

The Hanover Insurance Group, Inc.

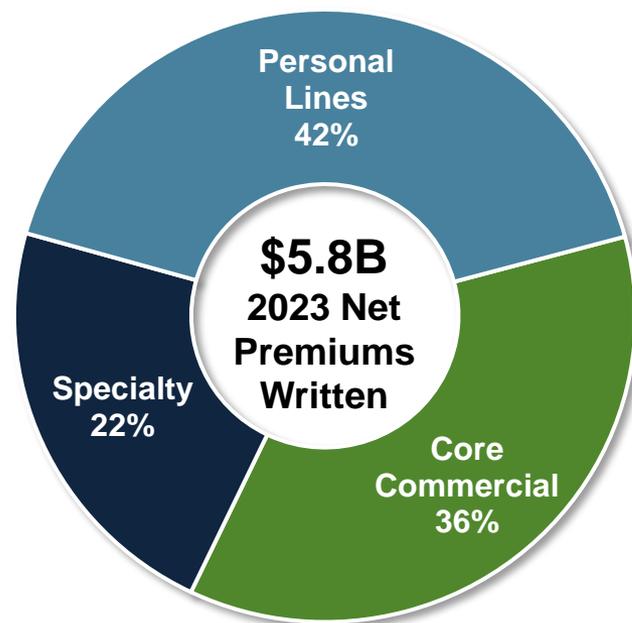
Investor Presentation
September 2024

The Hanover Insurance Group, Inc. (NYSE: THG) Overview

Exchange/Ticker		NYSE: THG
September 4, 2024	Stock price*	\$147.30
	Market capitalization*	\$5.3 billion
	Annual dividend per share	\$3.40 (Yield: 2.3%)
June 30, 2024	GAAP Equity	\$2.6 billion
	Equity, excluding net unrealized appreciation (depreciation) on fixed maturity investments, net of tax	\$3.0 billion
	Total Capital	\$3.3 billion
	Book value per share	\$70.96

Company Ratings*	AM Best	S&P Global	Moody's
Financial Strength Ratings			
The Hanover Insurance Company	A	A	A2
Debt Ratings			
Senior Debt	bbb+	BBB	Baa2
Subordinated Debentures	bbb-	BB+	Baa3

Business Mix



*As of September 4, 2024

Key Takeaways

Strategy

Our winning business strategy presents a sustainable competitive advantage in the independent agency market

Differentiation

Robust product capabilities and analytics combined with distinctive distribution approach and local underwriting drives Hanover's differentiation, positioning us well among both national and regional carriers

Growth

Broad set of specialized products and capabilities provides distinct growth opportunities, with a particular focus on further expansion of our Specialty business

Profitability

Aggressively executing on margin recapture and catastrophe management initiatives; back on the path to achieve 14% or higher operating ROE⁽¹⁾ during next two years

Sustainability

Building a sustainable organization by focusing on human capital development, enterprise risk management and impact of climate change

(1) See information about this and other non-GAAP measures and definitions used throughout this presentation on the final pages of this document.

Strategy

Robust Product Capabilities and Analytics Combined with Fulsome Distribution and Local Underwriting Drives Hanover's Differentiation

The Hanover
combines the best
attributes of
Nationals and
Regionals

Large Carriers
Broad product offerings
Technology
Deep analytics

Regional Carriers
Local presence
Robust agency relationships
Underwriting flexibility

Our Differentiated Strategy Presents a Sustainable Competitive Advantage in the Independent Agency Market

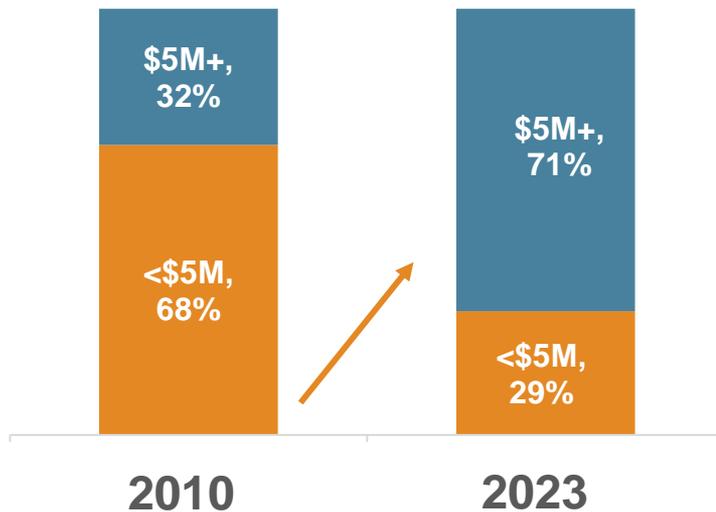
Competitive Advantages



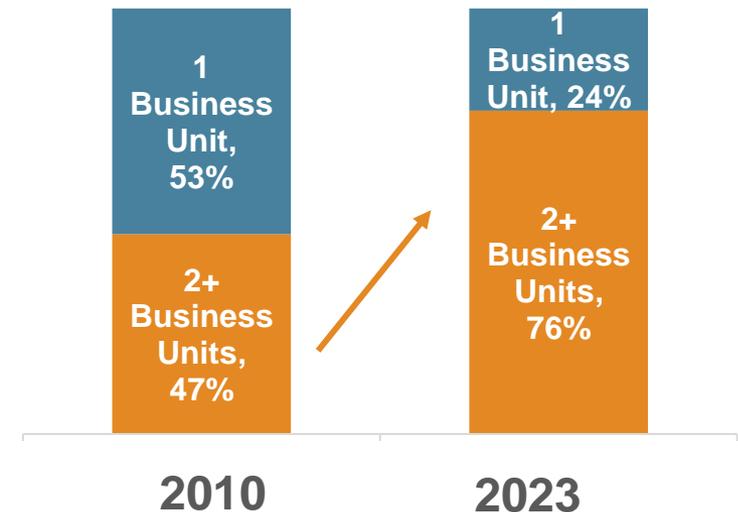
Strategic Sustainability Enablers

Our Three-Pronged Agency Approach Focused on Targeted Distribution, Broad and Relevant Underwriting, and Deep Business Insights Drives Growth and Profitability

Depth of Hanover Relationships

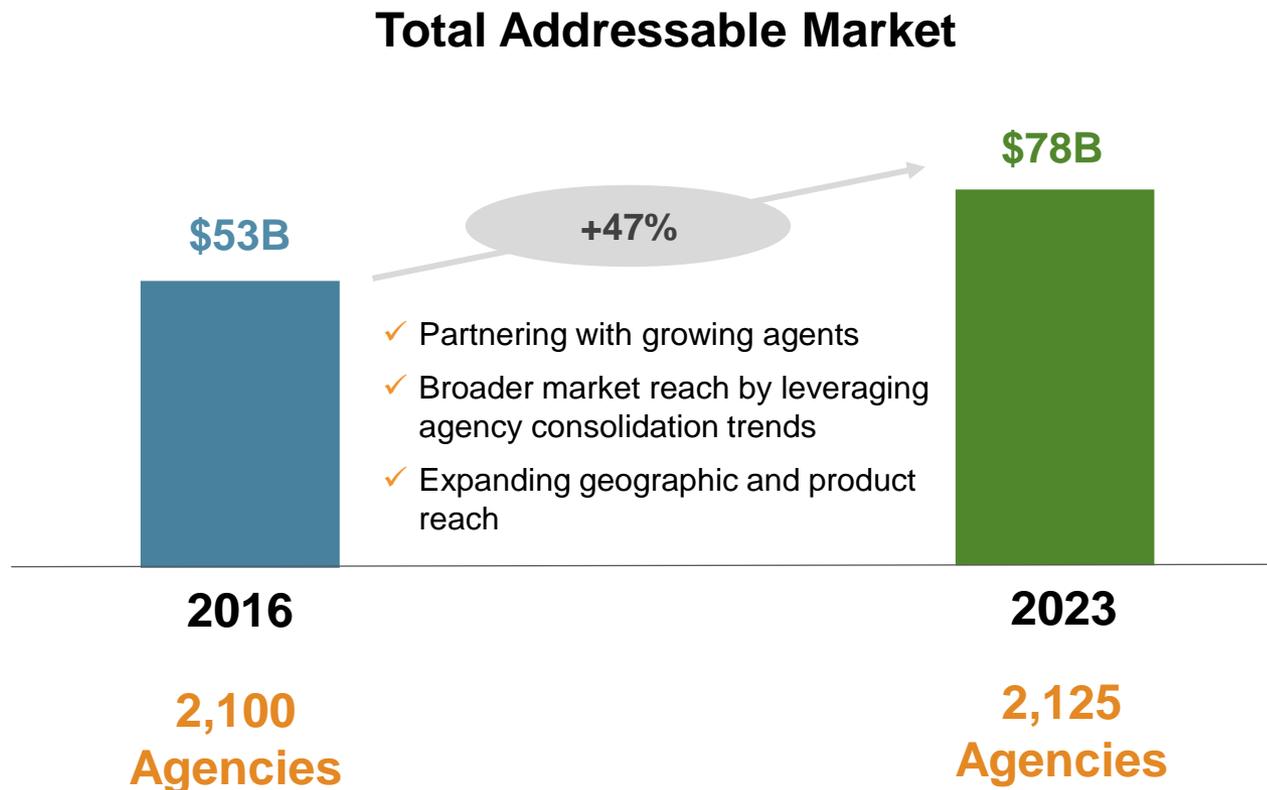


Breadth of Hanover Relationships



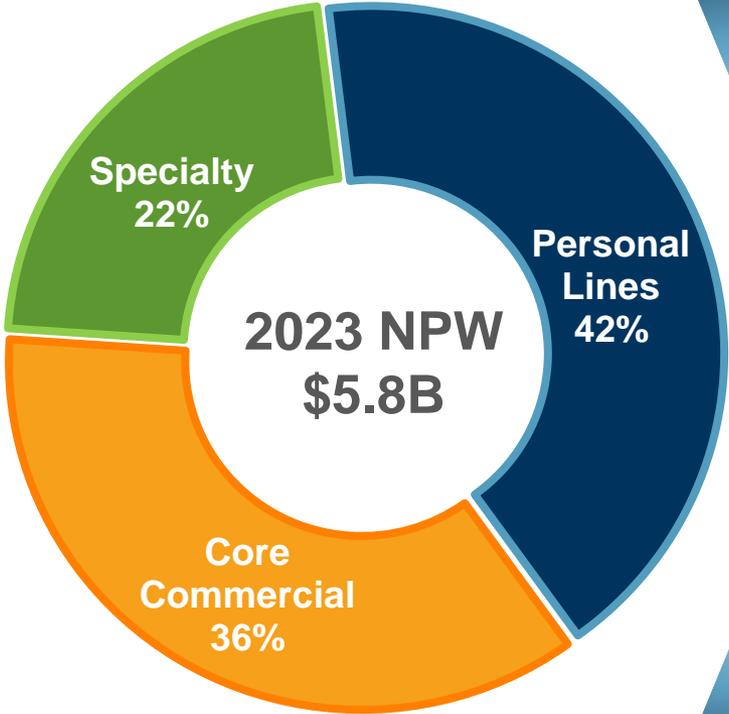
Increased depth and breadth of agency relationships drives growth and profitability, and increased relevance leads to higher retention and improved loss ratios

