Review & Preview

AM Best's 31st Annual *Review & Preview* Conference
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AM BEST
CELEBRATING
125
YEARS

Innovation Insights – What Does the Data Tell Us?

Steve Chirico – Director, AM Best
Edin Imsirovic – Director, AM Best

This session has live Q&A – please submit questions via the "Ask A Question" icon in the session navigation bar

Agenda

Accelerating Pace of Change of Innovation

Insurance Industry Innovation Benchmarking Update

Quantifying the Importance of Innovation

Wrap-up

Accelerated Pace of Change Is Making Innovation Increasingly Important

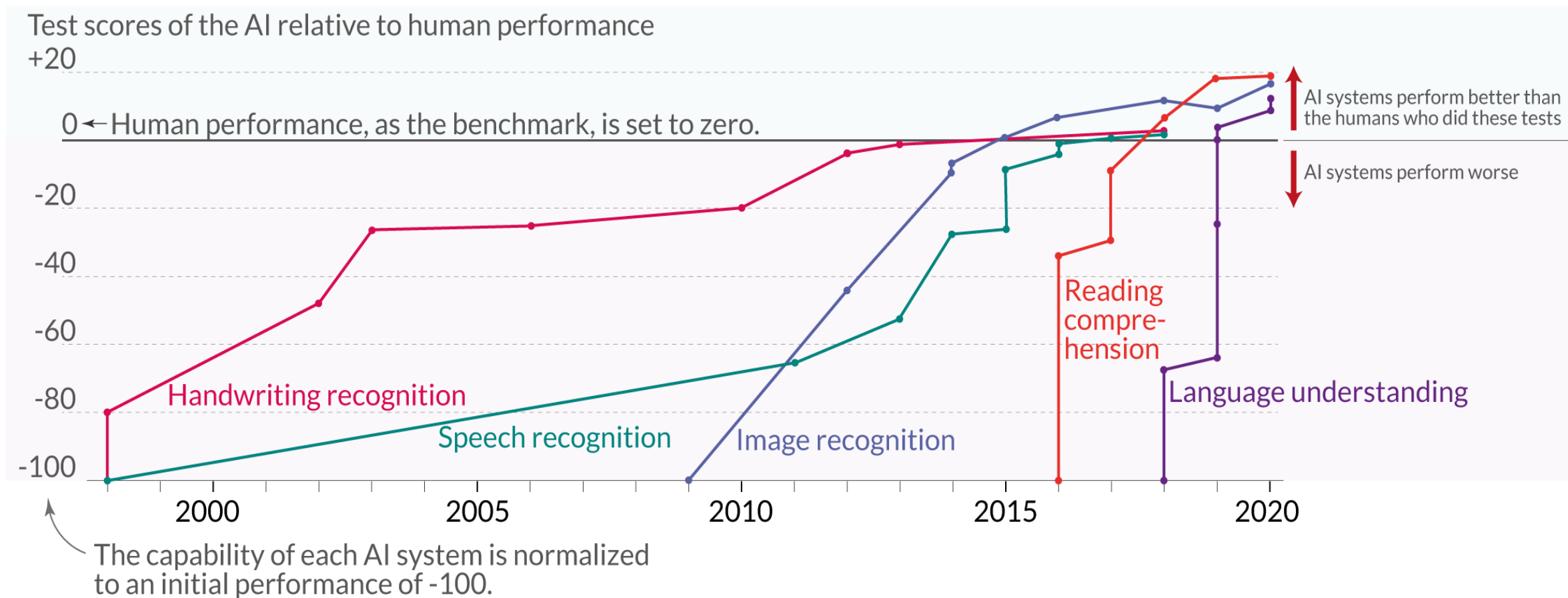## "Moving forward we expect innovation to <u>accelerate</u>"

— James Gillard, EVP & COO AM Best Rating Services

"The ever-accelerating progress of technology and changes in the mode of human life give the appearance of approaching some essential singularity in the history of the race beyond which human affairs, as we know them, could not continue."

— John von Neumann, 1958

And Better "AI" Outcomes

Test scores of the AI relative to human performance

+20

0 ← Human performance, as the benchmark, is set to zero.

AI systems perform better than the humans who did these tests

AI systems perform worse

-20

-40

Reading compre-hension

-60

-80
Handwriting recognition
Language understanding

-100
Speech recognition
Image recognition

2000   2005   2010   2015   2020

The capability of each AI system is normalized to an initial performance of -100.

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Impact of Accelerated Change on Insurance

Themes from Our First Innovation Research Report
• Enhancing the customer experience   • Unlocking operating efficiencies   • Improving underwriting performance   • Deepening relationships to drive the digital transformation   • Expanding digital ecosystems

Deepening Relationships To Drive the Digital Transformation

- Nearly $50 billion in funding over last 10 years

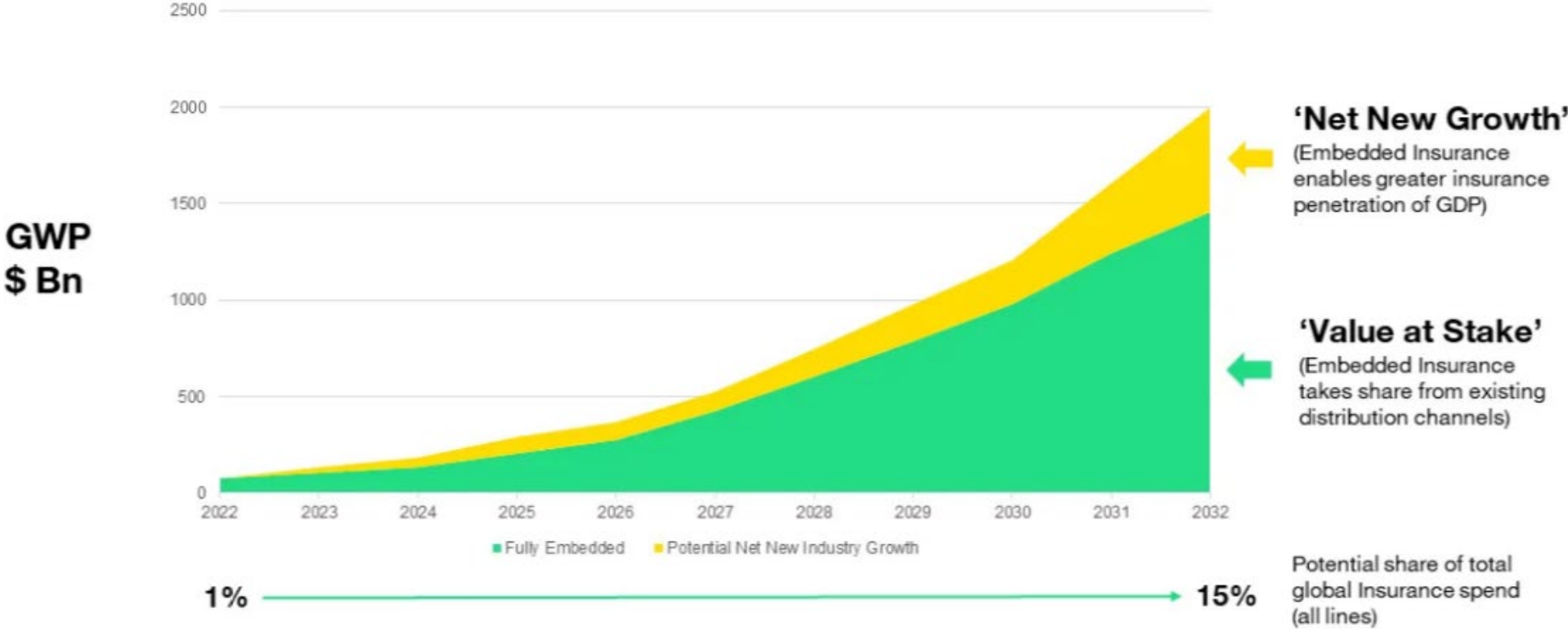- Approximately $35 billion in funding since Innovation Criteria went live in 1Q20

Total Insurtech Investment
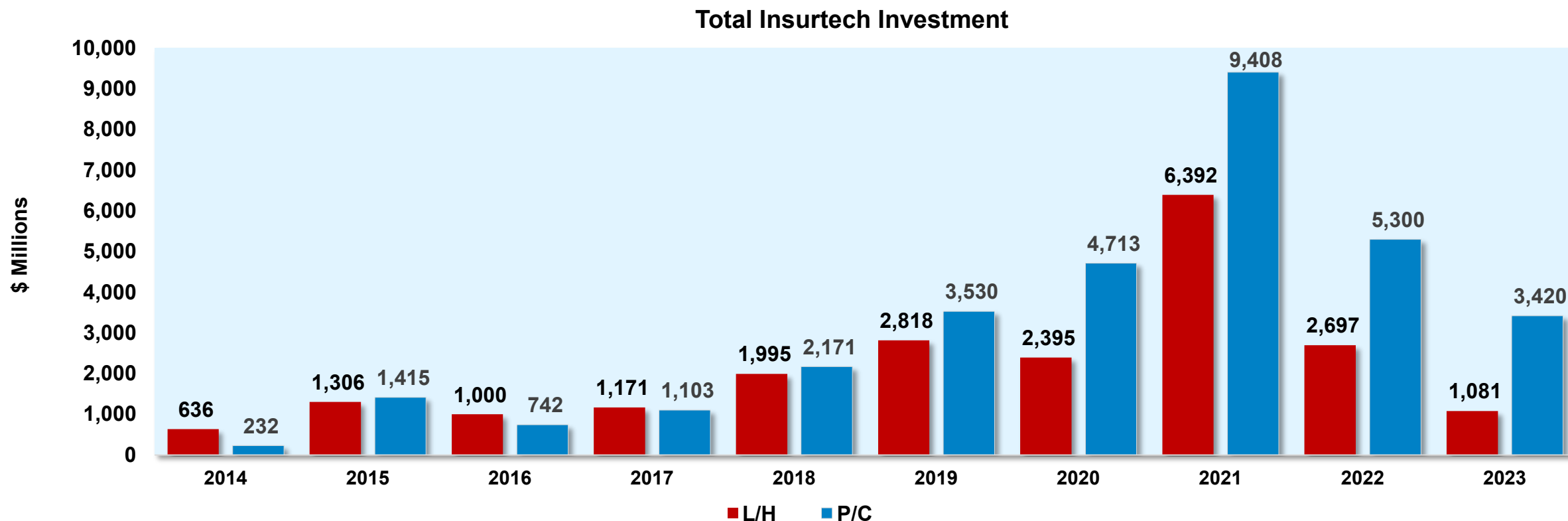
Source: Gallagher Re

Expanding Digital Ecosystems

Embedded Insurance market potential, life & non-life, worldwide

Source: Simon Torrance analysis

AI Transitions to "Generate"

- More advanced machine learning models started with recognition followed by "comprehension" and "understanding"

- Now AI can generate

Generative AI: Welcome to the World of AI Creation

- A generative AI model can take what it has learned from the examples it's been shown and create something entirely new based on that information

  - Large language models (LLMs) emerged in 2018 and are pivotal to generative AI advances

- Generative AI can be trained to produce content related to:

  - Text (GPT, Claude, Gemini, LaMDA, LLaMA, BLOOM, Chattensor, etc.)

