



AMERICAN ACADEMY *of* ACTUARIES

Objective. Independent. Effective.™

American Academy of Actuaries
Long-Term Care (LTC) Terminations Work Group
Update to NAIC LTC Actuarial Working Group

August 14, 2015

Warren Jones, MAAA, FSA, FCA
Chairperson, LTC Terminations Work Group



Table Used

- Implied lapse rates calculated using:
 - 2012 Individual Annuity Mortality (IAM) Basic Table (without margin)
 - 2012 IAM is age-near-birthday basis
 - LTC is sold on age-last-birthday basis
 - Total terminations less validated mortality used to address issue of miscoded deaths



Data

- LTC intercompany experience data 1984-2007
- Work group specified data that was compiled by the Medical Information Bureau (MIB)
- Data summarized and company de-identified by SOA
- Limited to experience years 1993 - 2006 to address data quality
- Work group believes that the resulting experience is an accurate representation of LTC insured lapse



Granularity of Analysis

- Individual vs. group
- Policy duration
- Without mortality selection vs. with mortality selection
- Top 9 companies by exposure vs. all companies
- Excludes lifetime benefit period (BP) and issue ages 80+
- Attained age group for Individual business



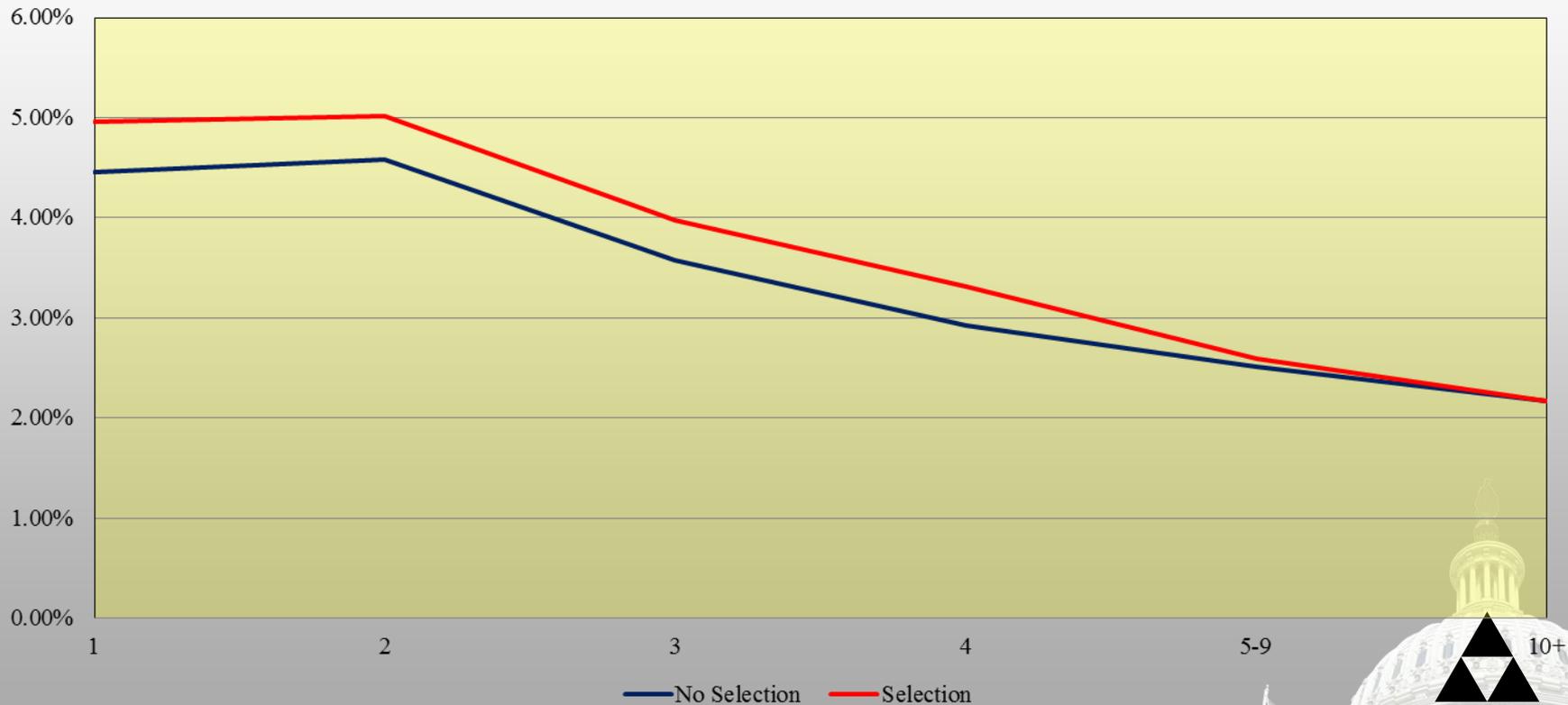
Mortality Selection

- Underwriting selection is observed in actual deaths
- Used mortality selection from validation of 2012 IAM
- With mortality selection is better measure of lapse
- Without mortality selection provides better measure of total terminations

