90%) associated with a single zip code (~95%)
- 42,913 unique loans, 1376 insurer-year with ~200 unique insurers per year

Data

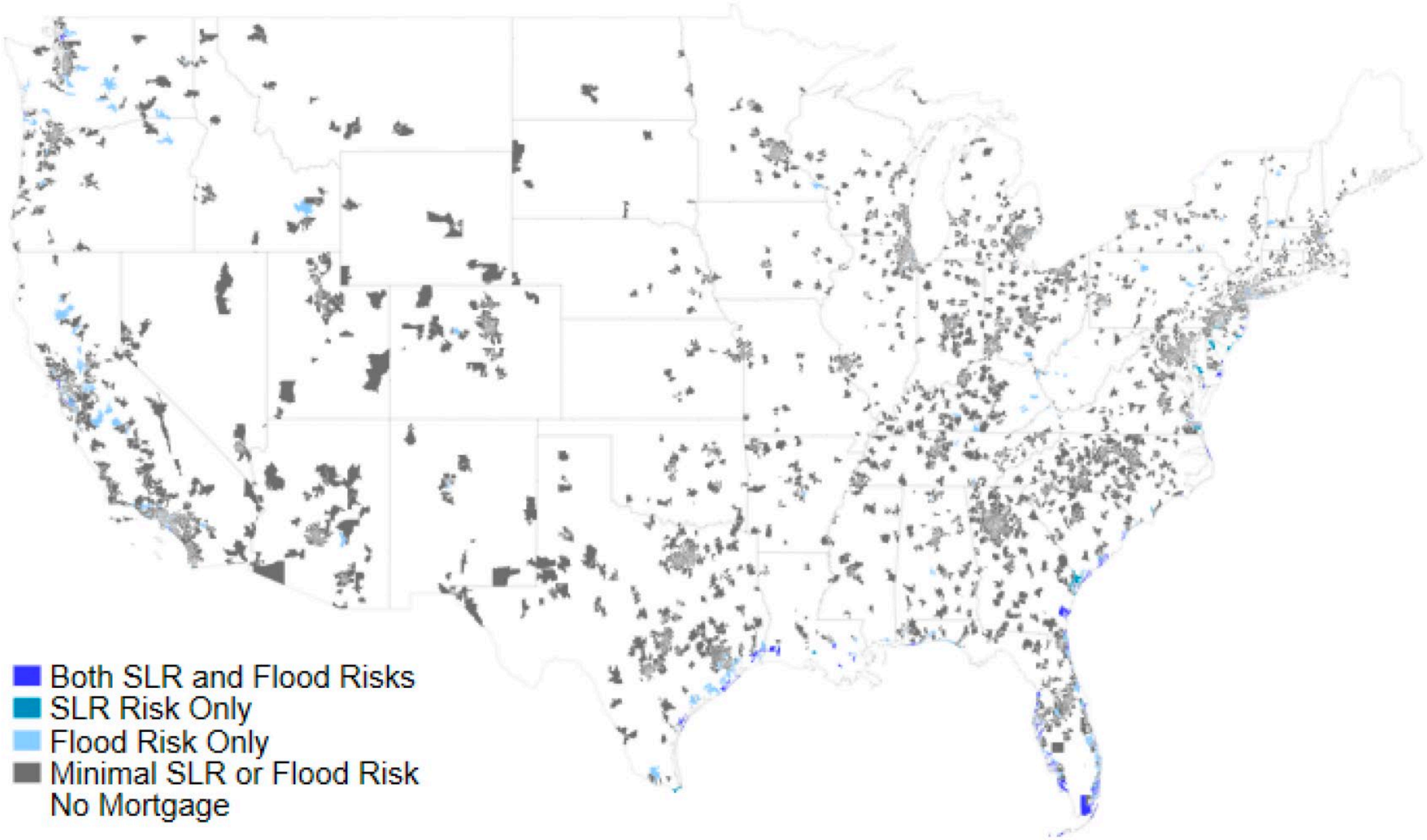
- Commercial Mortgage loan characteristics
  - Schedule B Part 2 (loan **originations**)
  - Interest rate, book value, appraisal value, acquisition date, maturity date, property type, location zip-code
- Insurer characteristics
  - Total invested assets, Risk Based Capital (RBC) ratio, capital to asset ratio, mortgage%, commercial mortgage%, organizational form, group indicator

Data – continued

- Sea Level Rise (SLR) risk data
  - NOAA SLR viewer tool
  - Six-feet SLR scenario by 2100, and overlay with zip-codes to determine an inundation percentage of area per zip-code
  - Use 20% inundation as cutoff (also tried 50%, 5%)
- FEMA flood zone data
  - Special flood hazard area (SFHA, >1% annual probability of being flooded) overlayed with zip-codes
  - Use 20% flood-zone cover as cutoff
- Flood risk factor data
  - First Street Foundation (FSF) zip-code level flood score
  - 1-10, 3 or above means moderate risk

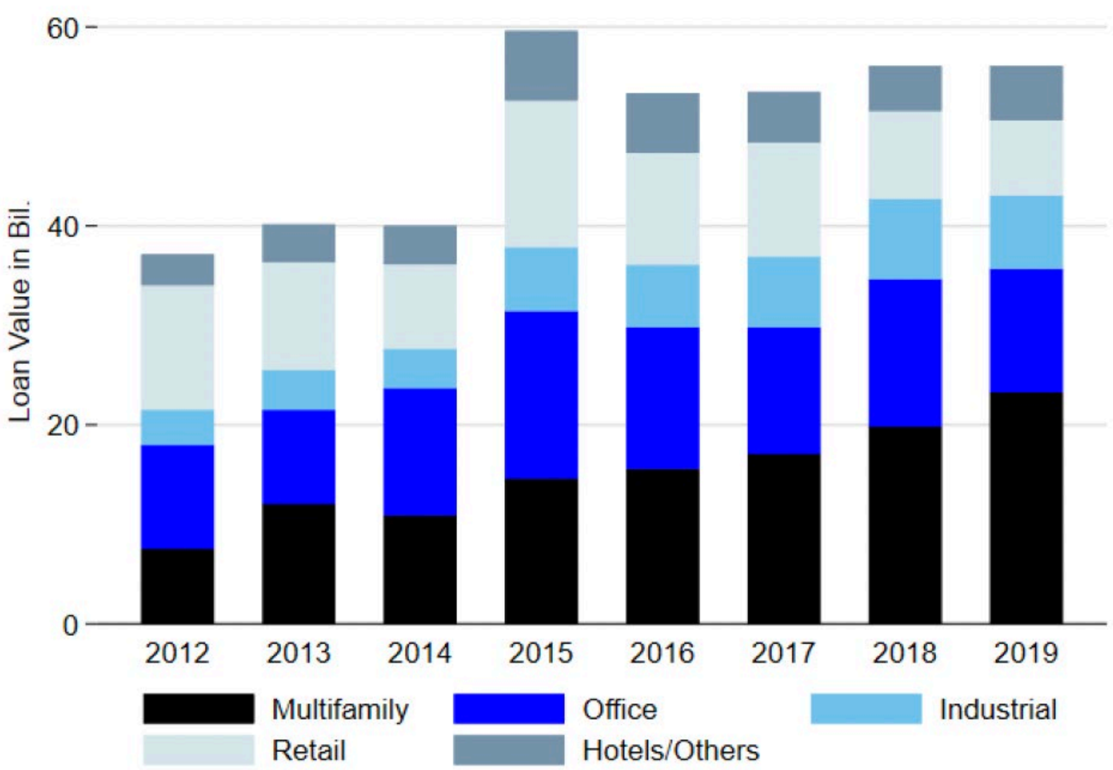
Geographic locations of life insurers' loans

Figure 4: Geographical SLR and Flood Risk Exposure of Life Insurer Mortgages



Commercial Property Types

Figure 2: Commercial Property Types



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Loan-level Summary Statistics

	Obs	Mean	SD	1st	25th	50th	75th	99th
A: Loan and Property								
Spread	42,913	2.17	1.08	0.64	1.61	2.00	2.45	6.62
Loan Value (Mil.)	42,913	9.22	20.10	0.02	0.97	3.20	9.00	98.90
Property Value (Mil.)	42,913	18.14	44.27	0.04	1.68	6.05	17.00	196.40
Loan-to-value ratio	42,913	0.58	0.16	0.09	0.50	0.61	0.69	0.86
Term (years)	42,913	14.73	7.27	2.01	10.02	12.59	20.05	30.09

Interest rate spread =
Interest rate – risk-free rate (T-bills with similar terms)

Motivation

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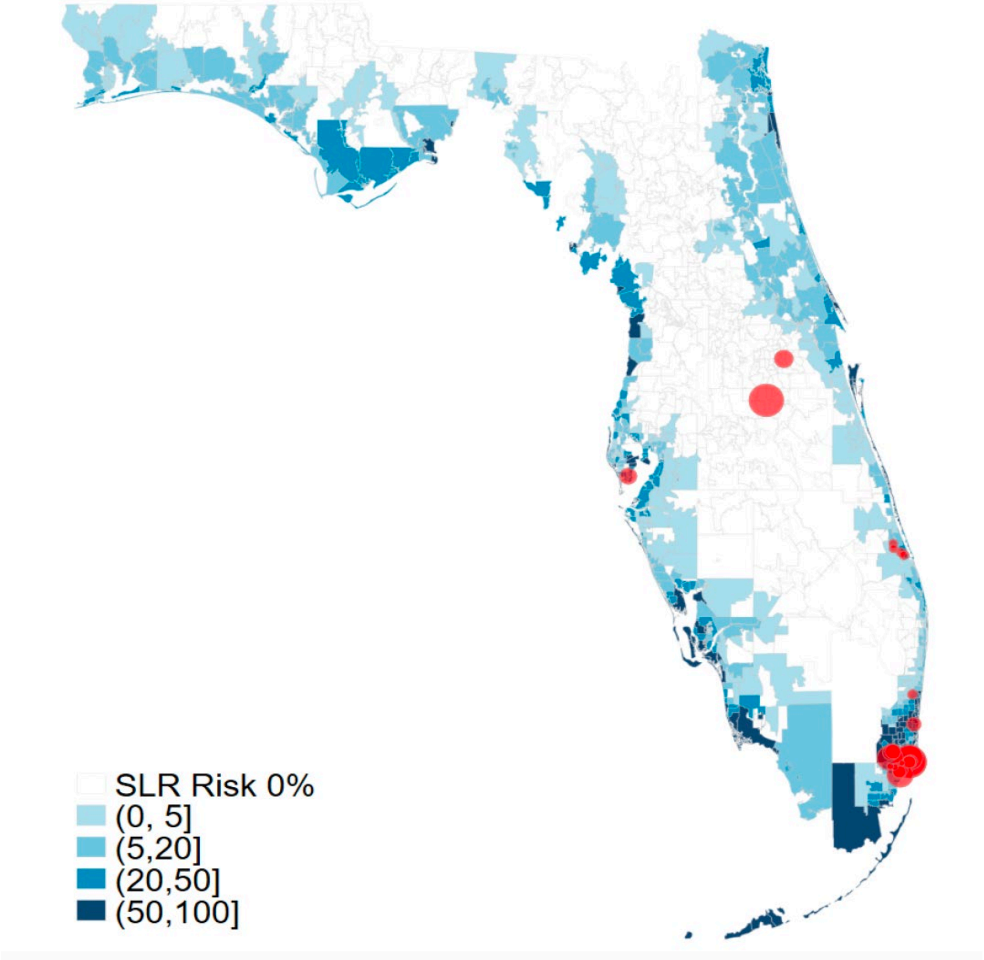
Insurer-level Loan-Portfolio Analysis

	Obs	Mean	SD	1st	25th	50th	75th	99th
B: Loan-portfolio								
Number of New Loans	1,376	31.19	64.51	1.00	5.00	13.00	34.00	423.00
Property Type HHI	1,376	0.46	0.25	0.20	0.29	0.37	0.54	1.00
Avg. Loan Value (Mil.)	1,376	15.78	26.21	0.05	2.68	7.01	18.20	140.93
Avg. Spread	1,376	2.41	1.40	0.60	1.71	2.05	2.66	8.57
Avg. LTV	1,376	0.55	0.13	0.07	0.49	0.56	0.63	0.89
Avg. Loan Terms	1,376	11.89	5.18	1.50	9.24	11.40	14.14	28.41
Hotel/Other Share	1,376	0.15	0.24	0.00	0.00	0.06	0.19	1.00
SLR 20% Share	1,376	0.06	0.13	0.00	0.00	0.00	0.06	0.74
Flood Zone Share	1,376	0.18	0.20	0.00	0.01	0.15	0.24	1.00
Flood Cap Share	1,033	0.09	0.26	0.00	0.00	0.00	0.00	1.00
Flood Factor>3 Share	1,376	0.10	0.16	0.00	0.00	0.05	0.12	1.00