  - Images (Imagen, DALL-E, Midjourney, Stable Diffusion)

  - Video (Lumiere,Gen1 and Gen2 by RunwayML, Make-A-Video, etc.)

  - Code (OpenAI Codex)

  - Voice / Music / Molecules / Robotics, etc.

- Multimodal training combines two or more of the above to create unique content

How Fast Is it Evolving: Most Advanced Text to Image Model in 2014

Prompt: Cow

How Fast Is it Evolving: Less Than a Decade Later – 2023

Generative AI: The Accelerating Speed of Development

Meta AI model leaked in spring of 2023 resulting in flurry of innovation

Barrier to entry for training and experimentation has dropped from the total output of a major research organization to one person, an evening, and a beefy laptop

Open-sourced AI models exploded in popularity with over 500,000 models shared on Hugging Face as of March 2024

Generative AI in Insurance: Opportunities, Risks and Obstacles

Opportunities:

Applications across the entire value chain

Risks:

- Scale, frequency and sophistication of cyber attacks
- Fraud-related issues

Obstacles:

- Technical issues and complexity surrounding implementation and integration
- Data privacy and security concerns, bias and regulatory uncertainty

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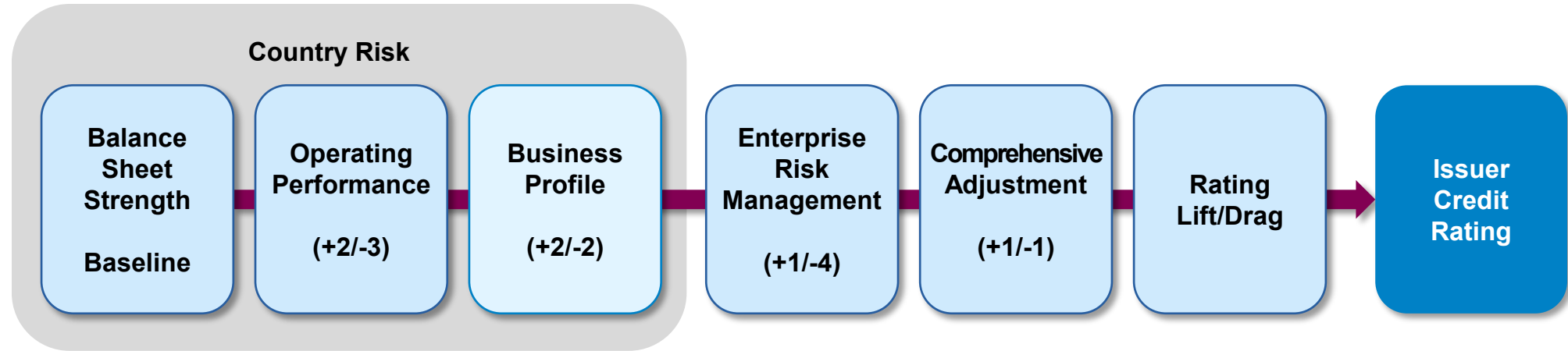SINCE 1899

Innovation Outlook – Very Positive
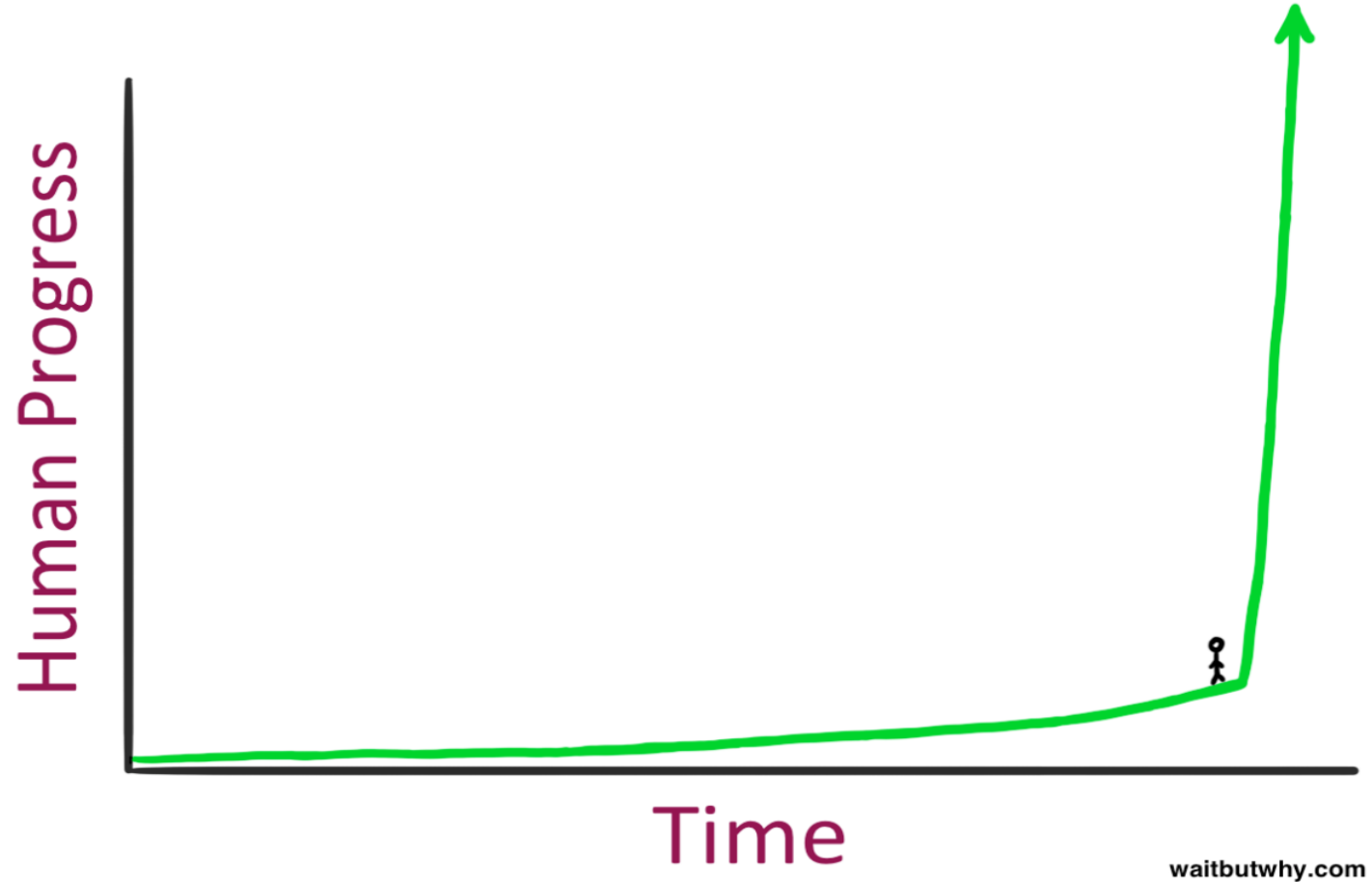
waitbutwhy.com

Innovation Benchmarking

How have innovation scores changed over the last few years?

What do the innovation scores tell us about the state of insurance innovation?

BCRM Building Blocks – Business Profile (Cont'd.)

Country Risk

| Balance Sheet Strength

Baseline | → | Operating Performance

(+2/-3) | → | Business Profile

(+2/-2) | → | Enterprise Risk Management

(+1/-4) | → | Comprehensive Adjustment

(+1/-1) | → | Rating Lift/Drag | → | Issuer Credit Rating |

Business Profile Components

- **Market Position**
- **Management Quality**
- **Pricing Sophistication & Data Quality**
- **Regulatory, Event and Country Risks**
- **Product Risk**
- **Distribution Channels**
- **Degree of Competition**
- **Product/Geographic Concentration**
- **Innovation**

Innovation Score

AM Best Scoring:

Innovation Input Score

+ Innovation Output Score

= Innovation Score

Innovation Input Score (1 to 4 for each component)

Leadership

Culture

Resources

Processes and Structure

Input = Leadership + Culture + Resources + Processes and Structure

Innovation Output Score (1 to 4 for each component)

<div style="display:flex">

Results

Level of Transformation

</div>

Output Score = 2 x (Results + Level of Transformation)

Innovation Assessment

- Companies receive an innovation score that is bucketed into five groups

Minimal — Score of less than 12

Moderate — Score between 12 and 17

Significant — Score between 18 and 22

Prominent — Score between 23 and 27

Leader — Score of 28 or higher

- These are the assessments of an insurer's innovation ability

Distribution Centered on "Moderate"