Capitalizing on Our Agents' Growth and Consolidation Trends

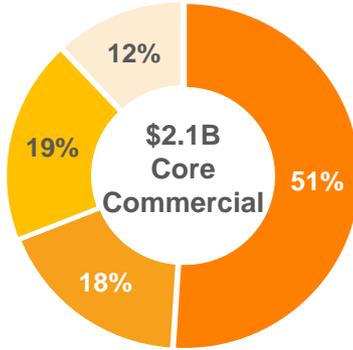
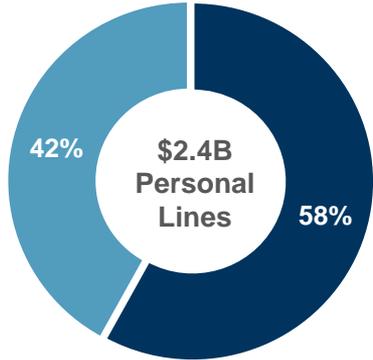


Positioned to drive continued expansion in a consolidating market through organic growth, partnering with consolidators, and new agency appointments

Diversified and Relevant Business Capabilities



- Personal auto
- Home and other



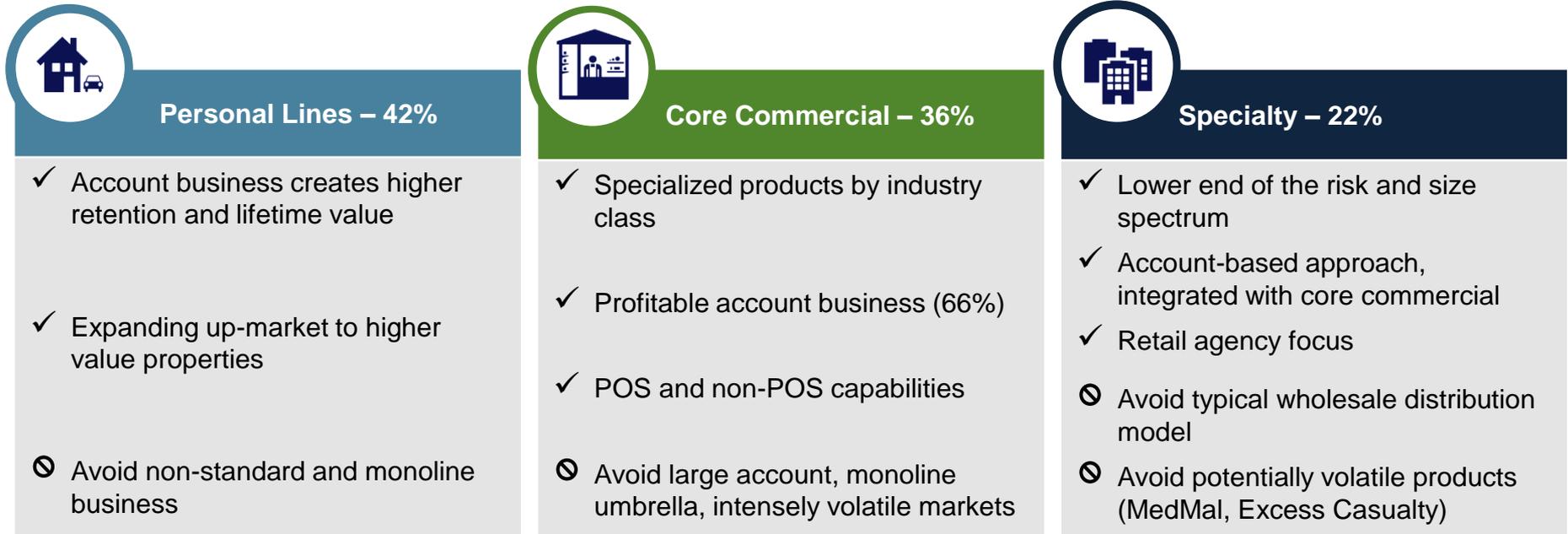
- Commercial multiple peril
- Commercial auto
- Workers' compensation
- Other core commercial

- Professional and executive lines
- Specialty property and casualty
- Marine
- Surety and other



Specialized and Differentiated Offering in Each Business Segment

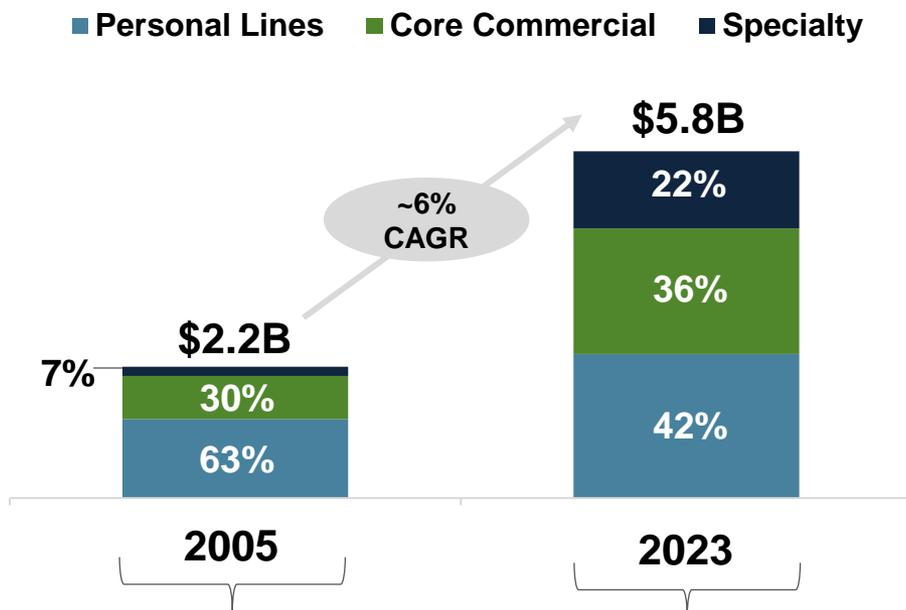
Business Profile \$5.8B 2023 Net Premiums Written



Growth

Transformed Into Diversified P&C Franchise with Strong Growth Opportunities

Net Premiums Written



- Regional footprint
- PL focused
- Property concentration

- National footprint
- Diversified across PL, Core Commercial and Specialty
- Balanced between property/casualty

- ✓ Transformed to a more balanced, differentiated P&C franchise
- ✓ Change fueled by organic growth and targeted “capabilities” acquisitions
- ✓ Reduced reliance on property lines in challenging geographies
- ✓ Most recent growth primarily driven by pricing increases

Specialty

Leading carrier for small to mid-sized clients primarily served by retail agents, with proven growth strategy on track to deliver ~10% CAGR

Business Mix

\$1.3B NPW



2023

Market Focus

Independent agency focus, with an emphasis on the lower-end of the risk and account size spectrum



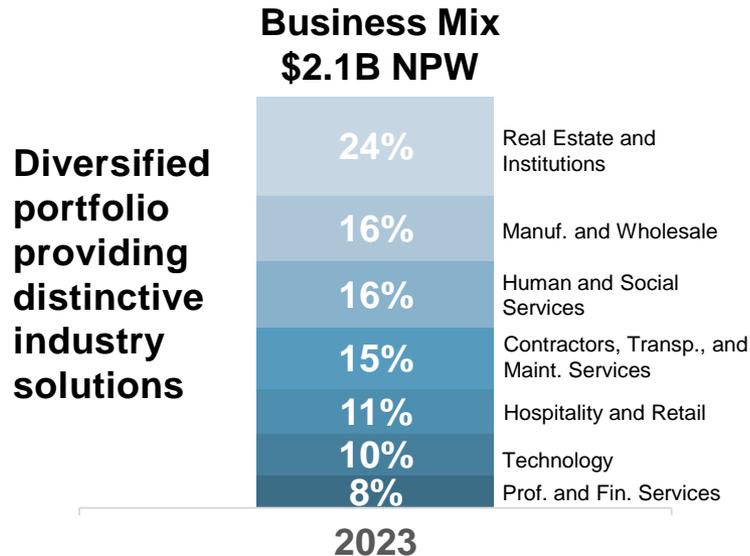
Growth and Profitability Drivers

- ✓ Nearly doubled written premium over the last 10 years using organic and inorganic opportunities
- ✓ Expanding product capabilities focused on agent needs
- ✓ Capturing excess & surplus opportunities at strong margins
- ✓ Expanding marine portfolio by geography and class of business
- ✓ Leveraging Core Commercial to pursue account strategy
- ✓ Expanding shelf space with agent partners and distribution points (i.e., wholesale channel)
- ✓ Accelerating technology investments to create efficiencies for agents
- ✓ Capitalizing on rate increases