A Small Insurer with High SLR Risk Exposure



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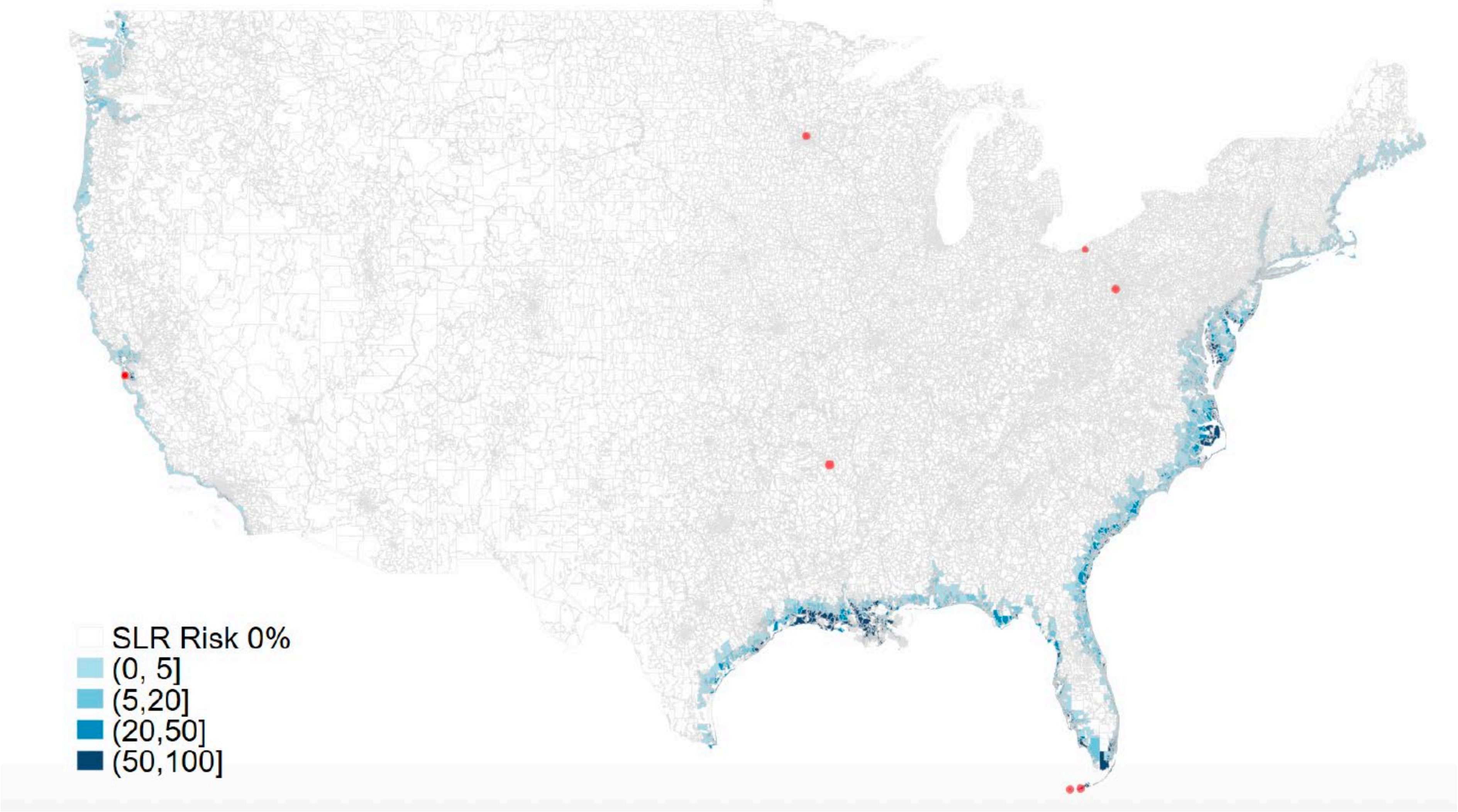
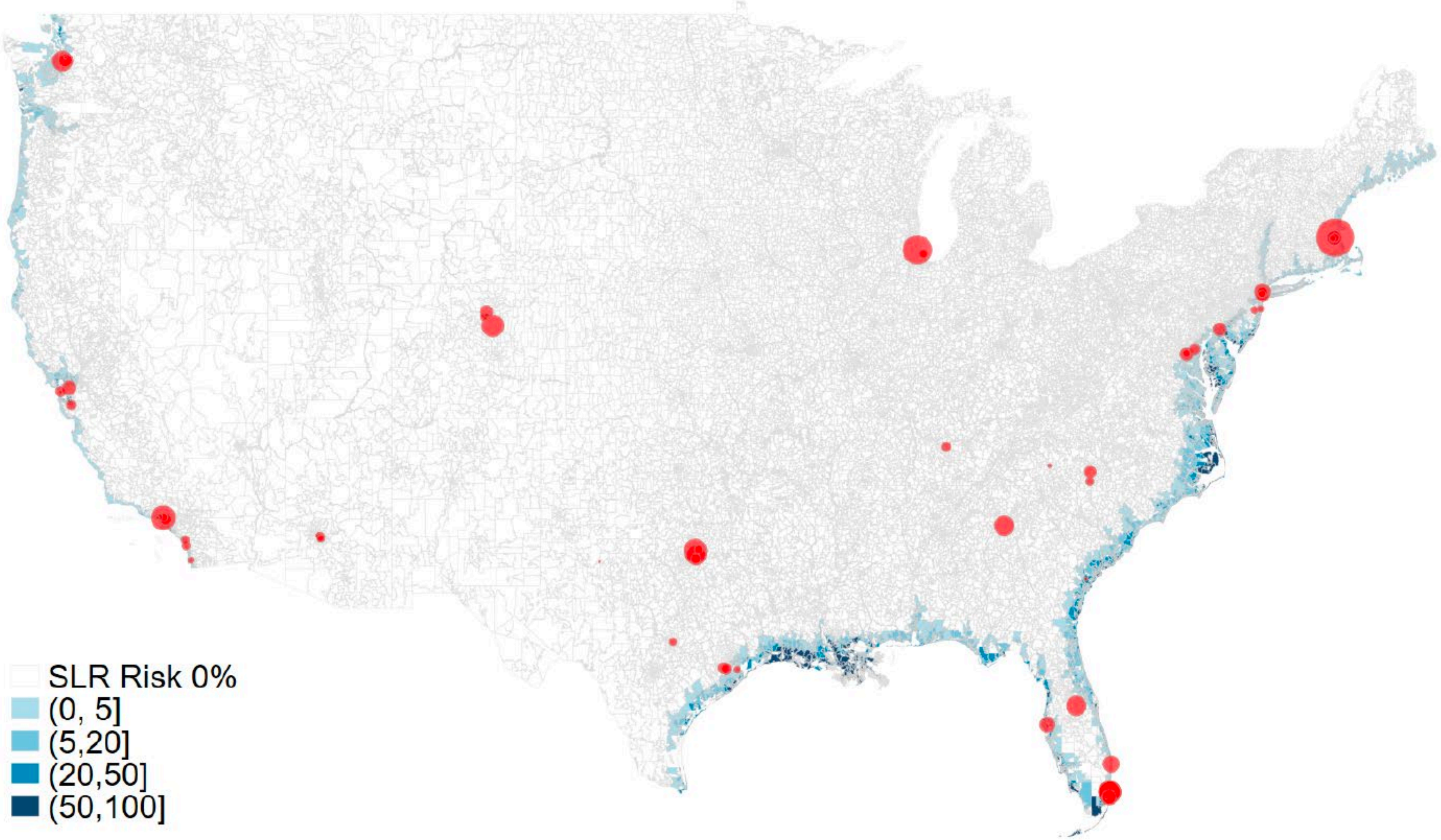
A Mid-size Insurer with High SLR Risk Exposure



A Large Insurer with High SLR Risk Exposure



Regulatory Reforms in the 2010s

- RBC charges for commercial mortgages changed in 2013
- The Biggert-Waters Act of 2012 (BW-12) started phasing out flood insurance premium subsidies in late 2013

Change in RBC Charge

- Before 2013: RBC charges for commercial mortgages mostly differ for those in good standing (apply insurer-level Mortgage Experience Adjustment Factor or MEAF) vs. not in good standing
- At the end of 2013, the RBC charge for commercial mortgages was updated, and a granular breakdown of the RBC charges for different categories of commercial mortgages replaced the MEAF

Change in RBC Charge – continued

- After 2013, the RBC charge for commercial mortgages is based on (1) debt service coverage ratio (DSCR), (2) loan-to-value (LTV) and (3) loan type.

Category	Description	RBC
CM1	Performing	0.90%
CM2	Performing	1.75%
CM3	Performing	3.00%
CM4	Performing	5.00%
CM5	Performing	7.50%
CM6	Loans 90 days past due but not in foreclosure	18.00%
CM7	Loans in process of foreclosure	23.00%

Biggert-Waters Flood Insurance Reform

- Phase out subsidies on the NFIP’s flood insurance premiums for both residential and commercial policies
- The B-W Act was partly reversed soon after for *residential policies only*
- The NFIP underwrites about 5 million policies per year, 5-7% are policies on commercial properties. 30-40% of commercial properties received subsidies before the B-W Act.

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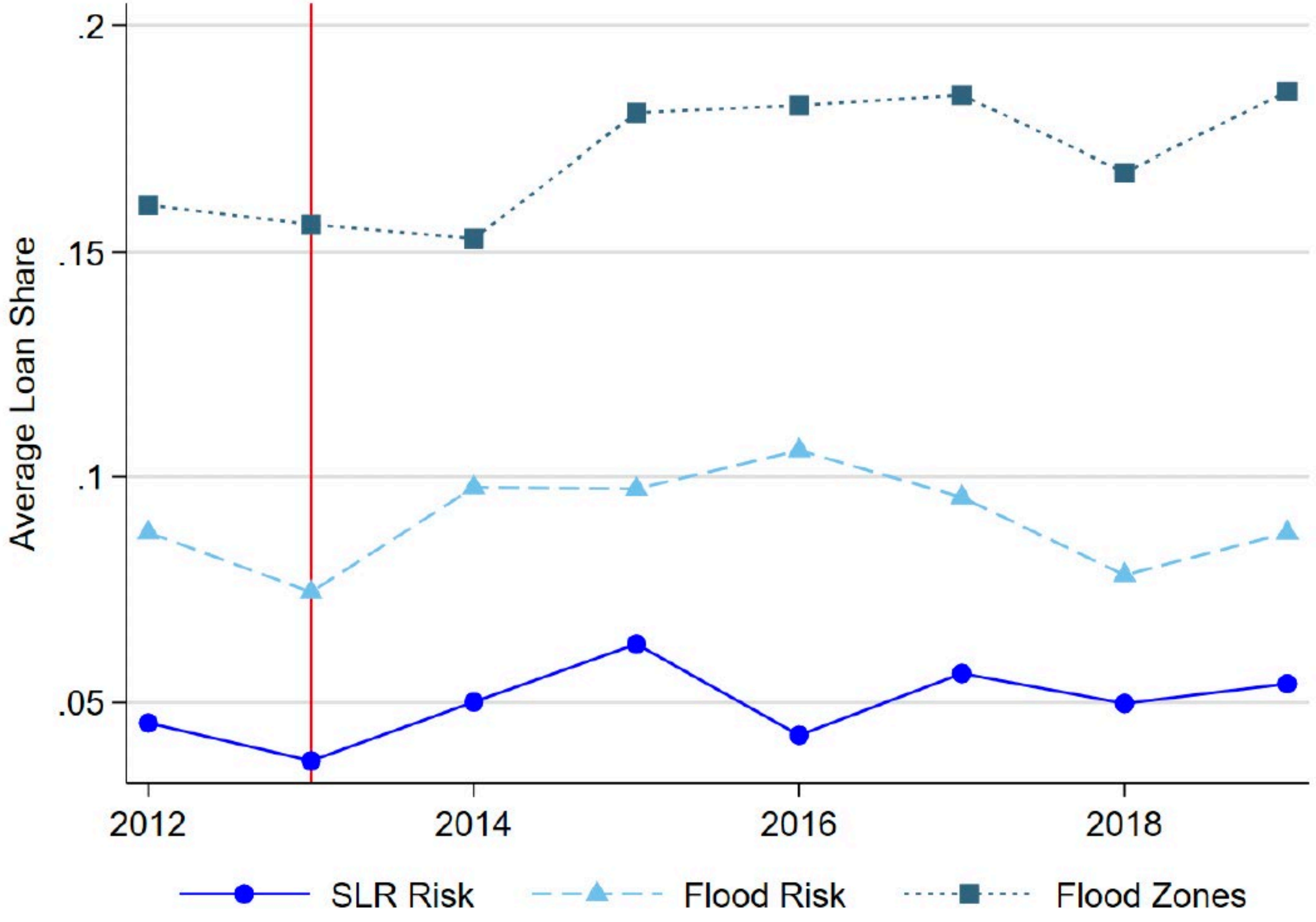
Insurer-level loan-portfolio SLR/Flood Risk exposure over time



Conclusion and Next Steps

- We analyze the commercial mortgage portfolios of life insurers from 2012-2019 using loan origination data, and in particular, focus on their exposures to SLR risk and flood risk
- Significant heterogeneity of loan-portfolios at the insurer level
- Did not find much change over time (2012-2019)
- After 2019?
- Street-level data for commercial properties
- Life insurers vs. banks
- Link insurer (and bank) characteristics to their commercial mortgage loan portfolio

Panelists

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S&P Global Ratings

ROBERT KASINOW
Assistant Deputy Superintendent
New York Department of Financial Services

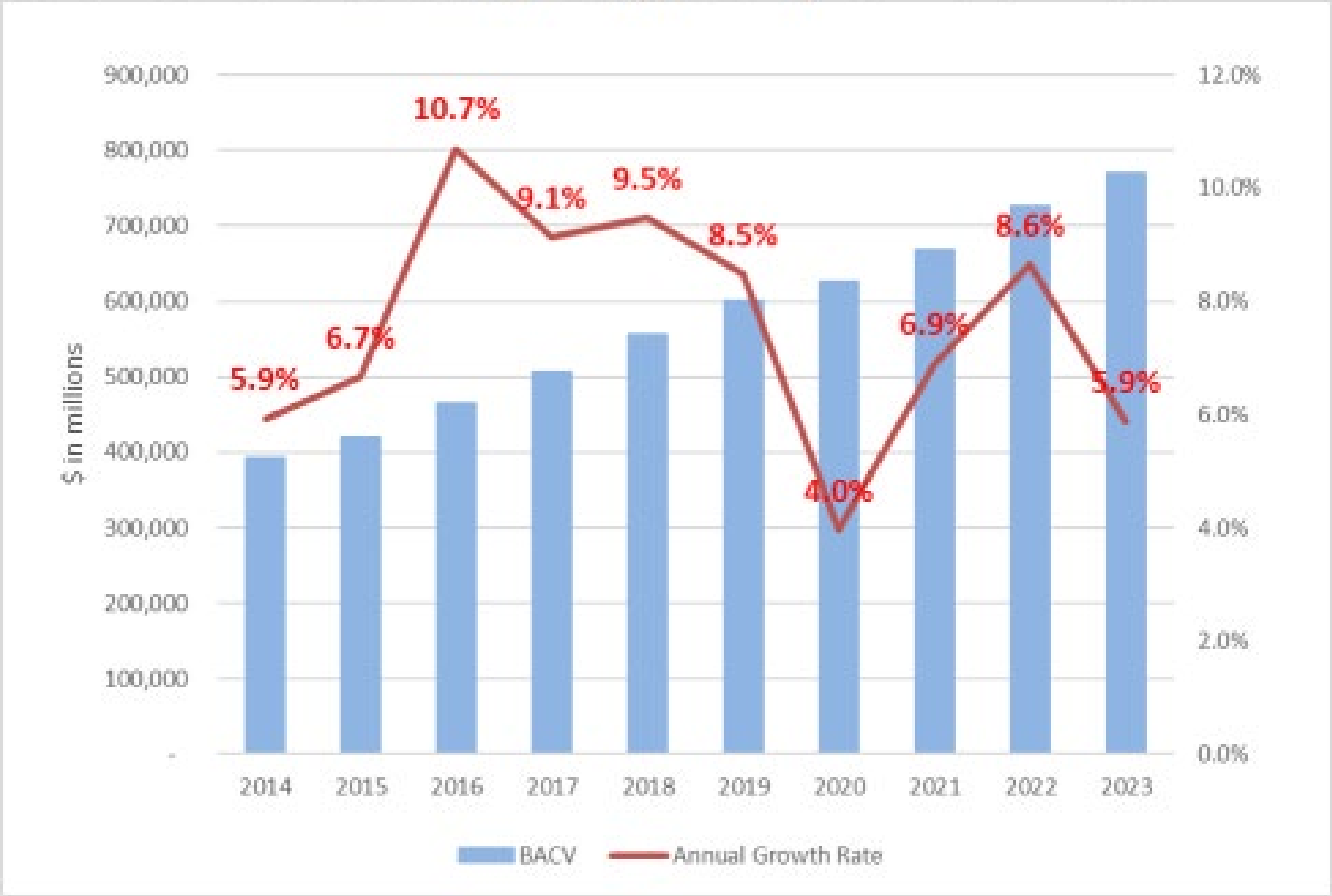
Insurance Industry Commercial (& Residential) Real Estate Exposure

