



The Hanover Insurance Group, Inc.

Fourth Quarter and Full Year 2022 Results February 2, 2023

*To be read in conjunction with the press release dated
February 1, 2023, and conference call scheduled for February 2, 2023*



Fourth Quarter and Full Year 2022 Operating Highlights

Full Year Highlights

- Combined ratio of 99.8%; combined ratio, excluding catastrophes⁽¹⁾, of 92.1%
- Net premiums written of \$5.5 billion, an increase of 9.7%* from the prior year
- Current accident year loss and loss adjustment expense (“LAE”) ratio, excluding catastrophes⁽²⁾, increased from the prior year reflecting the impact of inflation on property coverages in Personal Lines and Core Commercial, partially offset by the benefit of rate increases earning in within Specialty and Core Commercial
- Net investment income of \$296.3 million, above original guidance by approximately \$25 million, driven primarily by higher-than-expected bond reinvestment rates

Fourth Quarter Highlights

- Combined ratio of 108.0%; combined ratio, excluding catastrophes, of 94.1%
- Catastrophe losses of \$189.6 million, or 13.9 points, including the impact from Winter Storm Elliott of \$165 million
- Net premiums written increase of 9.1%, with strong contributions from each segment
- Renewal price change⁽³⁾ of 10.2% in Core Commercial, 13.2% in Specialty and 10.1% in Personal Lines, driven by homeowners renewal price change of 15.5%
- Rate change⁽³⁾ of 7.2% in Core Commercial, 8.2% in Specialty and 5.4% in Personal Lines
- Current accident year loss and LAE ratio, excluding catastrophes, was in line with the outlook provided on the third quarter 2022 earnings call, but higher than the prior-year quarter, driven by the impact of inflation, primarily on personal lines property
- On December 5, 2022, the Board of Directors approved an increase of 8% to the regular quarterly dividend
- Book value per share of \$65.38, up 1.2% from September 30, 2022, primarily driven by an increase in the fair value of investments

The Hanover Insurance Group, Inc. may also be referred to as “The Hanover” or “the company” interchangeably throughout this presentation.

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

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



Consolidated Financial Results

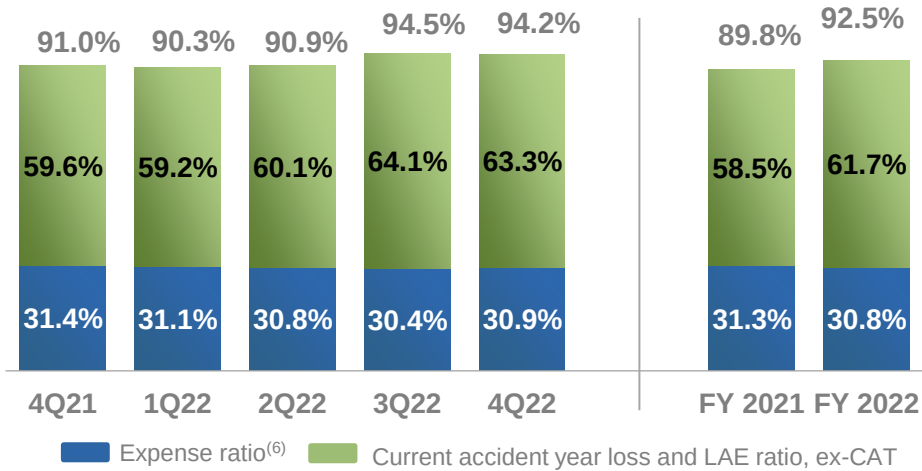
(\$ in millions, except per share amounts)

	Three months ended		Year ended	
	December 31, 2021	December 31, 2022	December 31, 2021	December 31, 2022
Net income (loss)	\$163.5	(\$11.6)	\$418.7	\$116.0
<i>Per diluted/(basic) share</i>	\$4.53	(\$0.33)	\$11.49	\$3.21
Operating income (loss) before interest expense and income taxes ⁽⁴⁾	\$162.9	(\$38.2)	\$432.3	\$285.1
Operating income (loss) after income taxes	\$122.1	(\$37.4)	\$318.3	\$199.9
<i>Per diluted/(basic) share</i>	\$3.38	(\$1.05)	\$8.73	\$5.53
<i>Book value per share</i>	\$88.59	\$65.38	\$88.59	\$65.38
<i>Book value per share, excluding net unrealized appreciation (depreciation) on fixed maturity investments</i>	\$83.38	\$83.41	\$83.38	\$83.41
Shareholders' equity	\$3,144.9	\$2,325.6	\$3,144.9	\$2,325.6
Debt	\$781.6	\$782.4	\$781.6	\$782.4
Total capital	\$3,926.5	\$3,108.0	\$3,926.5	\$3,108.0
Debt/total capital	19.9%	25.2%	19.9%	25.2%
Total assets	\$14,254.3	\$13,997.2	\$14,254.3	\$13,997.2
Net income (loss) return on average equity ⁽⁵⁾	20.9%	(2.0)%	13.4%	4.4%
Operating income (loss) return on average equity ⁽⁵⁾	16.8%	(5.0)%	11.2%	6.7%



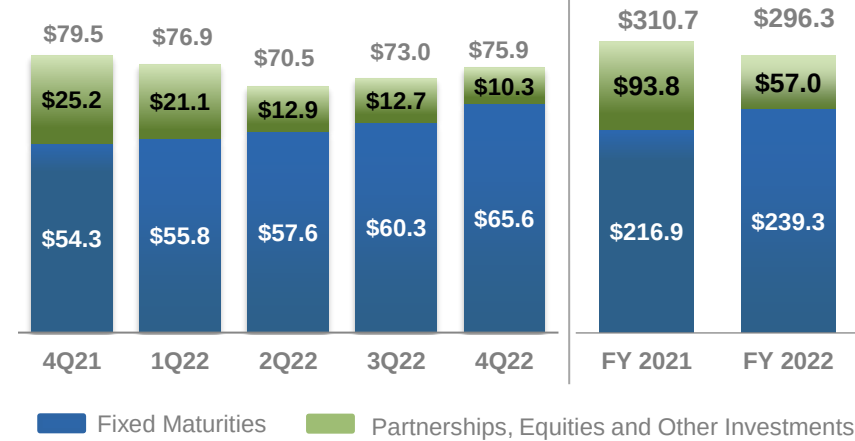
Solid Operating Results

Current Accident Year Combined Ratio, Ex-CAT



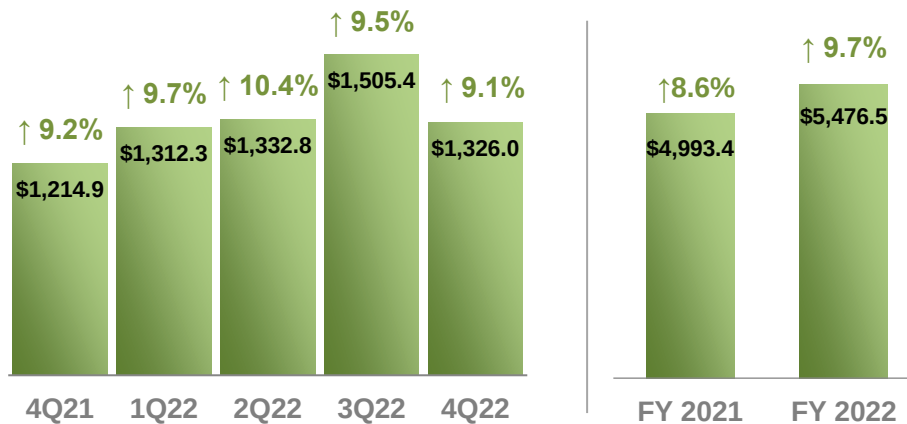
(\$ in millions)