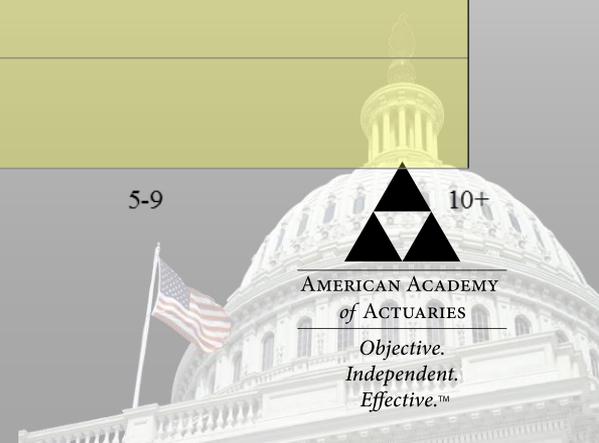


Individual for Top 9 Companies

Top 9 Companies Individual Business Exclude Lifetime BP and IA 80+

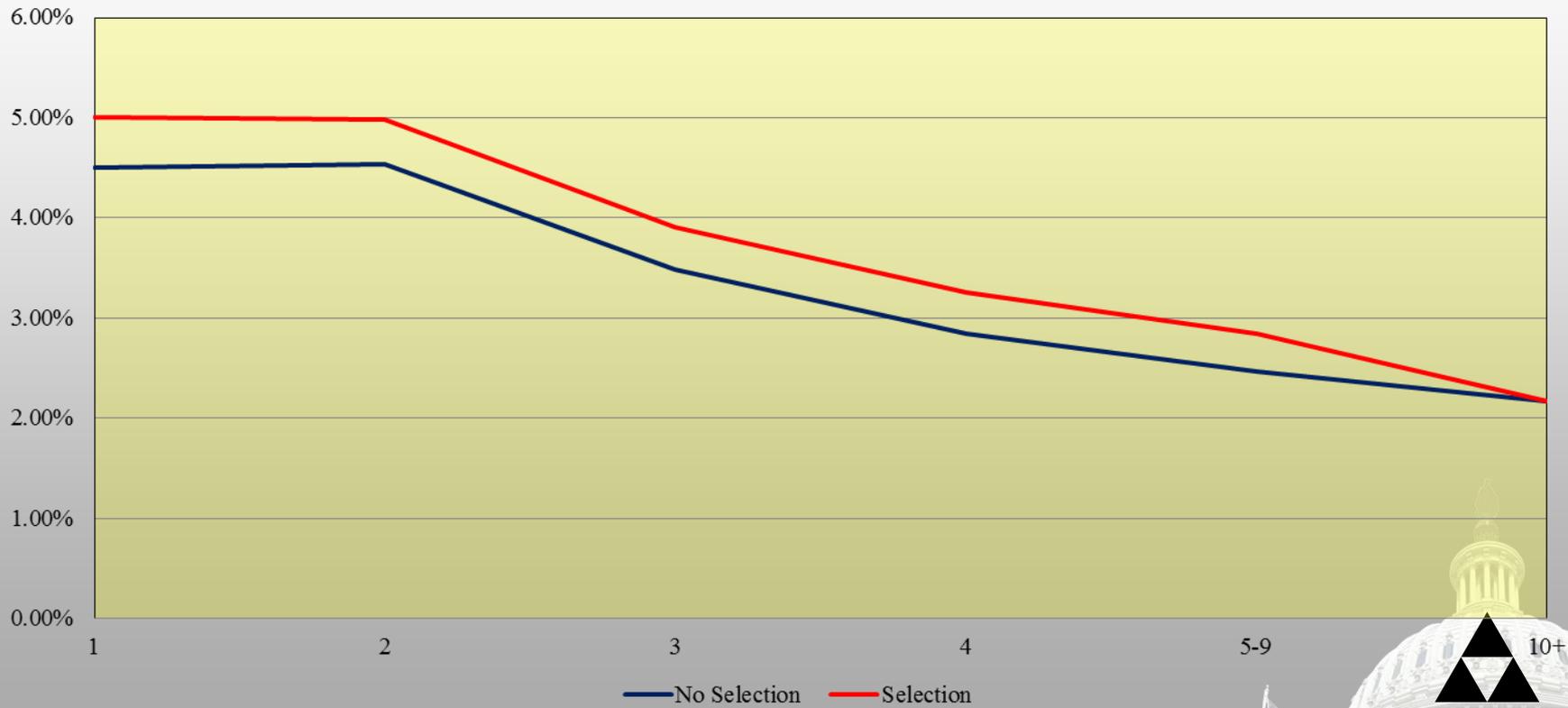


Data compiled by MIB

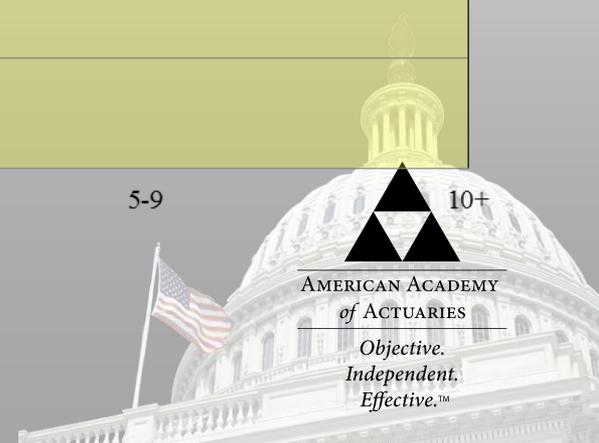


Individual for All Companies