Tim Nauheimer, Manager, Macroprudential Supervision, Capital Markets Bureau NAIC

Mortgage Loan (Commercial & Residential) Growth 2014 - 2023

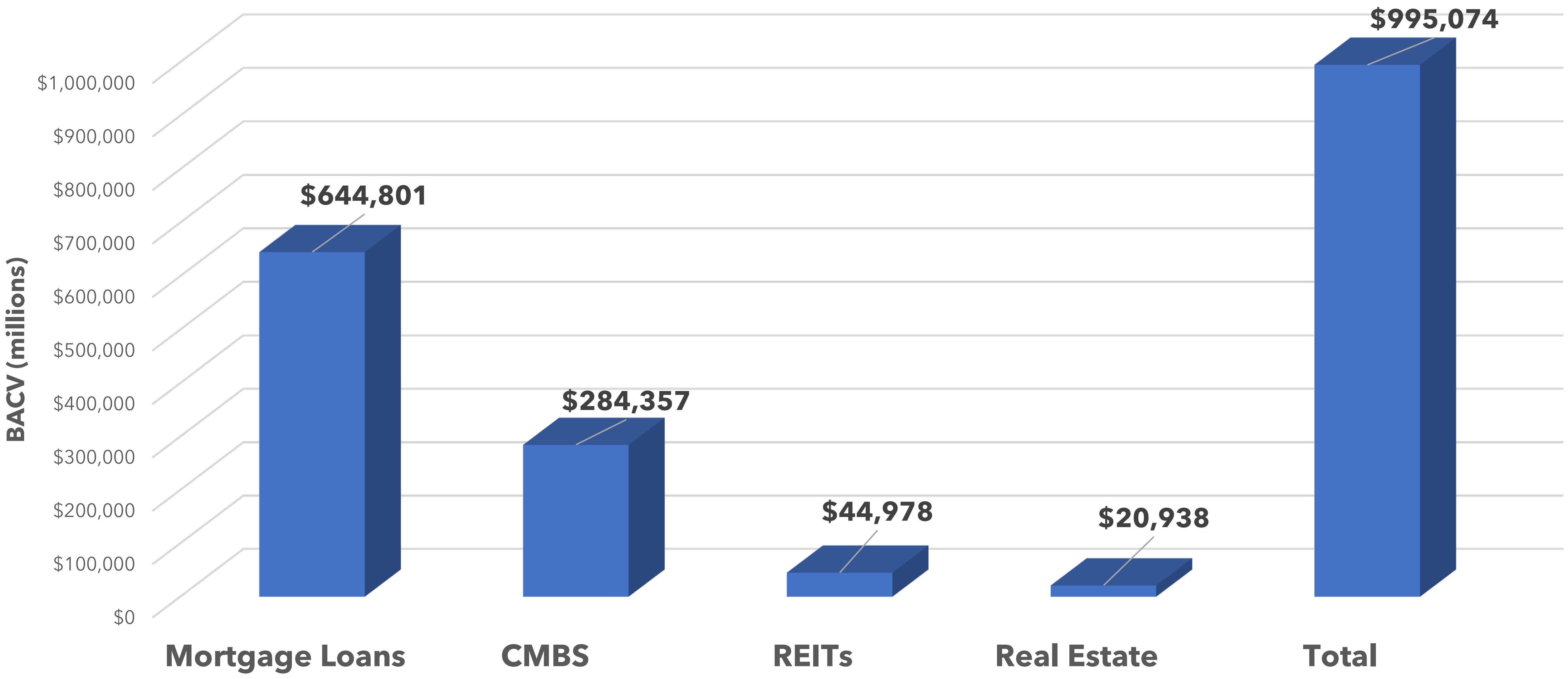
*Commercial mortgage loans are **84% of total** insurer mortgage loans year-end 2023*

Chart 2: U.S. Insurance Industry Mortgage Loans, Year-End 2014–2023



[U.S. Insurance Industry's Commercial Real Estate Investments Near $1 Trillion as of Year-End 2023, Led by Mortgage Loans]

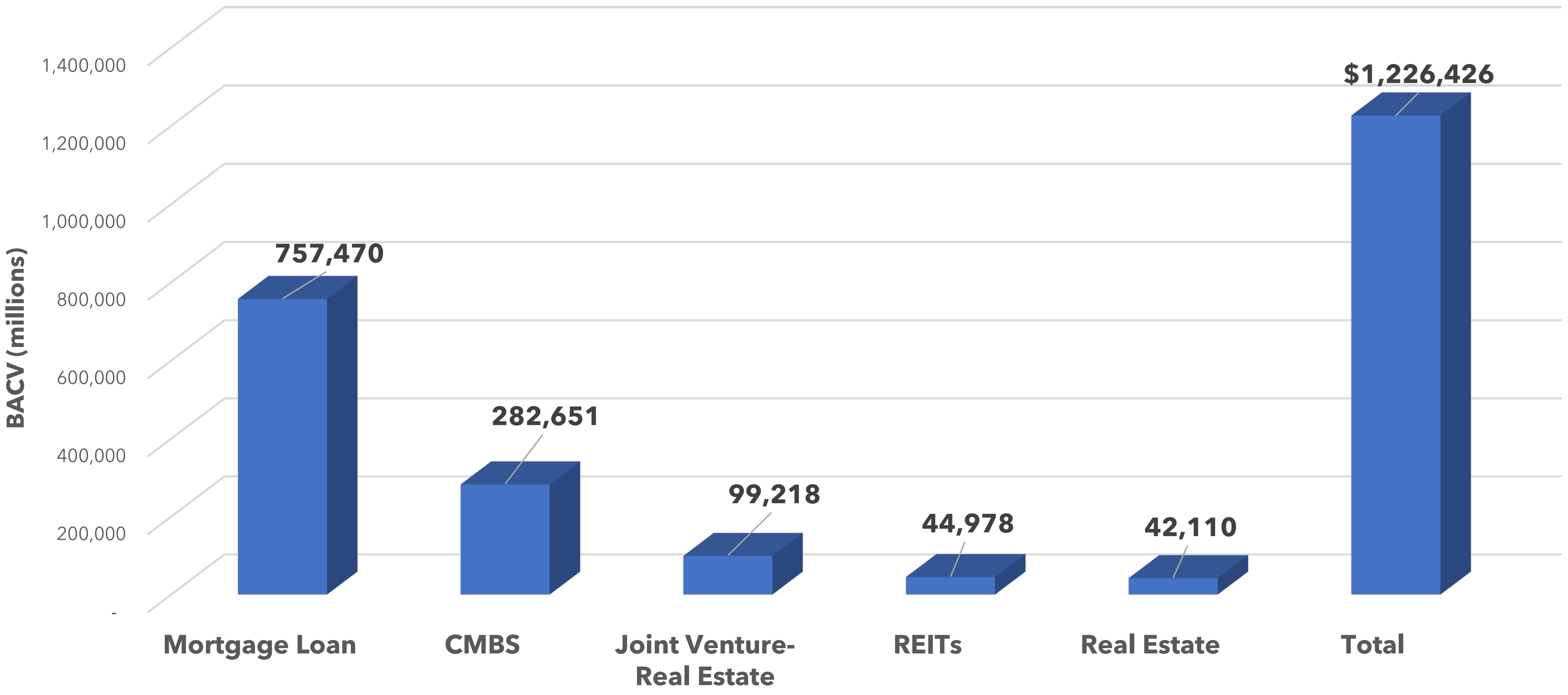
Commercial Real Estate Summary 2023



[U.S. Insurance Industry's Commercial Real Estate Investments Near $1 Trillion as of Year-End 2023, Led by Mortgage Loans]

Total Real Estate Summary 2023

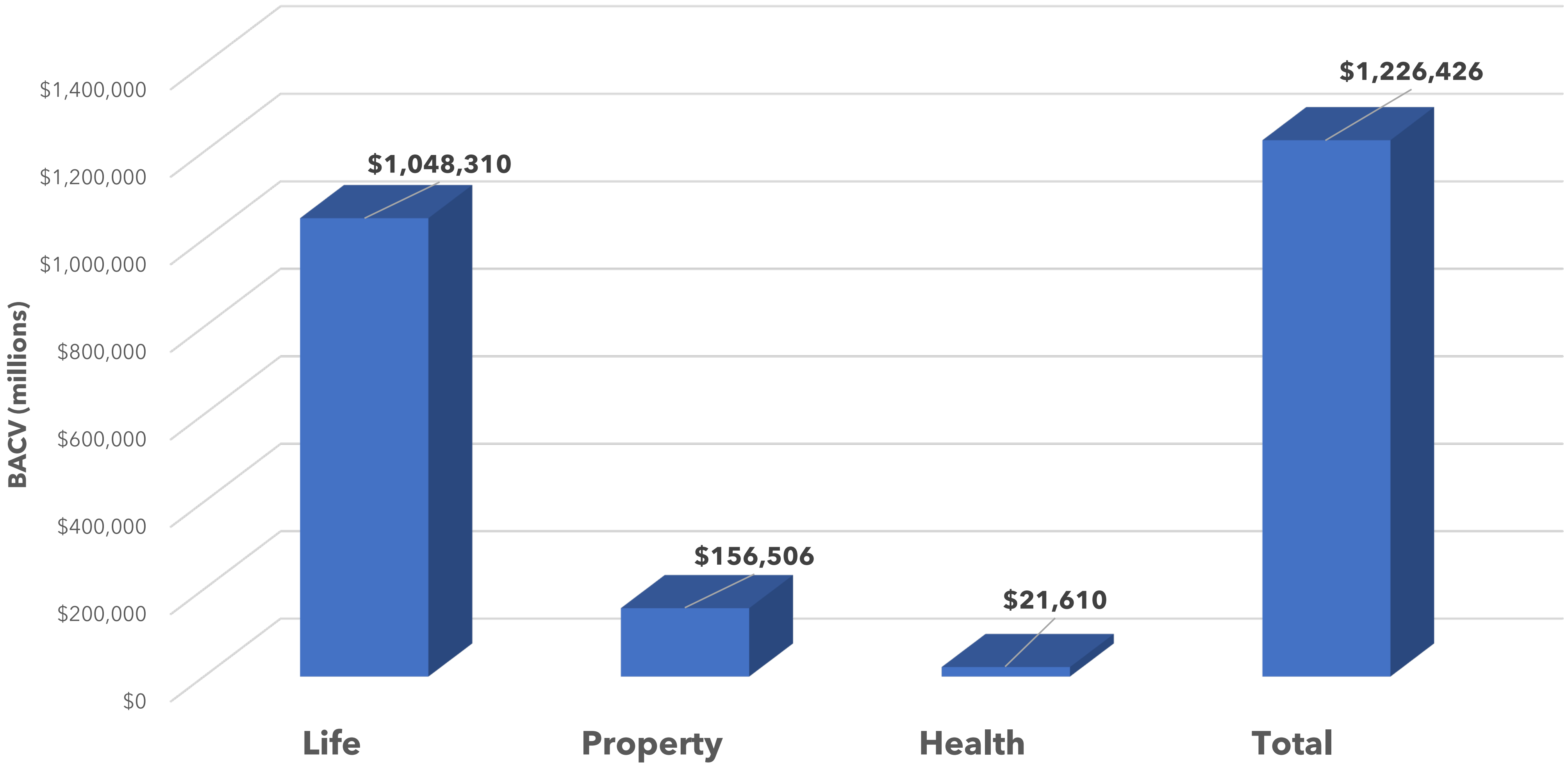
(includes Residential mortgage loan and JV-RE; excludes RMBS)



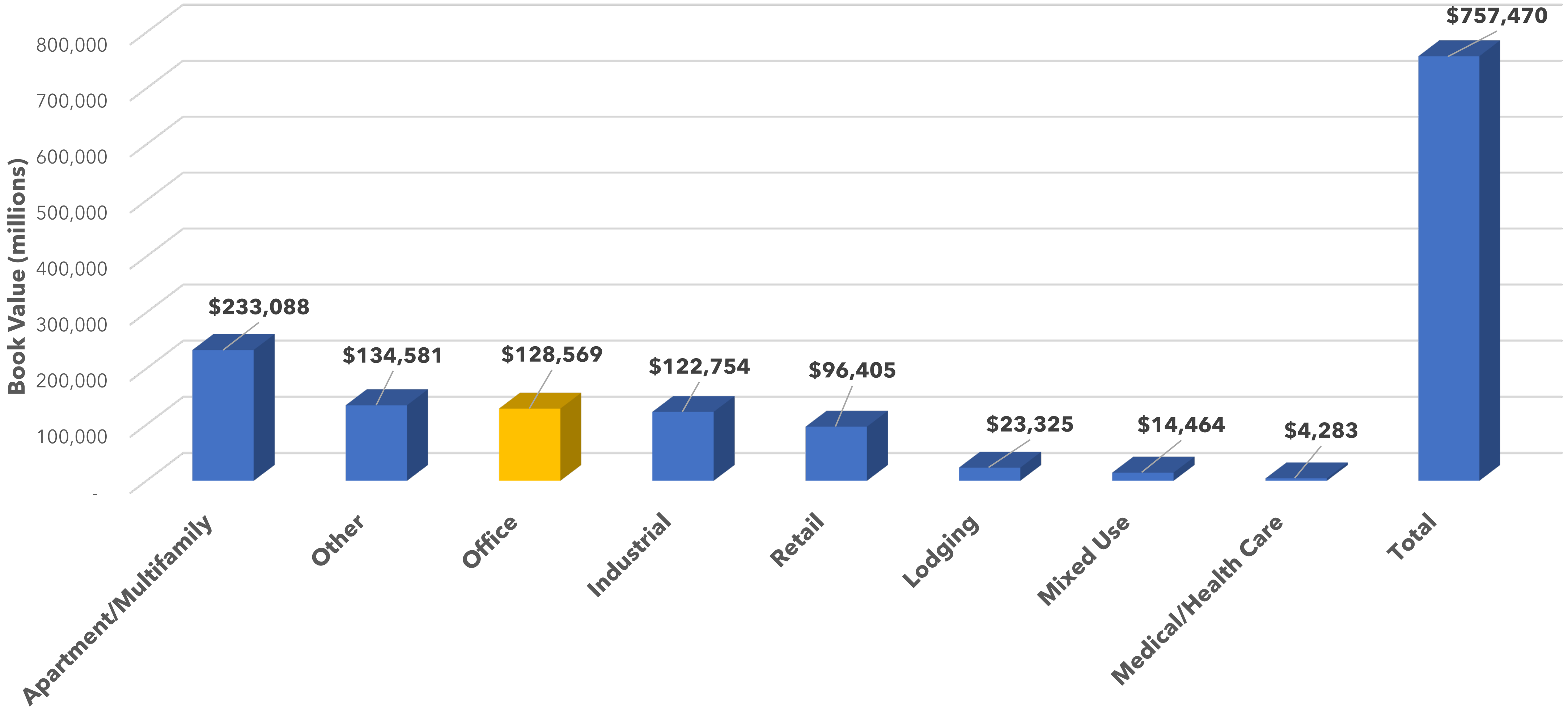
Real Estate (% of Total Cash and Invested Assets)

Real Estate	Percentage
Mortgage Loan	8.90%
CMBS	3.32%
Joint Venture-Real Estate	1.17%
REITs	0.53%
Real Estate	0.50%
Total	**14.42%**