Net Investment Income*

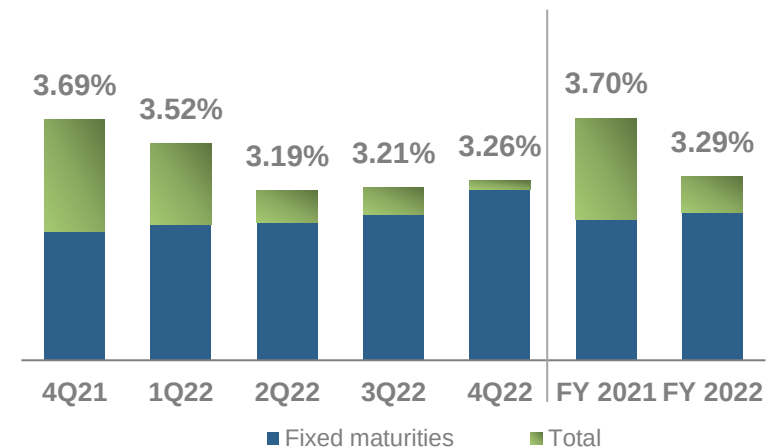


(\$ in millions)

Net Premiums Written and Growth



Pre-tax Investment Yields**



*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.



Core Commercial Underwriting Highlights

(\$ in millions)

	Three months ended December 31		Year ended December 31	
	2021	2022	2021	2022
Net premiums written	\$427.9	\$453.2	\$1,864.8	\$1,999.9
Growth	6.8%	5.9%	8.0%	7.2%
Net premiums earned	\$468.4	\$503.0	\$1,810.9	\$1,950.5
Catastrophe ratio	2.3%	24.6%	9.7%	9.9%
Prior year development ratio	(1.5)%	(0.5)%	(1.0)%	(0.5)%
Expense ratio	33.6%	32.9%	32.9%	32.7%
Combined ratio	92.4%	117.2%	100.3%	101.2%
Combined ratio, ex-CAT	90.1%	92.6%	90.6%	91.3%

- Current accident year combined ratio, ex-CAT, increased in the fourth quarter and full year 2022 compared to prior year periods, primarily driven by an increase in inflation and large losses, partially offset by a reduced expense ratio

- Catastrophe losses of 24.6 points in the fourth quarter, driven by the impact of Winter Storm Elliott

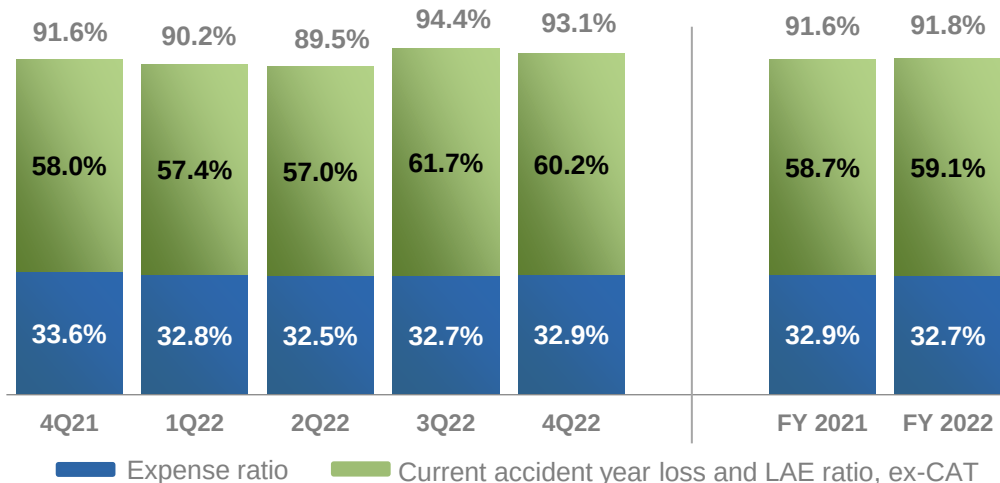
- Net favorable prior-year reserve development, excluding catastrophes, of 0.5 points in the fourth quarter and the full year

- Current accident year loss and LAE ratio, ex-CAT, increased in the fourth quarter and, to a lesser extent, in the full year, driven by:

- The impact of inflation on property coverages
- Higher property large loss activity in commercial multiple peril ("CMP")

- Expense ratio improvement of 0.7 points in the quarter and 0.2 points for the full year, primarily driven by fixed cost leverage from premium growth and lower variable compensation

Current Accident Year Combined Ratio, Ex-CAT

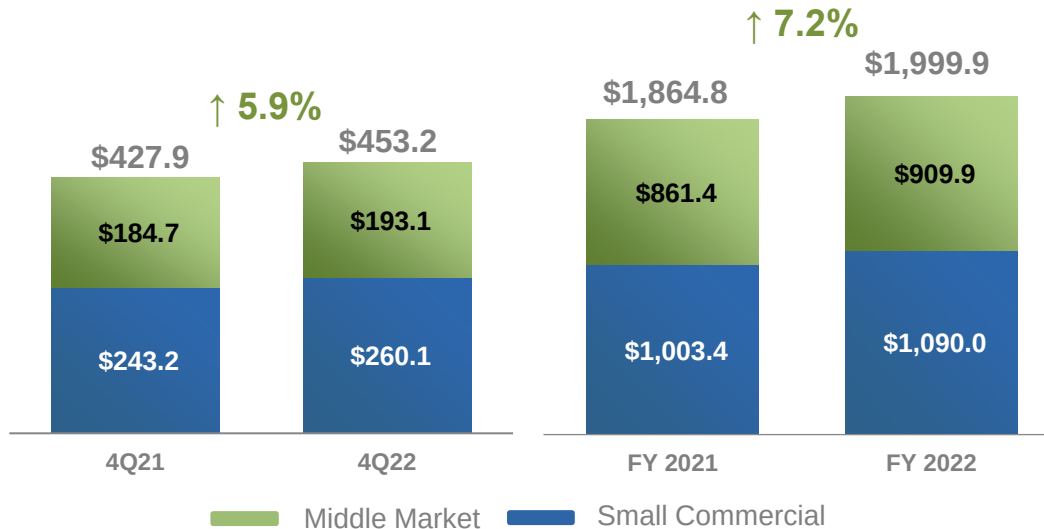




Core Commercial Growth Highlights

(\$ in millions)