Innovation Assessments
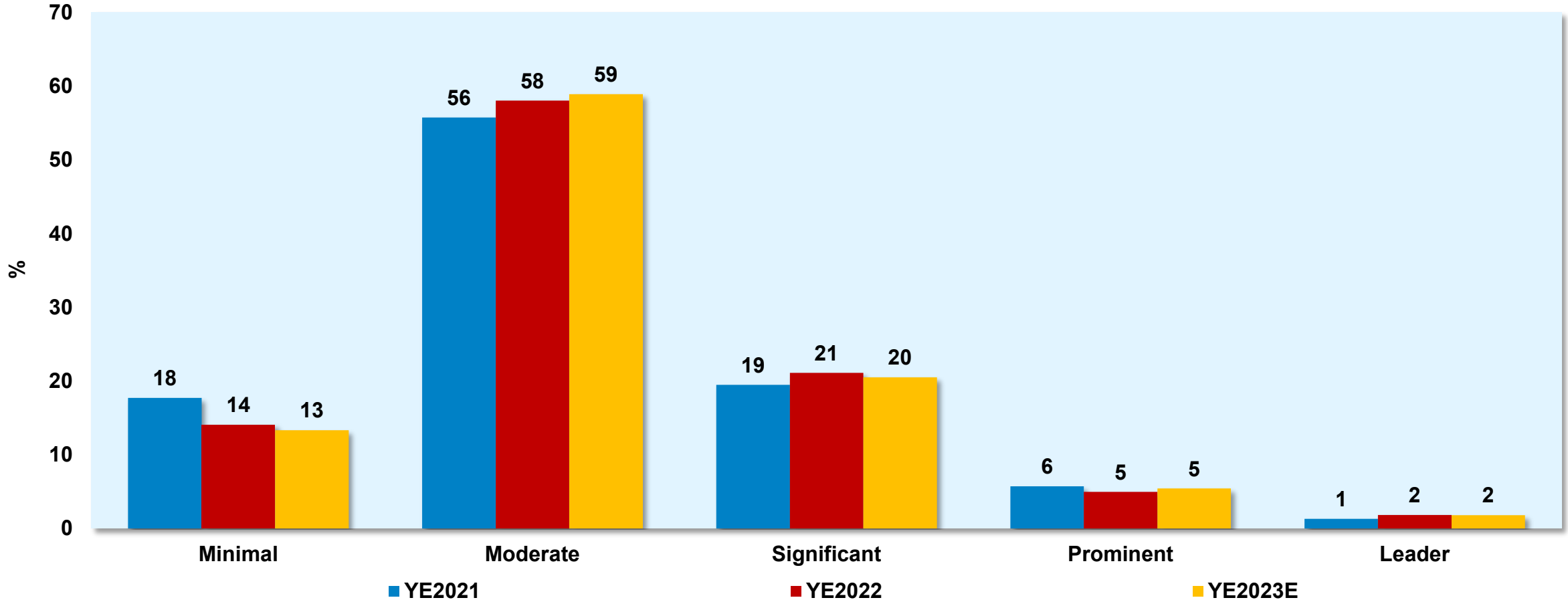
Output Score Lags Input Score

Average Innovation Scores by FSR Category
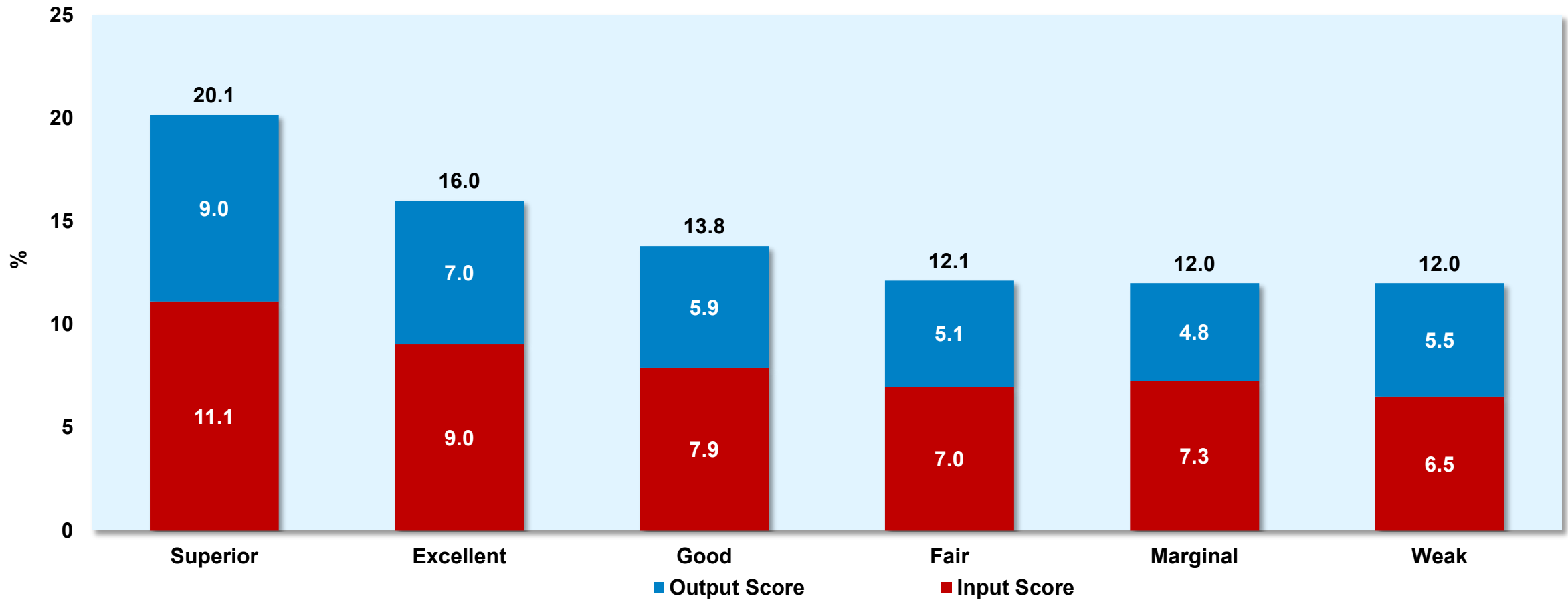
Insurance Industry Innovation Benchmarking Update
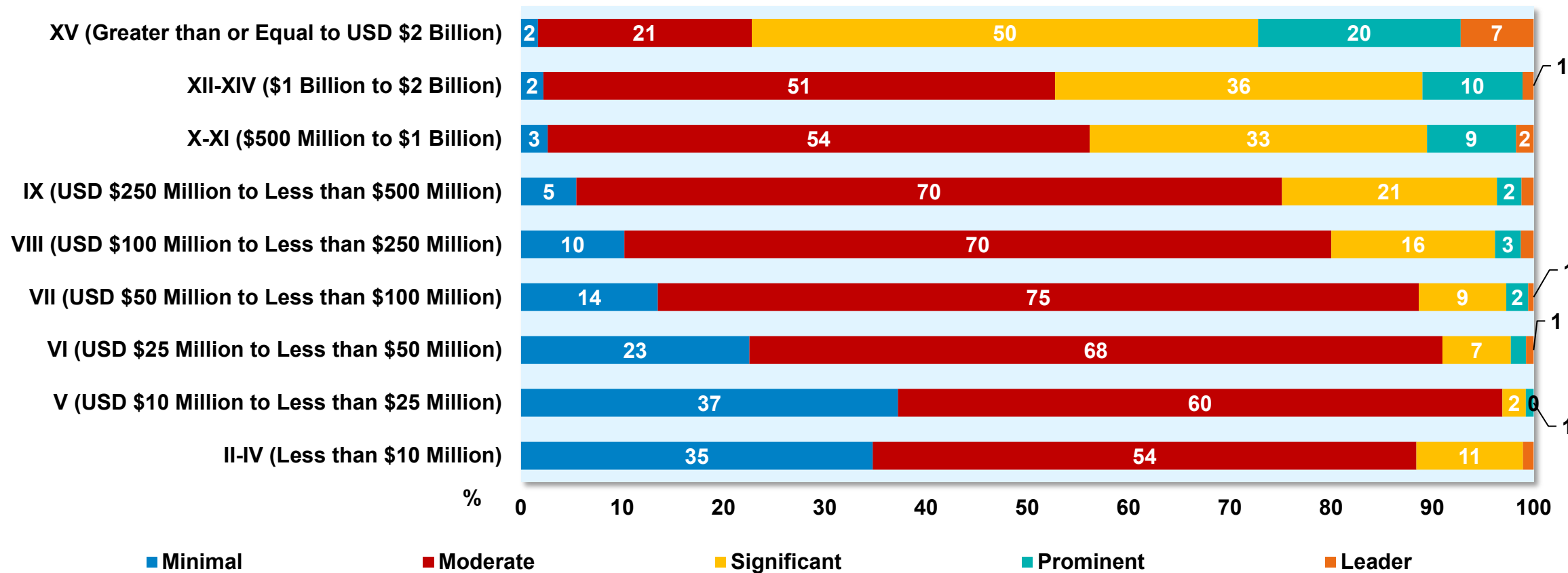
Higher Rated Companies Are More Innovative …
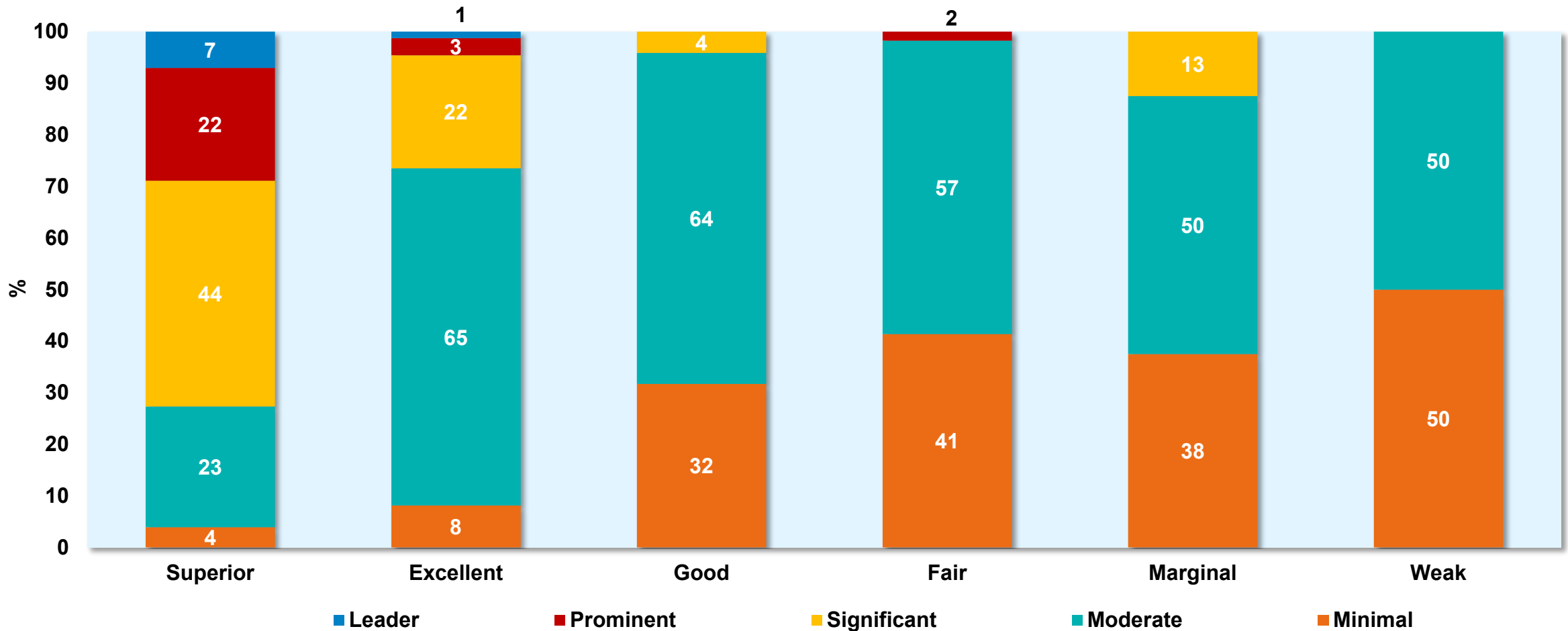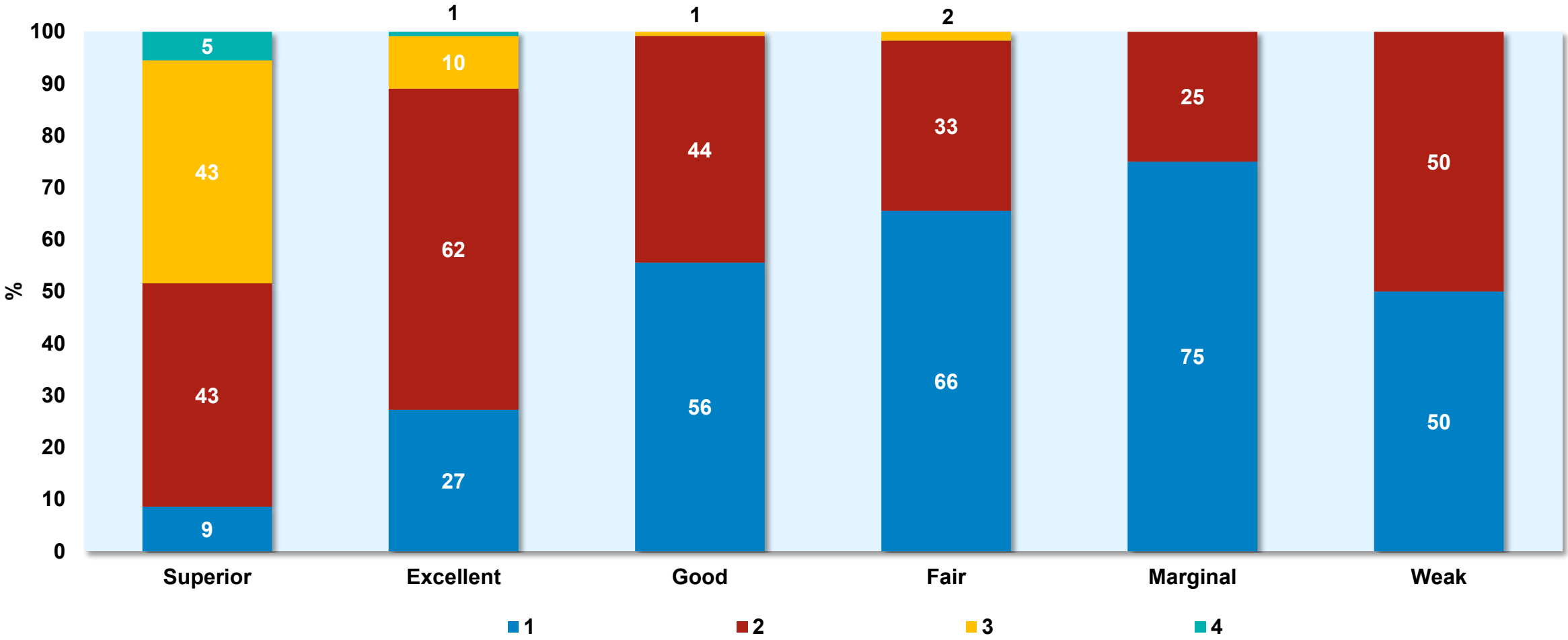
… A Clear Link with Business Profile

