2022 ERIE INDEMNITY COMPANY ANNUAL REPORT

OUR FOUNDING PURPOSE

To provide our Policyholders with
as near perfect protection,
as near perfect service as is
humanly possible, and to do so
at the lowest possible cost.

- H.O. Hirt, co-founder

After more than two years of physical distance, the ERIE Family came back together in new ways—and familiar ones—in 2022.

Pictured, clockwise from top left, Audrey Kruszewski, Actuarial; Sombath Inthavong, Commercial Products; Patricia Louis, Marketing; and Travis Shaffer, Creative Services.

Tim NeCastro, President and CEO

TO OUR SHAREHOLDERS

This past fall, we held a reception for ERIE Family members who had retired in the years and months since the pandemic began. They were invited to catch up with friends and former colleagues and tour the newly opened Thomas B. Hagen Building on our Home Office campus. It was great to see so many familiar faces for the first time in more than two years.

Many of these folks had spent decades at ERIE. And one day in March of 2020, they left a place they'd spent so much of their lives, not realizing they wouldn't return. When it was time for them to retire, the big send-offs that typically mark such a significant milestone—and that are so important to us at ERIE—were replaced by Microsoft Teams calls and drive-by parades. These modified celebrations, while well-intentioned, just couldn't compare.

It was a realization of just how many meaningful moments were diminished when our only choice was to stay apart.

You can imagine, then, how good it felt to get those moments back in 2022. We returned to more traditional ways of working and collaborating, across conference tables and cups of coffee. We reunited at cherished events and celebrations, and rediscovered the collegial hugs, handshakes and casual conversations we'd missed.

But as we returned to what we've always known, we also continued to embrace new ways we had discovered and come to value.

The digital capabilities that have kept us connected and bridged physical distances are no longer an accommodation—they are now essential.

The ability to work anywhere and at any time is no longer an exception—it's now the rule, creating a new definition of balance.

And technology is no longer a barrier to the human touch—it's now a way to enhance it, enabling us to meet people where they are and in ways they prefer.

As we head toward our second century of service, we're bringing together where we've been, what we've learned and where we're headed. And we're embracing new ways to pioneer what's next for ERIE.

MEETING ADVERSITY

Our 100-year anniversary that's quickly approaching in 2025 is not only exciting, it's reassuring. That's because this longstanding stability is what helps us weather challenges like the current economic climate. And over nearly a century, we've developed a muscle for adaptability that is only strengthened in the face of adversity.

Though we're feeling the impact of today's challenges, our financials are standing strong, reflected in the highlights for both Erie Indemnity Company and Erie Insurance Exchange on page 9. The relationship between these two entities is key: the health and viability of the Exchange, the insurance operations we manage, drives the success of the Indemnity Company.

The many business challenges of 2022—inflation, supply chain issues, labor shortages and increased weather-related claims, to name a few—have put substantial pressure on our bottom line. The Consumer Price Index rose 6.5 percent through December 2022, and auto repair costs are up even more, by 19.5 percent, through December. Along with that, extreme weather-related events such as hurricanes and winter storms have led to higher industry property losses.

These factors contributed to a combined ratio for the Exchange of 116.1 percent at year-end, compared to 103.9 percent at the end of 2021. Moving forward, we're focused on bringing our combined ratio down through various strategies in underwriting, claims and pricing.

The increasing claims severity, along with volatile market conditions, have also caused Policyholder surplus to fall from $11.7 billion at the start of 2022 to $10.1 billion at year end. That surplus, however, remains strong and allows us to maintain a balanced approach to pricing and profitability. Like the rest of the industry, we've responded to these economic challenges through rate increases, but we are doing so with a measured approach.

We're very pleased with the Exchange's premium growth, which climbed an impressive 9.2 percent for the year, and new business premium is up 14.5 percent. Overall policies in force are up 3.6 percent, and our retention rate remains strong at over 90 percent for personal and commercial lines combined.

For the Shareholder-owned Indemnity, operating income ended at $376.2 million, up $58.1 million compared to 2021. Investment income, impacted heavily by the year's volatile market conditions, finished $66.7 million less than 2021, at $0.6 million.

These economic conditions are far from ideal. But as we wait for the market to stabilize, we have confidence that our unique business model, financial strength and discipline will continue to serve us well. When Customers shop, as they have been in this hard market, they tend to not just look for a more attractive price, but also a superior value proposition. And they find that with ERIE.

EMBRACING FLEXIBILITY

The retiree reception I noted earlier was just one of many meaningful gatherings that punctuated the year.

It started in April, with the return of 200 Employees who raised their hands to be among the first to work in the company's newest office building, joining the essential Employees who had been maintaining our physical operations since the start of the pandemic.

“I’ve been sitting in my bedroom office for far too long. It’s wonderful to be in a room filled with ERIE energy again.”

When ERIE reopened its office doors to Employees on April 20—our 97th anniversary—Marketing Specialist Lauren Sovisky, center, was among the first to return. Catching up with Lauren are Jeffrey Sims and Janae Alexander from Strategic Communications.

Employees began returning more broadly in July at both the Home Office and throughout our 12-state footprint and continued to do so over the next several months. We also resumed many of our in-person events after more than two years of cancellations and shifts to virtual formats.

It’s been great to be back together. But it’s also been invigorating and eye-opening, as we learn to do it in new ways.

The world of work has changed significantly. Flexibility is a key component of attracting and retaining Employees today—especially in this tough labor market. That’s why the majority of ERIE Employees are now working in a hybrid format, splitting their time between in-office and remote work.

Three years after its planned opening, the new Thomas B. Hagen Building is home base for more than 1,000 Employees who gather in what we call “neighborhoods”—a mixture of dedicated and flexible workspaces.

Conference rooms have been equipped with new technology that supports the experience of hybrid meetings, or Employees participating both in person and virtually. And we’re learning how to incorporate the hybrid approach into our large-scale meetings and events—providing a seamless experience whether someone is joining us in the room or from their home several states away.

This continues to be a learning experience for us. We’re trying new things and making adjustments as we go. And we’re using different mechanisms to gather feedback from our Employees about their experience, which is crucial to making sure we do this the right way.

BRIDGING DIVIDES

The ability to bridge geographic distances through technology has turned out to be one of the silver linings of the challenges faced during the pandemic.

It’s also underscored the prevalence of technology in our lives, and the need for it to be an integral part of how to do business.

We’d already been planning for and prioritizing this through a strategy that aims to modernize our business model with greater digital capabilities while investing in our most unique and valuable asset—our independent agency force.

It’s all about embracing technology in ways that enable the human touch, and in 2022, we put that approach on the fast track.

One example is a new online quoting and Agent routing program, called Quote Flow, which started as a small pilot in December. Quote Flow aims to capture more digital prospects through a more streamlined quoting process combined with personal interaction with an ERIE Agent.

Data and feedback collected during the pilot will help the team compare Quote Flow to the existing online quote experience and make improvements in real time. Following a successful pilot, we expect to expand the program to more agencies throughout 2023.

Along with using technology to bring in new business, we're also investing in new ways to improve and expand services to our existing Customers:

- Chat services are now available to the more than 1 million households registered on our Online Account platform, a digital self-service tool for Customers.
- Users of ERIE's mobile app can now begin an auto glass claim directly through the app thanks to an integration with Safelite, ERIE's third-party glass claim vendor.
- And ongoing enhancements to the Claims Status platform will make it even easier and faster for Customers, Agents and Employees to access information about a claim.

Not only do these digital enhancements improve the experience for our Customers and agency force, but they also help us manage expenses. The more Customers engage with our online tools, the less paper and manual resources are used. That's why we're placing an even greater focus on modernizing our existing technology platforms and maximizing engagement with Online Account in 2023.

THINKING DIFFERENTLY

Along with launching more robust services last year, we've been working closely with our Agents to explore other ways to meet changing Customer needs and preferences through new and enhanced products.

An example of this is our commercial Cyber Suite coverage. This provides comprehensive protection against a risk we couldn't imagine a few decades back: cyber attacks on businesses. It's now automatically quoted on all new ErieSecure Business policies, and more than 11,000 Customers are now protected by this coverage. There is a growing market addressing the emerging threats businesses face in this digital age, and we see a lot of potential for this particular product.

Another example of a product that addresses an unmet Customer need is the new Extended Water product for Personal Lines. This represents ERIE's entry into the private flood market and includes sewer or drain backup coverage plus flood perils under a single limit. Extended Water was piloted in two states in early 2022, and since then has been rolled out to eight more states in our footprint and added to nearly 14,000 policies.

This approach to enhancing our products and services is nothing new. We've always worked with our Agents to identify Customers' wants and needs and then find ways to meet them. That's what innovation is about.

"We have an opportunity—even a duty—to find ways to capture our share of convenience-minded shoppers, especially since many can absolutely be shown the light when it comes to the value of both ERIE and an ERIE Agent."

Agent John Petruzzi of the Petruzzi Insurance Agency, with locations in Pennsylvania and New York. At the end of 2022, ERIE piloted Quote Flow, a new platform that connects online shoppers to Agents in minutes rather than hours.

"These updates are moving the needle toward becoming a true concierge service for Customers."

Agent Jack Wingate of ALLCHOICE Insurance of North Carolina is a fan of Customers' new ability to find more comprehensive claim-status updates within their Online Account and ERIE mobile app.

An innovative and entrepreneurial spirit has been part of ERIE since H.O. Hirt and O.G. Crawford established the company. That spirit is reflected in a slate of efforts aimed at generating new revenue opportunities in today's dynamic marketplace. In recent years, we've invested in promising businesses through both Opportunity Zone funding in Erie, Pittsburgh and Baltimore and in early-stage tech companies through our Next Level Innovation efforts. And in August, we announced the launch of an exciting investment fund, Erie Strategic Ventures, LLC, as Indemnity's new venture capital investment arm.

The focus of the fund is on businesses tied to the personal and commercial insurance value chain, as well as natural adjacencies. This could include companies that are innovating in areas like risk avoidance, claims or digital sales. We're partnering with Touchdown Ventures, an experienced corporate venture capital firm, to strategize and manage these investments.

The goal is to make investments that will enhance ERIE's existing value proposition, support our independent Agents, and explore new growth opportunities that complement our business model.

BROADENING OUR BASE

Thinking differently is key to growing our business. It's also marked our approach to growing our workforce.

Recruiting and retaining talent was a challenge we, and so many other companies, faced in 2022. The emergence of more fully remote opportunities during the pandemic created a competitive talent market unlike any we'd ever experienced. Not only that, but we're now seeing the expected increase in retirements among Baby Boomers, along with a need to hire more Employees to serve our growing Customer base.

As part of our strategy to recruit and retain talent, we've taken actions to increase compensation for hard-to-fill or in-demand positions and have also expanded remote opportunities in targeted areas and job families.

Another component of our talent strategy is diversifying our workforce and our Agency force. Focusing on diversity, equity and inclusion, or DEI, is good for business. More importantly, it's the right thing to do. The world is increasingly diverse; our workforce needs to represent the communities we serve. Along with that, diverse and inclusive cultures translate into proven value to organizations—including higher performing teams that are more innovative and agile, and more likely to achieve business outcomes.