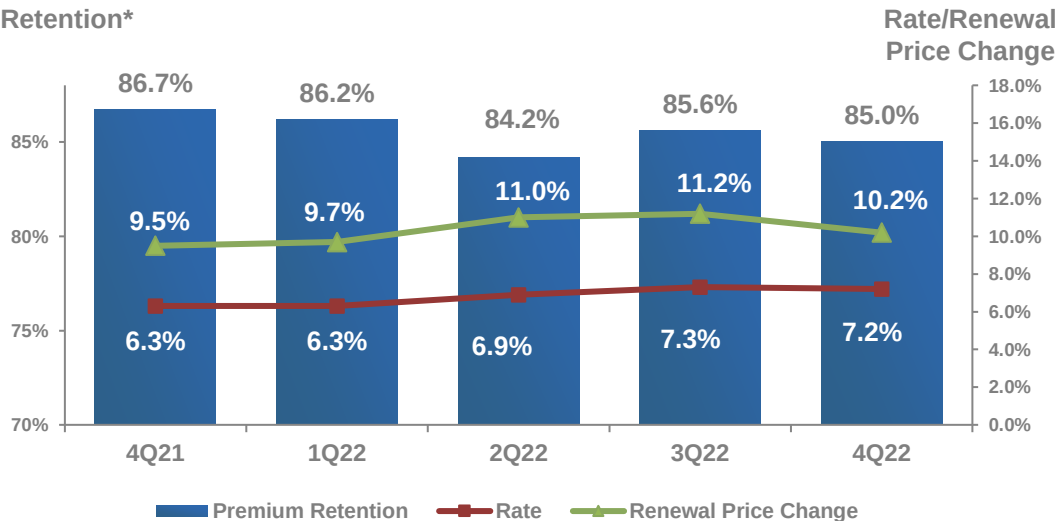
Net Premiums Written and Growth



- Net premiums written growth of 5.9% in the fourth quarter and 7.2% in the full year 2022, from the prior year periods, primarily driven by strong rate and exposure increases

- Meaningful contribution from small commercial, which delivered high-single digit growth supported by strong pricing and retention
- Industry-leading small commercial TAP Sales platform, now available in 46 states, delivered ~20% year-over-year increase in new business submissions
- Achieved middle market growth in the mid-single digits, while remaining focused on risk selection and increasing pricing to enhance profitability

Retention*



- Delivered third sequential quarter of double-digit renewal price change, while continuing to increase insured values and implement select property underwriting actions to support further margin expansion

- Renewal price change in the property portion of the book was 11.2%, and should continue to strengthen through 2023
- Casualty exposures are beginning to normalize compared to post-pandemic rebound

* Retention is defined as the ratio of net retained premium for the noted period to the premium available to renew over the same period



Specialty Underwriting Highlights

(\$ in millions)

	Three months ended December 31		Year ended December 31	
	2021	2022	2021	2022
Net premiums written	\$284.8	\$309.5	\$1,118.9	\$1,243.7
Growth	14.1%	8.7%	11.1%	11.2%
Net premiums earned	\$277.5	\$308.4	\$1,029.9	\$1,189.0
Catastrophe ratio	1.7%	3.2%	5.0%	2.8%
Prior year development ratio	(1.5)%	-	(1.6)%	(1.6)%
Expense ratio	35.1%	35.8%	35.5%	35.3%
Combined ratio	87.7%	90.5%	92.9%	89.3%
Combined ratio, ex-CAT	86.0%	87.3%	87.9%	86.5%

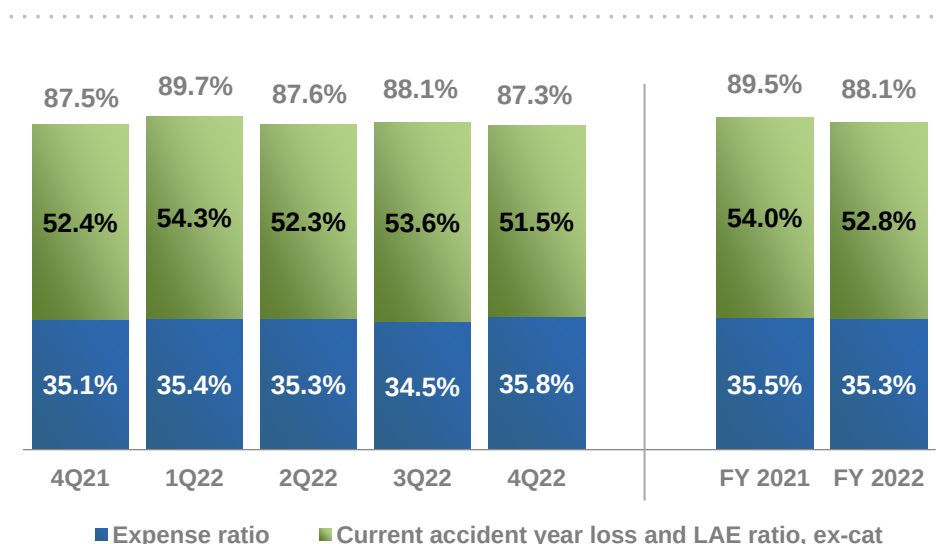
- Current accident year combined ratio, ex-CAT, improved in the fourth quarter and the full year 2022, compared to prior year periods

— The fourth quarter reflected the sixth sequential quarter of a sub-90s underlying combined ratio, underscoring the underwriting quality of the Specialty business

- Current accident year loss and LAE ratio, ex-CAT, improved in the quarter and in the year, driven primarily by the benefit of earned rate increases above loss trends

- Expense ratio improvement of 0.2 points in the year, while the fourth quarter expense ratio increased 0.7 points primarily driven by the timing of technology investments, partially offset by fixed cost leverage from premium growth