Innovation Profile by Business Profile Assessment
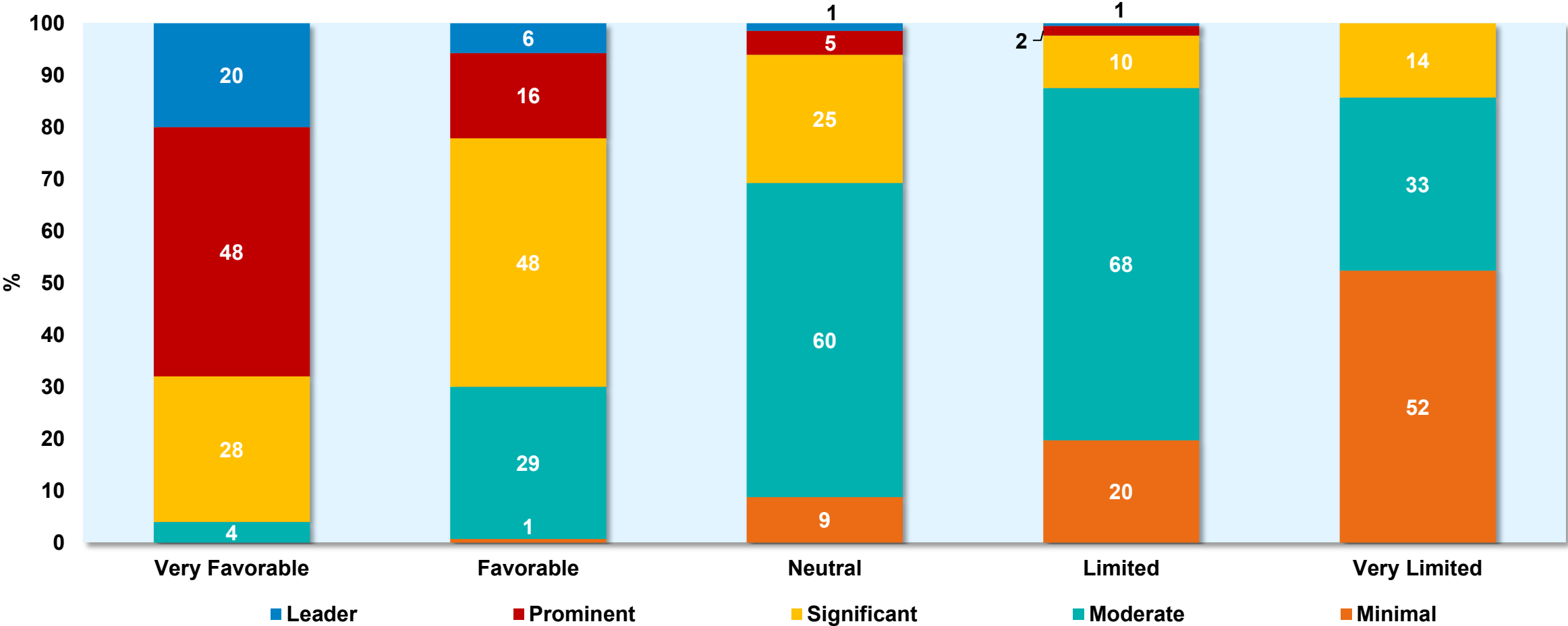
Innovation Is Not Just for Large Companies

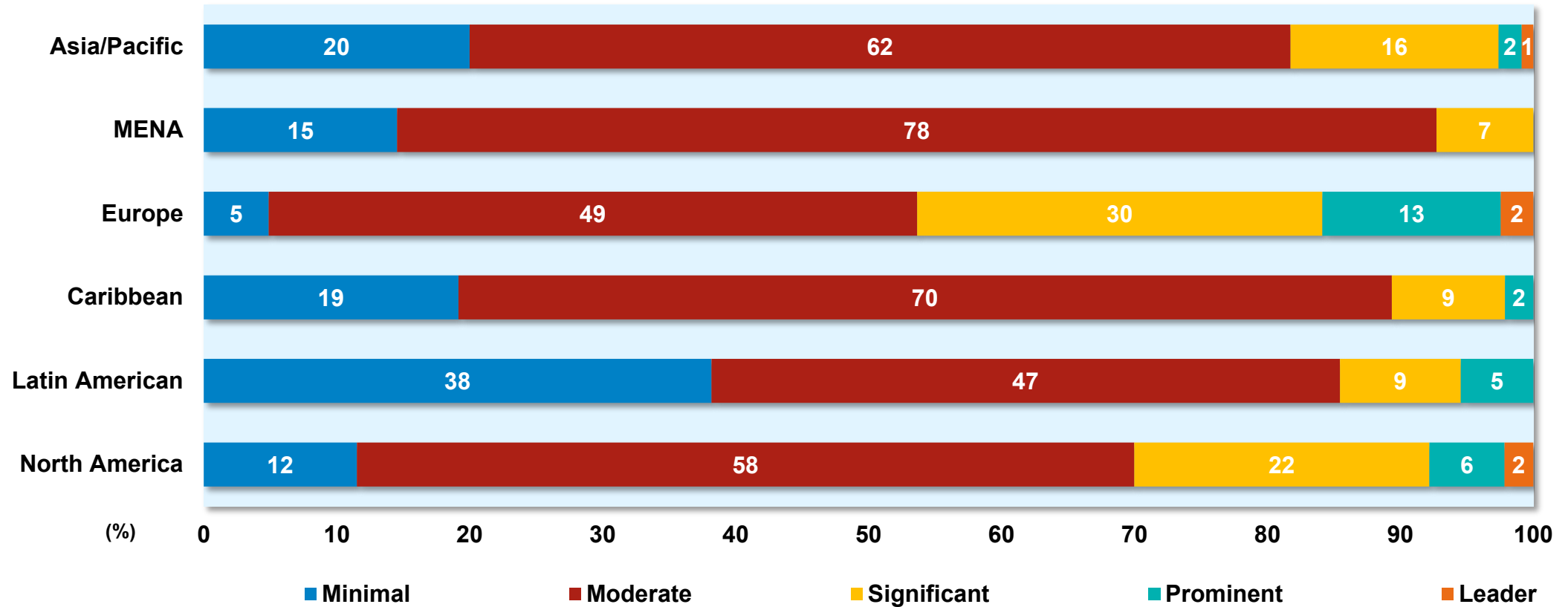Innovation Profile by Financial Size Category