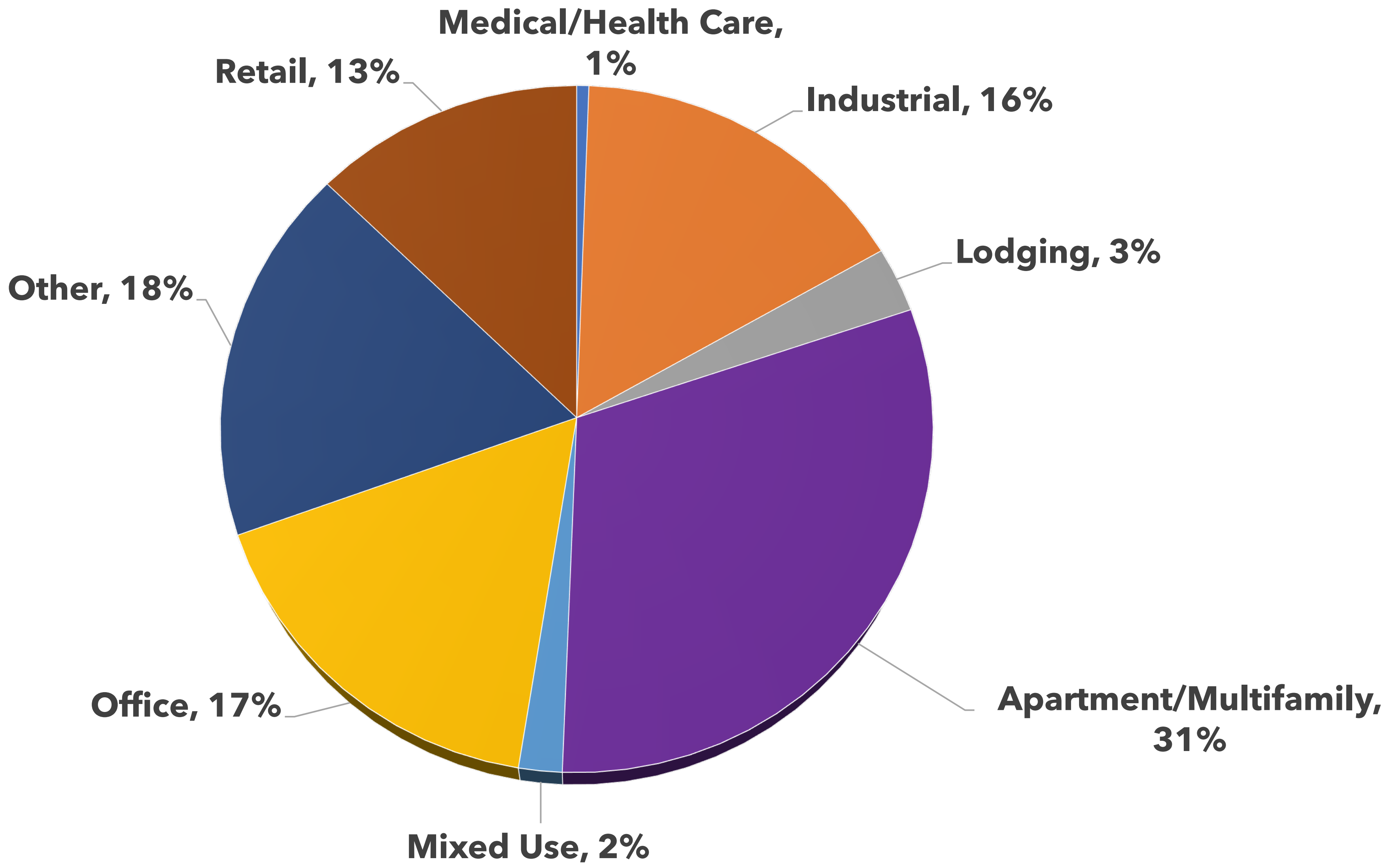
Real Estate Investments by Insurer Type



Mortgage Loans by Property Type



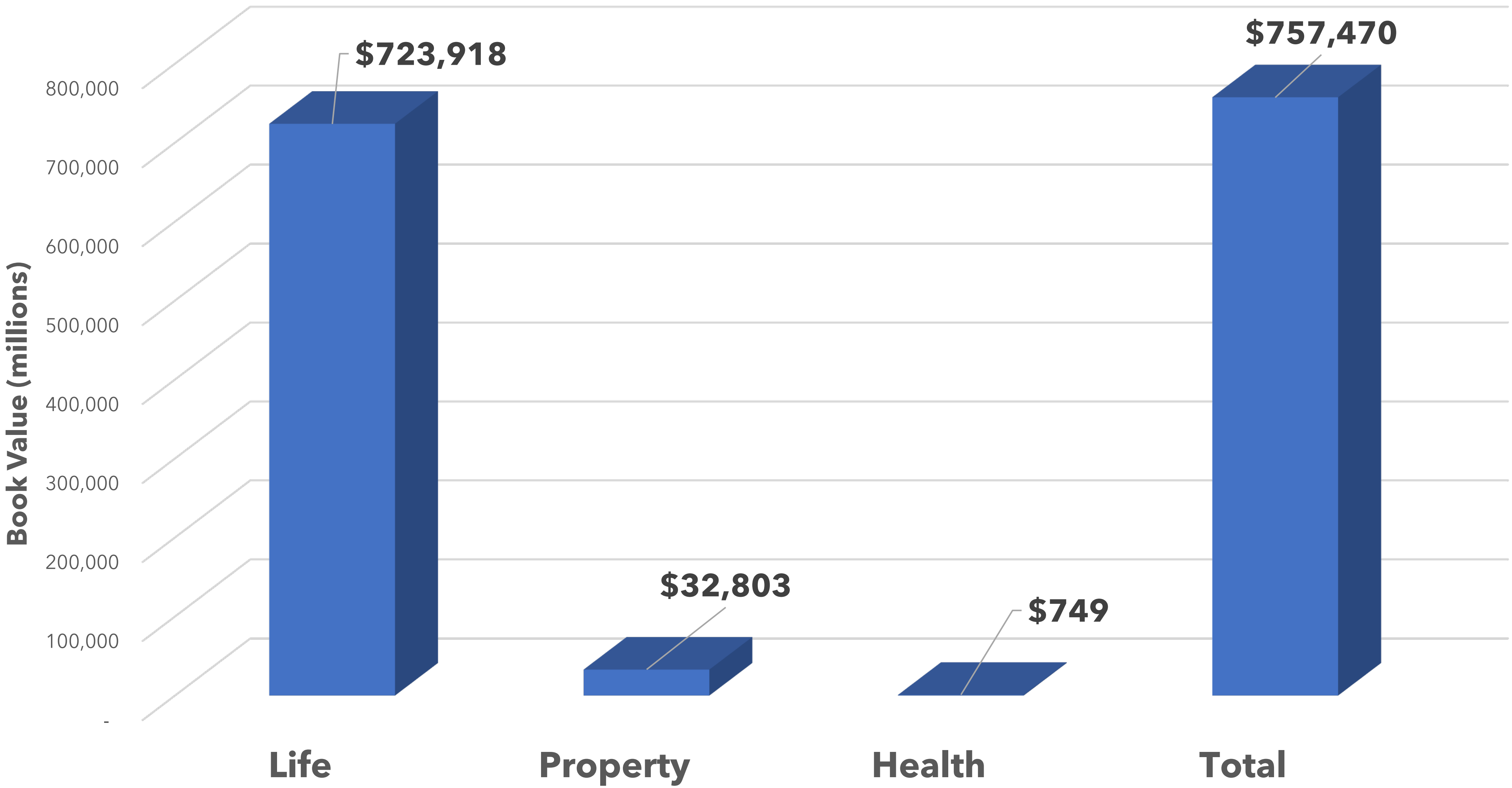
Mortgage Loans by Property Type (%)



Mortgage Loans (% of Total Cash and Invested Assets)

Real Estate	Percentage
Apartment/Multifamily	2.74%
Other	1.58%
Office	1.51%
Industrial	1.44%
Retail	1.13%
Lodging	0.27%
Mixed Use	0.17%
Medical/Health Care	0.05%
Total	**8.90%**

Mortgage Loans by Insurer Type



[U.S. Insurance Industry's Commercial Real Estate Investments Near $1 Trillion as of Year-End 2023, Led by Mortgage Loans]

Insurance Industry-Other Exposure Metrics

- **Commercial Mortgages**-insurance industry holds about **16% of the commercial mortgage market**

- **CMBS**-insurance industry **holds about 31% of the CMBS market**
  - Higher exposure for certain insurers

.

Selected Bond Type	Pct of Total - PE-Owned YE2023	Pct of Total - All U.S. Insurers YE2023
ABS and Other Structured Securities	**29%**	12%
Agency-Backed RMBS	2%	5%
Corporate Bonds	48%	55%
Private-Label CMBS	6%	1%
U.S. Government	3%	7%

Number of Private Equity-Owned U.S. Insurers Remains Constant, But Total Investments Increase by Double Digits in 2023

Key Take-Aways from Insurer Real Estate Exposure

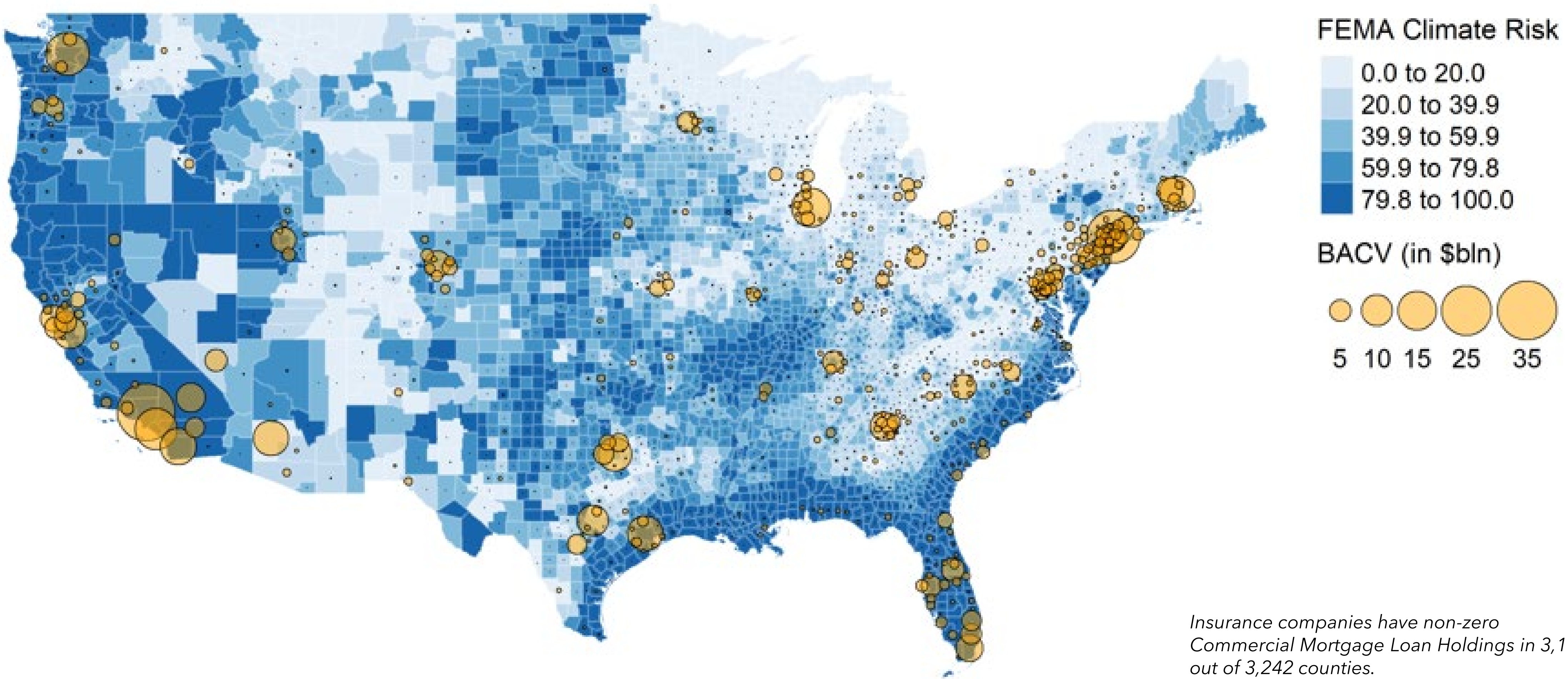
- **Insurers are significant holders of real estate investments** – ≈ 15% of their total cash & invested assets – and the total amount of real estate investments have been **growing over time**
- Commercial (≈ $1 trillion) and residential (≈ $250 billion) real estate investments are made through a **variety of asset types**, not just mortgages
- From a CRE perspective, the insurance industry – primarily through **life insurers** – holds significant amounts of the overall **commercial mortgage (16%) and CMBS markets (31%)**
- Commercial mortgages are held through multiple property types, but **multi-family and office** are the largest categories

Matching Commercial Mortgage Holdings to Climate Risk Indicators

- Mapped 94% of Commercial mortgage loans to ZIP code level
- Match Commercial Mortgage Loans to FEMA National Risk Index data
- FEMA Score of Expected Annual Loss (EAL) In Building Value is a normalized Expected Annual Loss (EAL):
  - First, FEMA calculates **EAL** as the fraction of a value of buildings that could be expected to be lost annually on average.
  - Second, FEMA ranks the EAL for a peril and then scales this rank between 0 and 100 to create a **score**.

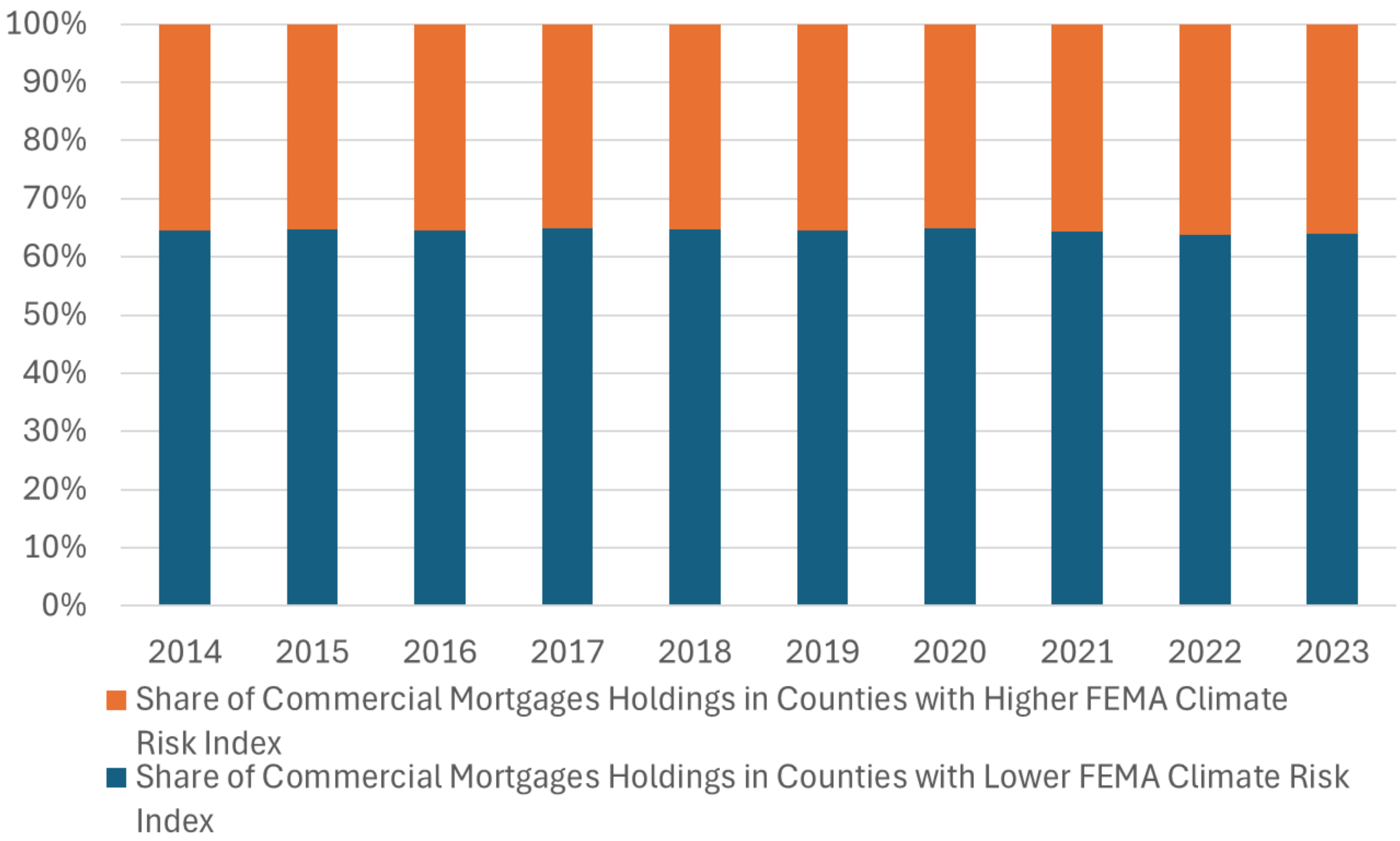
*__Source:__ https://www.fema.gov/sites/default/files/documents/fema_national-risk-index_technical-documentation.pdf, page 5-36