Current Accident Year Combined Ratio, Ex-CAT

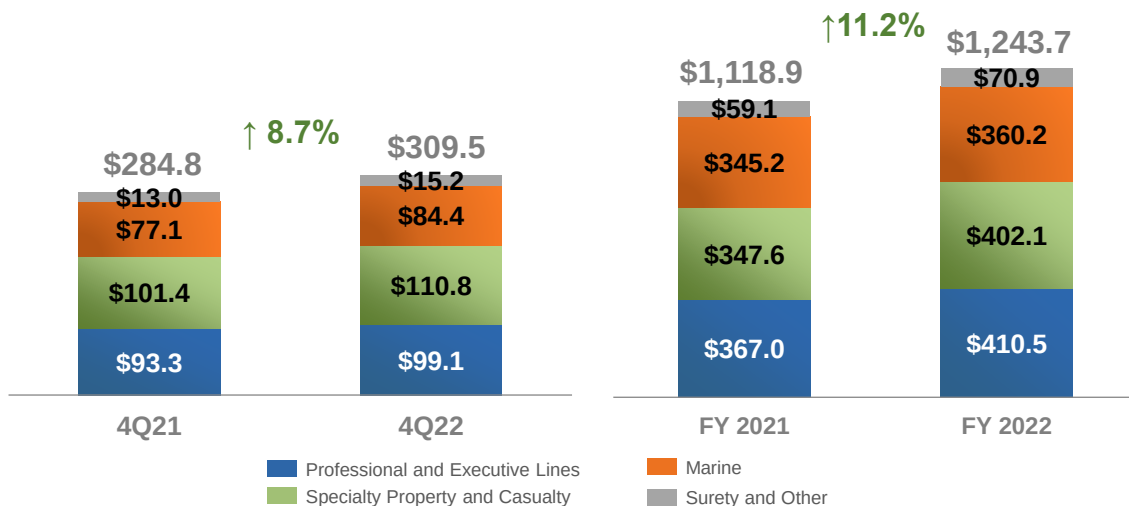




Specialty Growth Highlights

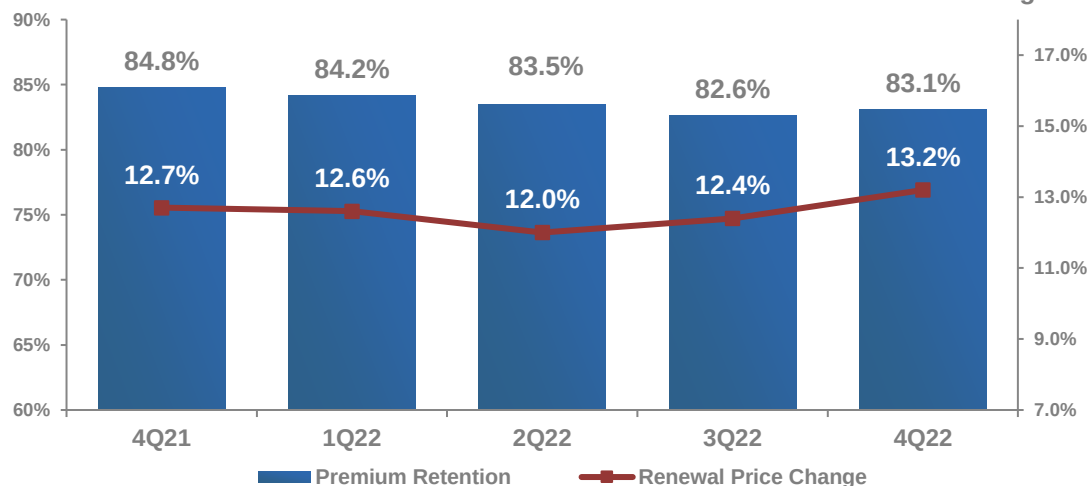
(\$ in millions)

Net Premiums Written and Growth



- Net premiums written growth of 8.7% in the fourth quarter and 11.2% in the full year, from the prior year periods
- Strong growth in the fourth quarter and full year reflects ongoing traction to capture additional market share supported by a prudent growth strategy
- Achieved full year double-digit growth in specialty property and casualty, professional and executive lines, and surety
- Renewal price increases of 13.2% in the quarter continued on a strong trajectory and exceeded third quarter 2022 levels
 - Robust rate increases of 8.2% in the quarter support enhanced profitability

Retention*



Renewal Price Change

* Retention is defined as the ratio of net retained premium for the noted period to the premium available to renew over the same period

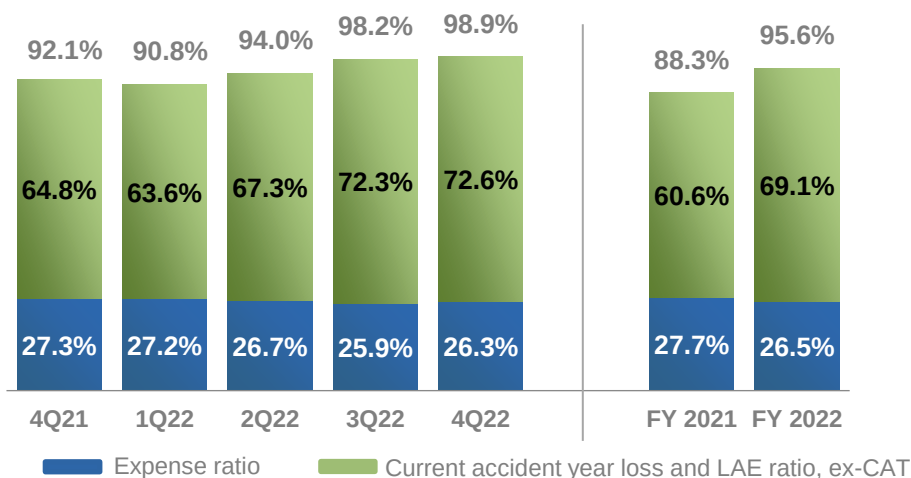


Personal Lines Underwriting Highlights

(\$ in millions)	Three months ended December 31		Year ended December 31	
	2021	2022	2021	2022
Net premiums written	\$502.2	\$563.3	\$2,009.7	\$2,232.9
Growth	8.7%	12.2%	7.7%	11.1%
Net premiums earned	\$496.7	\$552.1	\$1,929.4	\$2,112.8
Catastrophe ratio	4.7%	10.2%	9.1%	8.3%
Prior year development ratio	(0.6)%	-	(1.2)%	0.4%
Expense ratio	27.3%	26.3%	27.7%	26.5%
Combined ratio	96.2%	109.1%	96.2%	104.3%
Combined ratio, ex-CAT	91.5%	98.9%	87.1%	96.0%

- Current accident year combined ratio, ex-CAT, increased in the fourth quarter and in the full year 2022, compared to prior year periods, primarily due to the impact of inflation on personal auto and homeowners property
- Catastrophe losses of 10.2 points in the fourth quarter, driven primarily by Winter Storm Elliott
- Current accident year loss and LAE ratio, ex-CAT, increased 7.8 points in the quarter and 8.5 points in the year, primarily driven by:
 - In homeowners, the impact of inflation and large losses on property lines
 - In auto, higher inflationary pressure on car prices and costs of parts and labor, as well as an increase in animal hits in the fourth quarter of 2022 in auto comprehensive coverage
- Expense ratio improved in the quarter and the full year, primarily driven by fixed cost leverage from premium growth and lower variable compensation

Current Accident Year Loss and LAE Ratio, Ex-CAT

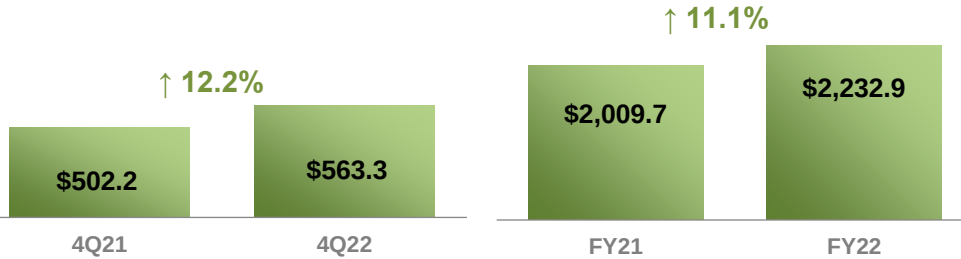




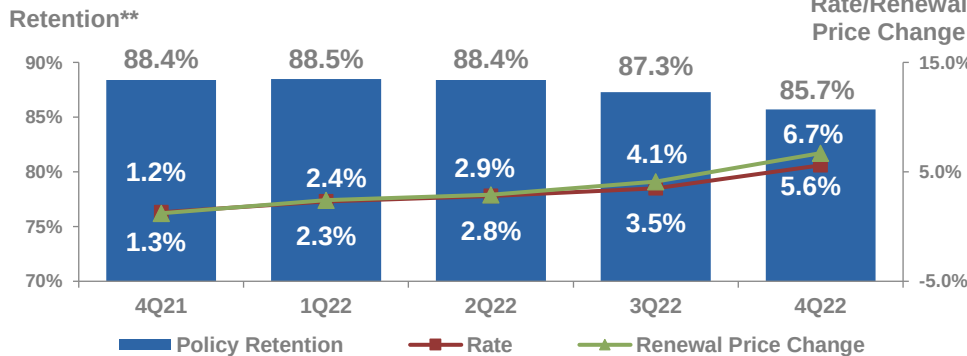
Personal Lines Growth Highlights

(\$ in millions)