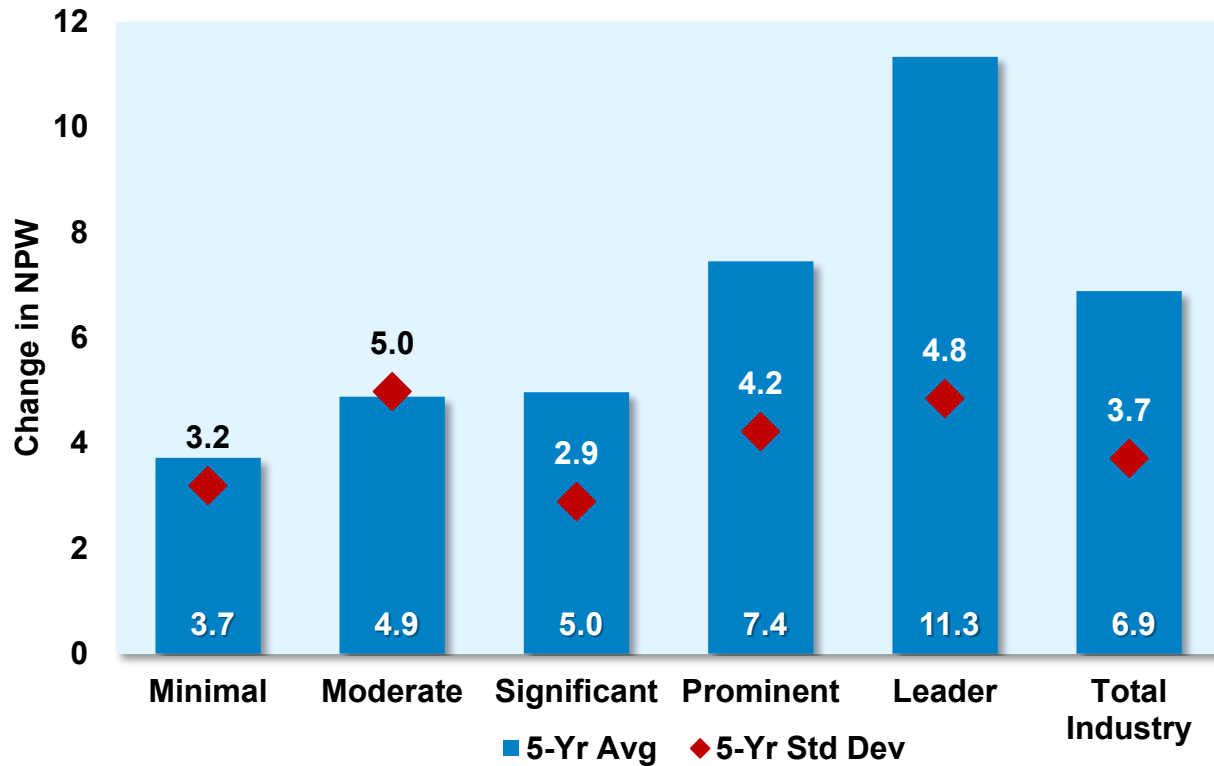# It Is a Global Phenomenon
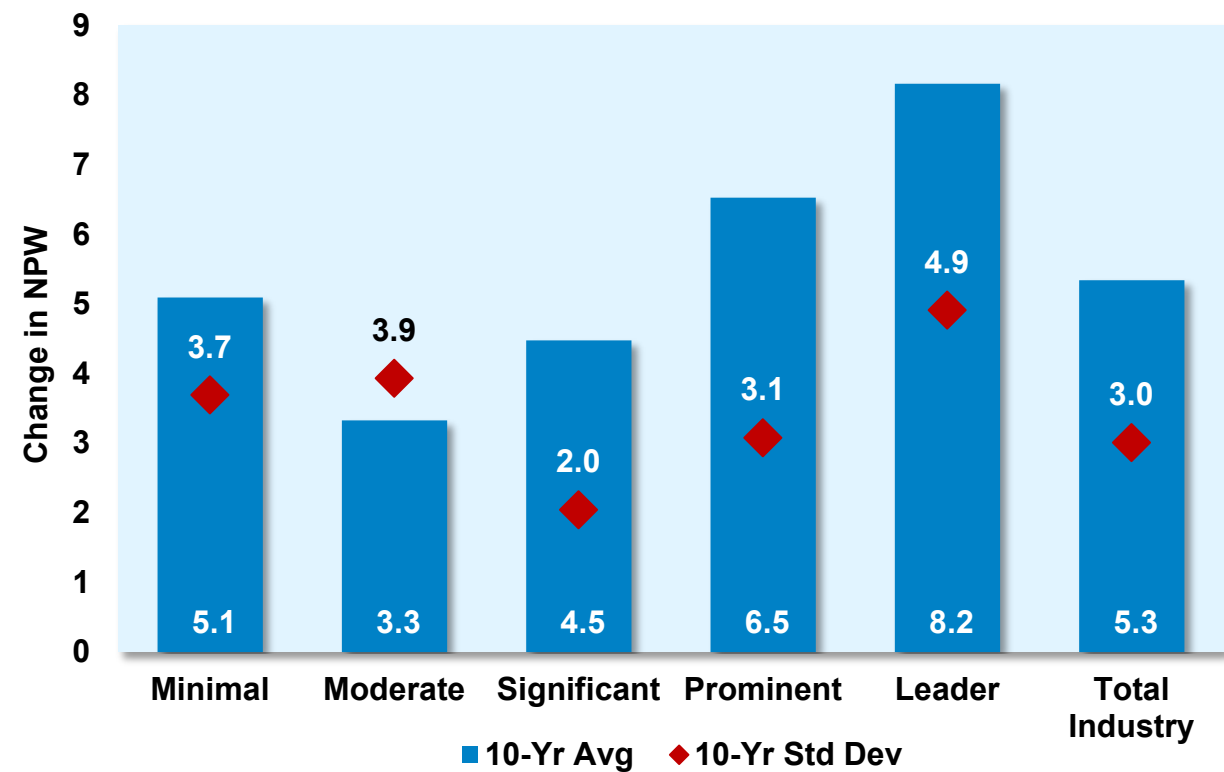
Innovation Profile by Region

Region	Minimal	Moderate	Significant	Prominent	Leader
Asia/Pacific	20	62	16	2	1
MENA	15	78	7		
Europe	5	49	30	13	2
Caribbean	19	70	9	2	
Latin American	38	47	9	5	
North America	12	58	22	6	2

(%) 0 10 20 30 40 50 60 70 80 90 100

■ Minimal   ■ Moderate   ■ Significant   ■ Prominent   ■ Leader

Quantifying the Importance of Innovation

P/C Industry – NPW Change

5-Yr Net Premiums Written Change

Change in NPW

Category	5-Yr Avg	5-Yr Std Dev
Minimal	3.7	3.2
Moderate	4.9	5.0
Significant	5.0	2.9
Prominent	7.4	4.2
Leader	11.3	4.8
Total Industry	6.9	3.7

■ 5-Yr Avg ◆ 5-Yr Std Dev

10-Yr Net Premiums Written Change

Change in NPW

Category	10-Yr Avg	10-Yr Std Dev
Minimal	5.1	3.7
Moderate	3.3	3.9
Significant	4.5	2.0
Prominent	6.5	3.1
Leader	8.2	4.9
Total Industry	5.3	3.0