\$45B
Market
Opportunity

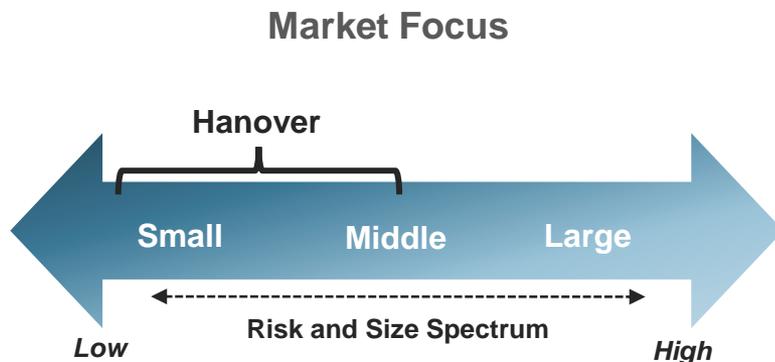
Core Commercial

Leading carrier in providing agents with the flexibility between straight through and more complex, risk specific underwriting



Growth and Profitability Drivers

- ✓ Deepen agency relationships, leveraging market insights
- ✓ Enhanced use of granular pricing and segmentation; capitalizing on rate momentum
- ✓ Leveraging our new, state-of-the-art quoting and binding platform in Small Commercial
- ✓ Targeted underwriting appetite expansion

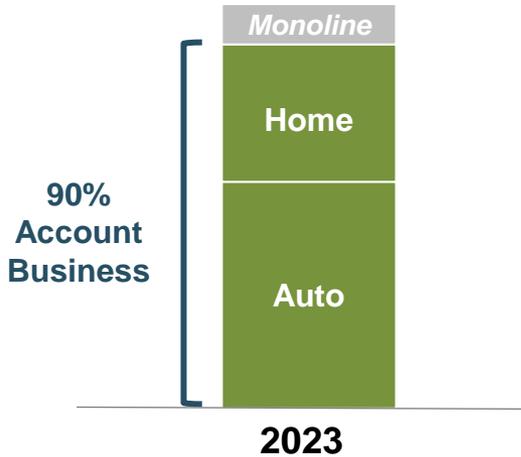


\$190B
Market Opportunity

Personal Lines

Leading carrier for whole account offerings for middle market customers across an attractive regional footprint

Business Mix \$2.4B NPW



20 State Footprint



Value Drivers

- ✓ Partnering with select independent agents to gain share of preferred accounts (~30% current market share of preferred accounts)
- ✓ Leveraging state-of-the-art TAP Sales platform
- ✓ Continue successful expansion “upmarket” through Prestige product
- ✓ New agency appointments in under-penetrated geographies

Market Focus

Expanding upstream toward a more value-oriented and growing customer segment



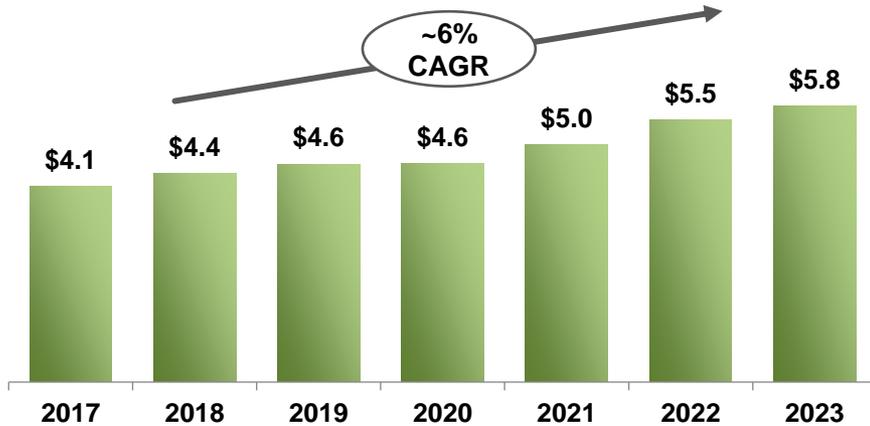
Profitability

Long-term Approach to Financial Discipline Drives Success

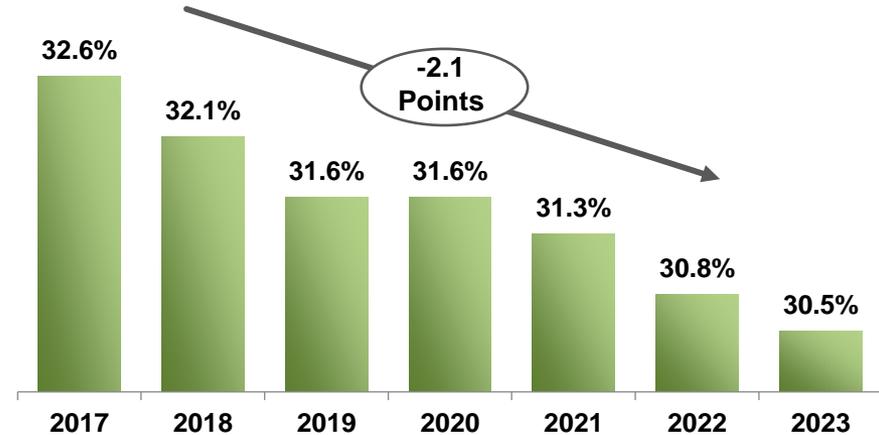


Built a Robust Performance Track Record Over The Last Several Years...

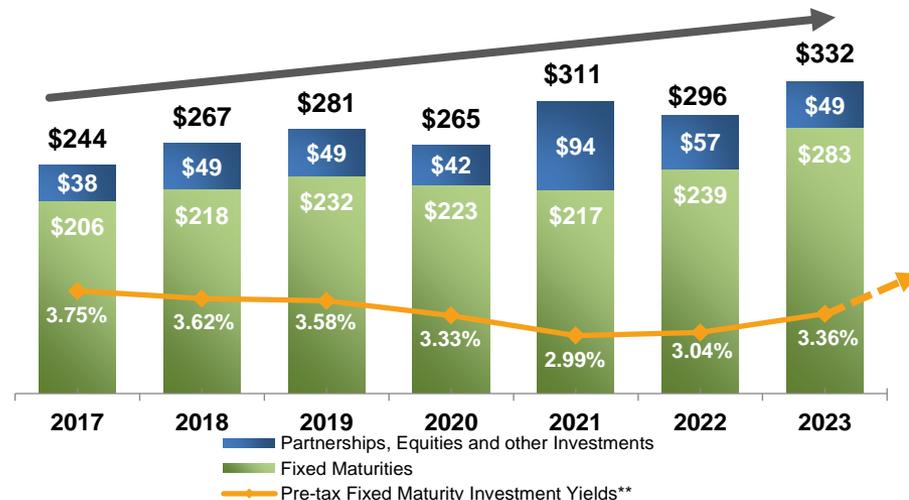
(\$ in billions) **Net Premiums Written**