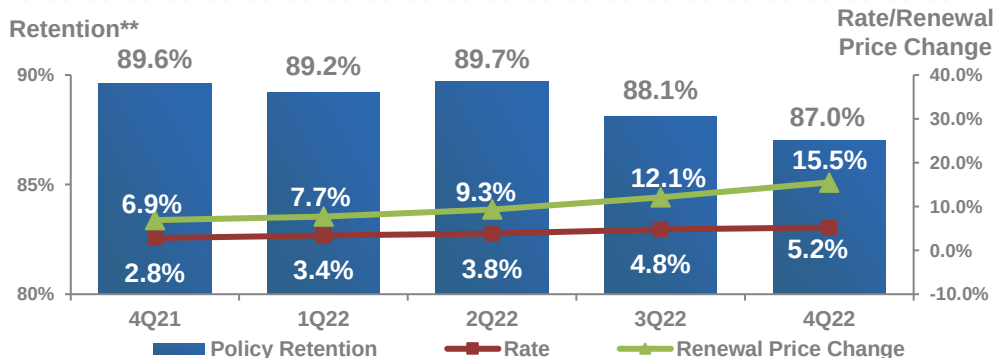
Net Premiums Written and Growth



Personal Auto Retention and Rate



Homeowners Retention and Rate



- Double-digit net premiums written growth in the quarter and year, from the prior year periods
 - Fourth quarter growth was predominantly driven by pricing increases, as retention and PIF growth reflected a slight sequential moderation
- Retention remains above 86%, underscoring the effectiveness of our account-focused strategy and the hard market in Personal Lines
- Fourth quarter renewal price change* of 10.1% in Personal Lines, including 15.5% in homeowners and 6.7% in auto, in line with expectations
- Expect further implementation of accelerated rate filings and exposure adjustments to result in:
 - Personal Lines renewal price change* of approximately 12% in 1Q23
 - Homeowners renewal price change* of approximately 18% in 1Q23, and expect price increases to remain in the upper teens for the remainder of the year
 - Personal auto renewal price change* of approximately 9% in 1Q23, with double-digit price increases for the remainder of the year

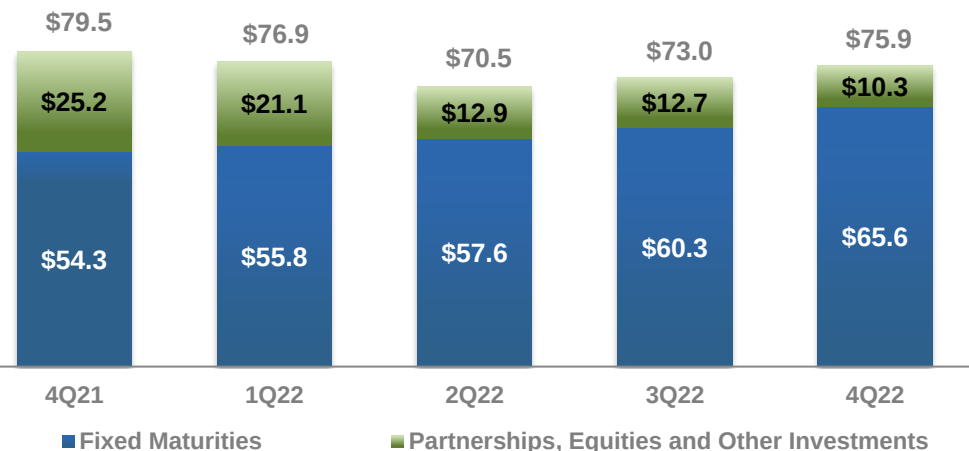
*A part of renewal price change is subject to regulatory approvals and competitive dynamics
 **Retention is defined as the ratio of net retained policies for the noted period to those policies available to renew over the same period and includes policies that were cancelled and rewritten.



Net Investment Income Trends

(\$ in millions)

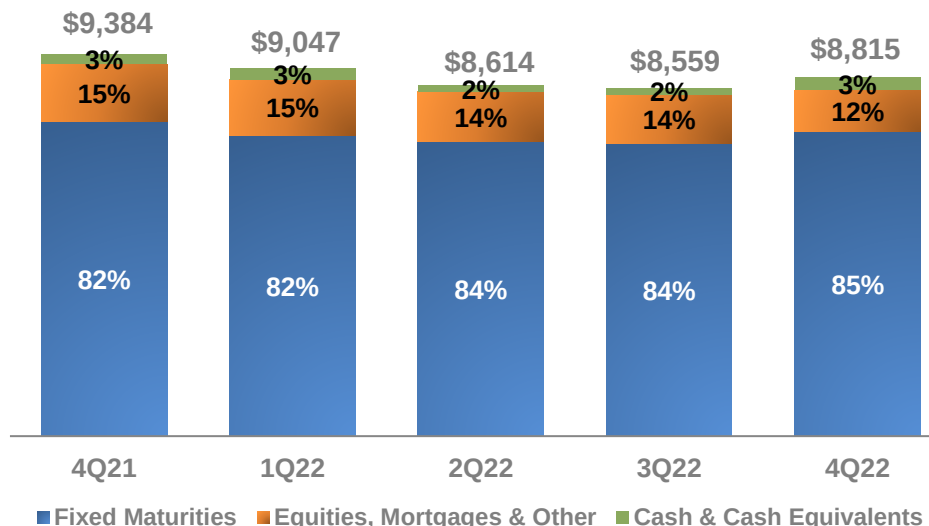
Net Investment Income*



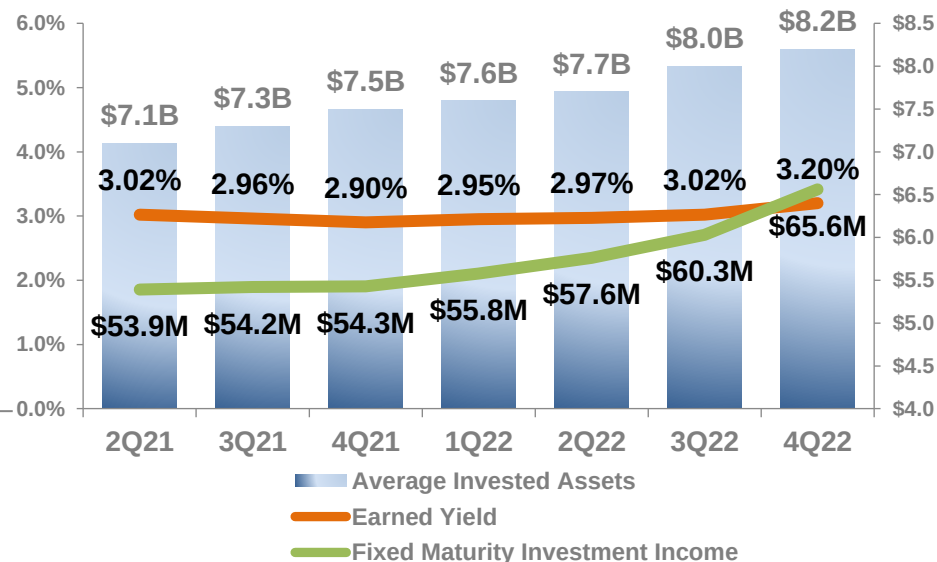
- Net investment income of \$75.9 million in the fourth quarter, above expectations and helped by higher bond reinvestment rates, while slightly below the prior-year quarter due to elevated level of partnership income in the fourth quarter of 2021
- New money yields on purchases of fixed maturities well above total portfolio yield and maturing fixed income securities rolling off of the portfolio
- Expect higher interest rates to provide meaningful tailwind in 2023