**All Companies
Individual Business
Exclude Lifetime BP and IA 80+**

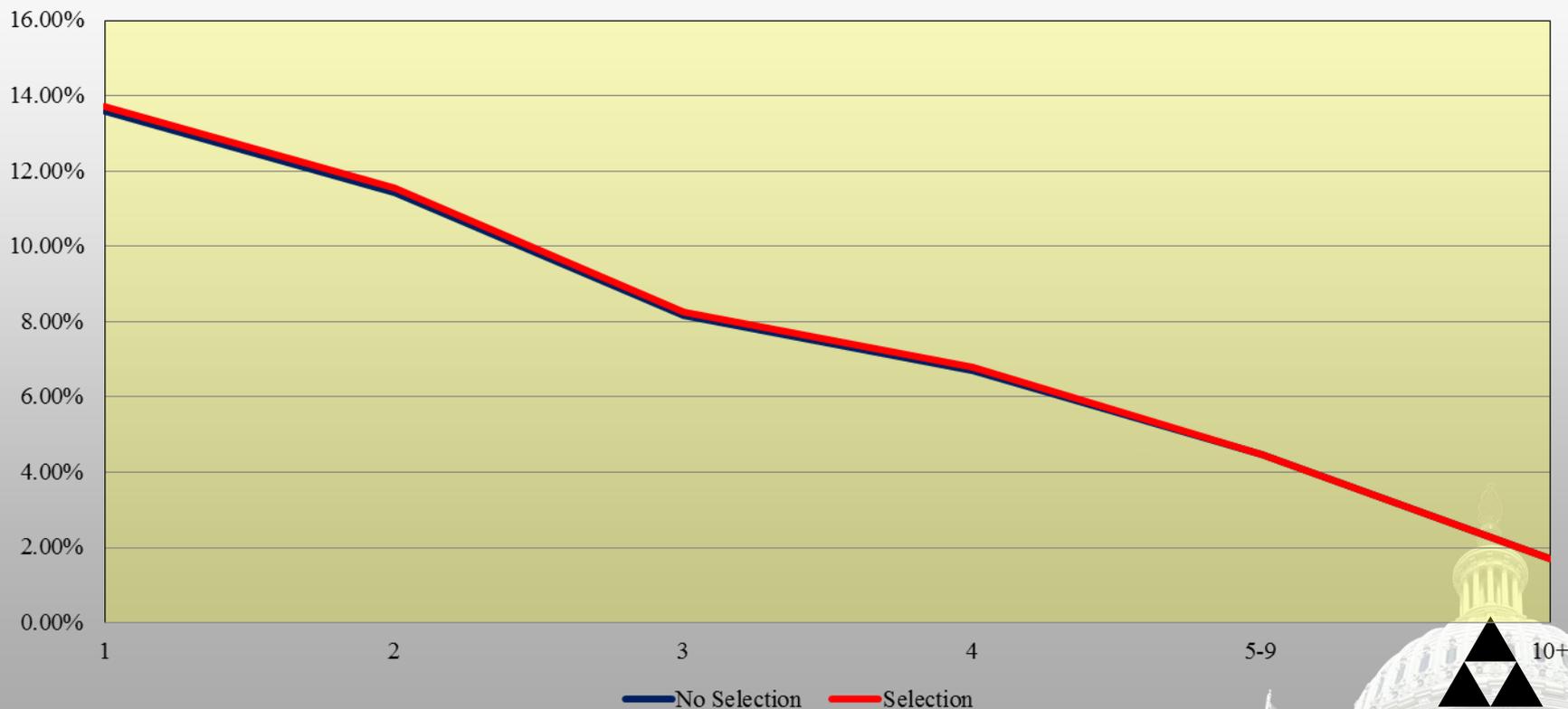


Data compiled by MIB



Group for Top 9 Companies

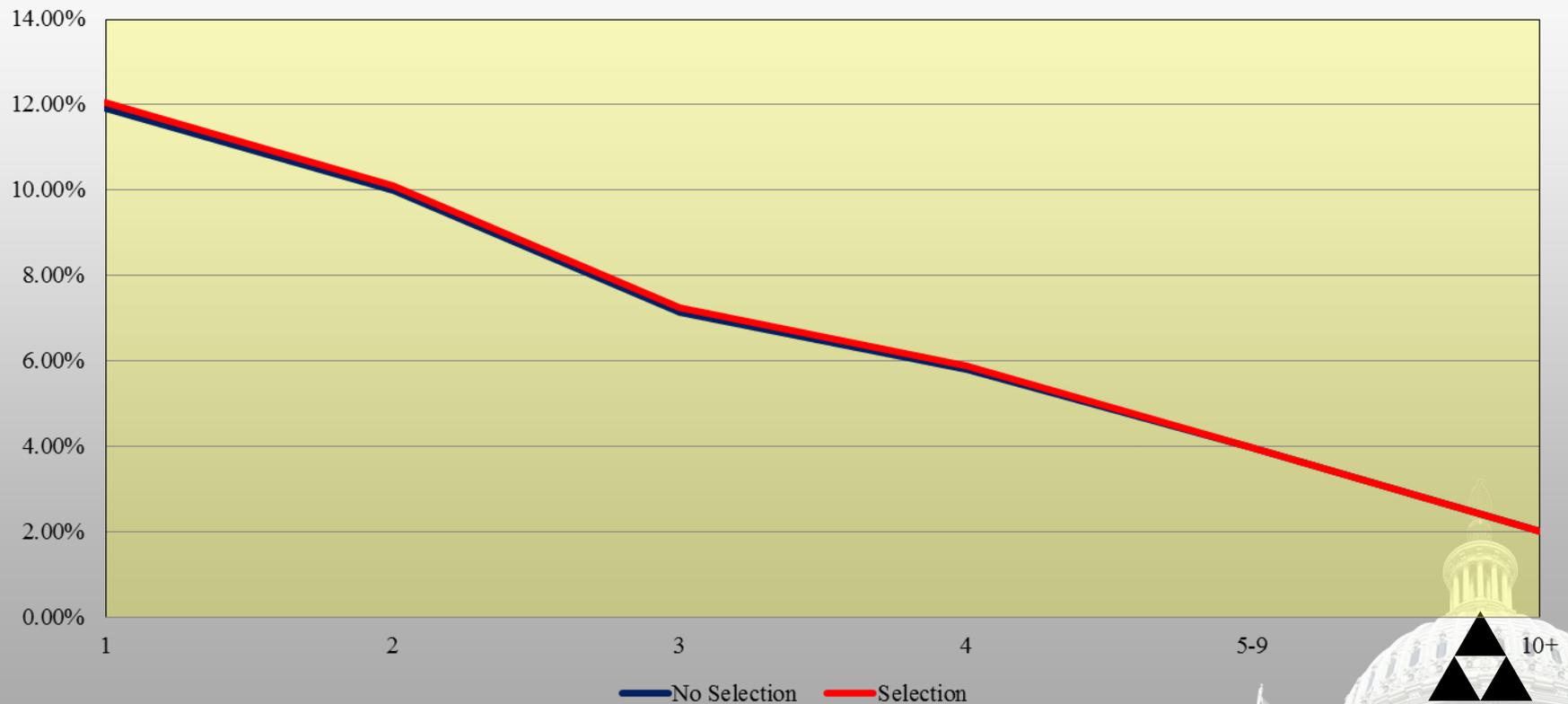
Top 9 Companies Group Business Exclude Lifetime BP and IA 80+