In 2022, we took a major step forward to further incorporate DEI into how ERIE functions as an insurer, employer and community partner by forming a DEI Task Force. This is made up of cross-functional teams of leaders from across the company who are working to tie DEI to business outcomes—from recruiting and retaining a diverse workforce to building a diverse supplier base.

We're leveraging our Future Focus Intern program to bring more diverse candidates into our talent pipeline. We've also found great success in a partnership formed in 2021 with The Precisionists, Inc. (TPI), an organization focused on employment opportunities for neurodiverse people, specifically adults with autism. Twenty individuals from TPI were brought on board in project-based work for teams in Data, Human Resources, Customer Service and Information Technology, and the results have been exceptional. We're excited to grow and foster this partnership in the years ahead.

CHOOSING BOTH

Our world and our lives fundamentally changed over the past three years.

I'll admit that at times, I've grieved for the moments we lost and the life we once knew. But I've also been energized—and emboldened—by the possibilities we now have.

We no longer need to choose between physical proximity or personal connections. We can have both.

We no longer need to choose between technology or exceptional service. We can provide both.

And we no longer need to choose between the company we've been for 98 years or the one we need to become in the future. We can be both.

As we approach our second century of service, I'm proud of our commitment to our values and our ability to adapt in today's dynamic world. I'm grateful to our Employees and Agents for their tireless commitment to upholding our Above all in SERVICE promise. And in an era marked by uncertainty, I'm thankful to you, our Shareholders, for your continued support and trust.

Together, we're ready to make the most of the opportunities—and possibilities—that lie ahead.

Tim

Tim NeCastro
President and CEO

"Before my internship, I thought insurance was just about paying claims, but I learned about other areas like underwriting, law and the different teams that make up our Claims Division. I'm amazed at the career journeys at ERIE—I can change roles without changing companies, which speaks volumes about how well ERIE treats its Employees."

Chrinesse Mpunga, a Future Focus intern who was hired as an Erie Branch liability adjuster. ERIE makes permanent offers to about half the students in its award-winning internship program. Chrinesse is pictured with Mathew Albert, a Future Focus intern who is now a liability adjuster in the Philadelphia Claims Office.

2022 HIGHLIGHTS

797 new Employees joined ERIE in 2022, setting a record for the number of Employees hired in one year and bringing our total workforce to 6,038.

147 new ERIE agencies opened in 2022.

$498,000 awarded to support out-of-school educational programming for young people in the city of Erie, Pennsylvania, through ERIE's competitive Investing in Our Future grants.

376% increase over 2021 in use of company-paid ERIE Service Corps volunteer hours by teams of Employees, a reflection of our return to in-person collaboration inside and outside the office.

6 ERIE branch offices piloted the new DEI Field Investment Fund to support the company's diversity, equity and inclusion goals and deepen relationships across ERIE's field offices. Pilot projects included funding post-secondary experiences and college scholarships and placing two interns in ERIE agencies.

1 million households with an Online Account as of December 2022.

100 new curbside trees will be planted in downtown Erie, Pennsylvania, before ERIE's 100th anniversary in April 2025. The first tree in the 100 Trees Project was planted on Arbor Day 2022.

16 events during ERIE's inaugural Diversity Summit, a week of discussions and presentations emphasizing the role equity and inclusion play in living ERIE's value of Doing the Right Thing, strengthening Customer and Employee relationships and growing market share.

22,023 conversations handled by the Digital Services team through the new Online Account chat feature in 2022, a 206% increase from 2021.

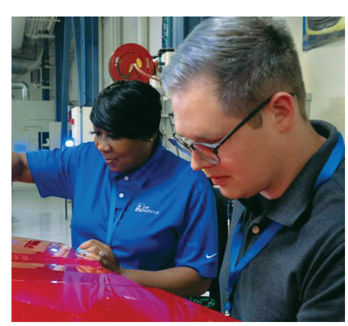
40 agencies in Pennsylvania and Maryland piloted Quote Flow, a digital platform with the potential to cut the time to connect insurance shoppers and ERIE Agents from hours to minutes.

$39.4 million in new auto direct written premium from online quotes started on *erieinsurance.com*.

38.1 million *erieinsurance.com* page views.

2,345 glass claims submitted through ERIE's mobile app since integration with Safelite last spring.

"The amount of information we received was astounding and useful. Hands-on training at the TLC is a unique experience and a big advantage that ERIE offers over other carriers."



Wyatt Austin, a material damage inside adjuster in the Pittsburgh Branch. A claims experience that's Above all in SERVICE starts with knowledgeable professionals like Wyatt and Tammy McCree, an adjuster in the Silver Spring Branch. In 2022, ERIE started returning Employees and Agents to its state-of-the-art, 52,000-square-foot Technical Learning Center, or TLC, for property and material damage education.

FINANCIAL RESULTS

INDEMNITY

- Net income of **$5.71** per diluted Class A share, compared to **$5.69** in 2021
- Net income of **$299 million**, compared to **$298 million** in 2021
- **$207 million** in dividends paid to Shareholders
- Regular quarterly cash dividend grew **7.2 percent** in payout per share over the prior dividend rate
  - From **$1.11** to **$1.19** on each Class A share
  - From **$166.50** to **$178.50** on each Class B share

EXCHANGE*

- Direct written premium grew to **$8.6 billion** compared to **$7.9 billion** in 2021
- New direct written premium of **$1.1 billion**
- Reported combined ratio of **116.1 percent** compared to **103.9 percent** at the end of 2021
- Policyholder surplus remains strong at **$10.1 billion**
- **3.6 percent** increase in total policies in force
- Strong policy retention at **90.5 percent**

LIFE

- Collected nearly **$322 million** in total life insurance, annuity and Medicare Supplement premium—an increase of **23.8 percent** from 2021

*Results for the Exchange include those of its wholly-owned property/casualty subsidiaries.

AWARDS & RECOGNITIONS

Ranked #1 in Independent Agent Satisfaction among Personal Line Insurers in the J.D. Power 2022 U.S. Independent Agent Satisfaction Study

Ranked #1 in Customer Satisfaction with the Property Claims Experience in the J.D. Power 2023 U.S. Property Claims Satisfaction Study

Ranked #3 in Best Renters Insurance Companies
U.S. News 360 Reviews

Ranked #3 in Best Homeowners Insurance Companies
U.S. News 360 Reviews

A+ (Superior) Rating
A.M. Best

Ranked #368 on the Fortune 500®

America's Best Insurance Companies 2023
Forbes, in five personal insurance categories

Ranked #3 in Top Contact Centers Contest First Notice of Loss
Benchmark Portal, medium-size centers

WORKPLACE HONORS

America's Best-in-State Employers 2022
Forbes, for Pennsylvania

Ranked #48 out of 500 in Best Employers for Diversity 2022
Forbes

2022 Diversity Impact Awards
Global ERG Network, four awards

Best of the Best 2022
Black EOE Journal
Hispanic Network Magazine
Professional Woman's Magazine

2022 Best Employer for Excellence in Health + Well-Being
Business Group on Health

2022 Elite 50 Internships
Rising Insurance Star Executive

ERIE INDEMNITY COMPANY FINANCIAL HIGHLIGHTS

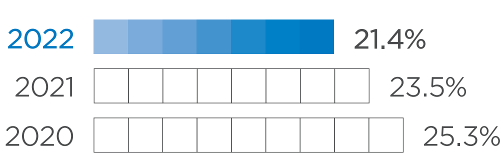
(Dollars in millions except per share data)

FINANCIAL OPERATING DATA	2020	2021	2022
Management fee rate	25%	25%	25%
Operating income	$338	$318	$376
Investment income	33	67	0.6
Interest expense and other, net	3	9	0.4
Net income	293	298	299
Return on equity	25.3%	23.5%	21.4%

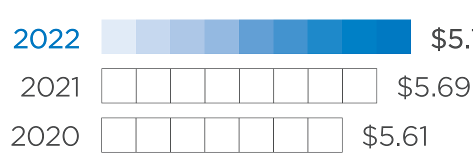
PER SHARE DATA			
Net income per Class A share—diluted	$5.61	$5.69	$5.71
Dividends declared per Class A share	5.93*	4.215	4.52
Dividends declared per Class B share	889.50**	632.25	678.00

FINANCIAL POSITION DATA			
Total assets	$2,117	$2,242	$2,239
Total equity	1,188	1,342	1,448
Weighted average Class A common and equivalent B shares outstanding—diluted	52,313,360	52,307,302	52,297,990

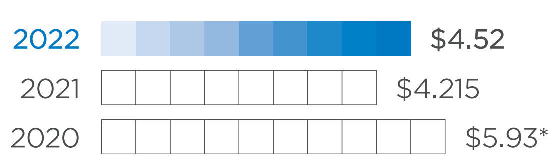
RETURN ON EQUITY



NET INCOME PER CLASS A SHARE - DILUTED



DIVIDENDS DECLARED PER CLASS A SHARE



*Includes a one-time special dividend of $2.00 per share
**Includes a one-time special dividend of $300 per share

ORGANIZATIONAL STRUCTURE

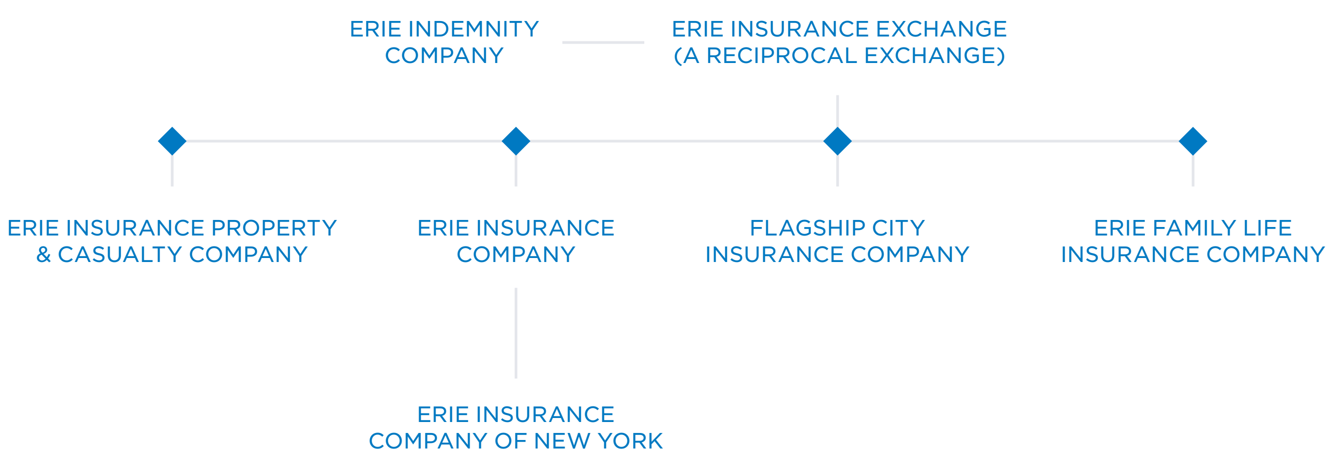
Erie Indemnity Company (Indemnity) is a publicly held Pennsylvania business corporation that has been the managing attorney-in-fact for the subscribers (Policyholders) at the Erie Insurance Exchange (Exchange) since 1925. The Exchange is a subscriber-owned Pennsylvania-domiciled reciprocal insurer that writes property and casualty insurance.