(\$ in millions)

Cash and Invested Assets



Fixed Maturity Investment Portfolio Trends



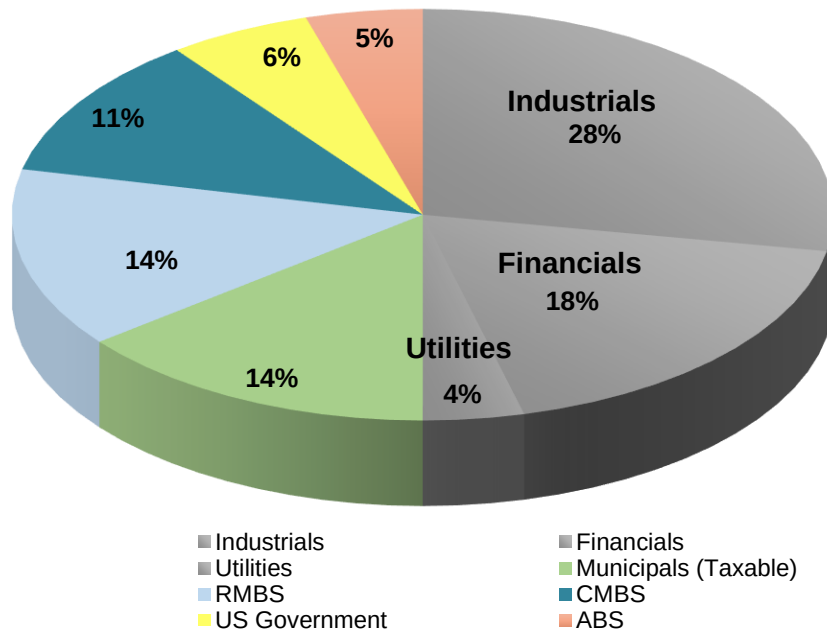
* Net investment income from partnerships, equities and other investments are presented net of investment expenses



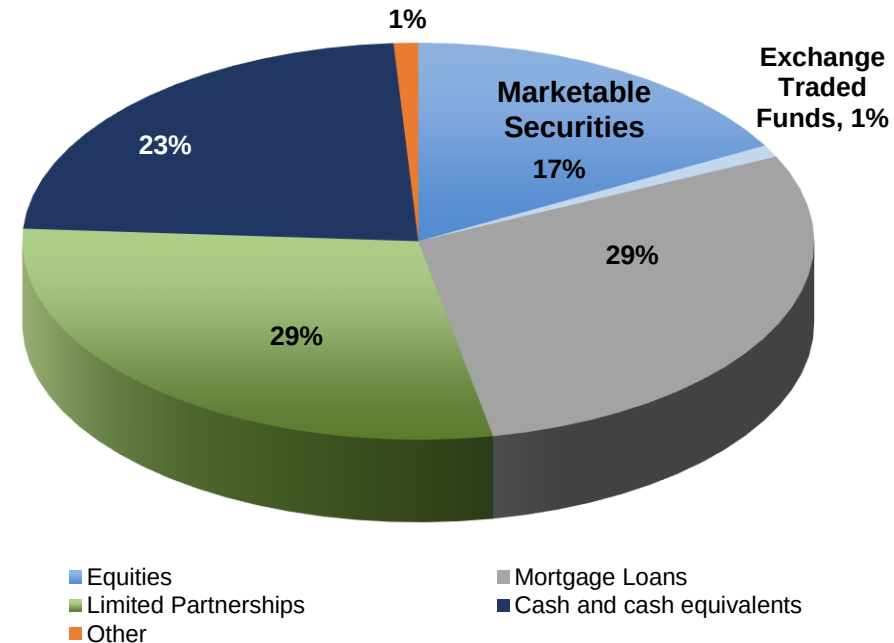
Investment Portfolio – Total Invested Assets and Cash of \$8.8 Billion

As of December 31, 2022

Fixed Maturities: \$7.5 Billion



Equities, Cash and Other: \$1.3 Billion



High-quality, well-laddered fixed income portfolio

- 96% of fixed maturity securities are investment grade
- Weighted average quality: A+
- Duration: 4.3 years



The Hanover Insurance Group 2023 Outlook*

Metric	Full Year 2023 Expectations**
Net Premiums Written	Mid-single digit growth
Expense Ratio	30.8%, an improvement of 30 basis points from 2022 guidance
Combined Ratio, Ex-CAT***	91% – 92%
Catastrophe Loss Ratio	5.1%
Effective Tax Rate	21%
Net Investment Income	Overall NII growth of ~8%, after incorporating an assumption for lower partnership performance in 2023 relative to 2022

In addition to typical loss ratio variability****, factors impacting the loss ratio by quarter in 2023 are expected to include the following:

- Weather seasonality
- Progressive earning-in of rate increases
- Further normalization of auto frequency benefit
- Some moderation in property inflationary trend

* Based on year-end 2022 results as reported February 1, 2023

** See pages 15 and 16 of this presentation for additional risks and uncertainties

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

**** 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")



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

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,” “may,” “projects,” “projections,” “plan,” “likely,” “potential,” “targeted,” “forecasts,” “should,” “could,” “continue,” “outlook,” “guidance,” “modeling,” “target profitability,” “target margins,” “moving forward,” “confident”, 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, 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 continued and residual impacts of the global pandemic (“Pandemic”) and related economic 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, severity from higher cost of repairs due to, among other things, supply chain disruptions, inflation, declines in premium as a result of, among other things, credits or returns to the company’s customers, lower submissions, changes in renewals and policy endorsements, public health guidance, recession, and the impact of government orders and restrictions in the states and jurisdictions in which the company operates;
- 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;
- Variability of catastrophe losses due to risk concentrations, changes in weather patterns including climate change, and severe weather including wildfires, hurricanes, terrorism, civil unrest, winter storms, 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, as a result of and following the Pandemic, global market disruptions, 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 related to the Pandemic, 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, and pricing segmentation, among others, to grow businesses believed to be more profitable or reduce premiums attributable to products or lines of business 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 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 the Pandemic, inflationary pressures and corresponding governmental and/or central banking initiatives taken in response thereto, and geopolitical circumstances on new money yields and overall investment returns.