Commercial Mortgage Loan Holdings & FEMA Climate Risk Index

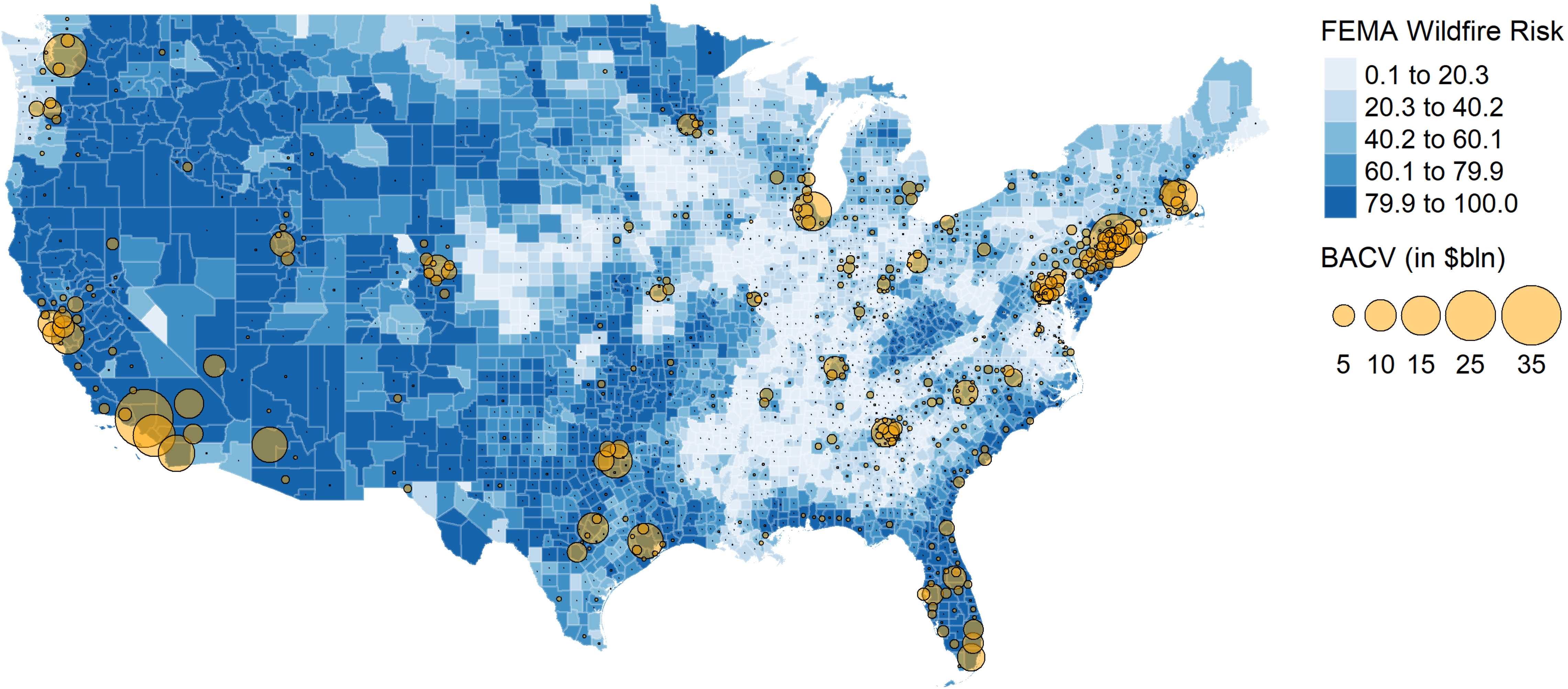


Insurance companies have non-zero Commercial Mortgage Loan Holdings in 3,107 out of 3,242 counties.
Map does not include "AK", "HI", "PR".

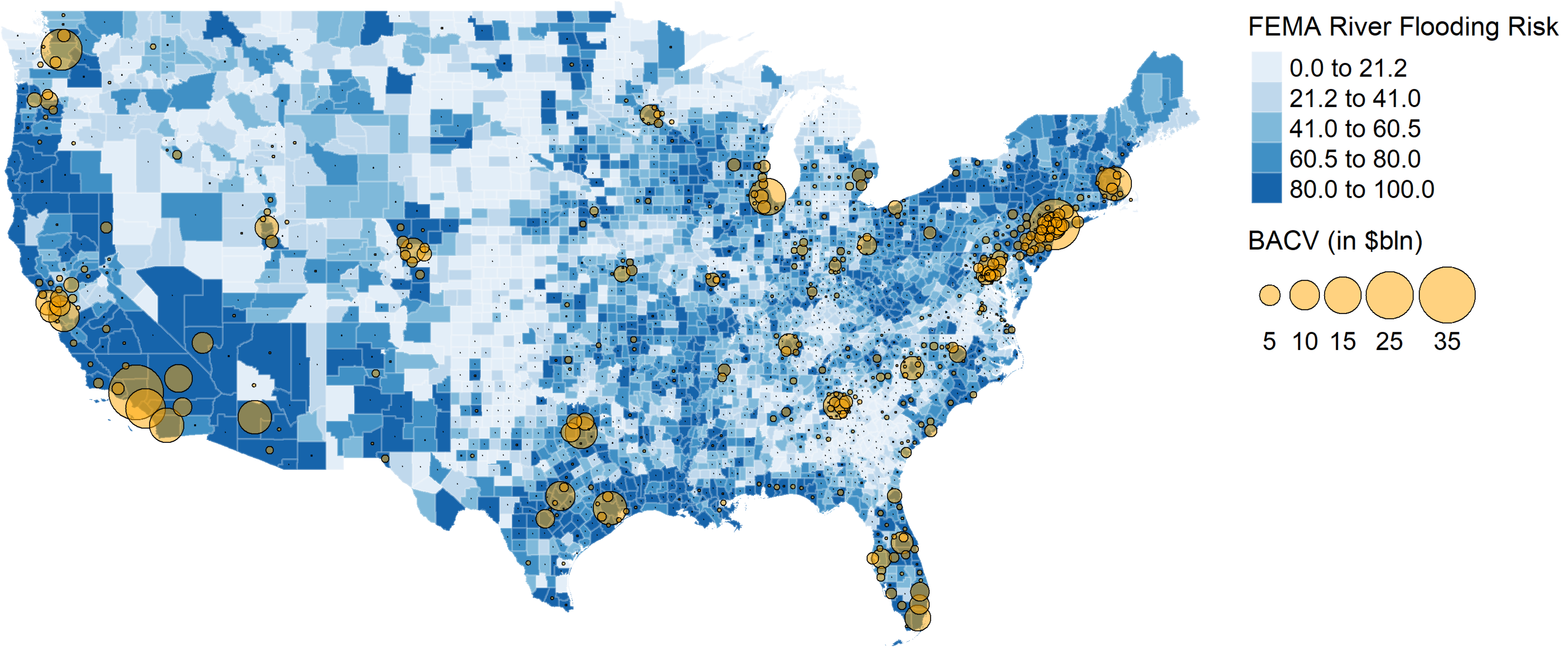
Share of Commercial Mortgage Loan Holdings in Lower (Blue) and Higher (Orange) FEMA Climate Risk Score Counties



Commercial Mortgage Loan Holdings & FEMA Wildfire Risk Index, 2023



Commercial Mortgage Loan Holdings & FEMA River Flooding Risk Index, 2023



Commercial Mortgage Loan Exposure At U.S. Life Insurers

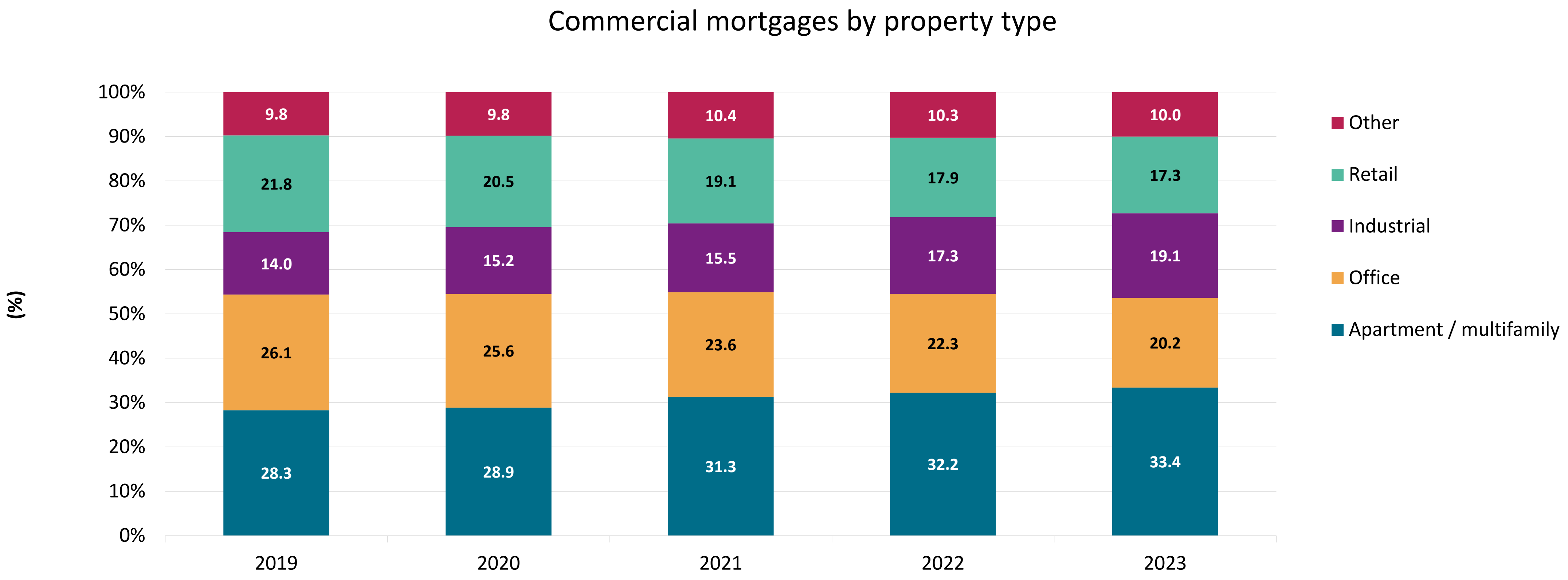
Carmi Margalit
Managing Director
Life Insurance Sector Lead

November 19, 2024

S&P Global Ratings

This report does not constitute a rating action

Office Properties Are Slowly Declining As A Share Of Commercial Mortgages

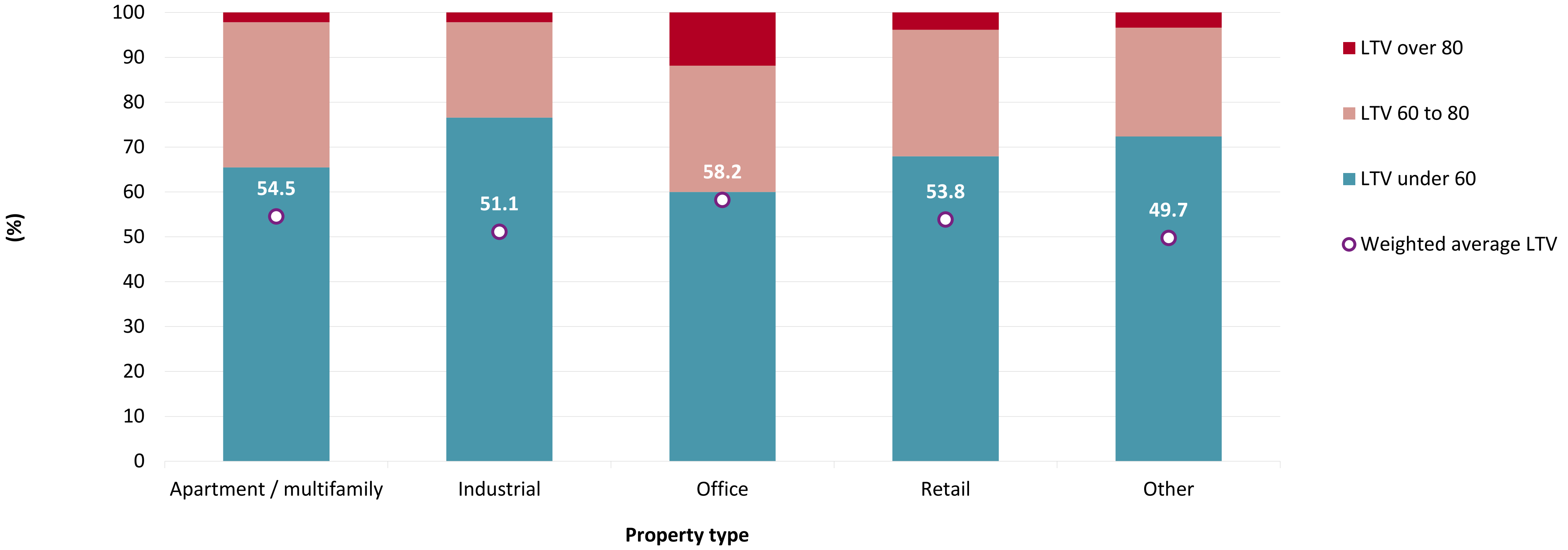


Sources: S&P Capital IQ Pro and S&P Global Ratings.

Life Insurers Tend To Be Conservative Underwriters Of CML

At end-2023, the weighted average of loan-to-value ratios for all property types was under 60%.

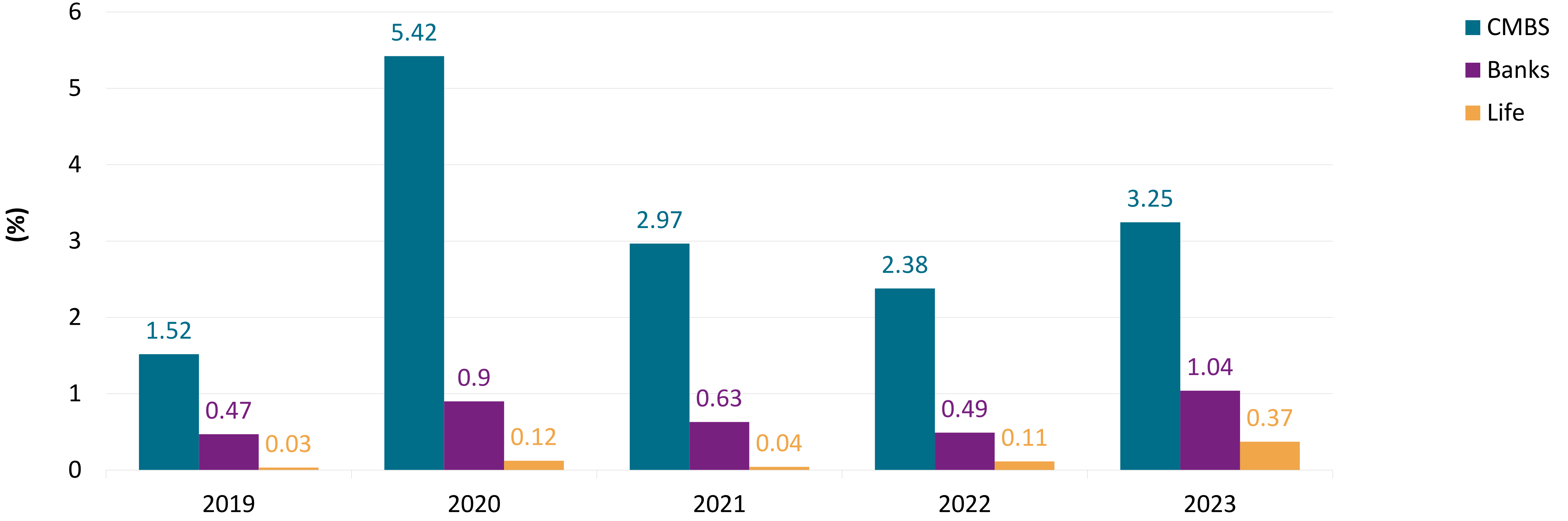
Loan-to-value distribution by property type as of Dec. 31, 2023



LTV--Loan-to-value ratio. DSCR – debt service coverage ratio. LTVs are based on latest appraisals; the weighted-average age of appraisals is 2.7 years.
Source: S&P Global Ratings.