Indemnity's primary function is to provide certain services to the Exchange relating to sales, underwriting and issuance of policies on behalf of the Exchange.

These services are performed in accordance with a subscriber's agreement (a limited power of attorney) executed by each subscriber, who appoints Indemnity as their common attorney-in-fact to transact business on their behalf and manage the affairs at the Exchange.

The property and casualty and life insurance operations are owned by the Exchange, and Indemnity functions as the management company. Indemnity, the Exchange, and its subsidiaries and affiliates operate collectively as the "Erie Insurance Group."

ERIE INSURANCE GROUP ORGANIZATIONAL CHART



CORPORATE DIRECTORY

BOARD OF DIRECTORS

J. Ralph Borneman, Jr., CIC, CPIA
President, Chief Executive Officer and Chairman of the Board, Body-Borneman Insurance & Financial Services, LLC

Eugene C. Connell, FCAS, CFA, CPCU
Independent Investor and Advisor, Erie, PA

Salvatore Correnti, CFA, CCM, FLMI
Retired Non-executive Vice Chair of the Board of Directors, Conning Holdings Corporation

LuAnn Datesh, Esq.
Vice President, General Counsel and Corporate Secretary, Olympus Energy, LLC

Jonathan Hirt Hagen, J.D.
Vice Chairman of the Board, Erie Indemnity Company; Chairman of the Board, ERIE Affiliated Insurance Companies; and Co-Trustee, H.O. Hirt Trusts

Thomas B. Hagen
Chairman of the Board, Erie Indemnity Company; and Chairman, Custom Group Industries

C. Scott Hartz, CPA
Director, INRange Systems, Inc.; and Managing Director, INRange Investor Group, LLC

Brian A. Hudson, Sr., CPA, CGMA, CTP
Retired Executive Director and Chief Executive Officer, Pennsylvania Housing Finance Agency

George R. Lucore, AAM, AIM, AIT, CIC, CPCU, LUTCF
Managing Director, PAFLA Properties, LLC

Thomas W. Palmer, Esq.
Of counsel to the law firm Marshall & Melhorn, LLC

Elizabeth Hirt Vorsheck
Co-Trustee, H.O. Hirt Trusts

ERIE INDEMNITY COMPANY 2022 STANDING COMMITTEES OF THE BOARD

Name	Audit	Charitable Giving	Executive	Executive Compensation & Development	Investment	Nominating & Governance	Risk	Strategy
J. Ralph Borneman, Jr.		◆						Chair
Eugene C. Connell	◆		◆		◆		Chair	◆
Salvatore Correnti	◆				Chair		◆	
LuAnn Datesh	◆	◆						
Jonathan Hirt Hagen[1][3]			◆	◆	◆	Chair		◆
Thomas B. Hagen[2]			Chair					
C. Scott Hartz					◆			◆
Brian A. Hudson, Sr.	Chair			◆			◆	
George R. Lucore		◆		◆				◆
Thomas W. Palmer	◆		◆	Chair		◆		
Elizabeth Hirt Vorsheck		Chair	◆			◆	◆	◆

(1) As the non-executive Vice Chairman of the Board, Jonathan Hirt Hagen performs the duties (including *ex officio* membership on committees) of the Chairman of the Board when the Chairman of the Board is absent or unable to act or during such time as no individual is serving as Chairman of the Board. The Vice Chairman of the Board also performs such other duties as from time to time may be assigned by the Board of Directors.

(2) As the non-executive Chairman of the Board of Directors, Thomas B. Hagen serves, *ex officio*, as a non-voting member of the Audit Committee, and a voting member of all other committees.

(3) The Chairman of the Board has delegated his ex officio status on the Risk Committee to the Vice Chairman of the Board.

EXECUTIVE LEADERSHIP

Timothy G. NeCastro, CPA, CIC
President and Chief Executive Officer

Brian W. Bolash, Esq.
Executive Vice President, Secretary and General Counsel

Sean Dugan, CPCU, CIC, ARe, AU
Executive Vice President, Human Resources and Corporate Services

Lorianne Feltz, CPCU
Executive Vice President, Claims and Customer Service

Gregory J. Gutting, CPA, CPCU
Executive Vice President and Chief Financial Officer

Douglas E. Smith, CPCU, FCAS, MAAA
Executive Vice President, Sales and Products

Parthasarathy Srinivasa
Executive Vice President and Chief Information Officer

SENIOR LEADERSHIP

Jon P. Bloom, FCAS, CPCU, CIC, CPA, CFA
Senior Vice President, Personal Products

Jeffrey W. Brinling, CPCU
Senior Vice President, Corporate Services

Marc Cipriani, CIC
Senior Vice President, Underwriting

Louis F. Colaizzo, CIC
Senior Vice President,
Erie Family Life Insurance Company

Cody W. Cook, FCAS, CPCU
Senior Vice President, Claims

David Edgerton
Senior Vice President, Business Applications and Support, Information Technology

C. Michael Fletcher, CIC
Senior Vice President, Sales and Marketing

Ronald S. Habursky, CFA
Senior Vice President and Chief Investment Officer

Keith E. Kennedy
Senior Vice President, Next Level Innovation

Robert W. McNutt, CTP
Vice President and Corporate Treasurer

James G. Nealon, III, Esq.
Senior Vice President, Law

Jorie Novacek, CPA, CPCU
Senior Vice President and Controller

Sapan S. Patel, CPCU
Senior Vice President, ERIE Experience

Julie M. Pelkowski, CPA
Senior Vice President, Enterprise Office

Sheryl A. Rucker, Esq.
Senior Vice President, Strategic and Integrated Services, Information Technology

David S. Russo, CPCU, CIC, ARe
Senior Vice President, Customer Service

Sarah J. Shine, CPCU, FCAS
Senior Vice President, Commercial Products

Timothy M. Shine
Senior Vice President, Business Capability Enablement, Information Technology

Robert J. Zehr, FCAS
Senior Vice President and Chief Actuary

A talented ERIE team collaborated on the production of the 2022 Annual Report: Emily Wilcko, design; Jennifer Duda and Christine Palattella, content; Bruce Bennett and Edwin Bernik, photography; Scott Beilharz and Robert Scalise, Treasury; Maureen Krowicki, Chandra Burns and Rebecca Buona, Law; Brent Johnson, Ryan Baer, Michael Gregory, Leslie O' Connell, Jennifer Trott and Kellie Young, Finance; Kathy Felong, Strategic Communications; Dennis Morell, Katie Yenny and Dorian Otero-Flanagan, Creative Services.

F.W. HIRT QUALITY AGENCY AWARD WINNERS 2018-2022

The F.W. Hirt Quality Agency Award is the highest honor bestowed on an ERIE agency. It recognizes long-term profitability and growth, thorough and responsible underwriting practices and continuing commitment to education.

Allentown/Bethlehem Branch
2021 Olsommer-Clarke Ins. Group, Inc.
2019 Warren Weiss Insurance
2018 Cellucci Foran Insurance

Canton Branch
2021 Bremke Insurance Agency, LLC
2020 Walsh Insurance Group
2018 Troy Miller Agency

Charlotte Branch
2020 Mark McDuffie Insurance Agency
2018 Trey Siner Insurance Group

Columbus Branch
2021 Dwyer Insurance Agency
2020 O'Nail-Hartman Ins. Agency
2018 Dolbow Insurance

Erie Branch
2022 Straub Insurance Agency
2021 Siegel Insurance, Inc.
2020 Williams Agency
2019 Hoak Insurance Services
2018 Rossbacher Insurance Service

Harrisburg Branch
2022 Everoak Insurance Group
2021 Baron Insurance Group, LLC
2020 The Hess Agency
2019 Klebon Insurance Group
2018 Covenant Insurance Group

Indiana Branch
2021 Martin & Martin Insurance Agency
2018 Patton Insurance

New York Branch
2021 Petruzzi Insurance Agency, LLC
2020 Tanner Insurance Agency
2019 The Kinney Agency, Inc.

Pittsburgh Branch
2021 Lanyi Insurance Agency, LLC
2020 Bruner Insurance Agency
2019 Kattan-Ferretti Insurance

Raleigh Branch
2021 Encore Insurance Advisors
2019 Riddick Insurance Group, Inc.

Richmond Branch
2019 CMR Insurance Agency, LLC

Roanoke Branch
2022 Felty Insurance Agency
2020 Willard Insurance Agency
2019 Wilkins Insurance Agency, Inc.
2018 Walter & Walter Ins. Agency

Silver Spring Branch
2022 Bradley Atlantic, LLC
2020 Bayside Insurance Associates
2019 Schauber-Van Schaik Insurance

Tennessee Branch
2020 Jones Insurance Service
2019 Hugh Cate Insurance Agency

West Virginia Branch
2020 Assure America Corporation
2019 L&L Auvil Insurance Agency, LLC
2018 United Security Agency

Wisconsin Branch
2019 Bartelt Insurance Services, LLC

"It's easy to write insurance. It's difficult to write high-quality risks. But when we're sitting at the table with a client, we can offer something that our competition does not, and that's confidence that ERIE is going to deliver for our insureds."

Maryland Agent Rob Bradley, his family and Bradley Atlantic staff members celebrated their F.W. Hirt Quality Agency Award at the Silver Spring Branch's annual meeting.

ERIE INDEMNITY COMPANY CORPORATE INFORMATION

Corporate Headquarters/Home Office
100 Erie Insurance Place
Erie, PA 16530
814.870.2000

Stock Listing
Erie Indemnity Company's Class A nonvoting common stock is listed on The NASDAQ Stock Market®, Inc., under the symbol "ERIE."

Stock Transfer Information
Broadridge Corporate Issuer Solutions, Inc.
P.O. Box 1342
Brentwood, NY 11717
877.830.4936

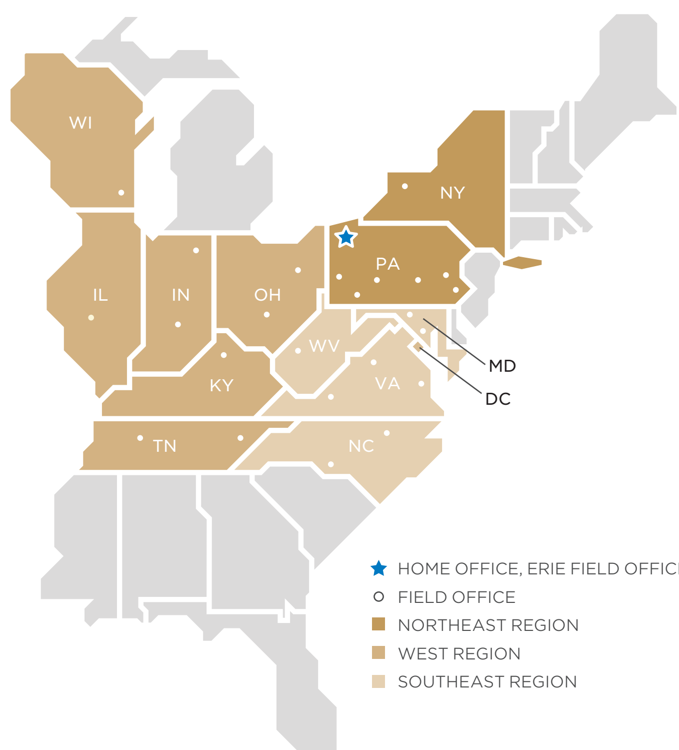
Annual Meeting of Shareholders
The Annual Meeting of Shareholders will be held on April 25, 2023, at 9:30 a.m., EDT, at the Warner Theatre in Erie, Pennsylvania.