Additional Risks and Uncertainties

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 and artificial intelligence, policy terms and conditions, payment flexibility, and regions where the company has geographical concentrations;
- Heightened 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 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 incidents, including, but not limited to, those resulting from a malicious cyber security attack on the company or its business partners and service providers, or intrusions into the company's systems, including cloud-based data 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 wildfires, winter storms, hurricanes, terrorism, civil unrest, riots or other severe weather;
- 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;
- Changes in weather patterns and severity, whether as a result of global climate change, or otherwise, causing a higher level of losses from weather events to persist;
- 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" 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, including the impact of competition and consolidation in the industry and among agents and brokers;
- Competition, particularly from competitors who have resource and capability advantages;
- The global macroeconomic environment, including actions taken in response to the Pandemic, 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;
- Adverse state and federal regulation, legislative and/or regulatory actions (including recent significant revisions to Michigan's automobile personal injury protection system and related litigation, and various regulations, orders and proposed legislation related to business interruption and workers' compensation coverages, premium grace periods and returns, 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, and the risk of cyber-security attacks on or breaches of the company's systems and/or impacting our outsourcing relationships and third-party operations, or resulting in claim payments (including from products not intended to provide cyber coverage);
- Uncertainties in estimating indemnification liabilities recorded in conjunction with obligations undertaken in connection with the sale of various businesses and discontinued operations;
- The ability to collect from reinsurers, reinsurance 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); and,
- Continuing risks and uncertainties associated with the impact of the Pandemic and related general economic conditions

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 37 of the company's Annual Report on Form 10-K for the year ended December 31, 2021, 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 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 2021 Annual Report on pages 63-66.

Operating income (loss) and operating income (loss) per 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 segments, "operating income (loss)" is the segment income (loss) before both interest expense and income taxes. The company also uses "operating income (loss) per 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 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 reserve development 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 21 of this presentation and in the Financial Supplement.

Operating return on average equity ("ROE") is a non-GAAP measure. See end note (5) 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.

The company may also 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, windstorms, earthquakes, hail, severe winter weather, freeze events, fire, explosions, civil unrest 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) 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. This and other non-GAAP measures are used throughout this document. See the disclosure on the use of this and other non-GAAP measures under the heading “Forward-Looking Statements and Non-GAAP Financial Measures.” A reconciliation of the GAAP combined ratio to the combined ratio, excluding catastrophes, and to the current accident year combined ratio, excluding catastrophes, is shown below.

	Three months ended December 31, 2022			
	Core Commercial	Specialty	Personal Lines	Total
Total combined ratio (GAAP)	117.2 %	90.5 %	109.1 %	108.0 %
Less: Catastrophe ratio	24.6 %	3.2 %	10.2 %	13.9 %
Combined ratio, excluding catastrophe losses (non-GAAP)	92.6 %	87.3 %	98.9 %	94.1 %
Less: Prior-year reserve development ratio	(0.5)%	-	-	(0.1)%
Current accident year combined ratio, excluding catastrophe losses (non-GAAP)	93.1 %	87.3 %	98.9 %	94.2 %
	December 31, 2021			
Total combined ratio (GAAP)	92.4 %	87.7 %	96.2 %	92.9 %
Less: Catastrophe ratio	2.3 %	1.7 %	4.7 %	3.1 %
Combined ratio, excluding catastrophe losses (non-GAAP)	90.1 %	86.0 %	91.5 %	89.8 %
Less: Prior-year reserve development ratio	(1.5)%	(1.5)%	(0.6)%	(1.2)%
Current accident year combined ratio, excluding catastrophe losses (non-GAAP)	91.6 %	87.5 %	92.1 %	91.0 %
	Year ended December 31, 2022			
Total combined ratio (GAAP)	101.2 %	89.3 %	104.3 %	99.8 %
Less: Catastrophe ratio	9.9 %	2.8 %	8.3 %	7.7 %
Combined ratio, excluding catastrophe losses (non-GAAP)	91.3 %	86.5 %	96.0 %	92.1 %
Less: Prior-year reserve development ratio	(0.5)%	(1.6)%	0.4 %	(0.4)%
Current accident year combined ratio, excluding catastrophe losses (non-GAAP)	91.8 %	88.1 %	95.6 %	92.5 %
	December 31, 2021			
Total combined ratio (GAAP)	100.3 %	92.9 %	96.2 %	97.0 %
Less: Catastrophe ratio	9.7 %	5.0 %	9.1 %	8.4 %
Combined ratio, excluding catastrophe losses (non-GAAP)	90.6 %	87.9 %	87.1 %	88.6 %
Less: Prior-year reserve development ratio	(1.0)%	(1.6)%	(1.2)%	(1.2)%
Current accident year combined ratio, excluding catastrophe losses (non-GAAP)	91.6 %	89.5 %	88.3 %	89.8 %



End notes continued

(2) 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. The following is a reconciliation of the GAAP loss ratio to the current accident year loss and LAE ratio, excluding catastrophe losses:

Three months ended December 31, 2022						
	Core Commercial	Specialty	Personal Auto	Home & Other	Personal Lines	Total
Total loss and LAE ratio	84.3 %	54.7 %	85.1 %	79.5 %	82.8 %	77.1 %
Less:						
Prior-year reserve development ratio	(0.5)%	-	(0.2)%	0.2 %	-	(0.1)%
Catastrophe ratio	24.6 %	3.2 %	(0.3)%	25.4 %	10.2 %	13.9 %
Current accident year loss and LAE ratio, excluding catastrophes	60.2 %	51.5 %	85.6 %	53.9 %	72.6 %	63.3 %
December 31, 2021						
Total loss and LAE ratio	58.8 %	52.6 %	73.4 %	61.7 %	68.9 %	61.5 %
Less:						
Prior-year reserve development ratio	(1.5)%	(1.5)%	(1.4)%	0.7 %	(0.6)%	(1.2)%
Catastrophe ratio	2.3 %	1.7 %	0.7 %	11.2 %	4.7 %	3.1 %
Current accident year loss and LAE ratio, excluding catastrophes	58.0 %	52.4 %	74.1 %	49.8 %	64.8 %	59.6 %
Year ended December 31, 2022						
	Core Commercial	Specialty	Personal Auto	Home & Other	Personal Lines	Total
Total loss and LAE ratio	68.5 %	54.0 %	77.3 %	78.6 %	77.8 %	69.0 %
Less:						
Prior-year reserve development ratio	(0.5)%	(1.6)%	(0.3)%	1.4 %	0.4 %	(0.4)%
Catastrophe ratio	9.9 %	2.8 %	0.7 %	19.8 %	8.3 %	7.7 %
Current accident year loss and LAE ratio, excluding catastrophes	59.1 %	52.8 %	76.9 %	57.4 %	69.1 %	61.7 %
December 31, 2021						
Total loss and LAE ratio	67.4 %	57.4 %	66.0 %	72.6 %	68.5 %	65.7 %
Less:						
Prior-year reserve development ratio	(1.0)%	(1.6)%	(2.0)%	0.1 %	(1.2)%	(1.2)%
Catastrophe ratio	9.7 %	5.0 %	1.6 %	21.3 %	9.1 %	8.4 %
Current accident year loss and LAE ratio, excluding catastrophes	58.7 %	54.0 %	66.4 %	51.2 %	60.6 %	58.5 %



End notes continued

(3) Renewal price changes in Core Commercial and Specialty represent the average change in premium on renewed policies caused by the estimated net effect of base rate changes, discretionary pricing, inflation or changes in policy level exposure or insured risks. Rate increases in Core Commercial and Specialty represent the average change in premium on renewed policies caused by the base rate changes, discretionary pricing, and inflation, excluding the impact of changes in policy level exposure or insured risks. 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

(4) Operating income (loss) and operating income (loss) per diluted (basic) share are non-GAAP measures. The following table provides 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 reconciled to net income (loss) and net income (loss) per diluted (basic) share, respectively.