Life Insurers' Commercial Mortgages Are Holding Up Well

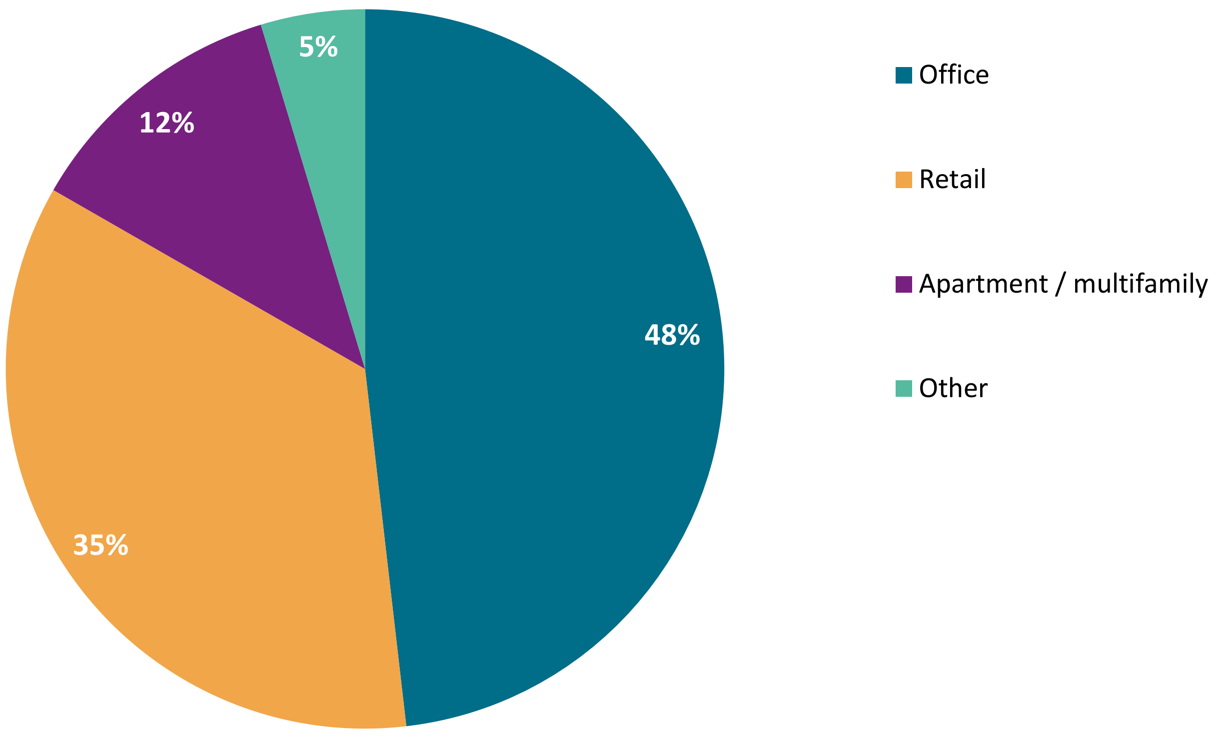
U.S. CMBS, banks & life insurers--Percentage of loans that are 90+ days delinquent or in foreclosure



Figures are as of each year-end. Sources: S&P Capital IQ Pro and S&P Global Ratings.

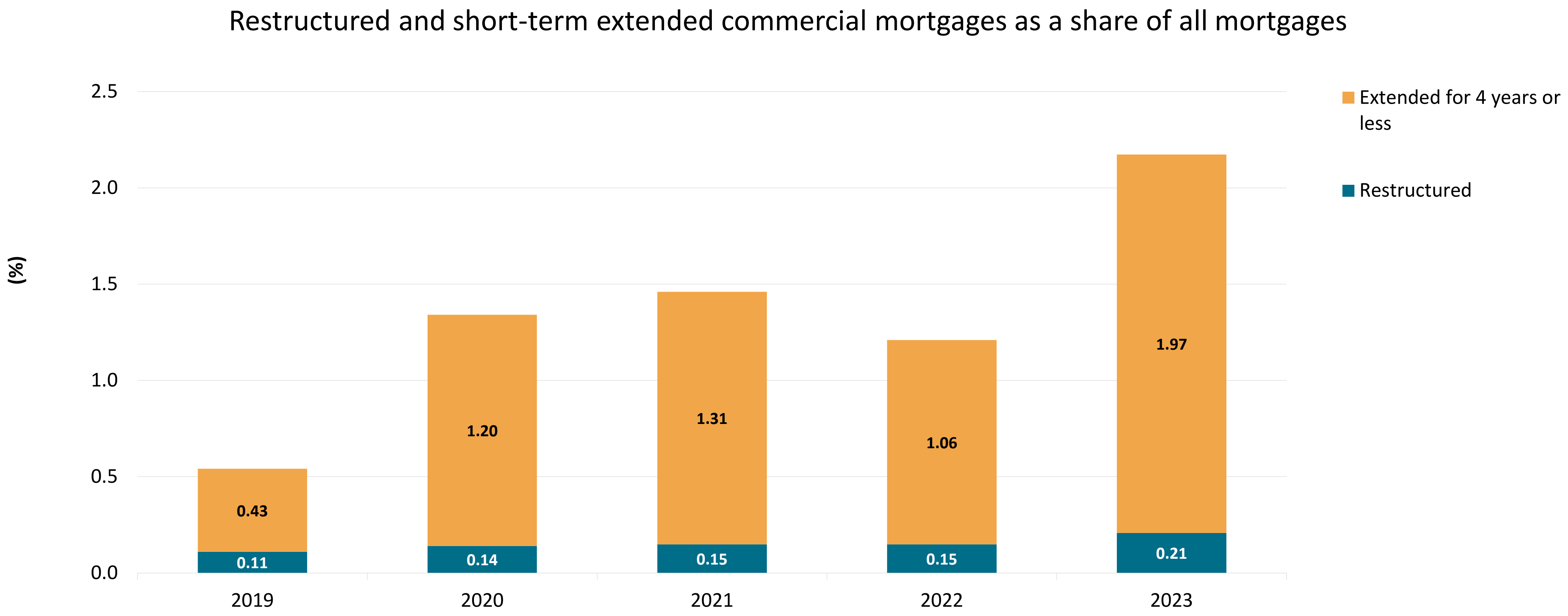
Delinquencies And Foreclosures Are Mostly In Office And Retail

U.S. life insurer's 90+ day delinquent and in-foreclosure CML by property type



As of Dec. 31, 2023. CML--Commercial mortgage loans. Source: S&P Capital IQ Pro.

Extensions Are Increasing



Sources: S&P Capital IQ Pro and S&P Global Ratings

S&P Global Ratings

U.S. Life Insurers Can Withstand Deep Losses On Office Mortgages

Total losses on office mortgages as a share of statutory surplus (%)

Decline in office property value (%)	U.S. life industry	Range for individual companies	Median life insurer
20	0.5	0.0-6.6	0.0
40	2.0	1.1-14.0	0.3
50	4.1	0.0-21.6	1.4
75	13.5	0.0-58.6	7.7

Sources: S&P Capital IQ Pro and S&P Global Ratings.

S&P Global
Ratings

- We calculated total losses on office mortgages given steep theoretical declines in property value.
- Total losses = Sum of losses on each loan (assuming **all** office properties decline in value by the given percentage).
- Declines in property value are from the latest appraisal. On Dec. 31, 2023, the weighted-average age of office appraisals was 2.9 years.
- These are **extreme stress scenarios**; the likelihood that **all** office properties experience such large drops in value is exceedingly remote.

Real Estate Investing for Social Impact

Kelly D. Edmiston, Ph.D.
Policy Research Manager

(with Anna Fitzgerald, Patrick Cho, and Jeff Czajkowski)

NAIC 2024 Fall National Meeting
CIPR Event

11/19/2024

NAIC NATIONAL ASSOCIATION OF INSURANCE COMMISSIONERS

Real Estate Investing for Social Impact

- As we have seen, insurers may invest in real estate in myriad ways.
- They also invest in real estate for different reasons, one of which may be **social impact** (with an acceptable risk-adjusted return).

- The predominant ways insurers invest in the real estate market with social impact investments is
  - **Commercial and Residential Mortgages**.
  - **Low-Income Housing Tax Credits** (**LIHTCs**).

Commercial and Residential Mortgages

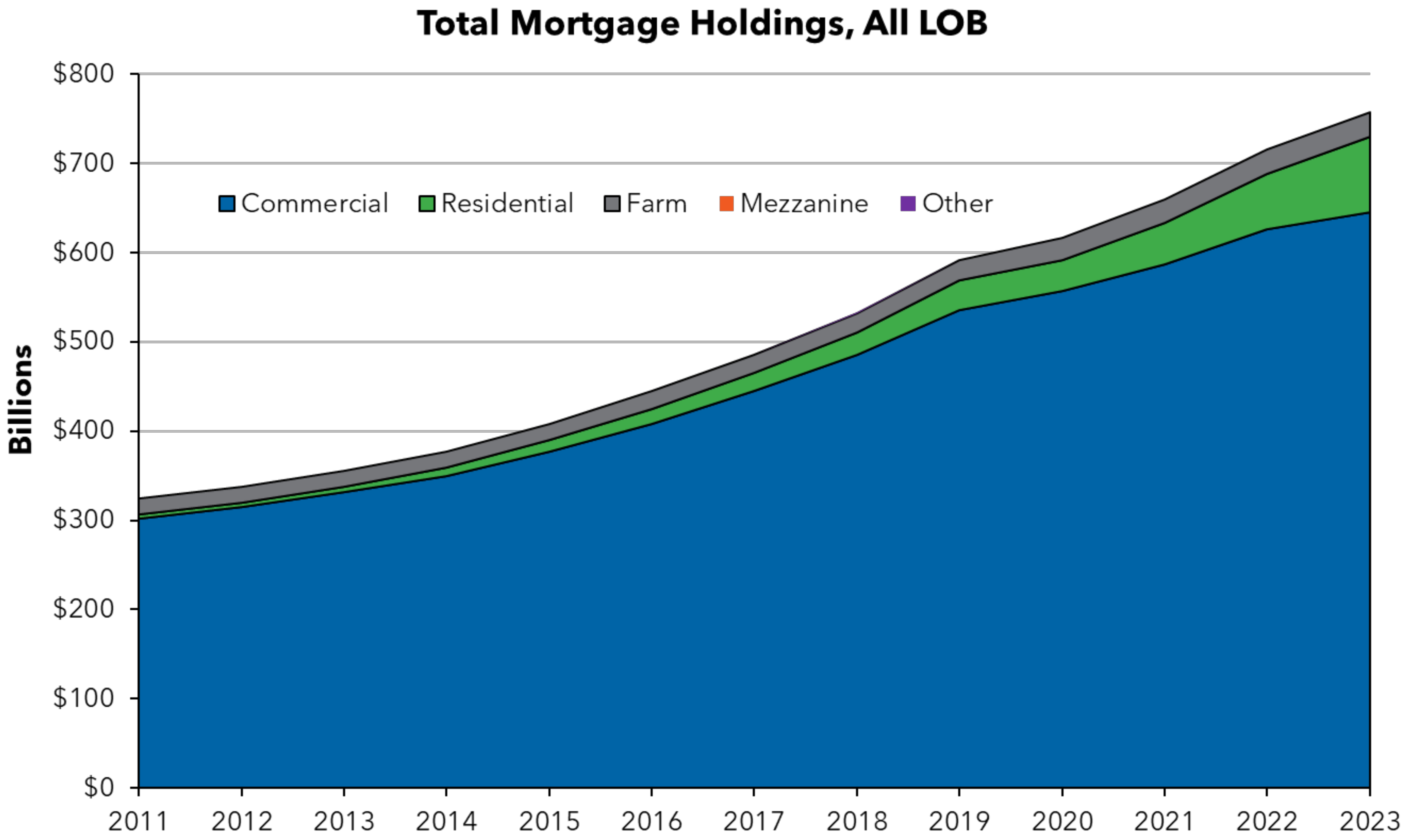
Real Estate Investing for Social Impact

NAIC NATIONAL ASSOCIATION OF INSURANCE COMMISSIONERS

Mortgage Investing for Social Impact

- **Why Invest in Mortgages?**
  - An especially good diversifier because not correlated to other capital markets.
  - Good long-term investment for
    - Asset/Liquidity Management.
    - Cash Flow Management.
  - Duration Matching – ensuring there is not a mismatch between when assets mature and when liabilities come due.

Total Mortgage Holdings by Insurers



Insurer holdings of mortgages have increased steadily over the last decade, although at a slower rate post-2019.

Source: CIPR/NAIC
Data Source: NAIC

Social Impact Mortgage Holdings by Insurers

From Schedule B, Top 5 Investments, Insurer ABC

Affordable LMI Ownership Housing	**$ 938,511,466**
Residential	78%
GARDEN_APARTMENT	6%
CANYON CLUB APARTMENTS	5%
COYOTE CREEK MOBIL HOME PARK - MOBILE/MANUFACT. HOMES	2%
RENAISSANCE APTS - PHASE 1	2%
Top 5 investments	**92%**
Affordable LMI Rental Housing	**$ 1,130,806,390**
Cumulus District, Apartment	27%
Commercial- Apartment/Multifamily	22%
1844 Market Street - Venn Apartments	5%
THE PARKER, APARTMENT	5%
HTFD PARK CENTRAL WHLN 2018	4%
Top 5 investments	**62%**

Community Development	**$ 7,316,113,498**
Commercial- Office	15%
Commercial- Industrial	7%
Elevator Apartments (300-999 Units)	4%
Commerical Mortage Loan	3%
Warehouse (Non-Rail)	3%
Top 5 investments	**32%**

Social Impact Mortgages

Mortgage Type	Commercial		Residential		Total	
	BACV ($M)	[Percent]	BACV ($M)	[Percent]	BACV ($M)	[Percent]
Social Impact		**of SI**		**of SI**		**of SI**
Affordable Housing	$2,368.4	17.0%	$679.5	65.3%	$3,047.9	**20.4%**
Comm. Develop.	$11,210.2	80.7%	$352.7	33.9%	$11,562.9	**77.4%**
Social Services	$314.1	2.3%	$8.7	0.8%	$322.8	**2.2%**
	BACV ($M)	**[Percent]**	**BACV ($M)**	**[Percent]**	**BACV ($M)**	**[Percent]**
		of Total		**of Total**		**of Total**
Social Impact	**$13,892.7**	**2.2%***	**$1,040.9**	**1.7%***	**$14,933.6**	**2.2%***
Not Social Impact*	**$612,902.6**	**97.8%**	**$60,599.3**	**98.3%**	**$673,501.8**	**97.8%**
Total	**$626,795.3**	**100.0%**	**$61,640.2**	**100.0%**	**$688,435.4**	**100.0%**

*Some Mortgages labeled "Not Social Impact" could be social impact investments, but we could not definitively say in some cases. Therefore, the percentages (2.2% for commercial and total and 1.7% for residential) should be considered lower bounds, although we suspect we have captured most social impact-related mortgages.