Independent Registered Public Accounting Firm
Ernst & Young, LLP
950 Main Avenue
Suite 1800
Cleveland, OH 44113

Online Information
Erie Indemnity's information statement and annual report are available online at *erieproxy.com*. Additional financial and shareholder information, press releases, and general news about the company may be accessed at *erieinsurance.com*.

FIELD OFFICES

West Region	Northeast Region	Southeast Region
Peoria, IL	Rochester, NY	Hagerstown, MD
Fort Wayne, IN	Allentown, PA	Silver Spring, MD
Indianapolis, IN	Erie, PA	Charlotte, NC
Lexington, KY	Harrisburg, PA	Raleigh, NC
Canton, OH	Johnstown, PA	Richmond, VA
Columbus, OH	Murrysville, PA	Roanoke, VA
Knoxville, TN	Philadelphia, PA	Waynesboro, VA
Nashville, TN	Pittsburgh, PA	Parkersburg, WV
Waukesha, WI		



ERIE INDEMNITY COMPANY
EXCERPTS FROM FORM 10-K

ERIE INDEMNITY COMPANY
EXCERPTS FROM FORM 10-K

This Annual Report includes the Company's Audited Financial Statements and excerpts from the Company's full Form 10-K report as filed with the Securities and Exchange Commission ("SEC") on March 1, 2023. The complete Form 10-K can be found on the SEC Web site at www.sec.gov.

☒ **ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**
For the fiscal year ended December 31, 2022
OR
☐ **TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**

Commission File Number 0-24000

ERIE INDEMNITY COMPANY

(Exact name of registrant as specified in its charter)

Pennsylvania	25-0466020
(State or other jurisdiction of incorporation or organization)	(IRS Employer Identification No.)
100 Erie Insurance Place, Erie, Pennsylvania	16530
(Address of principal executive offices)	(Zip Code)

814 870-2000
(Registrant's telephone number, including area code)

Securities registered pursuant to Section 12(b) of the Act:

Class A common stock, stated value $0.0292 per share	ERIE	NASDAQ Stock Market, LLC
(Title of each class)	(Trading Symbol)	(Name of each exchange on which registered)

Securities registered pursuant to Section 12(g) of the Act: None

Indicate by check mark if the registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act. Yes ☒ No ☐

Indicate by check mark if the registrant is not required to file reports pursuant to Section 13 or Section 15(d) of the Act. Yes ☐ No ☒

Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days. Yes ☒ No ☐

Indicate by check mark whether the registrant has submitted electronically every Interactive Data File required to be submitted pursuant to Rule 405 of Regulation S-T during the preceding 12 months (or for such shorter period that the registrant was required to submit such files). Yes ☒ No ☐

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, smaller reporting company, or an emerging growth company. See the definitions of "large accelerated filer," "accelerated filer," "smaller reporting company," and "emerging growth company" in Rule 12b-2 of the Exchange Act. (Check one):

Large accelerated filer	☒	Accelerated filer	☐	Non-accelerated filer	☐
Smaller reporting company	☐	Emerging growth company	☐		

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 13(a) of the Exchange Act. ☐

Indicate by check mark whether the registrant has filed a report on and attestation to its management's assessment of the effectiveness of its internal control over financial reporting under Section 404(b) of the Sarbanes-Oxley Act (15 U.S.C. 7262(b)) by the registered public accounting firm that prepared or issued its audit report. ☒

Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Exchange Act). Yes ☐ No ☒

Aggregate market value of voting and non-voting common stock held by non-affiliates as of the last business day of the registrant's most recently completed second fiscal quarter: $4.9 billion of Class A non-voting common stock as of June 30, 2022. There is no active market for the Class B voting common stock. The Class B common stock is closely held by few shareholders.

Indicate the number of shares outstanding of each of the registrant's classes of common stock, as of the latest practicable date:
46,189,068 shares of Class A common stock and 2,542 shares of Class B common stock outstanding on February 17, 2023.

DOCUMENTS INCORPORATED BY REFERENCE

Portions of Part III of this Form 10-K (Items 10, 11, 12, 13, and 14) are incorporated by reference to the information statement on Schedule 14C to be filed with the Securities and Exchange Commission no later than 120 days after December 31, 2022.

INDEX

PART I

ITEM 1. BUSINESS

General
Erie Indemnity Company ("Indemnity", "we", "us", "our") is a publicly held Pennsylvania business corporation that has since its incorporation in 1925 served as the attorney-in-fact for the subscribers (policyholders) at the Erie Insurance Exchange ("Exchange"). The Exchange, which also commenced business in 1925, is a Pennsylvania-domiciled reciprocal insurer that writes property and casualty insurance. The Exchange has wholly owned property and casualty subsidiaries including: Erie Insurance Company, Erie Insurance Company of New York, Erie Insurance Property & Casualty Company and Flagship City Insurance Company, and a wholly owned life insurance company, Erie Family Life Insurance Company ("EFL").

Our primary function as attorney-in-fact is to perform policy issuance and renewal services on behalf of the subscribers at the Exchange. We also act as attorney-in-fact on behalf of the Exchange with respect to all claims handling and investment management services, as well as the service provider for all claims handling, life insurance, and investment management services for its insurance subsidiaries, collectively referred to as "administrative services". Acting as attorney-in-fact in these two capacities is done in accordance with a subscriber's agreement (a limited power of attorney) executed individually by each subscriber (policyholder), which appoints us as their common attorney-in-fact to transact certain business on their behalf. Pursuant to the subscriber's agreement for acting as attorney-in-fact in these two capacities, we earn a management fee calculated as a percentage, not to exceed 25%, of the direct and affiliated assumed premiums written by the Exchange. The management fee rate is set at least annually by our Board of Directors. The process of setting the management fee rate includes the evaluation of current year operating results compared to both prior year and industry estimated results for both Indemnity and the Exchange, and consideration of several factors for both entities including: their relative financial strength and capital position; projected revenue, expense and earnings for the subsequent year; future capital needs; as well as competitive position.

Services
The policy issuance and renewal services we provide to the Exchange are related to the sales, underwriting and issuance of policies. The sales related services we provide include agent compensation and certain sales and advertising support services. Agent compensation includes scheduled commissions to agents based upon premiums written as well as additional commissions and bonuses to agents, which are earned by achieving targeted measures. Agent compensation comprised approximately 66% of our 2022 policy issuance and renewal expenses. The underwriting services we provide include underwriting and policy processing and comprised approximately 10% of our 2022 policy issuance and renewal expenses. The remaining services we provide include customer service and administrative support. We also provide information technology services that support all the functions listed above that comprised approximately 11% of our 2022 policy issuance and renewal expenses. Included in these expenses are allocations of costs for departments that support these policy issuance and renewal functions.

By virtue of its legal structure as a reciprocal insurer, the Exchange does not have any employees or officers. Therefore, it enters into contractual relationships by and through an attorney-in-fact. Indemnity serves as the attorney-in-fact on behalf of the Exchange with respect to its administrative services in accordance with the subscriber's agreement. The Exchange's insurance subsidiaries also utilize Indemnity for these services in accordance with the service agreements between each of the subsidiaries and Indemnity. Claims handling services include costs incurred in the claims process, including the adjustment, investigation, defense, recording and payment functions. Life insurance management services include costs incurred in the management and processing of life insurance business. Investment management services are related to investment trading activity, accounting and all other functions attributable to the investment of funds. Included in these expenses are allocations of costs for departments that support these administrative functions. The subscriber's agreement and service agreements provide for reimbursement of amounts incurred for these services to Indemnity. Reimbursements are settled at cost. State insurance regulations require that intercompany service agreements and any material amendments be approved in advance by the state insurance department.

Erie Insurance Exchange
As our primary purpose is to manage the affairs at the Exchange for the benefit of the subscribers (policyholders) through the policy issuance and renewal services and administrative services, the Exchange is our sole customer. Our earnings are largely generated from management fees based on the direct and affiliated assumed premiums written by the Exchange. We have no direct competition in providing these services to the Exchange.

The Exchange generates revenue by insuring preferred and standard risks, with personal lines comprising 69% of the 2022 direct and affiliated assumed written premiums and commercial lines comprising the remaining 31%. The principal personal lines products are private passenger automobile and homeowners. The principal commercial lines products are commercial multi-peril, commercial automobile and workers compensation. Historically, due to policy renewal and sales patterns, the Exchange's direct and affiliated assumed written premiums are greater in the second and third quarters than in the first and fourth quarters of the calendar year.

The Exchange is represented by independent agencies that serve as its sole distribution channel. In addition to their principal role as salespersons, the independent agents play a significant role as underwriting and service providers and are an integral part of the Exchange's success.

Our results of operations are tied to the growth and financial condition of the Exchange. If any events occurred that impaired the Exchange's ability to grow or sustain its financial condition, including but not limited to reduced financial strength ratings, disruption in the independent agency relationships, significant catastrophe losses, or products not meeting customer demands, the Exchange could find it more difficult to retain its existing business and attract new business. A decline in the business of the Exchange almost certainly would have as a consequence a decline in the total premiums paid and a correspondingly adverse effect on the amount of the management fees we receive. We also have an exposure to a concentration of credit risk related to the unsecured receivables due from the Exchange for its management fee and cost reimbursements. See Part II, Item 8. "Financial Statements and Supplementary Data - Note 15, Concentrations of Credit Risk, of Notes to Financial Statements" contained within this report. See the risk factors related to our dependency on the growth and financial condition of the Exchange in Item 1A. "Risk Factors" contained within this report.

Competition

Our primary function as attorney-in-fact is to perform policy issuance and renewal services on behalf of the subscribers at the Exchange. We also act as attorney-in-fact on behalf of the Exchange, as well as the service provider for its insurance subsidiaries, with respect to all administrative services. There are a limited number of companies that provide services under a reciprocal insurance exchange structure. We do not directly compete against other such companies, given we are appointed by the subscribers at the Exchange to provide these services.