■ 10-Yr Avg ◆ 10-Yr Std Dev
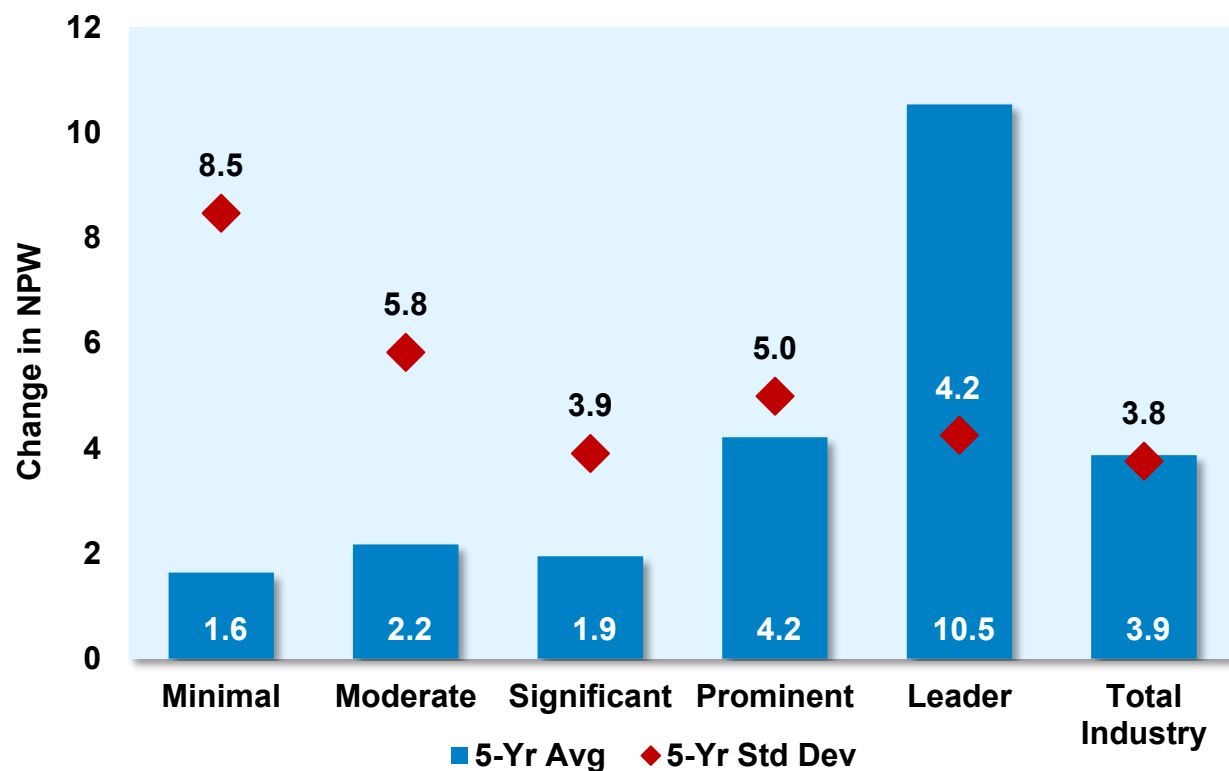
Personal Auto – NPW Change
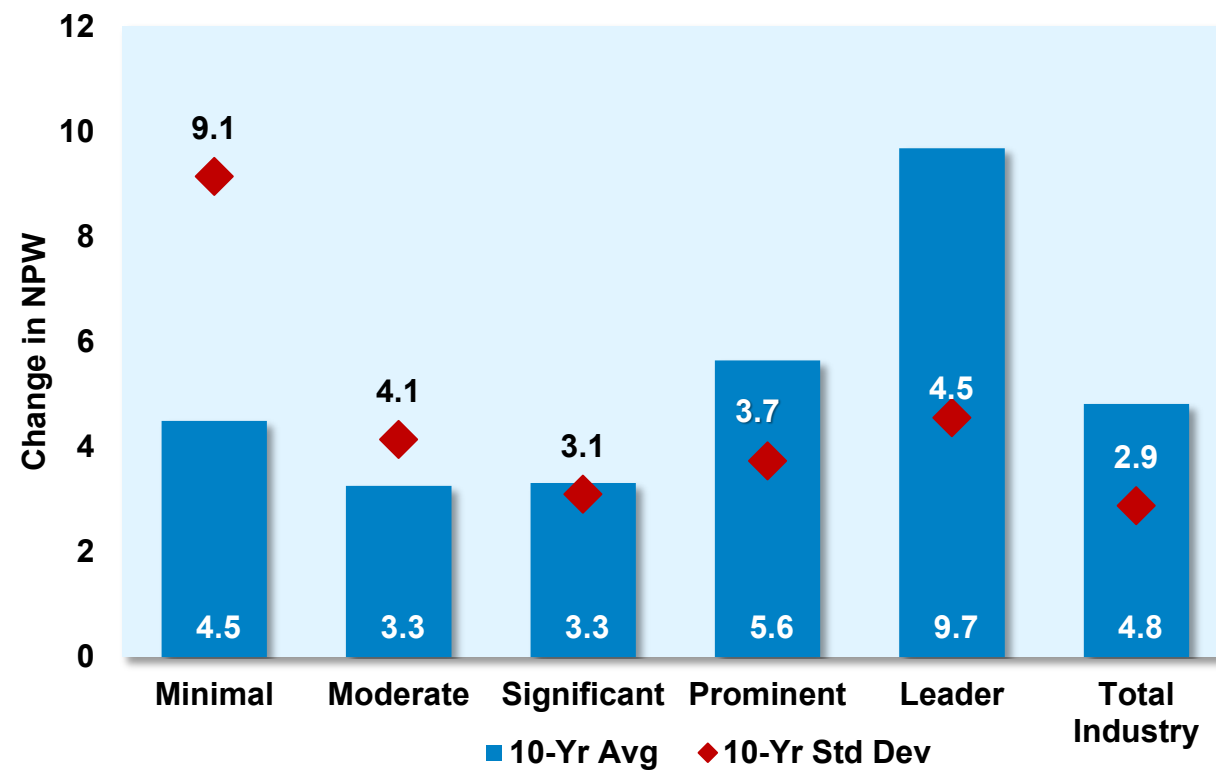
P/C Industry – Expense Ratio

Underwriting Expense Ratio

Personal Auto – Expense Ratio

Underwriting Expense Ratio
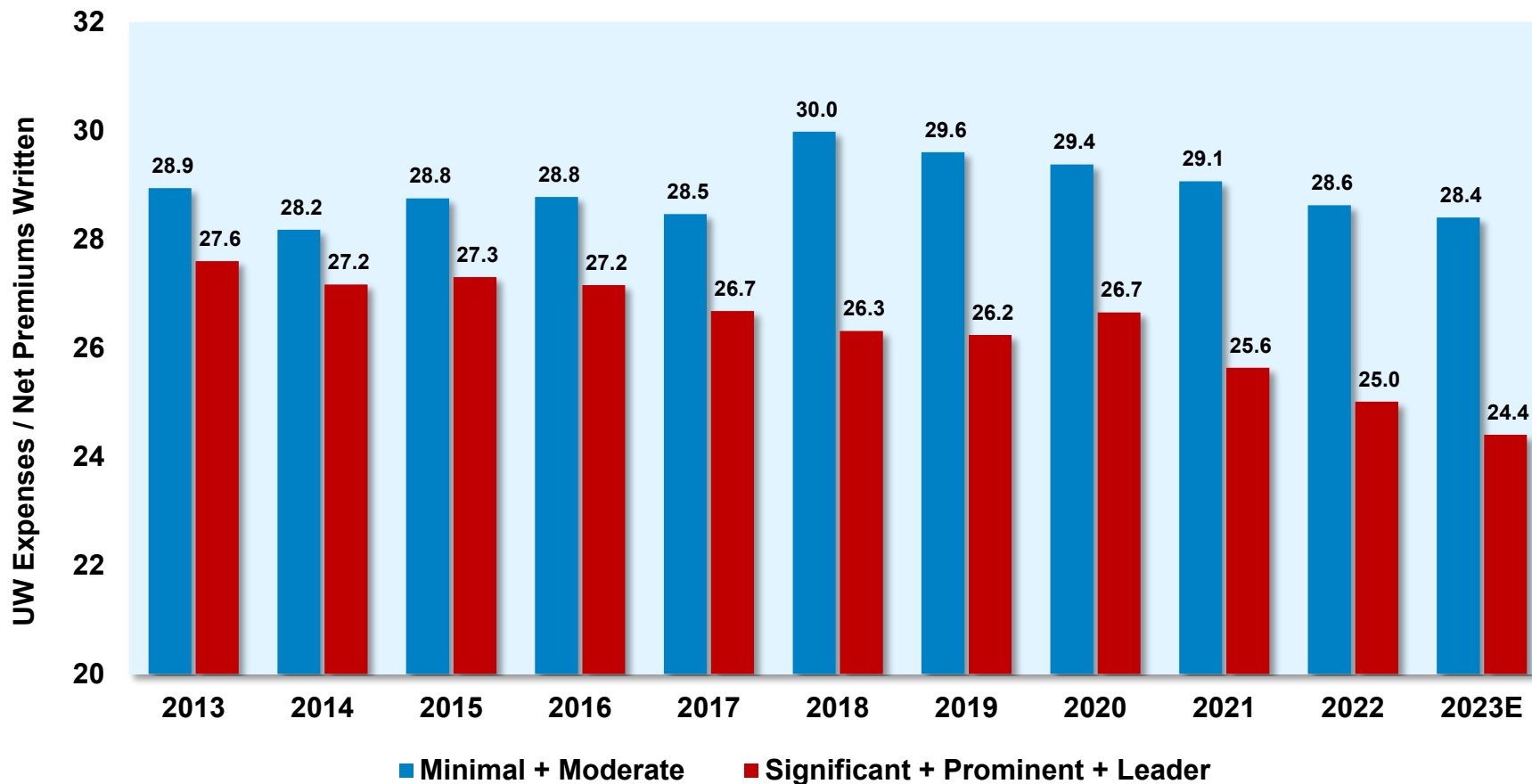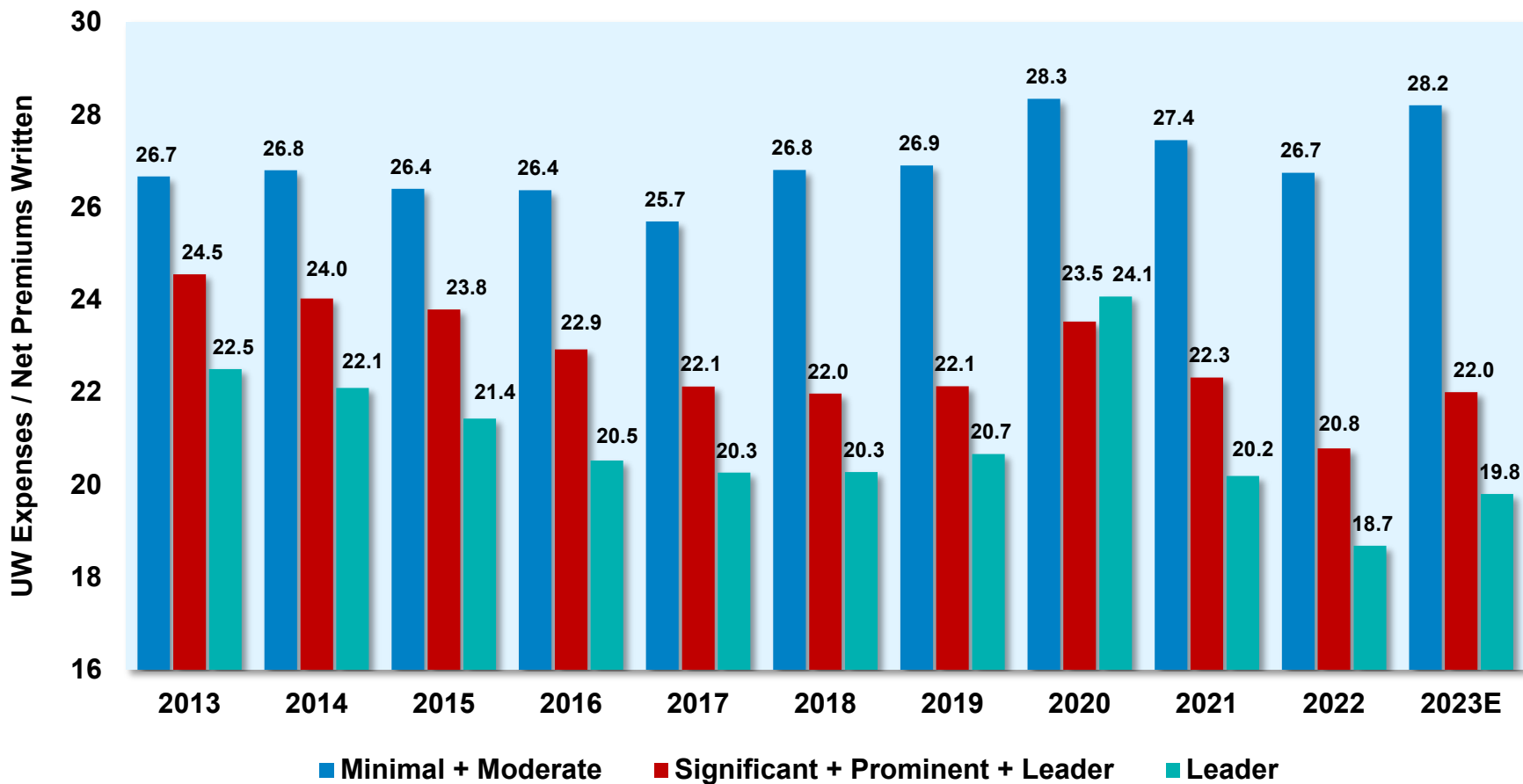
Expense Ratio Differential Innovators vs. Non-Innovators