Data compiled by MIB

Group for All Companies

All Companies Group Business Exclude Lifetime BP and IA 80+



Data compiled by MIB

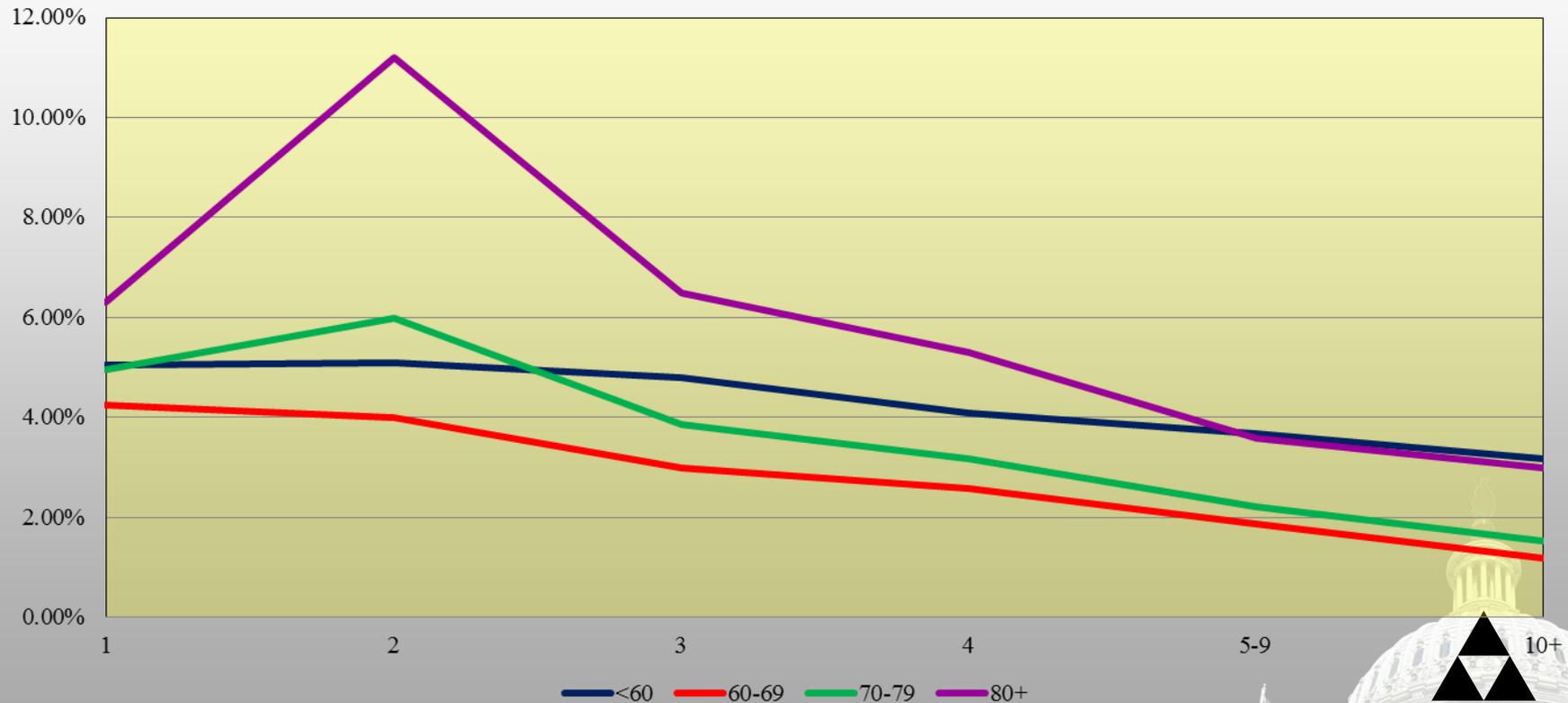
Individual for Attained Age Group

- All companies
- Includes lifetime BP and issue ages 80+
- Oldest and youngest attained age groups have higher lapse rates