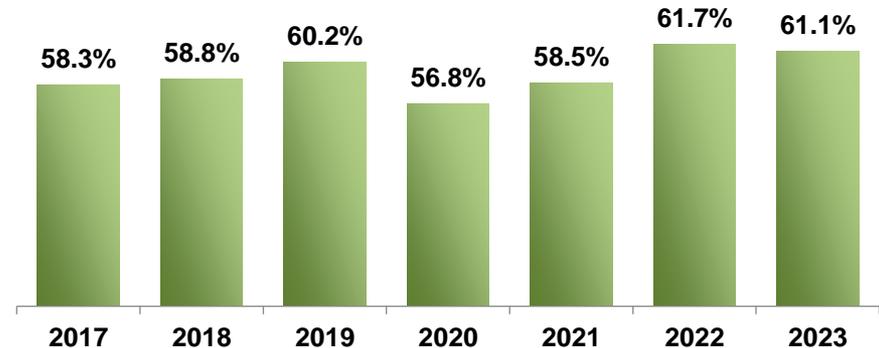
Expense Ratio⁽²⁾



(\$ in millions) **Pre-Tax Net Investment Income***

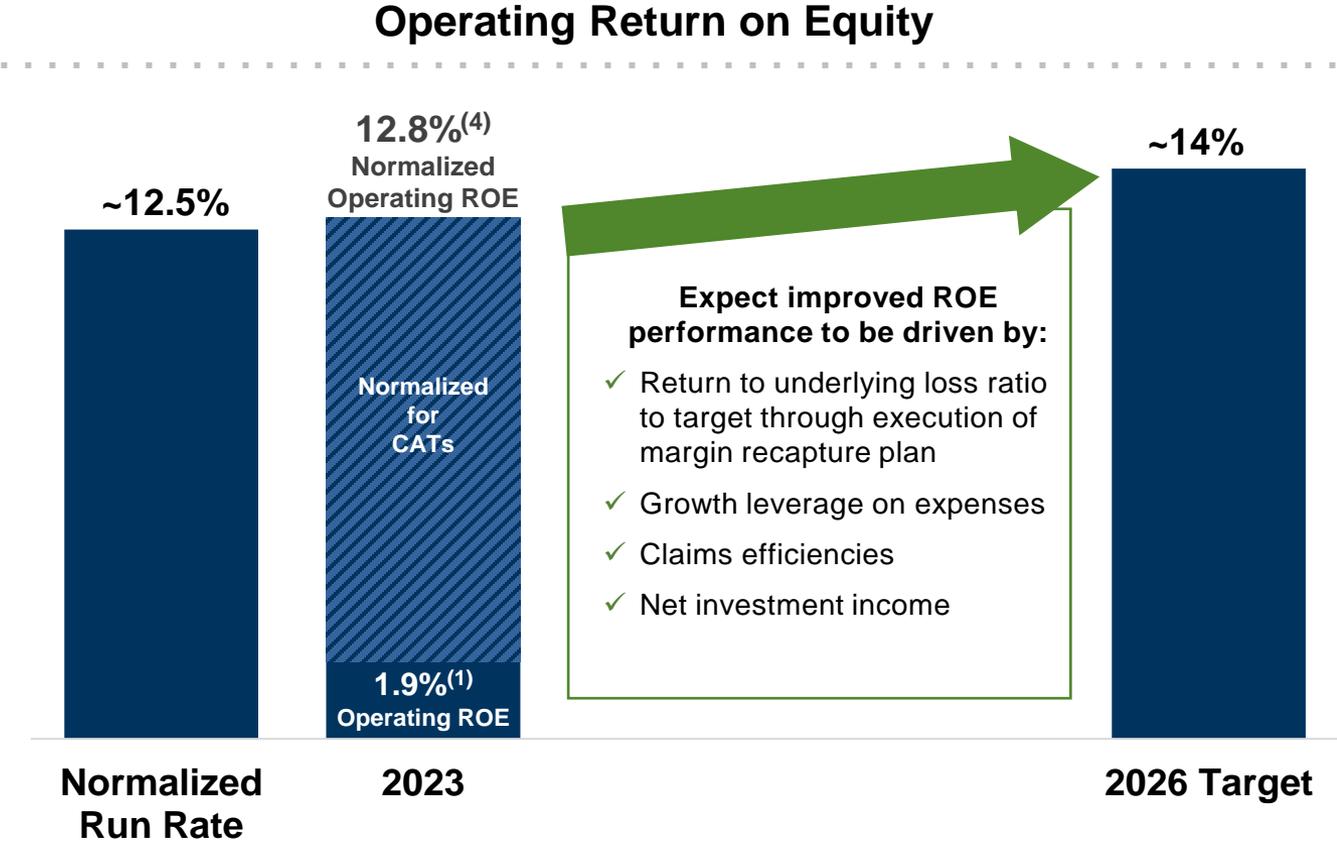


Current Accident Year Loss and LAE Ratio, ex-CAT⁽³⁾



* Net investment income from partnerships, equities and other investments are presented net of investment expenses
 ** Pre-tax yields represent annualized net investment income for the period divided by the monthly average invested assets at amortized cost or cost, which excludes accumulated changes in fair value for fixed maturities and equity securities

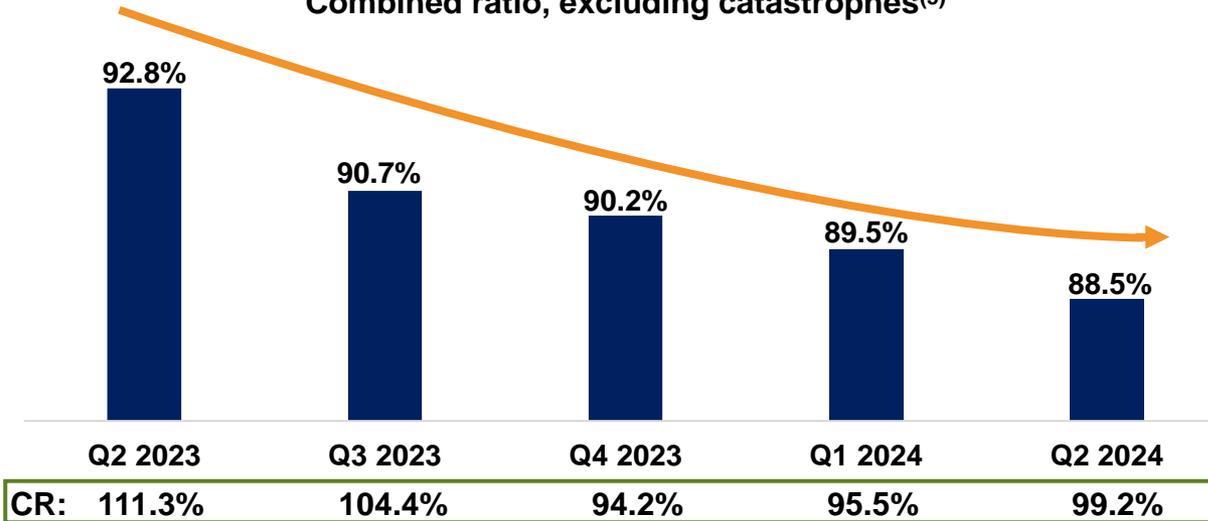
Well-positioned to Achieve 14% or Higher Operating ROE During the Next Two Years



For additional information regarding forward-looking statements and non-GAAP measures on this page and throughout this presentation, please refer to page 34 of this presentation.

Strong Execution Delivers Improved Performance

Combined ratio, excluding catastrophes⁽⁵⁾



- Improved performance generated by:
 - Significant pricing increases and exposure adjustments in property
 - Profitability management in Middle Market
 - Risk prevention and mitigation tools (sensors)
 - Further earning in of rates and exposure adjustments will continue to drive earnings improvement, particularly in Personal Lines

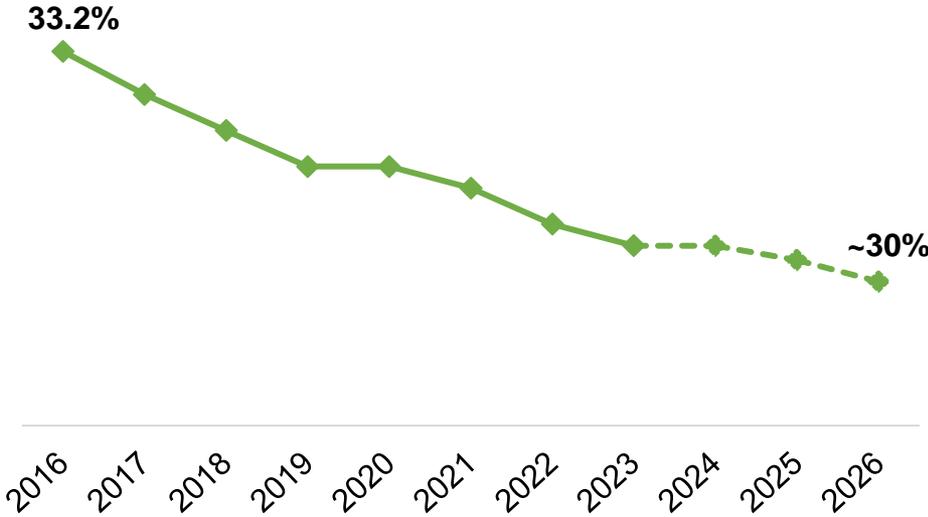
Q2 2024 Renewal Price Change⁽⁶⁾

Core Commercial	Personal Lines	Specialty
11.7%	18.5%	11.7%

- Franchise repositioning delivers substantial ROE

Continued Fixed Cost Leverage From Growth is The Foundation of Improved Financial Performance Looking Forward

Expense Ratio Improvement from Fixed Cost Leverage



- Expect at least 20 basis point annual improvement via fixed cost leverage
- After significant investment in modernization of our enterprise platforms, funding becomes increasingly available to further enable business growth and innovation

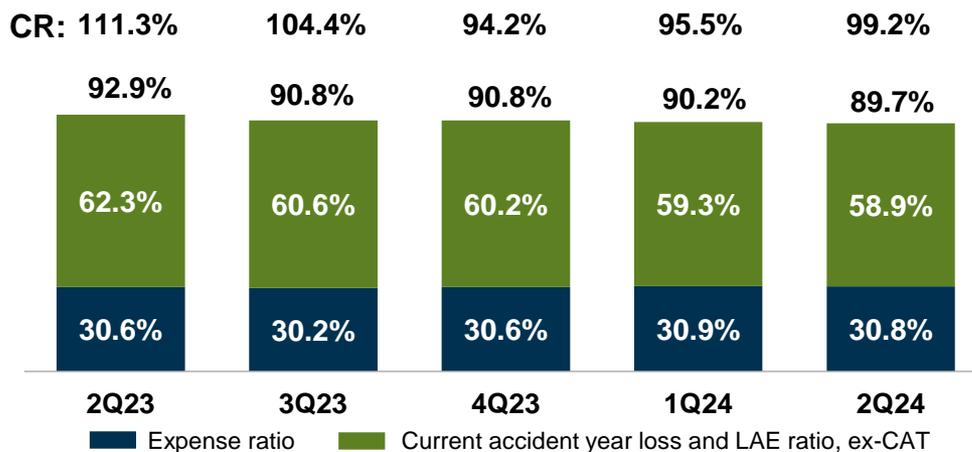
Second Quarter 2024 Underwriting Results

(\$ in millions)

Net premiums written and growth*



Current accident year combined ratio, ex-CAT⁽⁵⁾

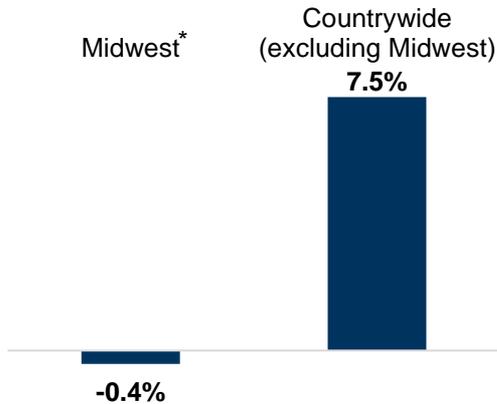


- Combined ratio (CR) of 99.2% in the second quarter of 2024, improved 12.1 points from the prior-year quarter, driven by lower catastrophe losses, as well as improvement in the current accident year loss and LAE ratio, ex-CAT, in each major segment
- Catastrophe losses of \$157.1 million in the second quarter of 2024, or 10.7 points, largely driven by severe convective storm activity and primarily impacting Personal Lines
- Current accident year loss and LAE ratio, ex-CAT, of 58.9%, improved 3.4 points from the prior-year quarter, driven by tremendous improvement in Personal Lines, as well as strong, steady margins in Core Commercial and Specialty
- Prior-year reserve development, ex-CAT, was \$17.4 million favorable in the quarter, driven by favorability in property lines within Personal Lines and Core Commercial, and widespread favorability in Specialty
- Expense ratio increased 20 basis points compared to the prior-year quarter, primarily driven by continued strategic business investments in Specialty and increased variable compensation expenses
- Net premiums written increased 5.1%, accelerating growth from the first quarter 2024