The Hanover Insurance Group, Inc.								
	Three months ended December 31				Year ended December 31			
	2022		2021		2022		2021	
	\$ Amount	Per Share*	\$ Amount	Per Share (Diluted)	\$ Amount	Per Share (Diluted)	\$ Amount	Per Share (Diluted)
(\$ in millions, except per share data)								
Operating income (loss)								
Core Commercial	\$ (52.7)		\$ 71.9		\$ 106.9		\$ 138.0	
Specialty	43.9		49.0		186.0		131.9	
Personal Lines	(29.1)		40.9		(8.8)		158.5	
Other	(0.3)		1.1		1.0		3.9	
Total	(38.2)		162.9		285.1		432.3	
Interest expense	(8.6)		(8.5)		(34.1)		(34.0)	
Operating income (loss) before income taxes	(46.8)	\$ (1.31)	154.4	\$ 4.27	251.0	\$ 6.95	398.3	\$ 10.93
Income tax expense (benefit) on operating income (loss)	9.4	0.26	(32.3)	(0.89)	(51.1)	(1.42)	(80.0)	(2.20)
Operating income (loss) after income taxes	(37.4)	(1.05)	122.1	3.38	199.9	5.53	318.3	8.73
Non-operating items:								
Net realized gains (losses) from sales and other	(10.2)	(0.29)	(2.2)	(0.06)	(26.5)	(0.73)	4.6	0.13
Net change in fair value of equity securities	42.8	1.20	53.2	1.47	(63.3)	(1.75)	119.1	3.27
Recoveries (impairments) on investments:								
Credit-related recoveries (impairments)	(0.4)	(0.01)	(0.3)	(0.01)	(1.9)	(0.05)	0.3	0.01
Losses on intent to sell securities	-	-	(0.3)	(0.01)	(14.8)	(0.41)	(1.0)	(0.03)
	(0.4)	(0.01)	(0.6)	(0.02)	(16.7)	(0.46)	(0.7)	(0.02)
Other non-operating items	(0.1)	-	-	-	(0.5)	(0.02)	-	-
Income tax benefit (expense) on non-operating items	(6.6)	(0.18)	(9.7)	(0.26)	23.9	0.66	(21.3)	(0.59)
Income (loss) from continuing operations, net of taxes	(11.9)	(0.33)	162.8	4.51	116.8	3.23	420.0	11.52
Discontinued operations (net of taxes):								
Income from Chaucer business	-	-	1.2	0.03	-	-	1.2	0.03
Income (loss) from discontinued life businesses	0.3	-	(0.5)	(0.01)	(0.8)	(0.02)	(2.5)	(0.06)
Net income (loss)	<u>\$ (11.6)</u>	<u>\$ (0.33)</u>	<u>\$ 163.5</u>	<u>\$ 4.53</u>	<u>\$ 116.0</u>	<u>\$ 3.21</u>	<u>\$ 418.7</u>	<u>\$ 11.49</u>
Dilutive weighted average shares outstanding		36.1		36.1		36.1		36.4
Basic weighted average shares outstanding		35.6		35.5		35.6		35.9

*Operating loss before and after income taxes, non-operating items, loss from continuing operations, net of taxes and net loss metrics are calculated using basic shares outstanding due to antidilution



End notes continued

(5) Operating return on average equity ("operating ROE") is a non-GAAP measure. Operating ROE is calculated by dividing annualized operating income (loss) after tax for the applicable period (see under the heading in this news release "Non-GAAP Financial Measures" and end note (4)), by average shareholders' equity, excluding unrealized appreciation (depreciation) on fixed maturity investments, net of tax, for the period presented. Total shareholders' equity, excluding net unrealized appreciation (depreciation) on fixed maturity investments, net of tax, is also a non-GAAP measure. Total shareholders' equity is the most directly comparable GAAP measure and is reconciled below. For the calculation of operating ROE, the average of beginning and ending shareholders' equity, excluding net unrealized appreciation (depreciation) on fixed maturity investments, net of tax, is used for the period as shown in the table below.

(\$ in millions)	Three months ended		Year ended	
	December 31, 2021	December 31, 2022	December 31, 2021	December 31, 2022
<i>Net Income (Loss) ROE</i>				
Net income (loss) (GAAP)	\$163.5	(11.6)	\$418.7	\$ 116.0
Annualized net income (loss)*	654.0	(46.4)		
Average shareholders' equity (end note (7))	3,123.6	2,310.8	3,130.0	\$ 2,634.2
Return on equity	20.9 %	(2.0)%	13.4 %	4.4%
<i>Operating Income (Loss) ROE</i>				
Operating income (loss) after income taxes	\$122.1	(37.4)	\$318.3	\$199.9
Annualized operating income (loss), net of tax* (end note (4))	488.4	(149.6)		
Average shareholders' equity, excluding net unrealized appreciation (depreciation) on fixed maturity investments, net of tax (end note (7))	2,902.8	2,984.8	2,864.6	2,997.7
Operating return on equity	16.8 %	(5.0)%	11.2%	6.7%

(6) Here, and later in this document, the expense ratio is reduced by installment and other fee revenues for purposes of the ratio calculation.



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 2020	March 31 2021	June 30 2021	September 30 2021	December 31 2021	March 31 2022	June 30 2022	September 30 2022	December 31 2022
Total shareholders' equity (GAAP)	\$ 3,202.2	\$ 3,046.8	\$ 3,154.0	\$ 3,102.3	\$ 3,144.9	\$ 2,832.8	\$ 2,571.8	\$ 2,295.9	\$ 2,325.6
Less: net unrealized appreciation (depreciation) on fixed maturity investments, net of tax	428.1	242.6	304.7	256.8	184.9	(195.0)	(459.4)	(706.7)	(641.4)
Total shareholders' equity, excluding net unrealized appreciation (depreciation) on fixed maturity investments, net of tax	\$ 2,774.1	\$ 2,804.2	\$ 2,849.3	\$ 2,845.5	\$ 2,960.0	\$ 3,027.8	\$ 3,031.2	\$ 3,002.6	\$ 2,967.0
Quarter Averages									
Average shareholders' equity (GAAP)					\$ 3,123.6				\$ 2,310.8
Average shareholders' equity, excluding net unrealized appreciation (depreciation) on fixed maturity investments, net of tax					\$ 2,902.8				\$ 2,984.8
Year-to-date Averages									
Average shareholders' equity (GAAP)					\$ 3,130.0				\$ 2,634.2
Average shareholders' equity, excluding net unrealized appreciation (depreciation) on fixed maturity investments, net of tax					\$ 2,846.6				\$ 2,997.7