Individual for Attained Age Group

All Companies - Attained Age Groups Individual Business With Mortality Selection



Data compiled by MIB

Individual By Calendar Year

- All companies
- Includes lifetime BP and issue ages 80+
- Policy durations 10+



Individual By Calendar Year

All Companies - Calendar Year Individual Business Policy Durations 10+



Data compiled by MIB

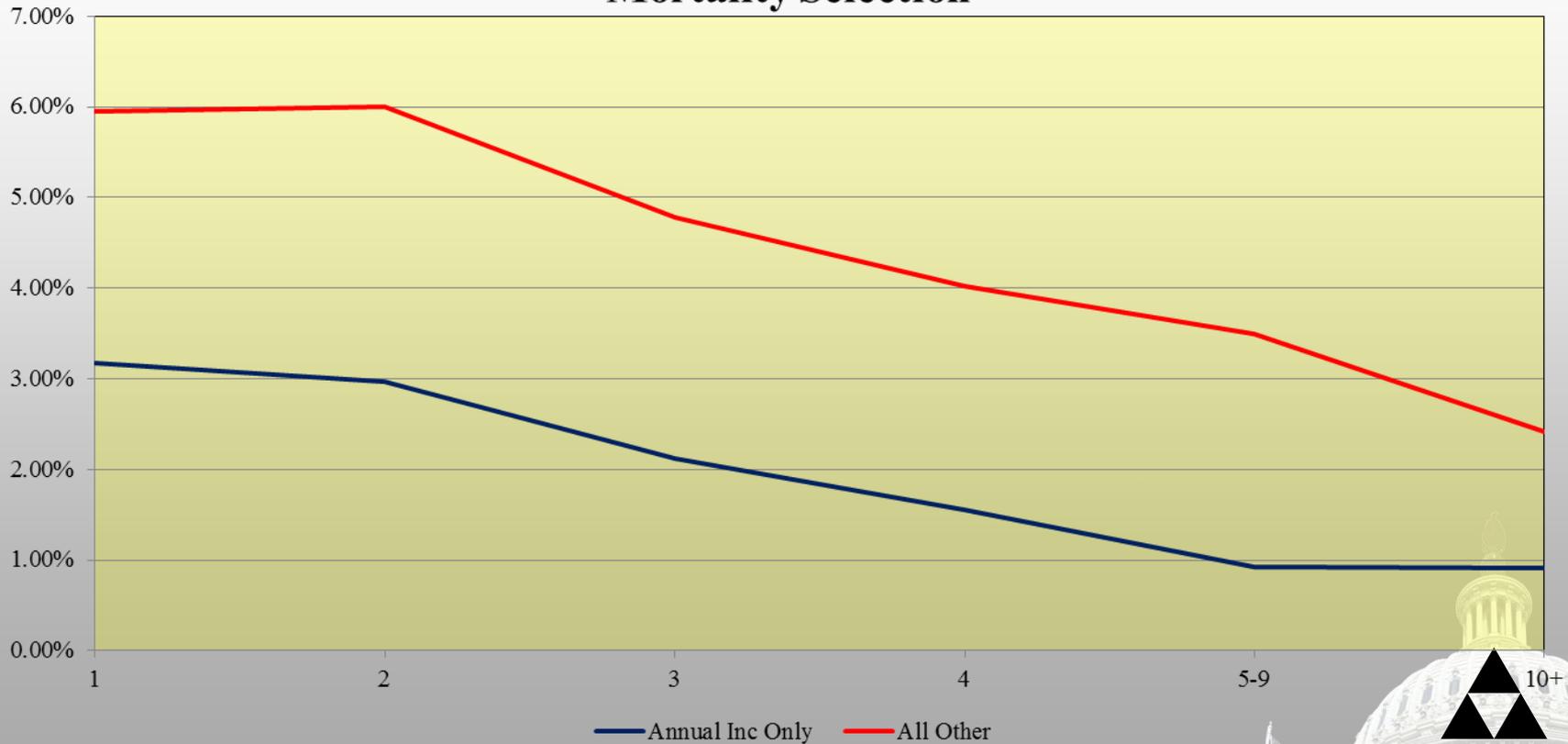
Individual By Inflation Benefit

- All companies
- Excludes lifetime BP and issue ages 80+
- Annual inflation vs. all other by policy duration