The direct and affiliated assumed premiums written by the Exchange drive our management fee, which is our primary source of revenue. The property and casualty insurance industry is highly competitive. Property and casualty insurers generally compete on the basis of customer service, price, consumer recognition, coverages offered, claims handling, financial stability and geographic coverage. Vigorous competition, particularly in the personal lines automobile and homeowners lines of business, exists from large, well-capitalized national companies, some of which have broad distribution networks of employed or captive agents, by smaller regional insurers, and by large companies who market and sell personal lines products directly to consumers. Innovations by competitors or other market participants may also increase the level of competition in the industry. In addition, because the insurance products of the Exchange are marketed exclusively through independent insurance agents, the Exchange faces competition within its appointed agencies based upon ease of doing business, product, price, and service relationships.

Market competition bears directly on the price charged for insurance products and services subject to regulatory limitations. Industry capital levels can also significantly affect prices charged for coverage. Growth is driven by a company's ability to provide insurance services and competitive prices while maintaining target profit margins. Growth is a product of a company's ability to retain existing customers and to attract new customers, as well as movement in the average premium per policy.

The Exchange's business model is designed to provide the advantages of localized marketing and claims servicing with the economies of scale and low cost of operations from centralized support services. The Exchange also carefully selects the independent agencies that represent it and seeks to be the lead insurer with its agents in order to enhance the agency relationship and the likelihood of receiving the most desirable underwriting opportunities from its agents.

The Exchange’s strategic focus as a reciprocal insurer is to employ a disciplined underwriting philosophy and to leverage its strong surplus position to generate higher risk adjusted investment returns. The goal is to produce acceptable returns, on a long-term basis, through careful risk selection, rational pricing and superior investment returns. This focus allows the Exchange to accomplish its mission of providing as near perfect protection, as near perfect service as is humanly possible at the lowest possible cost.

See the risk factors related to our dependency on the growth and financial condition of the Exchange in Item 1A. "Risk Factors" contained within this report for further discussion on competition in the insurance industry.

Human Capital Management

Employee Value Proposition

Our human capital management strategy, including initiatives to shape our workforce and workplace, is designed to attract, retain, and develop talent to ensure we are well positioned for the future. Our partnership with our employees is one of the cornerstones of our success.

Our employee value proposition includes a culture that focuses on physical, financial, and emotional well-being. A 2022 employee survey, administered by Willis Towers Watson, indicated that our employees place a value of 84 out of 100 on their total rewards package, approximately 12 points above the industry benchmark. We offer competitive pay with a signature and affordable benefits package including options designed to meet the unique needs of our employees and their families. Employees have access to an employee assistance plan, emergency child and elder care providers, adoption assistance, and infertility assistance, among others. We hold a shared responsibility view of retirement planning whereby we provide tools and resources that employees are expected to use to achieve their retirement goals. We set ourselves apart by offering both a 401(k) savings plan and a noncontributory defined benefit pension plan.

We encourage a work/life balance for all employees. During 2022, we began returning employees to the office and addressed the need to meet business requirements while recognizing the need for employee flexibility by offering a variety of hybrid working arrangements.

An engaged workforce is necessary for accomplishing organizational objectives and our portfolio of employee experience initiatives demonstrates our commitment to provide employees an engaging environment throughout all stages of their careers. We offer professional development opportunities that are designed to prepare employees for future career growth. Employees have access to skills enhancement training and programs as well as a generous tuition reimbursement program for higher education. We also grow and develop our employees by offering talent mobility opportunities such as expanded leadership experience, job shadowing, cross-training, stretch assignments, and formal career development programs.

Diversity, Equity & Inclusion

Diversity, equity, and inclusion (“DEI”) is integral to our business success. Our strength is in our people and the more diverse our backgrounds and experiences, the stronger we are.

Our department of Diversity & Community Development is led by the Chief Diversity Officer who reports directly to the Chief Executive Officer, affirming our commitment to DEI from executive leadership. Our DEI efforts are further supported by a dedicated team of professionals including a Vice President of Diversity, Equity, and Inclusion.

We foster an inclusive workplace through the endorsement of nine affinity networks and five business resource groups. Affinity networks are employee-driven groups that focus on particular dimensions of diversity and are designed to foster greater awareness and a culture of inclusion across our company. Business resource groups address business issues using a DEI lens. Through these groups, we are taking a broader approach to problem-solving and innovation by aligning cross-functional teams of employees to our business strategy.

Workforce Metrics

We used the following human capital metrics as part of managing our business for the years ended December 31:

	2022	2021	2020
Workforce size			
Full-time (1)	5,970	5,805	5,849
Part-time	23	30	31
Temporary (2)	45	41	34
Turnover (3)	11.2 %	8.0 %	5.3 %
Average tenure (4)	11.7	12.6	12.5

(1) Includes 50% of employees who provide claims and life insurance management services exclusively for the Exchange and its subsidiaries. The Exchange and its subsidiaries reimburse us monthly for the cost of these services.

(2) Temporary employees are hired for short-term work and paid directly by us.

(3) The percentage of employees who left voluntarily or involuntarily, including retirements; calculated using the number of employees who exited, divided by the average headcount of the period.

(4) The average number of years employees have been employed with the organization; calculated using the total number of years of employment, divided by average headcount of full-time and part-time employees for the period.

The volatile talent market experienced during the pandemic continued to be a challenge in 2022. Our turnover rate increased to 11.2% in 2022 from 8.0% in 2021 and 5.3% in 2020. The largest portion of our turnover continues to be voluntary turnover, excluding retirements, which increased to 6.9% in 2022 from 4.8% in 2021 and 2.4% in 2020, but continues to remain lower than industry benchmark data. Employee retirements also contributed to the increased turnover rate as they increased to 3.6% in 2022 from 2.2% in 2021 and 2.0% in 2020. We continue to monitor turnover trends to determine the appropriate actions to ensure we are well positioned for the future.

Government Regulation

Most states have enacted legislation that regulates insurance holding company systems, defined as two or more affiliated persons, one or more of which is an insurer. Indemnity and the Exchange, and its wholly owned subsidiaries, meet the definition of an insurance holding company system.

Each insurance company in the holding company system is required to register with the insurance supervisory authority of its state of domicile and furnish information regarding the operations of companies within the holding company system that may materially affect the operations, management, or financial condition of the insurers within the system. Pursuant to these laws, the respective insurance departments may examine us and the Exchange and its wholly owned subsidiaries at any time, and may require disclosure and/or prior approval of certain transactions with the insurers and us, as an insurance holding company.

All transactions within a holding company system affecting the member insurers of the holding company system must be fair and reasonable and any charges or fees for services performed must be reasonable. Approval by the applicable insurance commissioner is required prior to the consummation of transactions affecting the members within a holding company system.

Website Access

Our annual reports on Form 10-K, quarterly reports on Form 10-Q, current reports on Form 8-K, and any amendments to those reports are available free of charge on our website at www.erieinsurance.com as soon as reasonably practicable after such material is filed electronically with the Securities and Exchange Commission. Additionally, copies of our annual report on Form 10-K are available free of charge, upon written request, by contacting Investor Relations, Erie Indemnity Company, 100 Erie Insurance Place, Erie, PA 16530, or calling (800) 458-0811.

ITEM 1A.   RISK FACTORS

Our business involves various risks and uncertainties, including, but not limited to those discussed in this section. The risks and uncertainties described in the risk factors below, or any additional risk outside of those discussed below, could have a material adverse effect on our business, financial condition, operating results, cash flows, or liquidity if they were to develop into actual events. This information should be considered carefully together with the other information contained in this report and in other reports and materials we file periodically with the Securities and Exchange Commission.

Our risks have been divided into the following categories:

Risks related to Erie Insurance Exchange – risks related to our dependence on our relationship with the Exchange associated with management fees, premium growth, and financial condition, as the Exchange is our sole customer and principal source of revenue

Operating risks – risks stemming from events or circumstances that directly or indirectly affect our operations, including our operations as attorney-in-fact for the Exchange

Market, Capital, and Liquidity risks – risks that may impact the values or results of our investment portfolio, ability to meet financial obligations or covenants, or obtain capital as necessary

Although we have organized risks generally according to these categories in the discussion below, risks may have impacts in more than one category and are included where the impact is most significant.

Risks related to Erie Insurance Exchange

If the management fee rate paid by the Exchange is reduced or if there is a significant decrease in the amount of direct and affiliated assumed premiums written by the Exchange, revenues and profitability could be materially adversely affected.

We are dependent upon management fees paid by the Exchange, which represent our principal source of revenue. Pursuant to the subscriber's agreement with the subscribers at the Exchange, we may retain up to 25% of all direct and affiliated assumed premiums written by the Exchange. Therefore, management fee revenue from the Exchange is calculated by multiplying the management fee rate by the direct and affiliated assumed premiums written by the Exchange. Accordingly, any reduction in direct and affiliated assumed premiums written by the Exchange and/or the management fee rate would have a negative effect on our revenues and net income.

The management fee rate is determined by our Board of Directors and may not exceed 25% of the direct and affiliated assumed premiums written by the Exchange. The Board of Directors sets the management fee rate each December for the following year. At their discretion, the rate can be changed at any time. The process of setting the management fee rate includes the evaluation of current year operating results compared to both prior year and industry estimated results for both Indemnity and the Exchange, and consideration of several factors for both entities including: their relative financial strength and capital position; projected revenue, expense and earnings for the subsequent year; future capital needs; as well as competitive position. The evaluation of these factors could result in a reduction to the management fee rate and our revenues and profitability could be materially adversely affected.

Serving as the attorney-in-fact in the reciprocal insurance exchange structure results in the Exchange being our sole customer. The growth of the Exchange directly affects our management fee revenue, which is largely generated from management fees based on the direct and affiliated assumed premiums written by the Exchange. If the Exchange's ability to grow or renew policies were adversely impacted, the premium revenue of the Exchange would be adversely affected which would reduce our management fee revenue. The circumstances or events that might impair the Exchange's ability to grow include, but are not limited to, the items discussed below.

Unfavorable changes in macroeconomic conditions for any reason, including declining consumer confidence, inflation, high unemployment, lower demand for certain services, reduced personal income, and recession, among others, may lead the Exchange's customers to modify coverage, not renew policies, or even cancel policies, which could adversely affect the premium revenue of the Exchange, and consequently our management fee.

The Exchange faces significant competition from other regional and national insurance companies. The property and casualty insurance industry is highly competitive on the basis of product, price and service. If the Exchange's competitors offer property and casualty products with more coverage or offer lower rates, and the Exchange is unable to implement product improvements quickly enough to keep pace, its ability to grow and renew its business may be adversely impacted. In addition, due to the Exchange's premium concentration in the automobile and homeowners insurance markets, it may be more sensitive to trends that could affect auto and home insurance coverages and rates over time, for example changing vehicle usage, usage-based methods of determining premiums, ownership and driving patterns such as ride sharing or remote work, advancements in vehicle or home technology or safety features such as accident and loss prevention technologies, the development of autonomous vehicles, or residential occupancy patterns, among other factors. Innovations by competitors or other market participants may increase the level of competition in the industry. If the Exchange fails to respond to those innovations on a timely basis, its competitive position and results may be materially adversely affected.