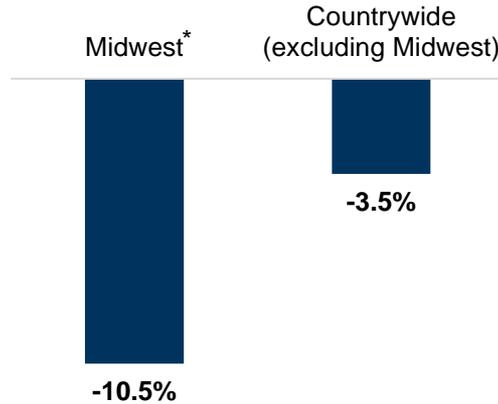
*Unless otherwise stated, net premiums written growth and other growth comparisons are to the same period of the prior year

Robust Progress on CAT Exposure Actions

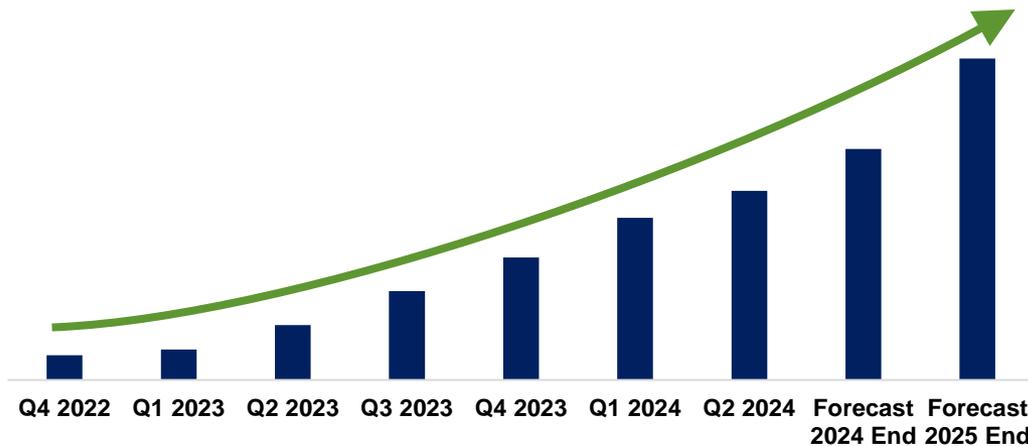
Personal Lines Net Written Premium Q2'24 YoY Growth



Personal Lines Q2'24 YoY PIF Change (ex OPL)



Estimated Total Insured Value (TIV) Protected by Property IoT Sensors in Core Commercial



- Elevated catastrophe experience across the industry reinforces the importance of our catastrophe management actions
- Using multiple levers to address including pricing, terms & conditions, geographic and industry mix management
- Higher all-peril deductibles and new wind and hail deductibles are being applied to property lines new business and renewals in all targeted states judiciously and on schedule with meaningful impact expected in 2025
- 75% of the most vulnerable Core Commercial middle market accounts have been addressed through underwriting actions or sensor deployment
- Accelerating implementation of our property IoT sensor offerings, primarily in our Core Commercial middle market business, to proactively mitigate risk and prevent losses
 - Already have observed numerous occasions of sensors driving loss prevention
 - Expect TIV protection to double by the end of 2025

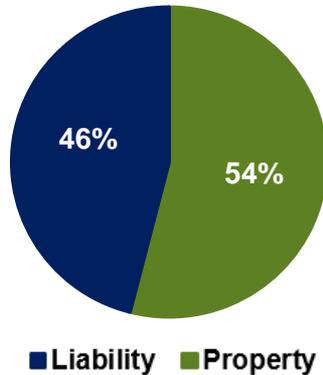
*Midwest includes Michigan, Illinois, Ohio, Wisconsin, and Indiana

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Committed to navigating the evolving liability environment with vigilance and agility

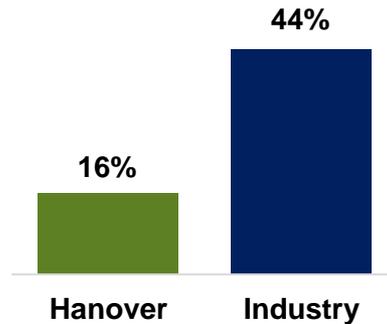
Relatively smaller exposure to liability versus most public peers

Based on 2023 Hanover Direct Written Premiums



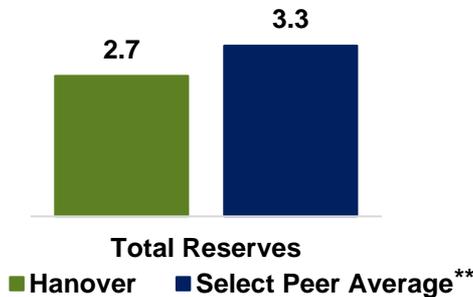
Grew slower than the industry in occurrence liability lines* from 2019 to 2023

Based on Direct Written Premiums
Source: S&P Global



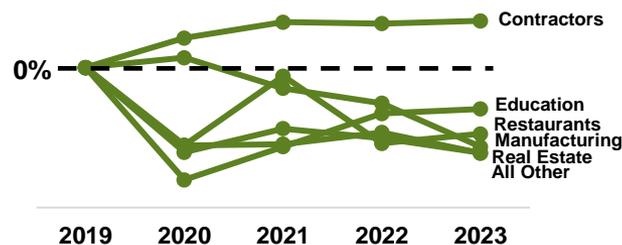
Shorter reserve duration compared to peers

(duration in years)



Seeing continued frequency benefit in many industry classes

Core Commercial BOP, CPP, and OCL Liability
Frequency Indexed to 2019



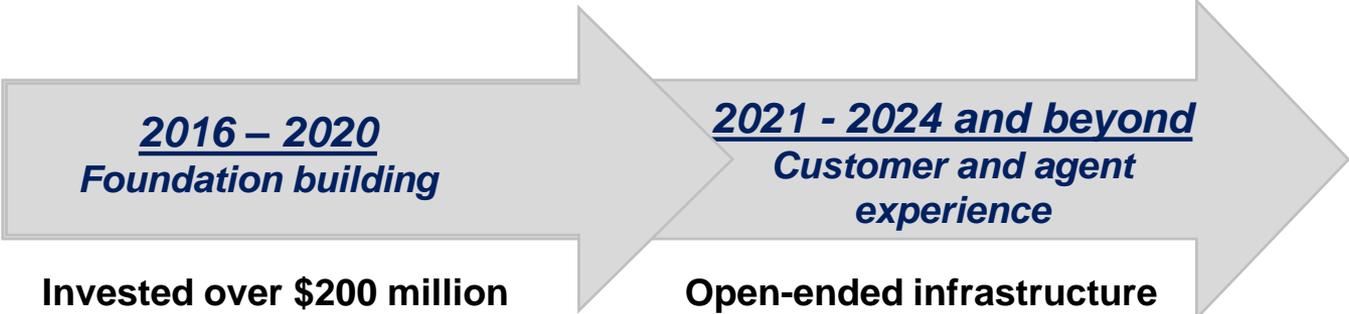
- Maintaining attentive focus on current liability trends, which have remained within expectations, supported by:
 - Prior initiatives to de-emphasize industry classes most impacted by social inflation, particularly in large metro areas
 - Advantageous industry and geographic mix has driven substantial reduction in loss frequency relative to pre-pandemic periods (lower exposure to contractors class)
 - Prudent severity assumptions
 - Slowed down growth over the last several years, in reaction to challenging loss trends
 - Do not write standalone excess umbrella
 - Casualty reinsurance attaches at \$2.5 million
- Remain confident in the strength of our reserves and disciplined in our loss ratio picks

*Occurrence liability lines includes other liability occurrence and CMP liability

**Select peer average includes Allstate, Chubb, Cincinnati, CNA, Hartford, RLI, Selective, Travelers, and W.R. Berkley – Source: Dowling & Partners

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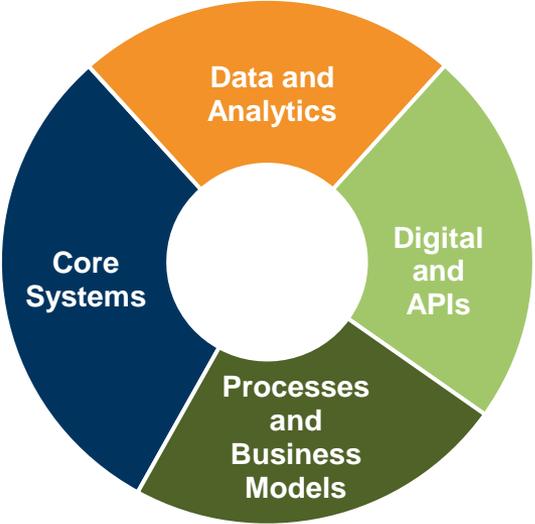
Technology Investments to Enhance Our Front-End Capabilities and Generate Efficiencies



Invested over \$200 million to upgrade or replace nearly all **core systems** within our technology stack:

- Small commercial platform
- Personal Lines platforms
- Claims
- Billing, General ledger

Open-ended infrastructure allows for agility in future innovation and investments in R&D