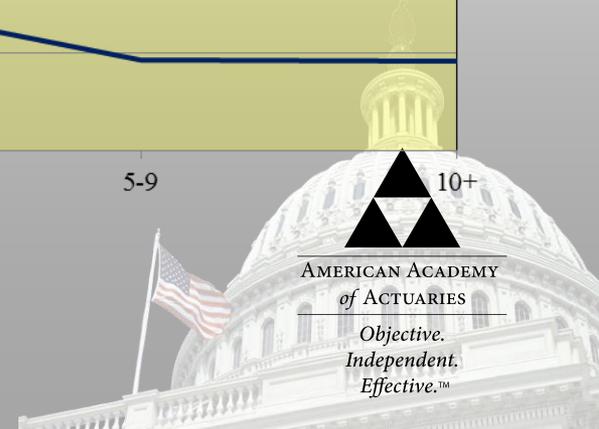


Individual By Inflation Benefit

All Companies - Inflation Benefit Individual Business Mortality Selection



Data compiled by MIB



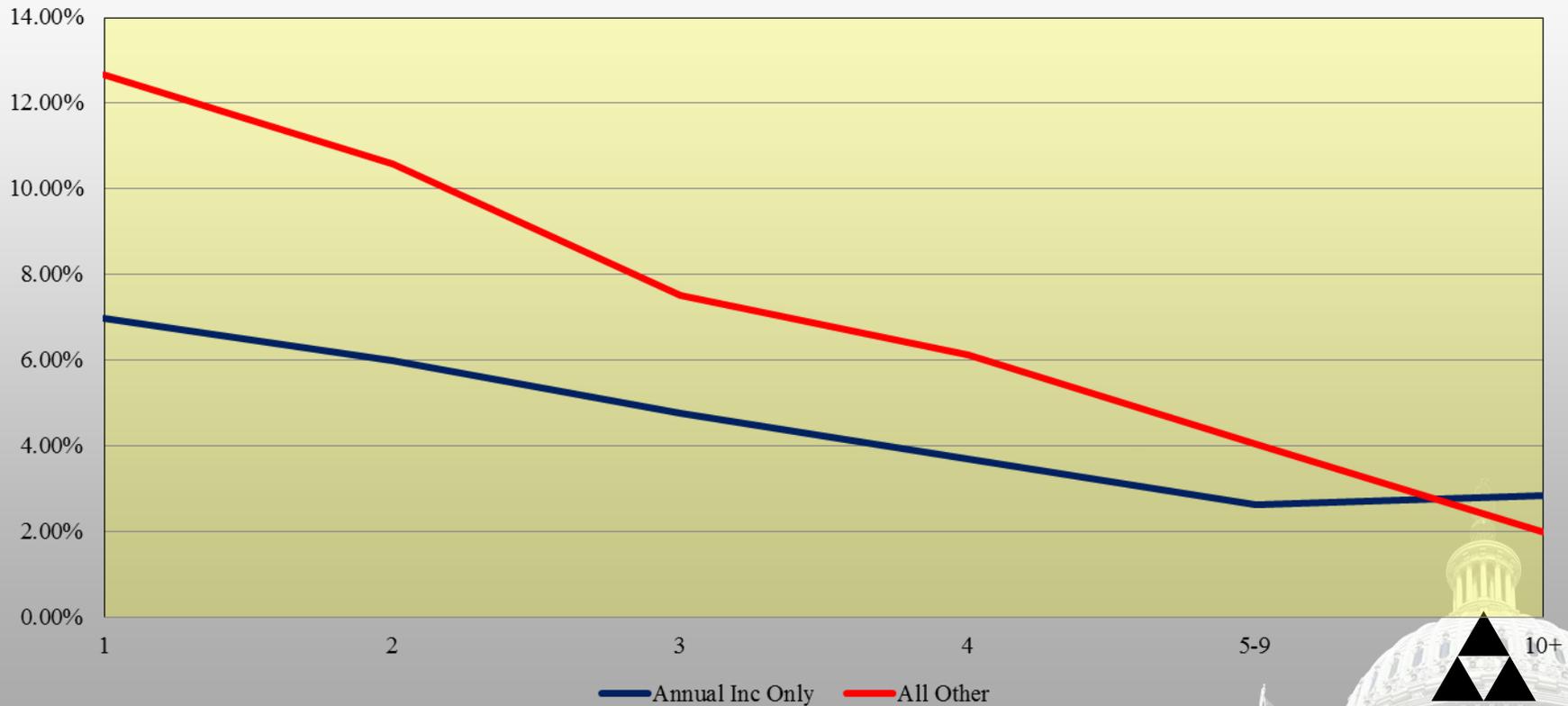
Group By Inflation Benefit

- All companies
- Excludes lifetime BP and Issue ages 80+
- Annual inflation vs. all other by policy duration



Group By Inflation Benefit

All Companies - Inflation Benefit Group Business With Mortality Selection



Data compiled by MIB

Appendix



Individual Top 9 Companies

Implied Lapse Rates – Total Terminations Less 2012 IAM Mortality

No Mortality Selection

Duration	All	Exclude	Exclude	Exclude
		Lifetime BP	IA 80+	LT BP & IA 80+
1	4.31%	4.42%	4.33%	4.46%
2	4.88%	4.83%	4.66%	4.59%
3	3.70%	3.66%	3.63%	3.58%
4	3.06%	2.99%	3.00%	2.93%
5-9	2.54%	2.59%	2.47%	2.51%
10+	2.17%	2.25%	2.10%	2.17%

Data compiled by MIB



Individual Top 9 Companies

Implied Lapse Rates – Total Terminations Less 2012 IAM Mortality

With Mortality Selection

	Mortality		Exclude	Exclude	Exclude
Duration	Selection	All	Lifetime BP	IA 80+	LT BP & IA 80+
1	33.9%	4.89%	5.02%	4.82%	4.96%
2	49.3%	5.36%	5.33%	5.07%	5.01%
3	59.1%	4.15%	4.12%	4.01%	3.98%
4	65.6%	3.49%	3.44%	3.37%	3.31%
5-9	77.6%	2.64%	2.69%	2.55%	2.59%
10+	100.0%	2.17%	2.25%	2.10%	2.17%

Data compiled by MIB

Individual All Companies

Implied Lapse Rates – Total Terminations Less 2012 IAM Mortality

No Mortality Selection

Duration	All	Exclude	Exclude	Exclude