The Exchange markets and sells its insurance products through independent, non-exclusive insurance agencies. These agencies are not obligated to sell only the Exchange's insurance products, and generally also sell products of the Exchange's competitors. If agencies do not maintain their current levels of marketing efforts, bind the Exchange to unacceptable risks, or place business with competing insurers, or if the Exchange is unsuccessful in attracting or retaining agencies in its distribution system or maintaining its relationships with those agencies, the Exchange's ability to grow and renew its business may be adversely impacted. More broadly, if independent agents face challenges sustaining their own business operations due to unfavorable economic conditions or staffing constraints, it could result in the sale or closure of their businesses, thereby reducing the agency force of the Exchange. Additionally, shifting consumer behaviors toward increased digital interactions may cause the insurance industry as a whole to migrate to a delivery system other than independent agencies.

The Exchange maintains a brand recognized for customer service. The perceived performance, actions, conduct and behaviors of employees, independent insurance agency representatives, and third-party service providers may result in reputational harm to the Exchange's brand. Specific incidents which may cause harm include but are not limited to disputes, long customer wait times, errors in processing a claim, failure to protect sensitive customer data, and negative or inaccurate social media or traditional media communications. Likewise, an inability to match or exceed the service provided by competitors, which is increasingly relying on digital delivery and enhanced distribution technology, may impede the Exchange's ability to maintain and/or grow its customer base. If third-party service providers fail to perform as anticipated, the Exchange may experience operational difficulties, increased costs and reputational damage. If an extreme catastrophic event were to occur in a heavily concentrated geographic area of subscribers/policyholders, an extraordinarily high number of claims could have the potential to strain claims processing and affect the Exchange's ability to satisfy its customers. Also, we, or the Exchange, may fail to meet environmental, social, and governance (ESG) expectations of our customers or other interested parties. Failure to satisfy expectations in these areas may result in negative publicity or other adverse outcomes. Any reputational harm to the Exchange could have the potential to impair its ability to grow and renew its business.

As the attorney-in-fact in the reciprocal insurance exchange structure with the Exchange as our sole customer, we are dependent on the financial condition of the Exchange. If the Exchange were to fail to maintain acceptable financial strength ratings, its competitive position in the insurance industry would be adversely affected. If a rating downgrade led to customers not renewing or canceling policies, or impacted the Exchange's ability to attract new customers, the premium revenue of the Exchange would be adversely affected which would reduce our management fee revenue. The circumstances or events that might impair the Exchange's financial condition include, but are not limited to, the items discussed below.

Financial strength ratings are an important factor in establishing the competitive position of insurance companies such as the Exchange. Higher ratings generally indicate greater financial stability and a stronger ability to meet ongoing obligations to policyholders. The Exchange's A.M. Best rating is currently A+ ("Superior"). A.M. Best periodically reviews the Exchange's ratings and changes their rating criteria; therefore, the Exchange's current rating may not be maintained in the future. A significant downgrade in the A.M. Best rating could reduce the competitive position of the Exchange, making it more difficult to attract profitable business in the highly competitive property and casualty insurance market and potentially result in reduced sales of its products and lower premium revenue.

The performance of the Exchange's investment portfolio is subject to a variety of investment risks. The Exchange's investment portfolio is comprised principally of fixed income securities, equity securities and limited partnerships. The fixed income portfolio is subject to a number of risks including, but not limited to, interest rate risk, investment credit risk, sector/concentration risk and liquidity risk. The Exchange's common stock and preferred equity securities have exposure to price risk, the risk of potential loss in estimated fair value resulting from an adverse change in prices. Limited partnerships are significantly less liquid and generally involve higher degrees of price risk than publicly traded securities. Limited partnerships, like publicly traded securities, have exposure to market volatility; but unlike fixed income securities, cash flows and return expectations are less predictable. Additionally, a portion of the Exchange's common stock and limited partnership portfolios are exposed to foreign exchange rate risk, or the potential loss in estimated fair value resulting from adverse changes in foreign currency exchange rates. If any investments in the Exchange's investment portfolio were to suffer a substantial decrease in value, the Exchange's financial position could be materially adversely affected through increased unrealized losses or impairments. A significant decrease in the Exchange's portfolio could also put it, or its subsidiaries, at risk of failing to satisfy regulatory or rating agency minimum capital requirements.

Property and casualty insurers are subject to extensive regulatory supervision in the states in which they do business. This regulatory oversight includes, by way of example, matters relating to licensing, examination, rate setting, market conduct, policy forms, limitations on the nature and amount of certain investments, claims practices, mandated participation in involuntary markets and guaranty funds, reserve adequacy, insurer solvency, restrictions on underwriting standards, accounting standards, transactions between affiliates, risk management, and ESG practices. Such regulation and supervision are primarily for the benefit and protection of policyholders. Changes in applicable insurance laws, tax statutes, regulations, or changes in the way regulators administer those laws, tax statutes, or regulations could adversely impact the Exchange's business, cash flows, results of operations, financial condition, or operating environment and increase its exposure to loss or put it at a competitive disadvantage, which could result in reduced sales of its products and lower premium revenue.

Property and casualty insurers face a significant risk of litigation and regulatory investigations and actions in the ordinary course of operating their businesses including the risk of class action lawsuits. The Exchange and its subsidiaries have also been named as defendants in a number of pandemic-related lawsuits and, therefore, are subject to the risks and uncertainties of such litigation. Plaintiffs in class action and other lawsuits against the Exchange may seek large or indeterminate amounts of damages, including punitive and treble damages, which may remain unknown for substantial periods of time. The Exchange is also subject to various regulatory inquiries, such as information requests, subpoenas, and books and record examinations from state and federal regulators and authorities.

The uncertainty of risks that emerge upon the occurrence of significant unexpected events, such as pandemics, or unexpected inflation caused by supply chain issues or otherwise, may cause additional challenges in the process of estimating loss and loss adjustment expense reserves or premiums to accommodate future claims and expenses. For example, the behavior of claimants and policyholders and the timing and amounts of claims settlements may change in unexpected ways. Furthermore, actions taken by governmental bodies, both legislative and regulatory, in reaction to significant unexpected events, and their related impacts, are hard to predict. The models that are used to determine appropriate premium levels, forecast future losses and expenses, estimate loss and loss adjustment expense reserves, and assess financial strength may be created or deployed in a manner that results in inaccurate predictions. This may result in changes to the Exchange's estimated level of loss and loss adjustment expense reserves or impact the adequacy of premiums to accommodate future claims and expenses.

As insurance industry practices and legal, judicial, social and other environmental conditions change, unexpected and unintended issues related to claims and coverage may emerge. In some instances, these emerging issues may not become apparent for some time after the Exchange has issued the affected insurance policies. As a result, the full extent of liability under the Exchange's insurance policies may not be known for many years after the policies are issued. These issues may adversely affect the Exchange's business by either extending coverage beyond its underwriting intent or by increasing the number or size of claims. If there were legislative action in response to a pandemic or other significant unexpected event that retroactively mandated coverage irrespective of terms, exclusions or other conditions included in policies, such as business interruption, that would otherwise preclude coverage, it could have a material impact on the financial condition, results of operations and cash flows of the Exchange.

The Exchange's insurance operations are exposed to claims arising out of catastrophes. Common natural catastrophic events include hurricanes, earthquakes, tornadoes, hail storms, and severe winter weather. The frequency and severity of these catastrophes is inherently unpredictable. Changing climate conditions have added to the unpredictability of the frequency and severity of natural disasters and have created additional uncertainty as to future trends and exposures. A single catastrophic occurrence or aggregation of multiple smaller occurrences within the geographical region of the Exchange or its assumed property reinsurance portfolio could adversely affect the financial condition of the Exchange. Man-made disasters such as terrorist attacks and riots could also cause losses from insurance claims related to the property and casualty insurance operations, which could adversely affect its financial condition.

Operating risks

If the costs of providing services to the Exchange are not controlled, our profitability could be materially adversely affected.

Pursuant to the subscriber's agreement, we perform policy issuance and renewal services for the subscribers at the Exchange and we serve as the attorney-in-fact on behalf of the Exchange with respect to its administrative services. The most significant costs we incur in providing policy issuance and renewal services are commissions, employee costs, and technology costs.

Commissions to independent agents are our largest expense. Commissions include scheduled commissions to agents based upon premiums written as well as additional commissions and bonuses to agents, which are earned by achieving certain targeted measures. Changes to commission rates or bonus programs may result in increased future costs and lower profitability. Our agent incentive bonuses include a profitability component. If claims frequency and loss expenses were to decrease significantly as a result of an unexpected event, such as a pandemic, the profitability component of our agent incentive bonuses would improve, and our agent compensation costs would increase. Our second largest expense is employee costs, including salaries, healthcare, pension, and other benefit costs. Regulatory developments, provider relationships, pandemics and demographic and economic factors that are beyond our control, such as inflation, are indicators that employee costs could increase which could reduce our profitability. The defined benefit pension plan we offer to our employees is affected by variable factors such as the interest rate used to discount pension liabilities, asset performance and changes in retirement patterns, which are beyond our control and any related future cost increases would reduce our profitability.

Technological development is necessary to facilitate ease of doing business for employees, agents and customers. Our technological developments are focused on simplifying and improving the employee, agent and customer experiences, increasing efficiencies, redesigning products and addressing other potentially disruptive changes in the insurance industry. As we continue to develop technology initiatives in order to remain competitive, our profitability could be negatively impacted as we invest in system development. We may also experience increased technology costs as we re-design hybrid work models for our employees.

If we are unable to attract, develop, and retain talented executives, key managers, and employees our financial condition and results of operations could be adversely affected.

Our success is largely dependent upon our ability to attract and retain talented executives and other key management. Talent is defined as people with the right skills, knowledge, abilities, character, and motivation. The loss of the services and leadership of certain key officers and the failure to plan for turnover or retirement or to attract and develop talented new executives and managers could prevent us from successfully communicating, implementing, and executing business strategies.

Our success also depends on our ability to attract, develop, and retain a talented employee base. The inability to staff all functions of our business with employees possessing the appropriate talent could have an adverse effect on our business performance. Additionally, failure to recognize, evaluate, and respond to changing workforce trends including current labor market conditions and new ways of managing in hybrid work environments, or failure to execute proactive retention and replacement strategies could also have an adverse effect on our business performance. Furthermore, failure to instill appropriate cultural expectations and behavioral norms within our employees, particularly in a hybrid work environment, could damage our reputation. Staffing appropriately talented employees for the handling of claims and servicing of customers, rendering of disciplined underwriting, and effective sales and marketing are critical to the core functions of our business. In addition, talented employees in the actuarial, finance, human resources, information technology, law, and risk management areas are also essential to support our core functions.

If we are unable to effectively maintain system availability or manage technology initiatives, we may experience adverse financial consequences and/or may be unable to compete effectively.

Our business is highly dependent upon the effectiveness of our technology and information systems which support key functions of our core business operations including processing applications and premium payments, providing customer support, performing actuarial and financial analysis, and maintaining key data. Additionally, the Exchange relies heavily on technology systems for processing claims. In order to support our business processes and strategic initiatives in a cost and resource efficient manner, we must maintain the effectiveness of existing technology systems and continue to identify and develop new, and enhance existing, technology systems. As we invest in the development of our systems, costs and completion times could exceed original estimates, and/or the project may not deliver the anticipated benefit or perform as expected. If we do not effectively and efficiently manage and upgrade our technology systems, our ability to serve our customers and implement our strategic initiatives could be adversely impacted.