Relative Performance of Social Impact Mortgages

Millions

Non-SII*	Good Standing	Interest > 90 Days	In Foreclosure	Restructured	Mezzanine	Total
Commercial	$624,924	**$124**	**$635**	**$1,113**		$626,795
Residential	$59,697	**$971**	**$511**	**$461**		$61,640
Farm	$26,719	**$121**	**$23**	**$24**		$26,888
Mezzanine					$139	$139
Social Impact	**Good Standing**	**Interest > 90 Days**	**In Foreclosure**	**Restructured**		**Total**
Commercial	$14,286					$14,286
Residential	$989	$22	$9	$21		$1,041
Farm	$364					$364

Non-SII*	Good Standing	Interest > 90 Days	In Foreclosure	Restructured	Total
Commercial	**99.7%**	0.0%	0.1%	0.2%	100.0%
Residential	**96.8%**	1.6%	0.8%	0.7%	100.0%
Farm	**99.4%**	0.5%	0.1%	0.1%	100.0%
Mezzanine	N/A				N/A
Social Impact	**Good Standing**	**Interest > 90 Days**	**In Foreclosure**	**Restructured**	**Total**
Commercial	**100.0%**				100.0%
Residential	**95.0%**	2.1%	0.8%	2.0%	100.0%
Farm	**100.0%**				100.0%

Low-Income Housing Tax Credits

Real Estate Investing for Social Impact

NAIC NATIONAL ASSOCIATION OF INSURANCE COMMISSIONERS

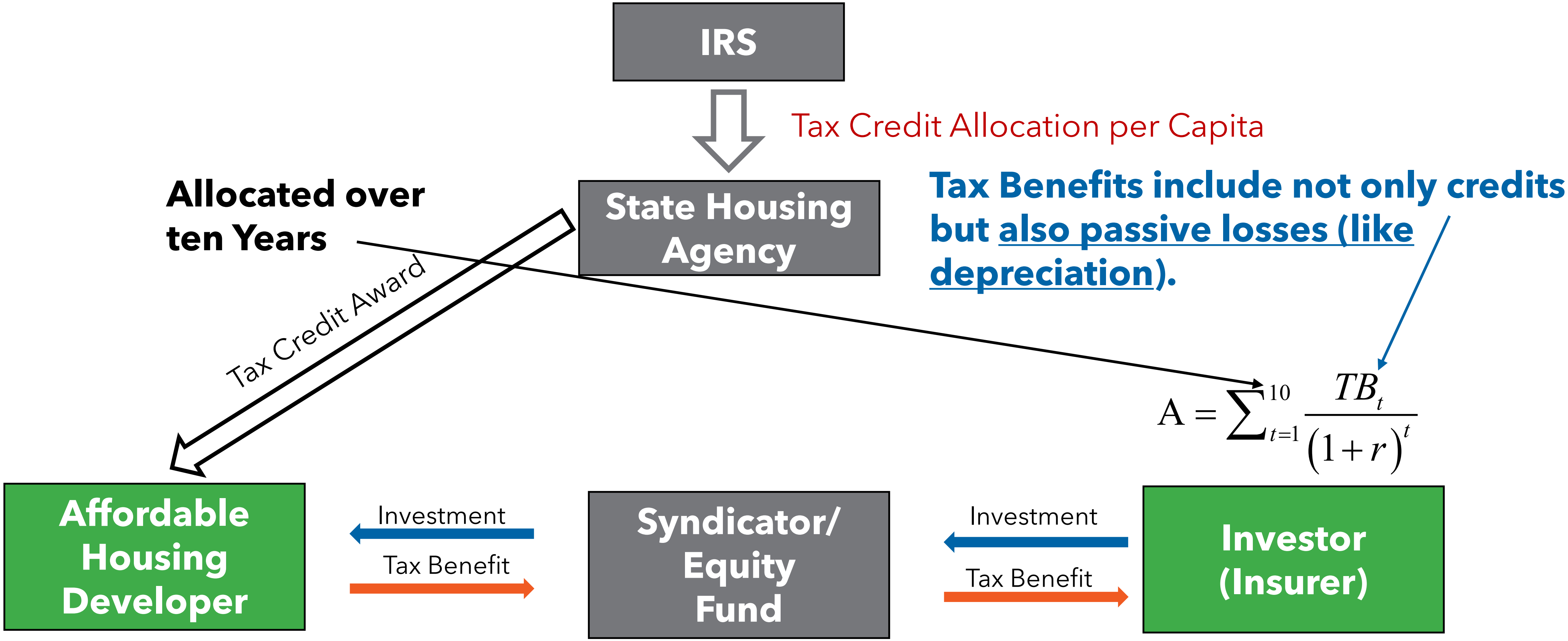
Low-Income Housing Tax Credits

- The **most significant source of affordable housing** in the United States.
- Awards **developers** **federal tax credits ($1 for $1**) to offset construction costs (is competitive)
- Additional tax benefits accrue from **passive losses**, such as depreciation.

- Developers need **upfront financing** to complete construction and are usually **non-profit entities** that cannot use the tax credits.
- Developers therefore sell tax credits to **outside investors** in exchange for immediate **equity financing**.

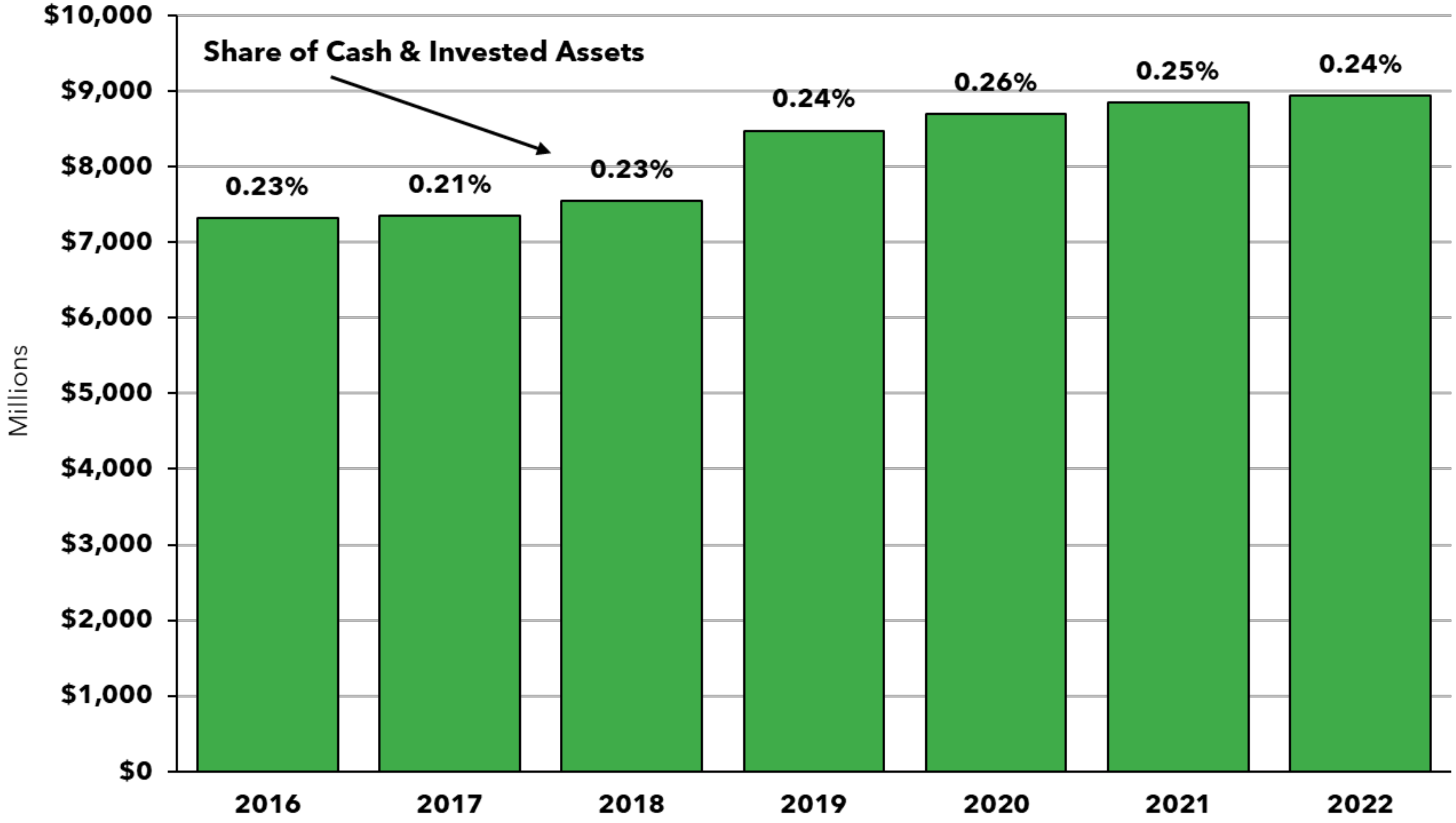
Low-Income Housing Tax Credits: Indirect Investment

(most common method)

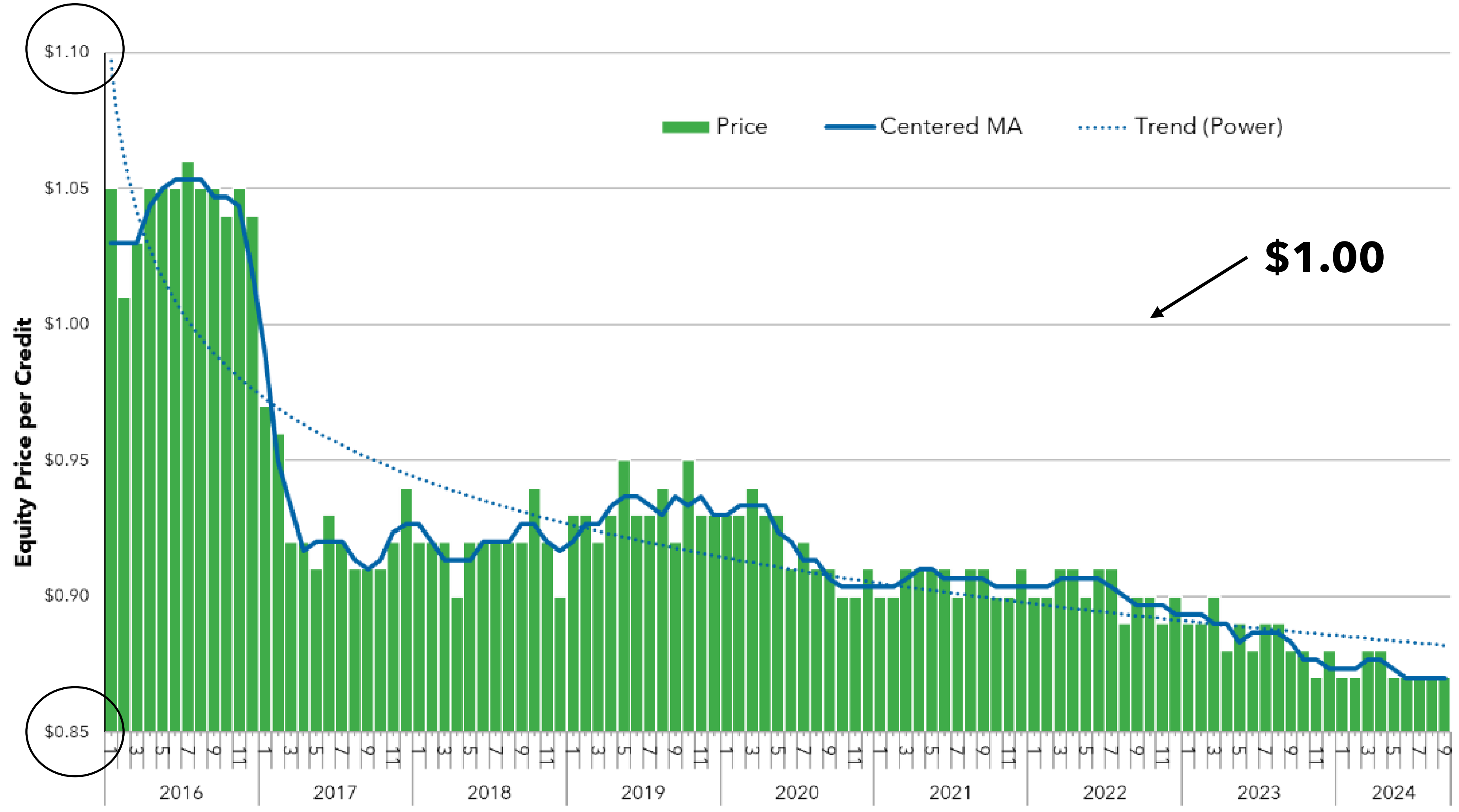


Low-Income Housing Tax Credits

Insurer LIHTC Investments Over Time



Tax Credit Prices 2016 – 2024



Calculating IRR

Investor Benefit Schedule

Credit

Deduction

(D x 0.21) = B

$$\text{NPV} = \sum_{t=0}^{T} \frac{CF_t}{(1+\textbf{IRR})^t} - p_{t=0} = 0$$

XYZ

[redacted] LP

Volume Discount III ($35M+)

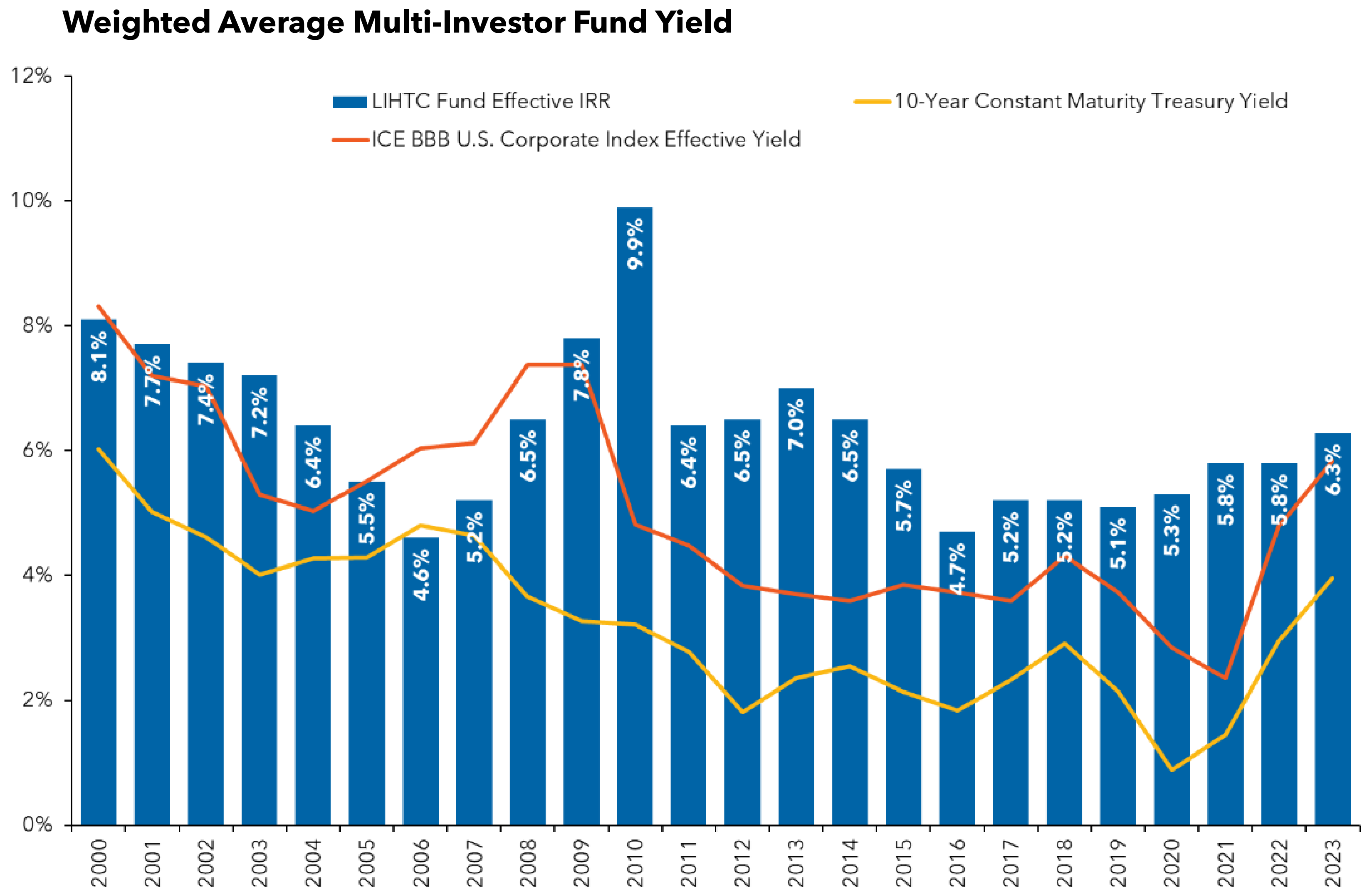
Investor Benefit Schedule:

Year	Capital Contribution	Financing & Interest Expense	Federal LIHTC	State LIHTC	Federal ITC	Federal HTC	Tax Deductions	Tax Gain/(Loss) On Dispos.	Total Tax Deductions	Assumed Tax Rate	Total After-tax Benefits	Non-Tax-Related Cash Returns	Net After-tax Benefits	Cumulative Net Cash Flow
	A	B	C	D	E	F	G	H	I	J	K	L	M	N
									=B+G+H	Federal Tax Rate 21.00%	C+D*(100%-J)+E+F+I*J		=A+K+L	
2024	8,312,725	-	822,409	-	67,237	99,971	(3,779,758)	-	(3,779,758)	21.00%	1,783,366	-	(6,529,359)	(6,529,359)
2025	13,956,723	-	2,727,839	-	58,058	117,248	(7,005,020)	-	(7,005,020)	21.00%	4,374,199	-	(9,582,524)	(16,111,883)
2026	8,114,374	-	3,608,775	-	-	110,138	(4,411,974)	-	(4,411,974)	21.00%	4,645,428	-	(3,468,946)	(19,580,829)
2027	3,173,622	-	3,696,479	-	-	110,138	(3,319,844)	-	(3,319,844)	21.00%	4,503,784	-	1,330,162	(18,250,667)
2028	36,064	-	3,696,479	-	-	110,138	(3,024,821)	-	(3,024,821)	21.00%	4,441,829	-	4,405,765	(13,844,901)
2029	36,064	-	3,696,479	-	-	10,167	(2,790,291)	-	(2,790,291)	21.00%	4,292,607	-	4,256,543	(9,588,358)
2030	36,064	-	3,696,479	-	-	-	(2,502,646)	-	(2,502,646)	21.00%	4,222,035	-	4,185,971	(5,402,388)
2031	577,022	-	3,696,479	-	-	-	(2,340,721)	-	(2,340,721)	21.00%	4,188,030	-	3,611,008	(1,791,379)
2032	36,064	-	3,696,479	-	-	-	(2,164,272)	-	(2,164,272)	21.00%	4,150,976	-	4,114,912	2,323,533
2033	36,064	-	3,714,268	-	-	-	(2,096,380)	-	(2,096,380)	21.00%	4,154,508	-	4,118,444	6,441,977
2034	36,064	-	2,849,497	-	-	-	(2,072,554)	-	(2,072,554)	21.00%	3,284,733	-	3,248,669	9,690,646
2035	36,064	-	971,073	-	-	-	(2,077,448)	-	(2,077,448)	21.00%	1,407,337	-	1,371,273	11,061,919
2036	36,064	-	84,024	-	-	-	(2,155,139)	-	(2,155,139)	21.00%	536,603	-	500,539	11,562,458
2037	36,064	-	-	-	-	-	(1,845,702)	-	(1,845,702)	21.00%	387,597	-	351,533	11,913,992
2038	36,064	-	-	-	-	-	(1,835,085)	-	(1,835,085)	21.00%	385,368	-	349,304	12,263,296
2039	36,064	-	-	-	-	-	(1,738,853)	-	(1,738,853)	21.00%	365,159	-	329,095	12,592,391
2040	468,830	-	-	-	-	-	(196,436)	-	(196,436)	21.00%	41,252	-	(427,578)	12,164,812
2041	-	-	-	-	-	-	-	-	-	21.00%	-	-	-	12,164,812
	35,000,000	-	36,956,759	-	125,295	557,800	(45,356,944)	-	(45,356,944)		47,164,812	-	12,164,812	
Final Disposition- 2041								10,977,392	10,977,392	21.00%	(2,305,252)	-	(2,305,252)	9,859,560
	35,000,000	-	36,956,759	-	125,295	557,800	(45,356,944)	10,977,392	(34,379,552)		44,859,560	-	9,859,560	

Calculating IRR

Alternative Quarterly IRR at Varying LIHTC Equity Prices
(from previous benefit schedule)

Weighted Average IRR, Multi-Investor Funds



Other Social Impact Investments

Real Estate Investing for Social Impact

Other Investments for Social Impact

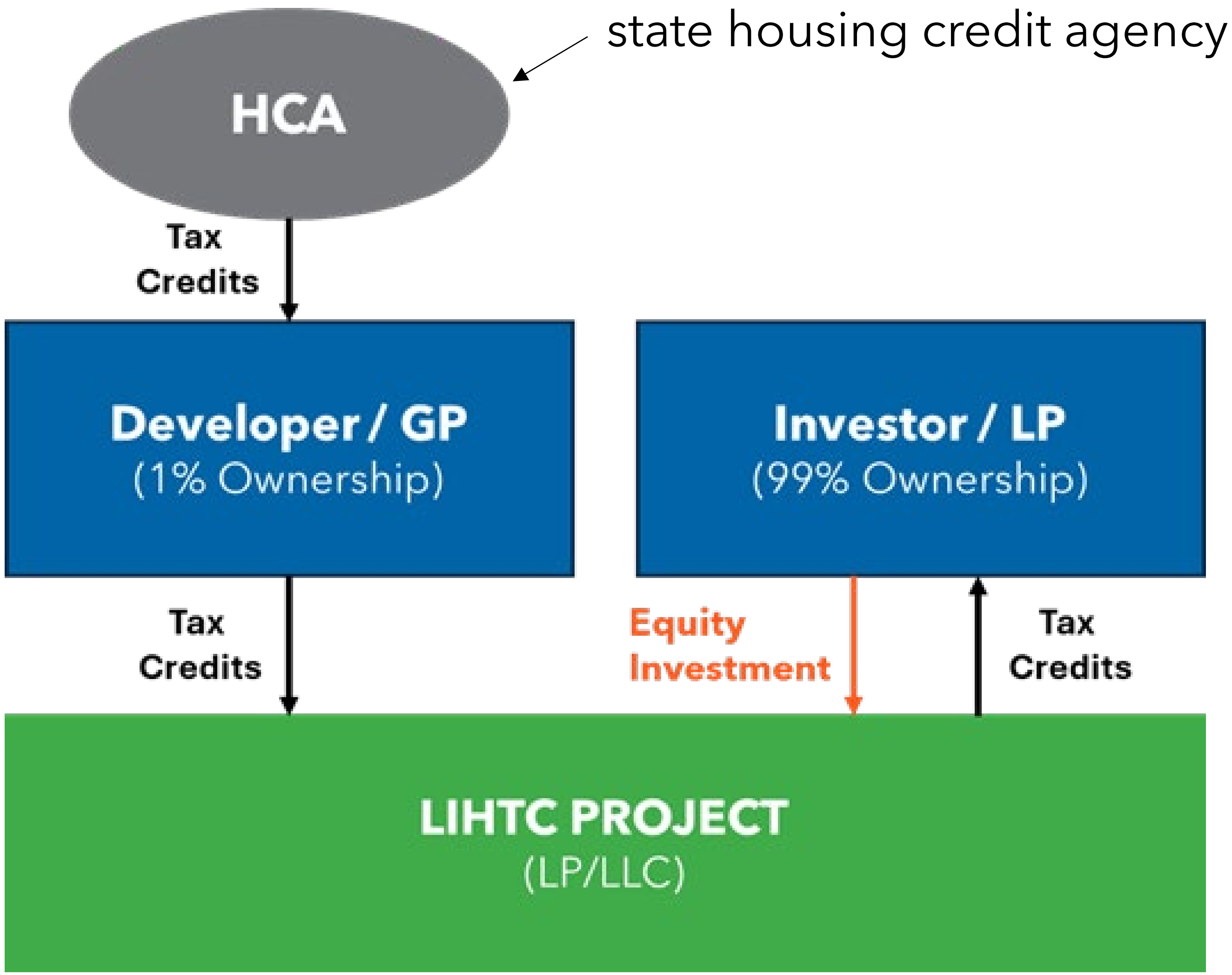
- There are myriad additional **real estate** investment avenues for making a social impact. Included are
  - **Municipal Bonds**
    - A significant number of bonds are issued to help finance affordable housing. Especially relevant are private activity bonds, which use public borrowing for private purposes.
  - **Community Development Financial Institutions** (CDFIs)
    - CDFIs are pivotal for financing and promoting community and economic development in underserved areas.
    - Are mostly specialized banks but also include credit unions, **loan funds**, and (rarely) venture capitalists.
    - A substantial portion of CDFI lending is targeted at affordable housing.
  - **Private Equity Social Infrastructure Funds**
    - Private equity has increasingly become a significant player in the social infrastructure and social impact space, including financing the development of affordable housing projects.

Reference Slides

Real Estate Investing for Social Impact

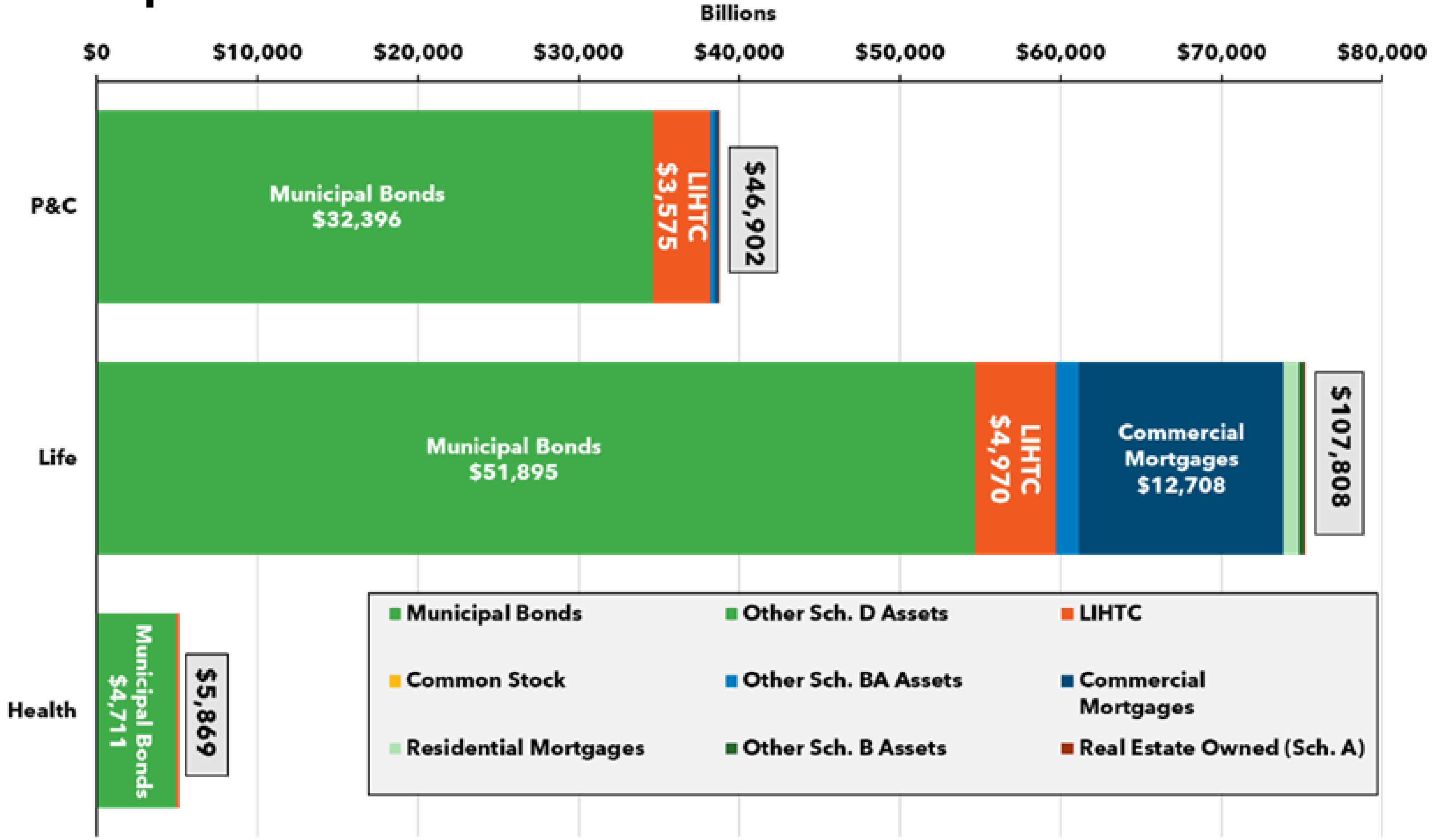
NAIC NATIONAL ASSOCIATION OF INSURANCE COMMISSIONERS

Low-Income Housing Tax Credits: Direct Investment



Insurer Exposure to Social Impact Investments

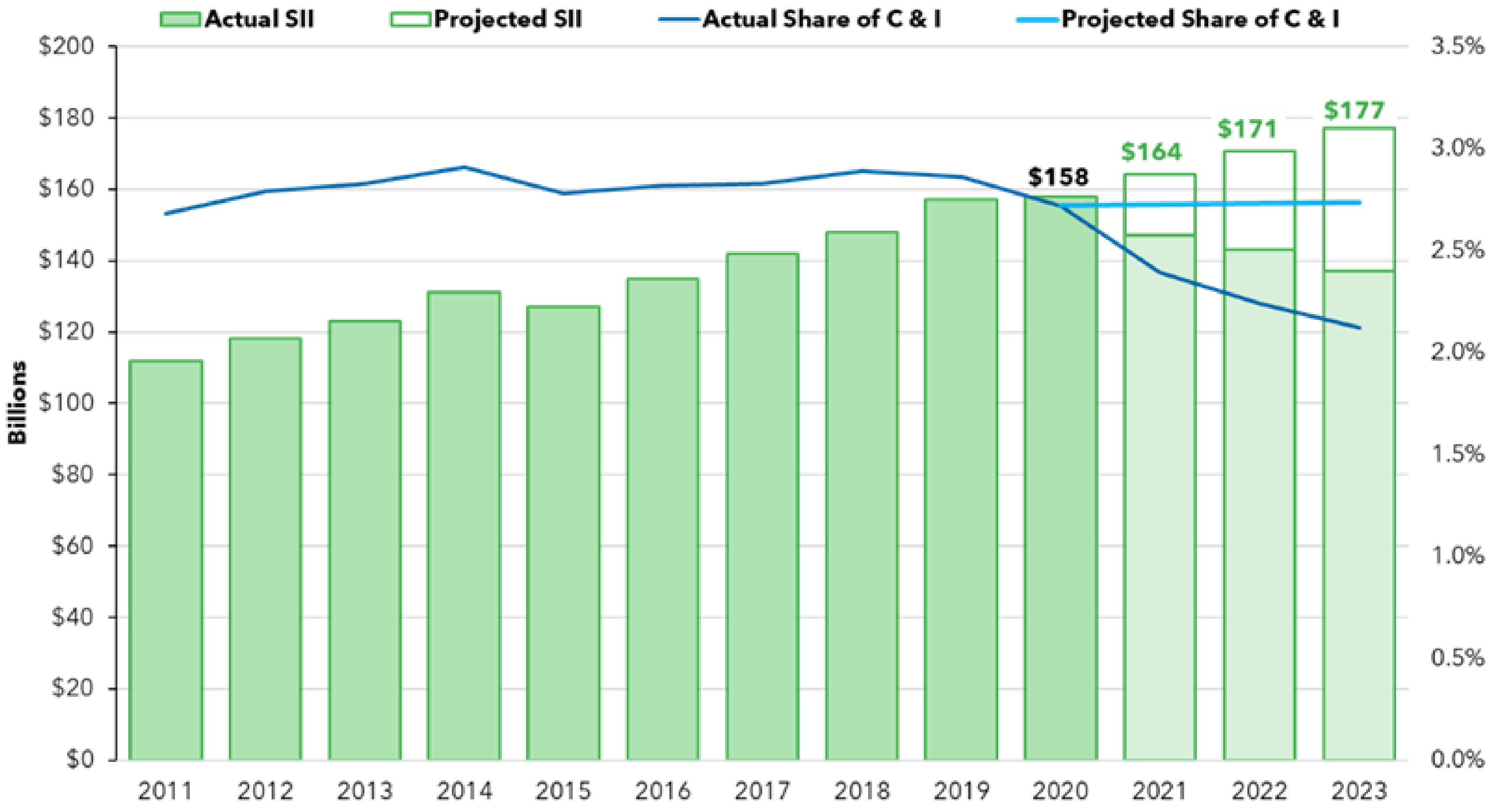
Baseline Exposure of the Insurance Industry to Social Impact Investments



See CIPR report.

Insurer Exposure to Social Impact Investments

Insurance Industry Exposure to Social Impact Investments Over Time



See CIPR report.

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