		Lifetime BP	IA 80+	LT BP & IA 80+
1	4.21%	4.46%	4.23%	4.50%
2	4.70%	4.75%	4.50%	4.54%
3	3.48%	3.55%	3.42%	3.48%
4	2.86%	2.89%	2.82%	2.84%
5-9	2.42%	2.54%	2.36%	2.46%
10+	2.13%	2.24%	2.06%	2.17%

Data compiled by MIB

Individual All Companies

Implied Lapse Rates – Total Terminations Less 2012 IAM Mortality

With Mortality Selection

Duration	Mortality Selection	All	Exclude Lifetime BP	Exclude IA 80+	Exclude LT BP & IA 80+
1	32.60%	4.77%	5.05%	4.72%	5.00%
2	47.40%	5.18%	5.27%	4.93%	4.98%
3	56.20%	3.95%	4.04%	3.83%	3.91%
4	62.70%	3.32%	3.38%	3.21%	3.25%
5-9	76.10%	2.83%	2.98%	2.72%	2.84%
10+	100.00%	2.13%	2.24%	2.06%	2.17%

Data compiled by MIB



Group Top 9 Companies

Implied Lapse Rates – Total Terminations Less 2012 IAM Mortality

No Mortality Selection

Duration	All	Exclude	Exclude	Exclude
		Lifetime BP	IA 80+	LT BP & IA 80+
1	13.59%	13.58%	13.60%	13.59%
2	11.45%	11.43%	11.46%	11.44%
3	8.20%	8.15%	8.20%	8.16%
4	6.76%	6.70%	6.77%	6.71%
5-9	4.50%	4.47%	4.51%	4.48%
10+	1.72%	1.69%	1.72%	1.68%

Data compiled by MIB



Group Top 9 Companies

Implied Lapse Rates – Total Terminations Less 2012 IAM Mortality

With Mortality Selection

Duration	Selection	All	Exclude	Exclude	Exclude
			Lifetime BP	IA 80+	LT BP & IA 80+
1	44.3%	13.71%	13.70%	13.72%	13.71%
2	60.8%	11.56%	11.53%	11.57%	11.54%
3	69.1%	8.30%	8.25%	8.30%	8.26%
4	75.3%	6.86%	6.80%	6.86%	6.80%
5-9	100.0%	4.50%	4.47%	4.51%	4.48%
10+	100.0%	1.72%	1.69%	1.72%	1.68%