Additionally, we depend on a large amount of data to price policies appropriately, track exposures, perform financial analysis, report to regulatory bodies, and ultimately make business decisions. Should this data be inaccurate or insufficient, risk exposure may be underestimated and/or poor business decisions may be made. This may in turn lead to adverse operational or financial performance and adverse customer or investor confidence.

If we experience difficulties with technology, data and network security, including those that could result from cyber attacks, third-party relationships or cloud-based relationships, our ability to conduct our business could be adversely impacted.

In the normal course of business, we collect, use, store and where appropriate, disclose data concerning individuals and businesses. We also conduct business using third parties who may provide software, data storage, cloud-based computing and other technology services. We have on occasion experienced, and will continue to experience, cyber threats to our data and systems. Cyber threats can create significant risks such as destruction of systems or data, denial or interruption of service, disruption of transaction execution, loss or exposure of customer data, theft or exposure of our intellectual property, theft of funds or disruption of other important business functions. Our interactions with third parties may expose us to increased risk related to data security, service disruptions or effectiveness of our control system.

In addition, we are subject to numerous federal and state data privacy and security laws relating to the privacy and security of the nonpublic personal information of our customers, employees and others. The improper access, disclosure, misuse or mishandling of such information could result in legal liability, regulatory action and reputational damage. Third parties on whom we rely for certain business processing functions are also subject to these risks, and their failure to adhere to these laws and regulations could negatively impact us.

The number, complexity and sophistication of cyber threats continue to increase over time. While we maintain cyber liability insurance to mitigate the financial risk around cyber incidents, such insurance may not cover all costs associated with the consequences of information or systems being compromised, and such insurance may become prohibitively expensive to maintain. Additionally, while we have dedicated resources with security incident response capabilities, our response process may not be adequate, may fail to accurately assess the severity of an incident, may not respond quickly enough or may fail to sufficiently remediate an incident. As a result, we may suffer significant legal, reputational, or financial losses, which could adversely affect our business, cash flows, financial condition or results of operations.

To date, we are not aware of any material cybersecurity breach with respect to our systems or data. Additionally, we are not aware of any cybersecurity breach experienced by anyone with whom we have a third-party relationship that has had a material impact on our systems or data.

If events occurred causing interruption of our operations, facilities, systems or business functions, it could have a material adverse effect on our operations and financial results.

We have established business continuity and disaster recovery plans to provide for the continuation of core business operations in the event that normal business operations could not be performed due to catastrophic or other events, including pandemics. While we continue to test and assess our business continuity and disaster recovery plans to validate they meet the needs of our core business operations and address multiple business interruption events, there is no assurance that core business operations could be performed upon the occurrence of such an event. Employee absence, physical premises damage, systems failures or outages could compromise our ability to perform our business functions in a timely manner, which could harm our ability to conduct business and hurt our business and customer relationships. Our operational resiliency is also dependent on third-party personnel, infrastructure and systems on which we rely. Our operations and those of our third parties may become vulnerable to damage or disruption due to circumstances beyond our or their control, such as from catastrophic events, power anomalies or outages, natural disasters, pandemics, supply chain interruptions, network failures, and cyber attacks. Additionally, we are dependent on internet and telecommunications access and capabilities. Our workforce is largely concentrated in Erie, Pennsylvania. If a significant event affects the labor force in this area, it could impact the policy acquisition, underwriting, claims and/or support services provided to the policyholders and/or independent agents of the Exchange. Disruptions to our workforce or our operations for any reason could result in a material adverse effect on our business, cash flows, financial condition, or results of operations.

We are subject to applicable insurance laws, tax statutes, and regulations, as well as claims and legal proceedings, which, if determined unfavorably, could have a material adverse effect on our business, results of operations, or financial condition.

We face a significant risk of litigation and regulatory investigations and actions in the ordinary course of operating our businesses including the risk of class action lawsuits. We are, have been, or may become subject to class actions and individual suits alleging breach of fiduciary or other duties, including our obligations to indemnify directors and officers in connection with certain legal matters. We are also subject to litigation arising out of our general business activities such as contractual and employment relationships and claims regarding the infringement of the intellectual property of others. Plaintiffs in class action and other lawsuits against us may seek large or indeterminate amounts of damages, including punitive and treble damages, which may remain unknown for substantial periods of time. We are also subject to various regulatory inquiries, such as information requests, subpoenas, and books and record examinations from state and federal regulators and authorities. In addition, changes in the way regulators administer applicable laws, tax statutes, or regulations could adversely impact our business, cash flows, results of operations, or financial condition. It is also possible that changes in economic conditions and steps taken by federal, state and local governments in response to a pandemic or other significant events could cause an increase in taxes at the federal, state and local levels, which would adversely impact our results of operations.

Market, Capital, and Liquidity risks

The performance of our investment portfolio is subject to a variety of investment risks, which may in turn have a material adverse effect on our results of operations or financial condition.

At December 31, 2022, our investment portfolio consisted of approximately 84% fixed maturity securities, with the remaining 16% invested in equity securities and other investments.

General economic conditions and other factors beyond our control can adversely affect the value of our investments and the realization of net investment income, or result in realized investment losses. In addition, downward economic trends also may have an adverse effect on our investment results by negatively impacting the business conditions and impairing credit for the issuers of securities held in our respective investment portfolios. This could reduce fair values of investments and generate significant unrealized losses or impairment charges which may adversely affect our financial results.

The performance of the fixed income portfolio is subject to a number of risks including, but not limited to:

- Interest rate risk - the risk of adverse changes in the value of fixed income securities as a result of increases in market interest rates.

- Investment credit risk - the risk that the value of certain investments may decrease due to the deterioration in financial condition of, or the liquidity available to, one or more issuers of those securities or, in the case of structured securities, due to the deterioration of the loans or other assets that underlie the securities, which, in each case, also includes the risk of permanent loss.

- Sector/Concentration risk - the risk that the portfolio may be too heavily concentrated in the securities of one or more issuers, sectors, or industries. Events or developments that have a negative impact on any particular industry, group of related industries, or geographic region may have a greater adverse effect on our investment portfolio to the extent that the portfolio is concentrated within those issuers, sectors, or industries.

- Liquidity risk - the risk that we will not be able to convert investment securities into cash on favorable terms and on a timely basis, or that we will not be able to sell them at all, when desired. Disruptions in the financial markets or a lack of buyers for the specific securities that we are trying to sell, could prevent us from liquidating securities or cause a reduction in prices to levels that are not acceptable to us.

- Reinvestment risk - the possibility that the cash flows produced by an investment will have to be reinvested at a reduced rate of return. Approximately 36% of our fixed maturity portfolio is expected to mature over the next three years.

Our equity securities have exposure to price risk. Equity markets, sectors, industries, and individual securities may also be subject to some of the same risks that affect our fixed income portfolio, as discussed above.

All of our fixed income and equity securities are subject to market volatility. To the extent that future market volatility negatively impacts our investments, our financial condition will be negatively impacted. We review the fixed income portfolio on a periodic basis to evaluate positions that are in an unrealized loss position to determine whether impairments are a result of credit loss or other factors. Inherent in management's evaluation of a security are assumptions and estimates about the operations of the issuer and its future earnings potential. As the process for determining impairments is highly subjective, changes in our assessments may have a material effect on our operating results and financial condition. See also Part II, Item 7A. "Quantitative and Qualitative Disclosures about Market Risk".

In July 2017, the United Kingdom's Financial Conduct Authority ("FCA"), which regulates the London Interbank Offered Rate ("LIBOR"), announced that it intends to phase out LIBOR by the end of 2021. After this date, the FCA would no longer require banks to make LIBOR submissions. Following discussions with the FCA and other official sector bodies, the Intercontinental Exchange Benchmark Administration announced in March 2021 the publication of certain USD LIBOR settings will continue through June 30, 2023. The Alternative Reference Rates Committee of the Federal Reserve Board (ARRC), a group of market participants convened to help ensure a successful transition away from LIBOR, has recommended the Secured Overnight Financing Rate (SOFR) as its preferred alternative reference rate and has proposed a transition plan and timeline designed to encourage the adoption of SOFR from LIBOR. Volume in SOFR-linked products progressed strongly in 2022, and SOFR is now the predominant floating rate used in newly issued fixed income transactions. However, most floating rate instruments outstanding still reference LIBOR and therefore will need to transition to an alternative rate.

We have identified our population of contracts that contain a LIBOR reference and have determined that our primary exposure is in fixed income securities within our investment portfolio. At December 31, 2022, approximately 17% of our investment portfolio includes securities with LIBOR exposure where the stated final maturity date extends beyond June 30, 2023. Many of our LIBOR indexed securities have fallback provisions that provide for an alternative reference rate when LIBOR ceases to exist. For securities governed by U.S. law without adequate fallback provisions already in place, federal legislation was passed in 2022 to provide a safe harbor for transition to the recommended alternative reference rate.

We continually monitor the risks associated with the LIBOR transition which include identifying and monitoring our exposure to LIBOR, monitoring the market adoption of alternative reference rates and ensuring operational processes are updated to accommodate alternative rates. Due to the inherent uncertainty in financial markets, we are currently unable to predict the overall impact of LIBOR transition on our net investment income, fair market value and return on investments that contain a LIBOR reference.

Deteriorating capital and credit market conditions or a failure to accurately estimate capital needs may significantly affect our ability to meet liquidity needs and access capital.

Sufficient liquidity and capital levels are required to pay operating expenses, income taxes, and to provide the necessary resources to fund future growth opportunities, satisfy certain financial covenants, pay dividends on common stock, and repurchase common stock. Management estimates the appropriate level of capital necessary based upon current and projected results, which includes evaluating potential risks. Failure to accurately estimate our capital needs may have a material adverse effect on our financial condition until additional sources of capital can be obtained. Further, a deteriorating financial condition may create a negative perception of us by third parties, including investors, and financial institutions, which could impact our ability to access additional capital in the debt or equity markets. Volatility in the financial markets could also limit our ability to sell certain fixed income securities or cause such investments to sell at deep discounts.

Our primary sources of liquidity are management fee revenue and cash flows generated from our investment portfolio. In the event these traditional sources of liquidity are not available, we may have to seek additional financing. Our access to funds will depend upon a number of factors including current market conditions, the availability of credit, market liquidity, and the timing of obtaining credit ratings. In deteriorating market conditions, there can be no assurance that we will obtain additional financing, or, if available, that the cost of financing will not substantially increase and affect our overall profitability.

ITEM 1B. UNRESOLVED STAFF COMMENTS

None.

ITEM 2. PROPERTIES

Indemnity and the Exchange share a corporate home office campus in Erie, Pennsylvania, which comprises approximately 996,000 square feet. Additionally, we lease two office buildings and one warehouse facility from third parties. We are charged rent for the related square footage we occupy.