2013	-2.2%
2023E	-6.2%

Expense Ratio Differential Leaders vs. Non-Innovators

2013	-4.2%
2023E	-8.4%

■ Minimal + Moderate   ■ Significant + Prominent + Leader   ■ Leader

P/C Industry – Loss & LAE

Net Loss & LAE Ratio

Net Losses & LAE Incurred / Net Premiums Earned

Year	Minimal + Moderate	Significant + Prominent + Leader
2013	69.0	68.6
2014	70.2	69.1
2015	74.6	69.4
2016	78.0	72.3
2017	77.0	76.0
2018	74.1	71.8
2019	71.0	71.3
2020	70.9	69.2
2021	70.6	73.3
2022	72.9	78.0
2023E	77.7	80.1

■ Minimal + Moderate   ■ Significant + Prominent + Leader

5-Yr Net Loss & LAE Ratio
All lines of Business

Net Loss & LAE Ratio

Category	5-Yr Avg	5-Yr Std Dev
Minimal	67.7	3.5
Moderate	72.0	1.5
Significant	73.2	3.7
Prominent	73.8	3.3
Leader	68.8	3.0
Total Industry	72.3	2.5

■ 5-Yr Avg   ◆ 5-Yr Std Dev

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Personal Auto – Loss & LAE

Net Loss & LAE Ratio

(Net Losses Incurred + Net LAE Incurred) / Net Premiums Earned

Legend: ■ Minimal + Moderate ■ Signif. + Prom + Leader ■ Leader

Year	Minimal + Moderate	Signif. + Prom + Leader	Leader
2013	75.2	76.1	73.4
2014	73.9	77.6	73.6
2015	76.8	80.2	73.5
2016	71.1	83.7	77.1
2017	77.5	79.7	75.0
2018	74.5	74.7	70.8
2019	73.0	75.8	70.9
2020	64.8	66.3	62.8
2021	73.4	78.0	76.1
2022	82.8	91.1	79.1
2023E	79.1	87.1	75.7

Note: 79.2 label also shown for 2022 Leader region.

5-Yr Net Loss & LAE Ratio
All Private Passenger Auto Lines of Business

Net Loss & LAE Ratio

Category	5-Yr Avg	5-Yr Std Dev
Minimal	76.5	8.0
Moderate	73.7	6.4
Significant	78.6	10.8
Prominent	77.7	8.3
Leader	72.0	6.3
Total Industry	76.8	8.6

Legend: ■ 5-Yr Avg ◆ 5-Yr Std Dev

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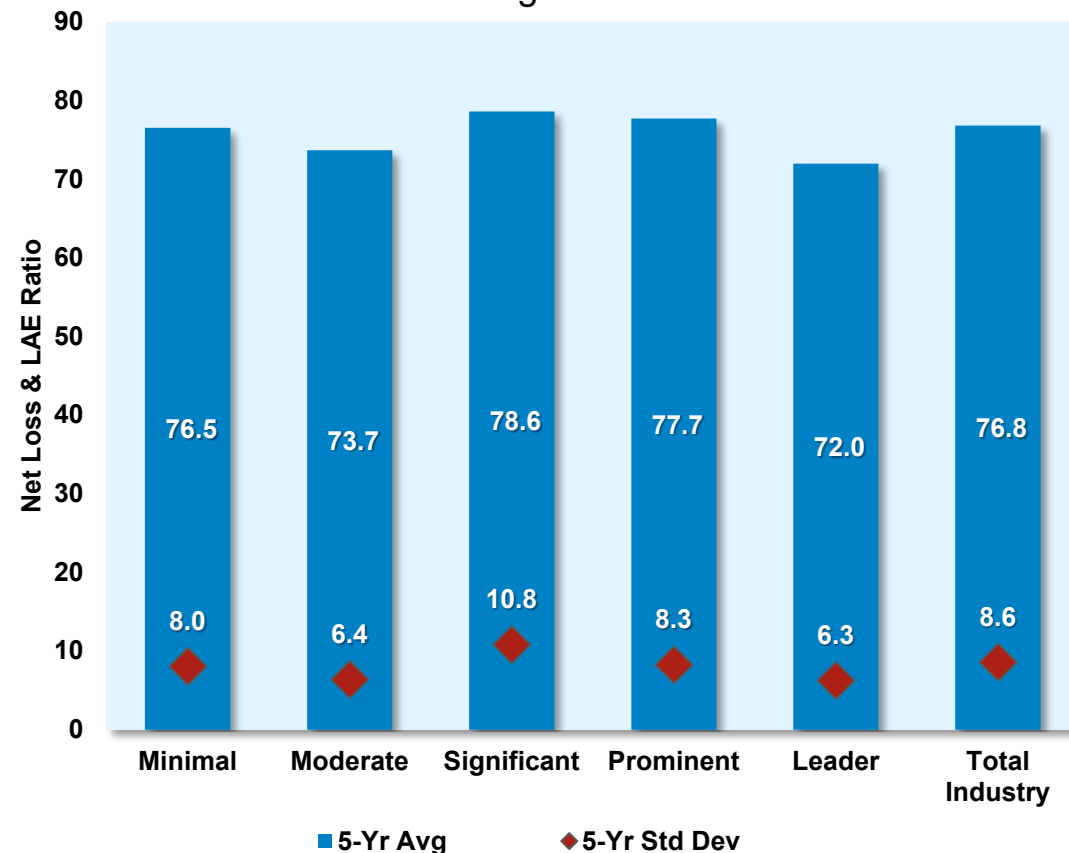
P/C Industry – Surplus Growth

Surplus Growth

Legend: ■ Minimal + Moderate   ■ Significant + Prominent + Leader

Year	Minimal + Moderate	Significant + Prominent + Leader
2013	2.9	13.4
2014	3.3	3.3
2015	0.1	0.1
2016	0.7	5.5
2017	2.6	9.3
2018	-3.3	-1.1
2019	5.7	17.0
2020	6.4	8.1
2021	5.2	14.7
2022	-3.1	-8.2
2023E	-1.4	-1.2
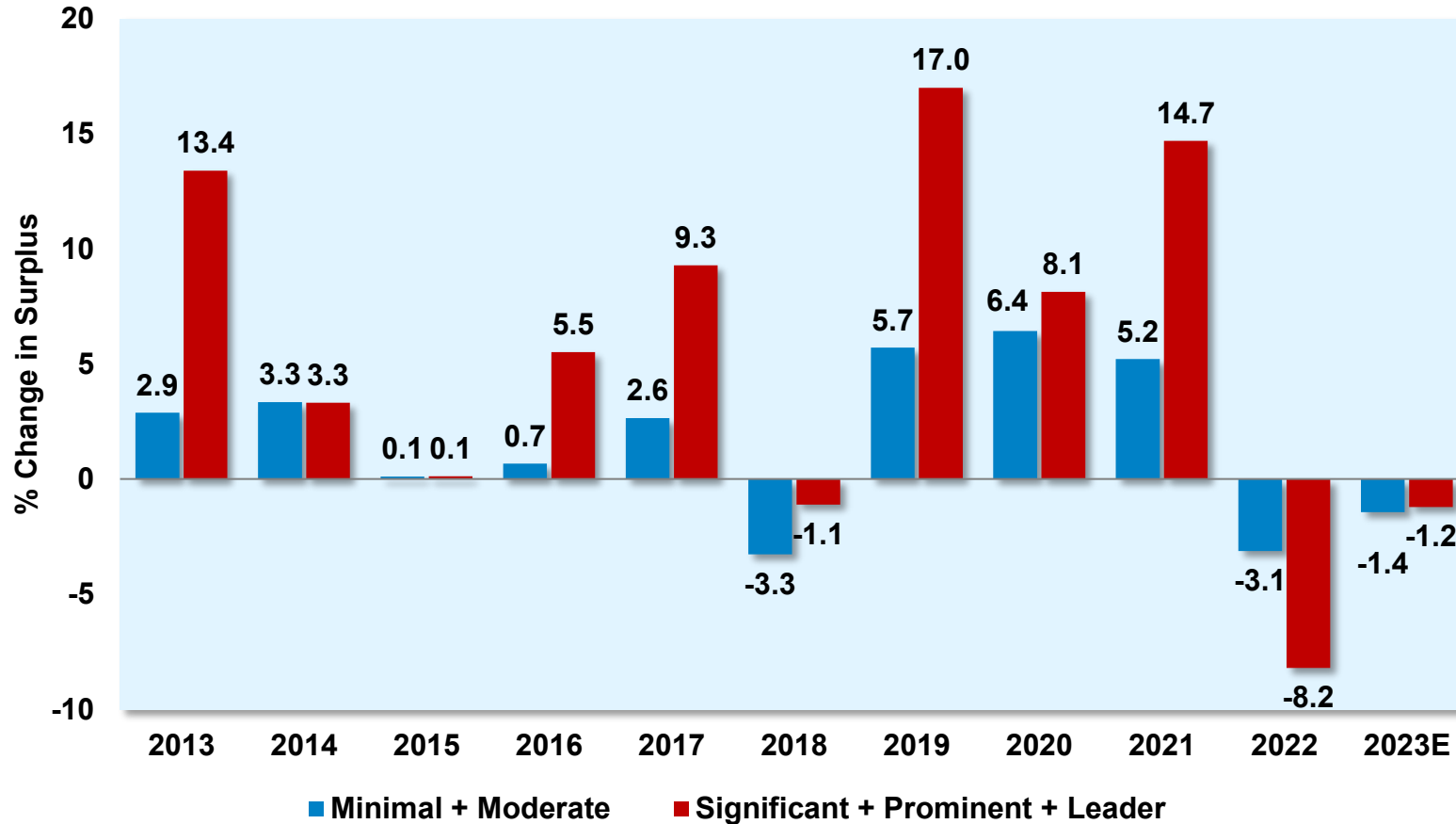
P/C Industry Surplus Growth		
	Innovators	Non-Innovators
10 Years	6.2%	2.1%
5 Years	7.9%	2.2%