Data compiled by MIB

Group All Companies

Implied Lapse Rates – Total Terminations Less 2012 IAM Mortality

No Mortality Selection

Duration	All	Exclude	Exclude	Exclude
		Lifetime BP	IA 80+	LT BP & IA 80+
1	11.95%	11.91%	11.96%	11.92%
2	10.02%	9.98%	10.03%	9.99%
3	7.18%	7.14%	7.19%	7.15%
4	5.86%	5.80%	5.86%	5.80%
5-9	3.98%	3.95%	3.99%	3.95%
10+	2.03%	2.01%	2.03%	2.01%

Data compiled by MIB

Group All Companies

Implied Lapse Rates – Total Terminations Less 2012 IAM Mortality

With Mortality Selection

Duration	Selection	All	Exclude Lifetime BP	Exclude IA 80+	Exclude LT BP & IA 80+
1	42.7%	12.08%	12.04%	12.09%	12.05%
2	63.6%	10.12%	10.09%	10.13%	10.09%
3	71.7%	7.27%	7.24%	7.28%	7.25%
4	78.8%	5.94%	5.89%	5.94%	5.89%
5-9	94.3%	3.99%	3.95%	3.99%	3.96%
10+	100.0%	2.03%	2.01%	2.03%	2.01%

Data compiled by MIB

Individual Lapse Counts

Count of Implied Lapses – Total Terminations Less 2012 IAM Mortality

Excludes Lifetime BP and Issue Ages 80+

Duration	Top 9 Companies		All Companies	
	Selection	No Selection	Selection	No Selection
1	174,477	156,788	199,632	179,503
2	154,026	140,855	172,818	157,530
3	104,206	93,827	114,956	102,580
4	72,991	64,554	80,424	70,214
5-9	164,689	159,443	200,054	173,285
10+	53,634	53,634	57,539	57,539

Data compiled by MIB



Group Lapse Counts

Count of Implied Lapses – Total Terminations Less 2012 IAM Mortality
Excludes Lifetime BP and Issue Ages 80+

Duration	Top 9 Companies		All Companies	
	Selection	No Selection	Selection	No Selection
1	181,849	180,229	199,596	197,489
2	118,975	117,921	133,815	132,461
3	67,350	66,555	76,991	75,936
4	45,207	44,623	50,968	50,237
5-9	85,550	85,550	95,956	95,823
10+	15,543	15,543	22,440	22,440

Data compiled by MIB

Individual Lapse Counts By Attained Age Groups

Count of Implied Lapses – Total Terminations Less 2012 IAM Mortality

Includes Lifetime BP and Issue Ages 80+

Duration	< 60	60 - 69	70 - 79	80 - 89
1	96,265	80,961	51,792	11,076
2	73,528	68,454	63,414	24,464
3	50,851	43,968	40,214	15,351
4	29,902	31,317	32,355	13,679
5 - 9	45,050	49,109	87,535	48,623
10+	7,424	4,588	21,681	34,266

Data compiled by MIB



Individual Lapse Counts By Calendar Year – Policy Duration 10+

Count of Implied Lapses – Total Terminations Less 2012 IAM Mortality
Includes Lifetime BP and Issue Ages 80+
Policy Duration 10+

Calendar Year	Count
1993 - 1996	2,302
1997	3,152
1998	4,224
1999	5,151
2000	6,714
2001	5,225
2002	4,347
2003	12,427
2004	12,708
2005	6,063
2006	5,645

Data compiled by MIB



AMERICAN ACADEMY
of ACTUARIES

Objective.
Independent.
Effective.™



Individual Lapse Counts by Inflation

Count of Implied Lapses – Total Terminations Less 2012 IAM Mortality
 All Companies - With Mortality Selection
 Excludes Lifetime BP and Issue Ages 80+

Duration	Ann Inc Only	All Other	Total
1	43,207	156,425	199,632
2	34,823	137,995	172,818
3	20,459	94,497	114,956
4	11,874	68,550	80,424
5 - 9	16,436	183,617	200,054
10+	3,986	53,552	57,539

Data compiled by MIB



Group Lapse Counts By Inflation

Count of Implied Lapses – Total Terminations Less 2012 IAM Mortality
 All Companies - With Mortality Selection
 Excludes Lifetime BP and Issue Ages 80+

Duration	Ann Inc Only	All Other	Total
1	12,349	187,247	199,596
2	8,505	125,310	133,815
3	4,916	72,075	76,991
4	3,033	47,935	50,968
5-9	4,418	91,538	95,956
10+	620	21,820	22,440

Data compiled by MIB



Staff Contact Information

David Linn

Health Policy Analyst

American Academy of Actuaries

1850 M St., NW (Suite 300)

Washington, DC 20036

202-223-8196

linn@actuary.org