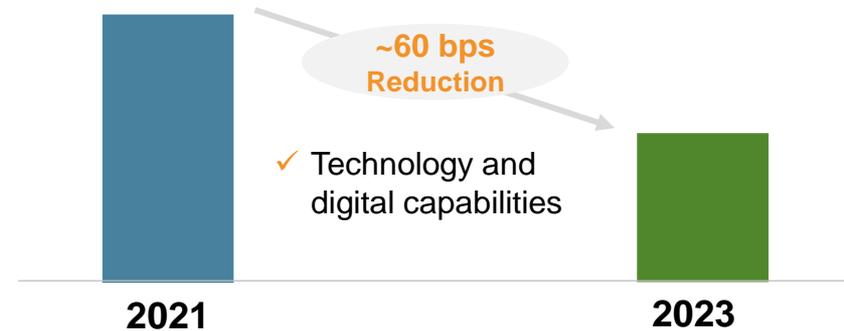


Our Claims Organization is a Strong Contributor to Earnings and Growth

Claims Strategy

- Enhance customer experience through digital and self-service
- Reduce operating costs through the integration of AI and automation
- Leverage claims data for insights and analytics to optimize indemnity outcomes

Loss Adjustment Expense (“LAE”)



Remain on track to deliver 80 to 100 basis point reduction in the loss adjustment expense (“LAE”) ratio by 2026, as a result of our claims strategy implementation

Sustainability

Advancing Sustainability Priorities With Purpose

Process



Embedding ESG into our business strategy

Established Board of Directors oversight of ESG

Established a cross disciplinary management committee, known as our **ESG Council**

Created and following a responsible investment policy

Disclosures



Launched Global Reporting Initiative (GRI) Index in 2019

Created GRI disclosure that cross references to TCFD in 2021

Signed CEO Action for Diversity and Inclusion pledge in 2019; signed Insurer's Principles of Climate Change Adaptation

Published an inaugural sustainability report in 2023 and second in 2024

Awards



100% score on Human Rights Corporate Equality Index

Recognized by Forbes as one of America's best midsize employers

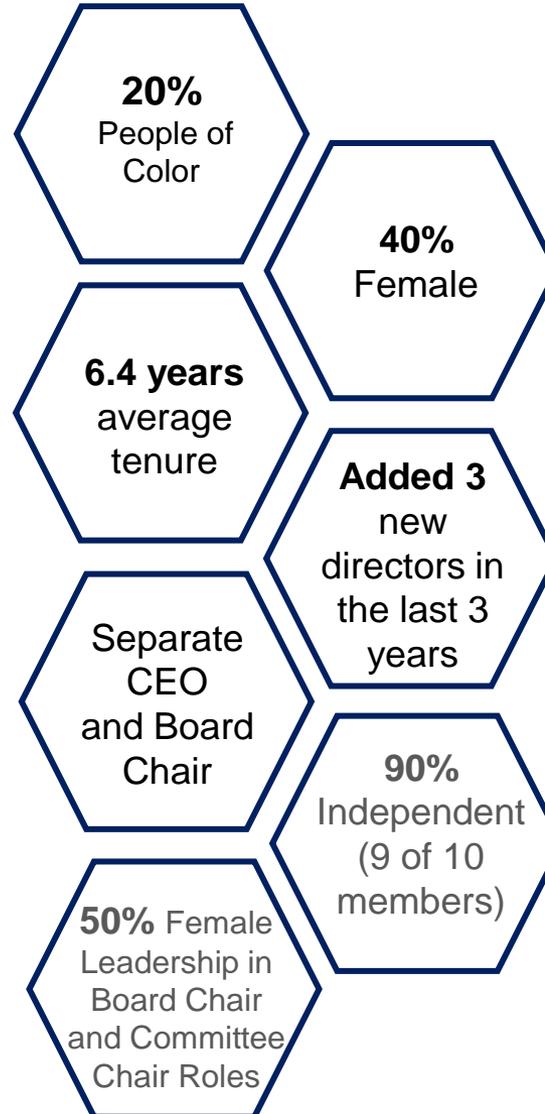
Named one of America's Most Responsible Companies by Newsweek

Women on Boards Winning Company

Diverse Board Focused on Delivering Sustainable, Long-Term Stakeholder Value Through Strong Governance

Board Member	Selected Experience
 Cynthia Egan <i>Chair of the Board</i>	T. Rowe Price, Fidelity
 Francisco Aristeguieta	Citigroup, State Street
 Kevin Bradicich	McKinsey
 Theodore Bunting, Jr.	Entergy
 Jane Carlin*	Morgan Stanley, Credit Suisse
 J. Paul Condrin III*	Liberty Mutual, KPMG
 Kathleen Lane	TJX, National Grid, Gillette, GE, Pepsi
 Joseph Ramrath*	Colchester Partners, United Asset Management
 Elizabeth Ward	MassMutual, Babson Capital Management
 Jack Roche <i>CEO, The Hanover</i>	Travelers, Fireman's Fund, Atlantic Mutual

* Committee Chair



Collective Expertise

- ✓ P&C Insurance
- ✓ Financial Services
- ✓ Mergers and Acquisitions
- ✓ Finance / Accounting
- ✓ Investments / Portfolio Management
- ✓ Technology
- ✓ Operations
- ✓ Marketing and Distribution
- ✓ Governance
- ✓ Government and Public Policy
- ✓ Capital Markets
- ✓ Risk Management
- ✓ Information Security
- ✓ Artificial Intelligence
- ✓ Legal / Regulatory
- ✓ Investor Relations
- ✓ Corporate Strategy
- ✓ Human Resources
- ✓ Sustainability

About The Hanover

The Hanover Insurance Group, Inc. is the holding company for several property and casualty insurance companies, which together constitute one of the largest insurance businesses in the United States. The company provides exceptional insurance solutions through a select group of independent agents and brokers. Together with its agent partners, The Hanover offers standard and specialized insurance protection for small and mid-sized businesses, as well as for homes, automobiles, and other personal items. For more information, please visit hanover.com.

Forward-Looking Statements

Certain statements in this document and comments made by management may be “forward-looking statements” as defined in the Private Securities Litigation Reform Act of 1995. All statements, other than statements of historical facts, may be forward-looking statements. Words such as, but not limited to, “believes,” “anticipates,” “expects,” “intends,” “may,” “projects,” “projections,” “plan,” “likely,” “potential,” “targeted,” “forecasts,” “should,” “could,” “continue,” “outlook,” “guidance,” “modeling,” “target profitability,” “target margins,” “confident,” “will,” “line of sight,” and other similar expressions are intended to identify forward-looking statements. Forward-looking statements by their nature address matters that are, to different degrees, uncertain. The company cautions investors that any such forward-looking statements are estimates, beliefs, expectations and/or projections that involve significant judgment, and that historical results, trends and forward-looking statements are not guarantees and are not necessarily indicative of future performance. Actual results could differ materially from those anticipated.

These statements include, but are not limited to, the company’s statements regarding:

- The company’s outlook and its ability to achieve components or the sum of the respective period guidance on its future results of operations including: the combined ratio, excluding catastrophe losses; catastrophe losses; net investment income; growth of net premiums written and/or net premiums earned in total or by line of business; expense ratio; operating return on equity; interest rate assumptions and investment portfolio management, renewal price change, rate, and/or the effective tax rate;
- The company’s ability to deliver on expectations set forth related to target margins, target returns and/or return to target profitability in total or by line of business;
- The company’s ability to deliver on its long-term targets, including, but not limited to, return on equity;
- The impacts of general economic and sociopolitical conditions on the company’s operating and financial results, including, but not limited to, the impact on the company’s investment portfolio, changes in claims frequency as a result of fluctuations in economic activity, the potential impacts of inflation, and/or claims severity from higher cost of repairs due to, among other things, supply chain disruptions and inflation;
- Uses of capital for share repurchases, special or ordinary cash dividends, business investments or growth, or otherwise, and outstanding shares in future periods as a result of various share repurchase mechanisms, capital management framework, especially in the current environment, and overall comfort with liquidity and capital levels;
- Catastrophe modeling and variability of catastrophe losses due to risk concentrations, changes in weather patterns, severe weather including hurricanes, tornadoes and other windstorms, hail, flood, earthquakes, fire, explosions, severe winter weather and other convective storms, or terrorism, civil unrest, riots or other events, as well as the complexity in estimating losses from large catastrophe events due to delayed reporting of the existence, nature or extent of losses or where “demand surge,” regulatory assessments, litigation, coverage and technical complexities or other factors may significantly impact the ultimate amount of such losses;
- Current accident year losses and loss selections (picks), excluding catastrophes, and prior accident year loss reserve development patterns, particularly in complex “longer-tail” liability lines, as well as the inherent variability in short-tail property and non-catastrophe weather losses;
- Changes in frequency and loss severity trends in Core Commercial, Specialty and/or Personal Lines;
- Ability to manage the impact of inflationary pressures, global market disruptions, economic conditions, geopolitical events or otherwise, including, but not limited to, supply chain disruptions, labor shortages, and increases in cost of goods, services, labor, and materials;
- The confidence or concern that the current level of reserves is adequate and/or sufficient for future claim payments, whether due to losses that have been incurred but not reported, circumstances that delay the reporting of losses, business complexity, adverse judgments or developments with respect to case reserves, the difficulties and uncertainties inherent in projecting future losses from historical data, changes in replacement and medical costs, as well as complexities including legislative, regulatory or judicial actions that expand the intended scope of coverages, or other factors;
- Characterization of some business as being “more profitable” in light of inherent uncertainty of ultimate losses incurred, especially for “longer-tail” liability businesses;
- Efforts to manage expenses, including the company’s long-term expense savings targets, while allocating capital to business investment, which is at management’s discretion;
- Risks and uncertainties with respect to our ability to retain profitable policies in force and attract profitable policies and to increase rates commensurate with, or in excess of, loss trends;
- Mix improvement, underwriting initiatives, coverage restrictions, non-renewals, changes in terms and conditions, and pricing segmentation, among others, to grow businesses believed to be more profitable or reduce premiums attributable to products or lines of business or geographies believed to be less profitable; balance rate actions and retention; offset long-term and/or short-term loss trends due to increased frequency; increased “social inflation” from a more litigious environment and higher average cost of resolution; increased property replacement or repair costs; and/or social movements;
- The ability to generate growth in targeted segments through new agency appointments; rate increases (as a result of its market position, agency relationships or otherwise), retention improvements or new business; expansion into new geographies; new product introductions; or otherwise; and
- Investment returns and the effect of macro-economic interest rate trends and overall security yields, including the macro-economic impact of governmental and/or central banking initiatives taken in response to inflationary pressures, and geopolitical circumstances, on new money yields, as well as individual investment and overall investment returns.