P/C Industry – Total Return on Surplus

Total Return on Surplus

Chart — Total Return / Avg. Surplus

Year	Minimal + Moderate	Significant + Prominent + Leader
2013	12.4	17.2
2014	9.2	10.3
2015	3.2	5.2
2016	3.9	9.1
2017	5.4	15.2
2018	0.4	2.2
2019	9.4	20.7
2020	6.8	12.9
2021	9.6	17.2
2022	(2.1)	(7.6)
2023E	0.2	10.9

■ Minimal + Moderate ■ Significant + Prominent + Leader
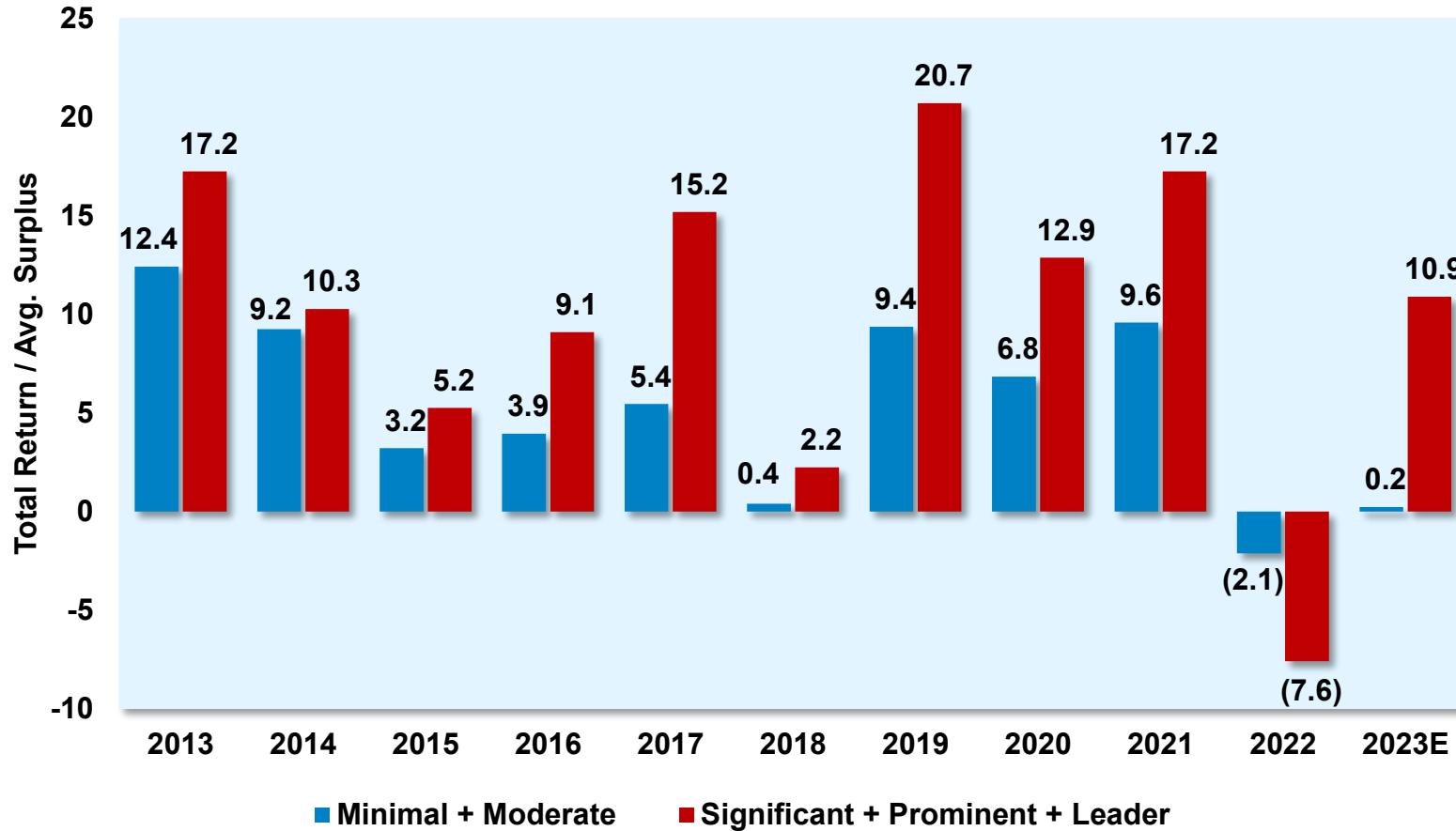
P/C Industry Return on Surplus		
	Innovators	Non-Innovators
10 Years	14.0%	8.3%
5 Years	18.8%	6.7%

Reinsurance Case Studies

In Reinsurance, Necessity Is the Mother of Innovation

Reinsurance contracts – Mission

The Genesis of Risk Management

Sidecars and cat bonds – KRW re-funding

Early stage insurtech investment – Fintech/insurtech bubble bust

Own view of risk – Climate change response

Innovation as a Competitive Advantage

- Innovative insurers are leveraging technology to enhance premium growth opportunities and to better operational efficiency compared to peers

10-Yr P/C Net Premiums Written Change

Change in NPW

Category	10-Yr Avg	10-Yr Std Dev
Minimal	5.1	3.7
Moderate	3.3	3.9
Significant	4.5	2.0
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Total Industry	5.3	3.0

■ 10-Yr Avg   ◆ 10-Yr Std Dev
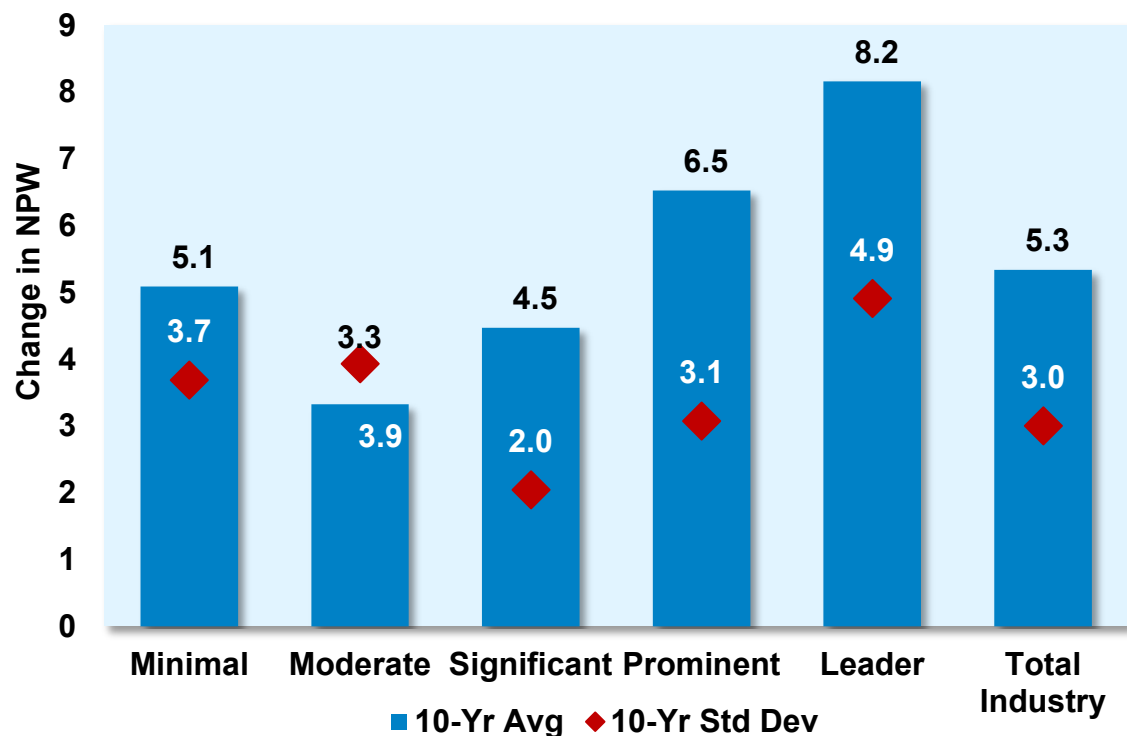
10-Yr P/C Underwriting Expense Ratio

Underwriting Expense Ratio

Category	10-Yr Avg	10-Yr Std Dev
Minimal	31.5	0.8
Moderate	28.9	0.6
Significant	27.9	0.5
Prominent	24.6	1.0
Leader	25.4	1.3
Total Industry	27.3	0.7

■ 10-Yr Avg   ◆ 10-Yr Std Dev

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Q&A

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