Additional Risks and Uncertainties

Investors are further cautioned and should consider the risks and uncertainties in the company's business that may affect such estimates and future performance that are discussed in the company's most recently filed reports on Form 10-K and Form 10-Q and other documents filed by The Hanover Insurance Group, Inc. with the Securities and Exchange Commission (SEC) and that are also available at www.hanover.com under "Investors." These risks and uncertainties include, but are not limited to:

- Changes in regulatory, legislative, economic, market and political conditions, particularly with respect to rates, the use of data, technology, artificial intelligence, cybersecurity, policy terms and conditions, restrictions on cancellations and/or non-renewals, payment flexibility, and regions where the company has geographical concentrations;
- Heightened financial market volatility, fluctuations in interest rates (which have a significant impact on the market value of our investment portfolio and thus our book value), inflationary pressures, default rates, difficult economic, market and political conditions and other factors that affect investment returns from the investment portfolio;
- Recessionary economic periods that may inhibit the company's ability to increase pricing or renew business, or otherwise impact the company's results, and which may be accompanied by higher claims activity in certain lines;
- Data security and privacy incidents, including, but not limited to, those resulting from a malicious cybersecurity attack on the company or its business partners and service providers, or intrusions into the company's network systems, including cloud-based data information storage, or data sources;
- Adverse claims experience, including those driven by large or increased frequency and/or severity of catastrophe events, including those related to hurricanes, tornadoes and other windstorms, hail flood, earthquakes, fire, explosions, severe winter weather and other convective storms, or due to terrorism, civil unrest, riots, or cybersecurity events (including from products not intended to provide cyber coverage);
- The limitations and assumptions used to model non-catastrophe property and casualty losses (particularly with respect to products with longer-tail liability lines, such as casualty and bodily injury claims, or involving emerging issues related to losses incurred as the result of new lines of business, such as cyber or financial institutions coverage, or reinsurance contracts and reinsurance recoverables), leading to potential adverse development of loss and loss adjustment expense reserves;
- Impacts of changing climate conditions and weather patterns causing higher levels of losses from weather events to persist and leading to new or enhanced regulations;
- Litigation and the possibility of adverse judicial decisions, including those which expand policy coverage beyond its intended scope and/or award "bad faith" or other non-contractual damages, and the impact of "social inflation" and third-party litigation funding affecting judicial awards and settlements;
- The ability to increase or maintain insurance rates in line with anticipated loss costs and/or governmental action, including mandates by state departments of insurance to either raise or lower rates, or provide credits or return premium to insureds;
- Investment impairments, which may be affected by, among other things, the company's ability and willingness to hold investment assets until they recover in value, as well as credit and interest rate risk, and general financial and economic conditions;
- Disruption of the independent agency channel or its operating model, including the impact of competition and consolidation in the industry and among agents and brokers, and the impact of artificial intelligence tools;
- Competition, particularly from competitors who have resource and capability advantages;
- The global macroeconomic environment, including inflation, recessionary effects, global trade disputes, war, energy market disruptions, equity price risk, and interest rate fluctuations, which, among other things, could result in reductions in market values of fixed maturities and other investments, and/or increases in loss costs;
- Adverse state and federal regulation, legislative and/or regulatory actions (including significant revisions to Michigan's automobile personal injury protection system and related litigation, and various regulations, orders and proposed legislation regarding bad faith, premium grace periods and returns, changes to policy terms and conditions, and rate actions);
- Financial ratings actions, in particular, downgrades to the company's ratings;
- Operational and technology risks and evolving technological and product innovation, including risks created by remote work environments, the evolving use of artificial intelligence, and cybersecurity threats;
- Uncertainties in estimating indemnification liabilities recorded in conjunction with obligations undertaken in connection with the sale of various businesses and discontinued operations; and
- The ability to collect from reinsurers, reinsurance availability and pricing, reinsurance terms and conditions, and the performance of the run-off voluntary property and casualty pools business (including those in the Other segment or in discontinued operations).

Investors should not place undue reliance on forward-looking statements, which speak only as of the date they are made and should understand the risks and uncertainties inherent in or particular to the company's business. The company does not undertake the responsibility to update or revise such forward-looking statements, except as required by law.

Non-GAAP Financial Measures

Non-GAAP Financial Measures

As discussed on page 40 of the company's Annual Report on Form 10-K for the year ended December 31, 2023, the company uses non-GAAP financial measures as important measures of its operating performance, including operating income (loss), operating income (loss) before interest expense and income taxes, operating income (loss) per diluted (basic) share, and components of the combined ratio, both excluding and/or including catastrophe losses, prior-year reserve development and the expense ratio. Management believes these non-GAAP financial measures are important indications of the company's operating performance. The definition of other non-GAAP financial measures and terms can be found in the 2023 Annual Report on pages 64-67.

Operating income (loss) and operating income (loss) per diluted (basic) share are non-GAAP measures. They are defined as net income (loss) excluding the after-tax impact of net realized and unrealized investment gains (losses), gains and/or losses on the repayment of debt, other non-operating items, and results from discontinued operations. Net realized and unrealized investment gains (losses), which include changes in the fair value of equity securities still held, are excluded for purposes of presenting operating income (loss), as they are, to a certain extent, determined by interest rates, financial markets and the timing of sales. Operating income (loss) also excludes net gains and losses from disposals of businesses, gains and losses related to the repayment of debt, costs to acquire businesses, restructuring costs, the cumulative effect of accounting changes, and certain other items. Operating income (loss) is the sum of the segment income (loss) from: Core Commercial, Specialty, Personal Lines, and Other, after interest expense and income taxes. In reference to one of the company's four reporting segments, "operating income (loss)" is the segment income (loss) before both interest expense and income taxes. The company also uses "operating income (loss) per diluted (basic) share" (which is after both interest expense and income taxes). Operating income per share is calculated by dividing operating income by the weighted average number of diluted shares of common stock. Operating loss per share is calculated by dividing operating loss by the weighted average number of basic shares of common stock due to antidilution. The company believes that metrics of operating income (loss) and operating income (loss) in relation to its four reporting segments provide investors with a valuable measure of the performance of the company's continuing businesses because they highlight the portion of net income (loss) attributable to the core operations of the business. Income (loss) from continuing operations is the most directly comparable GAAP measure for operating income (loss) (and operating income (loss) before income taxes) and measures of operating income (loss) that exclude the effects of catastrophe losses and/or prior-year reserve development. These non-GAAP measures should not be misconstrued as substitutes for income (loss) from continuing operations or net income (loss) determined in accordance with GAAP. A reconciliation of operating income (loss) to income (loss) from continuing operations and net income (loss) for the relevant periods is included on page 35 of this presentation.

Operating return on average equity (ROE) is a non-GAAP measure. See end note (1) for a detailed explanation of how this measure is calculated. Operating ROE is based on non-GAAP operating income (loss). In addition, the portion of shareholder equity attributed to unrealized appreciation (depreciation) on fixed maturity investments, net of tax, is excluded. The company believes this measure is helpful in that it provides insight to the capital used by, and results of, the continuing business exclusive of interest expense, income taxes, and other non-operating items. These measures should not be misconstrued as substitutes for GAAP ROE, which is based on net income (loss) and shareholders' equity of the entire company and without adjustments.

Book value per share is total shareholders' equity divided by the number of common shares outstanding. Book value per share excluding net unrealized appreciation (depreciation) on fixed maturity investments, net of tax, is total shareholders' equity excluding the after-tax effect of unrealized appreciation (depreciation) on fixed maturities and market risk divided by the number of common shares outstanding.

The company may provide measures of operating income (loss) and combined ratios that exclude the impact of catastrophe losses (which in all respects include prior accident year catastrophe loss development). A catastrophe is a severe loss, resulting from natural or manmade events including, but is not limited to, hurricanes, tornadoes and other windstorms, hail, flood, earthquakes, fire, explosions, severe winter weather and other convective storms, riots, and terrorism. Due to the unique characteristics of each catastrophe loss, there is an inherent inability to reasonably estimate the timing or loss amount in advance. The company believes a separate discussion excluding the effects of catastrophe losses is meaningful to understand the underlying trends and variability of earnings, loss and combined ratio results, among others.

Prior accident year reserve development, which can either be favorable or unfavorable, represents changes in the company's estimate of costs related to claims from prior years. Calendar year loss and loss adjustment expense (LAE) ratios determined in accordance with GAAP, excluding prior accident year reserve development, are sometimes referred to as "current accident year loss ratios." The company believes a discussion of loss and combined ratios, excluding prior accident year reserve development, is helpful since it provides insight into both estimates of current accident year results and the accuracy of prior-year estimates.

The loss and combined ratios in accordance with GAAP are the most directly comparable GAAP measures for the loss and combined ratios calculated excluding the effects of catastrophe losses and/or prior-year reserve development. The presentation of loss and combined ratios calculated excluding the effects of catastrophe losses and/or prior-year reserve development should not be misconstrued as substitutes for the loss and/or combined ratios determined in accordance with GAAP.

End Notes

(1) Operating income (loss) and operating income (loss) per diluted (basic) share are non-GAAP measures. The following tables provide the reconciliation of operating income (loss) and operating income (loss) per diluted (basic) share to the most directly comparable GAAP measures, income (loss) from continuing operations and income (loss) from continuing operations per diluted (basic) share, respectively, which are then reconciled to net income (loss) and net income (loss) per diluted (basic) share, respectively, and shown in the table below. Operating Return on Average Equity (“Operating ROE”) is a non-GAAP measure. Operating ROE is calculated by dividing annualized operating income (after taxes for the applicable period (see under the heading in this presentation “Non-GAAP Financial Measures”) by the average shareholders’ equity, excluding net unrealized appreciation (depreciation) on fixed maturity investments, net of tax, (end note (7)). Operating ROE should not be misconstrued as a substitute for GAAP ROE. See calculations in table below, including the calculation of net income ROE using net income and average shareholders’ equity without adjustments as shown below.

The Hanover Insurance Group, Inc.								
	Three months ended December 31				Year ended December 31			
	2023		2022		2023		2022	
	\$ Amount	Per Share (Diluted)	\$ Amount	Per Share* (Diluted)	\$ Amount	Per Share (Diluted)	\$ Amount	Per Share (Diluted)
<i>(\$ in millions, except per share data)</i>								
Operating income (loss)								
Core Commercial	\$ 52.8		\$ (52.7)		\$ 167.2		\$ 106.9	
Specialty	70.5		43.9		243.5		186.0	
Personal Lines	36.8		(29.1)		(304.3)		(8.8)	
Other	(2.0)		(0.3)		(0.8)		1.0	
Total	158.1		(38.2)		105.6		285.1	
Interest expense	(8.5)		(8.6)		(34.1)		(34.1)	
Operating income (loss) before income taxes	149.6	\$ 4.14	(46.8)	\$ (1.31)	71.5	\$ 1.98	251.0	\$ 6.95
Income tax benefit (expense) on operating income (loss)	(36.5)	(1.01)	9.4	0.26	(15.3)	(0.42)	(51.1)	(1.42)
Operating income (loss) after income taxes	113.1	3.13	(37.4)	(1.05)	56.2	1.56	199.9	5.53
Non-operating items:								
Net realized losses from sales and other	(7.0)	(0.19)	(10.2)	(0.29)	(8.9)	(0.25)	(26.5)	(0.73)
Net change in fair value of equity securities	7.8	0.21	42.8	1.20	(5.6)	(0.16)	(63.3)	(1.75)
Impairments on investments:								
Credit-related impairments	(1.5)	(0.04)	(0.4)	(0.01)	(7.7)	(0.21)	(1.9)	(0.05)
Losses on intent to sell securities	-	-	-	-	(10.3)	(0.29)	(14.8)	(0.41)
Other non-operating items	(1.5)	(0.04)	(0.4)	(0.01)	(18.0)	(0.50)	(16.7)	(0.46)
Income tax benefit (expense) on non-operating items	1.3	0.04	(0.1)	-	2.1	0.06	(0.5)	(0.02)
Income (loss) from continuing operations, net of taxes	(6.4)	(0.18)	(6.6)	(0.18)	7.7	0.22	23.9	0.66
Discontinued operations (net of taxes):								
Income from discontinued Chaucer business	107.3	2.97	(11.9)	(0.33)	33.5	0.93	116.8	3.23
Income (loss) from discontinued life business	-	-	-	-	1.2	0.03	-	-
Net income (loss)	0.6	0.01	(0.2)	(0.01)	0.6	0.02	(0.8)	(0.02)
	<u>\$ 107.9</u>	<u>\$ 2.98</u>	<u>\$ (12.1)</u>	<u>\$ (0.34)</u>	<u>\$ 35.3</u>	<u>\$ 0.98</u>	<u>\$ 116.0</u>	<u>\$ 3.21</u>
Dilutive weighted average shares outstanding		36.2		36.1		36.1		36.1
Basic weighted average shares outstanding		35.8		35.6		35.7		35.6

	Year ended December 31, 2023
(\$ in millions)	
<i>Net Income ROE</i>	
Net income (GAAP)	\$ 35.3
Average shareholders' equity (end note (7))	2,308.5
Return on equity	1.5%
<i>Operating Income ROE</i>	
Operating income after income taxes	\$ 56.2
Average shareholders' equity, excluding net unrealized appreciation (depreciation) on fixed maturity investments, net of tax (end note (7))	2,903.7
Operating return on equity	1.9%

End Notes Continued

(2) Throughout this presentation, for purposes of the expense ratio calculation, expenses are reduced by installment and other fee revenues.

(3) Current accident year loss and LAE ratio, excluding catastrophe losses, is a non-GAAP measure, which is equal to the loss and LAE ratio (“loss ratio”), excluding prior-year reserve development and catastrophe losses. The loss ratio (which includes losses, LAE, catastrophe losses and prior-year loss reserve development) is the most directly comparable GAAP measure. A reconciliation of the GAAP loss ratio to the current accident year loss and LAE ratio, excluding catastrophe losses is shown below.

	Years ended						
	December 31, 2017	December 31, 2018	December 31, 2019	December 31, 2020	December 31, 2021	December 31, 2022	December 31, 2023
Total Loss and LAE ratio (GAAP)	64.7%	64.0%	64.0%	62.8%	65.7%	69.0%	73.0%
Less: Catastrophe ratio	6.4%	5.2%	3.8%	6.3%	8.4%	7.7%	12.2%
Less: Prior-year reserve development ratio	0.0%	0.0%	0.0%	-0.3%	-1.2%	-0.4%	-0.3%
Current accident year loss and LAE ratio, ex cat losses (non-GAAP)	<u>58.3%</u>	<u>58.8%</u>	<u>60.2%</u>	<u>56.8%</u>	<u>58.5%</u>	<u>61.7%</u>	<u>61.1%</u>

(4) “Normalized Operating ROE” is a non-GAAP financial measure and is used for illustrative purposes only. “Normalization” is not intended to imply a forward-looking statement or future expectations but is intended to illustrate results after specific adjustments. Normalization factors for the ongoing operations of the 2023 period assumes a catastrophe loss ratio of 5.1% of net earned premiums, as compared to 12.2% actually incurred for the full year 2023. Catastrophe losses are unpredictable in timing and magnitude and past experience is not indicative of future results (see additional risks and uncertainties on page 33). The following is a reconciliation of normalized operating ROE to net income ROE.

(\$ in millions)	Year ended December 31, 2023
<i>Net Income ROE</i>	
Net income (GAAP)	\$ 35.3
Average shareholders' equity (end note (7))	2,308.5
Return on equity	<u>1.5%</u>
<i>Operating Income ROE</i>	
Operating income after income taxes	\$ 56.2
Average shareholders' equity, excluding net unrealized appreciation (depreciation) on fixed maturity investments, net of tax (end note (7))	2,903.7
Operating return on equity	<u>1.9%</u>
<i>Normalized Operating Income ROE</i>	
Operating return on equity	1.9%
Normalization factors:	
Catastrophe losses	10.9%
Normalized operating return on equity	<u>12.8%</u>

End Notes Continued

(5) Combined ratio, excluding catastrophes, and current accident year combined ratio, excluding catastrophes, are non-GAAP measures. The combined ratio (which includes catastrophe losses and prior-year loss reserve development) is the most directly comparable GAAP measure. A reconciliation of the GAAP combined ratio to the combined ratio, excluding catastrophes, and the current accident year combined ratio, excluding catastrophes, is shown below.

	Q2 2023	Q3 2023	Q4 2023	Q1 2024	Q2 2024
Total combined ratio (GAAP)	111.3%	104.4%	94.2%	95.5%	99.2%
Less: Catastrophe ratio	18.5%	13.7%	4.0%	6.0%	10.7%
Combined ratio, excluding catastrophe losses (non-GAAP)	92.8%	90.7%	90.2%	89.5%	88.5%
Less: Prior-year reserve development ratio	-0.1%	-0.1%	-0.6%	-0.7%	-1.2%
Current accident year combined ratio, excluding catastrophe losses (non-GAAP)	92.9%	90.8%	90.8%	90.2%	89.7%

(6) Renewal price change in Personal Lines represents the average change in premium on policies available to renew caused by the net effects of filed rate, inflation adjustments or other changes in policy level exposure or insured risks, regardless of whether or not the policies are retained for the duration of their contractual terms. Rate change in Personal Lines is the estimated cumulative premium effect of approved rate actions applied to policies available for renewal, regardless of whether or not policies are actually renewed. Accordingly, rate changes do not represent actual increases or decreases realized by the company. Personal Lines rate changes do not include inflation or changes in policy level exposure or insured risks.

End Notes Continued

(7) Total shareholders' equity, excluding net unrealized appreciation (depreciation) on fixed maturity investments, net of tax, is a non-GAAP measure. Total shareholders' equity is the most directly comparable GAAP measure and is reconciled in the table below. For the calculation of operating ROE, the average of beginning and each included quarter's ending shareholders' equity, excluding net unrealized appreciation (depreciation) on fixed maturity investments, net of tax, is used for the period as shown and reconciled in the table below:

(\$ in millions)	Period Ended				
	December 31 2022	March 31 2023	June 30 2023	September 30 2023	December 31 2023
Total shareholders' equity (GAAP)	\$ 2,333.7	\$ 2,389.0	\$ 2,237.9	\$ 2,116.3	\$ 2,465.6
Less: net unrealized appreciation (depreciation) on fixed maturity investments, net of tax	(637.4)	(545.2)	(610.0)	(720.9)	(462.4)
Total shareholders' equity, excluding net unrealized appreciation (depreciation) on fixed maturity investments, net of tax	\$ 2,971.1	\$ 2,934.2	\$ 2,847.9	\$ 2,837.2	\$ 2,928.0
<u>Quarter Averages</u>					
Average shareholders' equity (GAAP)					\$ 2,291.0
Average shareholders' equity, excluding net unrealized appreciation (depreciation) on fixed maturity investments, net of tax					\$ 2,882.6
<u>Year-to-date Averages</u>					
Average shareholders' equity (GAAP)					\$ 2,308.5
Average shareholders' equity, excluding net unrealized appreciation (depreciation) on fixed maturity investments, net of tax					\$ 2,903.7