Indemnity and the Exchange also operate 25 field offices in 12 states used to primarily support claims-related activities. The Exchange owns seven field offices and leases another 16 from third parties. Indemnity owns one field office and leases another from a third party. Commitments for properties leased from third parties expire periodically through 2027. We expect that most leases will be renewed or replaced upon expiration. Rental costs of shared facilities are allocated based upon usage or square footage occupied.

Over 90% of our workforce had been working remotely from March 2020 through April 2022 due to the COVID-19 pandemic. We implemented a phased return of our workforce beginning in April 2022 and transitioned to a predominately hybrid format.

ITEM 3. LEGAL PROCEEDINGS

Erie Indemnity Company ("Indemnity") was named as a defendant in a complaint filed on August 24, 2021, by alleged subscribers of the Erie Insurance Exchange (the "Exchange") in the Court of Common Pleas Civil Division of Allegheny County, Pennsylvania captioned TROY STEPHENSON, CHRISTINA STEPHENSON, SUSAN RUBEL, and STEVEN BARNETT, individually and on behalf of all others similarly situated (Plaintiffs) v. Erie Indemnity Company (Defendant).

The complaint seeks relief for alleged breaches of fiduciary duty by Indemnity in connection with the setting of the management fee it receives, pursuant to the terms of the Subscribers Agreement executed between Indemnity and all policyholders of the Exchange, as compensation for acting as the attorney-in-fact in the management of the Exchange. The relief sought is for the period beginning two years prior to the date of the filing of the complaint and continuing through 2021.

The complaint seeks (i) a finding that Indemnity has breached its fiduciary duties; (ii) an award of damages in an amount to be determined at trial; and (iii) such other relief, including disgorgement of profits or other injunctive relief, that the Court deems just and proper.

Service of the complaint was effectuated on September 20, 2021. A Notice of Removal to the United States District Court for the Western District of Pennsylvania was filed on October 20, 2021. On November 2, 2021, Plaintiffs filed a Notice of Voluntary Dismissal. As a result, the action was dismissed without prejudice.

On December 6, 2021, another Complaint was filed in the Court of Common Pleas of Allegheny County, Pennsylvania captioned ERIE INSURANCE EXCHANGE, an unincorporated association, by TROY STEPHENSON, CHRISTINA STEPHENSON, and STEVEN BARNETT, trustees ad litem, and alternatively, ERIE INSURANCE EXCHANGE, by TROY STEPHENSON, CHRISTINA STEPHENSON, and STEVEN BARNETT, (Plaintiff), v. ERIE INDEMNITY COMPANY, (Defendant).

This most recent complaint has the same allegation of breach of fiduciary duty by Indemnity in connection with the setting of the management fee it receives, pursuant to the terms of the Subscribers Agreement executed between Indemnity and all policyholders of the Exchange, as compensation for acting as the attorney-in-fact in the management of the Exchange.

This most recent complaint seeks the same relief, specifically, (i) a finding that Indemnity has breached its fiduciary duties; (ii) an award of damages in an amount to be determined at trial; and (iii) such other relief, including disgorgement of profits or other injunctive relief, that the Court deems just and proper.

A Notice of Removal to the United States District Court for the Western District of Pennsylvania was filed on January 27, 2022. Indemnity intends to vigorously defend against all of the allegations and requests for relief in the complaint.

By Memorandum Opinion and Order dated September 28, 2022, the Court granted the Motion for Remand and directed the case be remanded to the Court of Common Pleas of Allegheny County, Pennsylvania. On September 30, 2022, Indemnity filed a Motion to Stay the Remand Order pending an appeal to the United States Court of Appeals for the Third Circuit. On October 3, 2022, the Court granted the Stay. On October 11, 2022, Indemnity filed a Petition for Permission to Appeal the Remand Order with the Third Circuit. By Order dated November 7, 2022, a three judge panel of the Court denied the Petition to Appeal.

On November 21, 2022, Indemnity filed a Petition for Rehearing requesting that the Third Circuit permit the appeal. By Order dated January 9, 2023, the Court granted the petition for rehearing and vacated the prior Order of October 7, 2022, denying permission to appeal. The appeal will now be heard before the Third Circuit.

Indemnity intends to vigorously defend against all of the allegations and requests for relief in the complaint.

Separately, Indemnity filed a Complaint in Federal Court to invoke certain provisions of the “All Writs Act” and the “Anti-Injunction Act.” By filing this complaint, Indemnity seeks to protect the federal court’s prior binding, final judgments in favor of Indemnity and thereby foreclose further litigation of the claims and issues pertaining to the compensation practices that were the subject of the prior judgments.

For additional information on contingencies, see Part II, Item 8. "Financial Statements and Supplementary Data - Note 16, Commitment and Contingencies, of Notes to Financial Statements".

ITEM 4. MINE SAFETY DISCLOSURES

Not applicable.

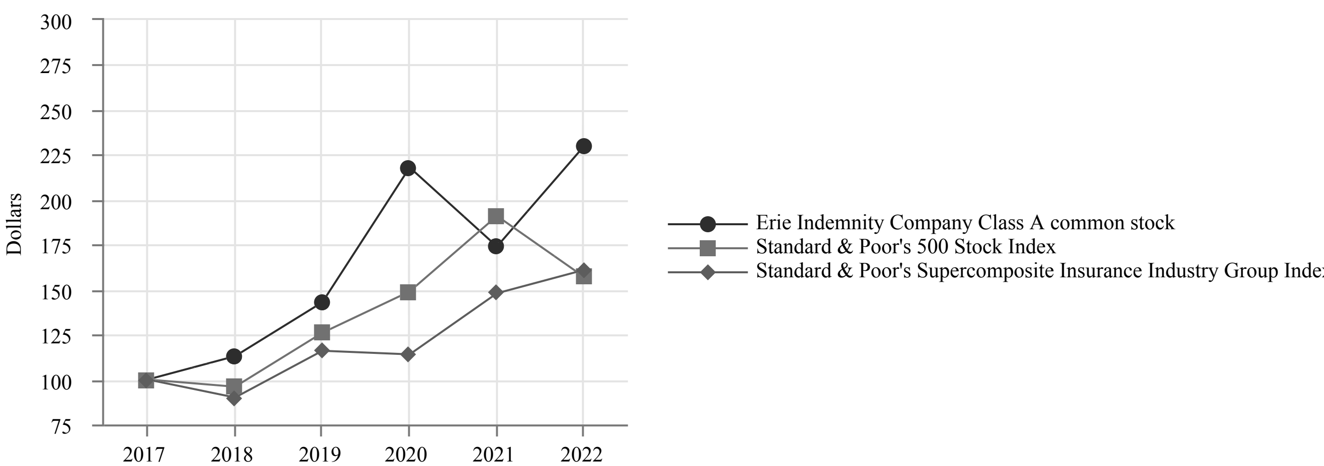
PART II

ITEM 5. MARKET FOR REGISTRANT'S COMMON EQUITY, RELATED STOCKHOLDER MATTERS AND ISSUER PURCHASES OF EQUITY SECURITIES

Common Stock Market Prices and Dividends
Our Class A, non-voting common stock trades on The NASDAQ Stock Market℠ LLC under the symbol "ERIE". No established trading market exists for the Class B voting common stock. Broadridge Corporate Issuer Solutions, Inc. serves as our transfer agent and registrar. As of February 17, 2023, there were approximately 527 shareholders of record for the Class A non-voting common stock and 9 shareholders of record for the Class B voting common stock.

Historically, we have declared and paid cash dividends on a quarterly basis at the discretion of the Board of Directors. The payment and amount of future dividends on the common stock will be determined by the Board of Directors and will depend upon, among other things, our operating results, financial condition, cash requirements, and general business conditions at the time such payment is considered.

Stock Performance
The following graph depicts the cumulative total shareholder return, assuming reinvestment of dividends, for the periods indicated for our Class A common stock compared to the Standard & Poor's 500 Stock Index and the Standard & Poor's Supercomposite Insurance Industry Group Index. The Standard & Poor's Supercomposite Insurance Industry Group Index is made up of 55 constituent members represented by property and casualty insurers, insurance brokers, and life insurers, and is a capitalization weighted index.



	2017	2018	2019	2020	2021	2022
Erie Indemnity Company Class A common stock	$ 100 (1)	$ 113	$ 143	$ 218	$ 174	$ 230
Standard & Poor's 500 Stock Index	100 (1)	96	126	149	191	157
Standard & Poor's Supercomposite Insurance Industry Group Index	100 (1)	90	116	114	148	161

(1) Assumes $100 invested at the close of trading, including reinvestment of dividends, on the last trading day preceding the first day of the fifth preceding fiscal year, in our Class A common stock, the Standard & Poor's 500 Stock Index, and the Standard & Poor's Supercomposite Insurance Industry Group Index.

Issuer Purchases of Equity Securities
We may purchase shares, from time-to-time, in the open market, through trading plans entered into with one or more brokerage firms pursuant to Rule 10b5-1 under the Securities Exchange Act of 1934, or through privately negotiated transactions. The purchase of shares is dependent upon prevailing market conditions and alternate uses of capital, and at times and in a manner that is deemed appropriate.

Our Board of Directors authorized a stock repurchase program effective January 1, 1999, allowing the repurchase of our outstanding Class A nonvoting common stock. Various approvals for continuation of this program have since been authorized, with the most recent occurring in 2011 for $150 million, which was authorized with no time limitation.

The following table presents the number and average price of our outstanding Class A nonvoting common stock shares purchased during the quarter ending December 31, 2022:

(dollars in thousands, except per share data)

Period	Total number of shares purchased	Average price paid per share	Total number of shares purchased as part of publicly announced program	Dollar value of shares that may yet be purchased under the program
October 1–31, 2022	—	$ —	—	$ 17,754
November 1–30, 2022 [(1)]	1,835	254.47	—	17,754
December 1–31, 2022	—	—	—	17,754
Total	1,835	254.47	—	

(1) Represents shares purchased on the open market to fund the rabbi trust for both the outside director deferred stock compensation plan (1,563 shares at an average price of $254.47 per share) and the incentive compensation deferral plan (272 shares at an average price of $254.47 per share).

See Item 8. "Financial Statements and Supplementary Data – Note 10, Incentive and Deferred Compensation Plans, of Notes to Financial Statements" contained within this report for additional information on shares purchased outside of this program.

ITEM 6. SELECTED FINANCIAL DATA

Not applicable.

ITEM 7. MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS

The following discussion of financial condition and results of operations highlights significant factors influencing Erie Indemnity Company ("Indemnity", "we", "us", "our"). This discussion should be read in conjunction with the audited financial statements and related notes and all other items contained within this Annual Report on Form 10-K as these contain important information helpful in evaluating our financial condition and results of operations.

INDEX

CAUTIONARY STATEMENT REGARDING FORWARD-LOOKING INFORMATION

"Safe Harbor" Statement under the Private Securities Litigation Reform Act of 1995:
Statements contained herein that are not historical fact are forward-looking statements and, as such, are subject to risks and uncertainties that could cause actual events and results to differ, perhaps materially, from those discussed herein. Forward-looking statements relate to future trends, events or results and include, without limitation, statements and assumptions on which such statements are based that are related to our plans, strategies, objectives, expectations, intentions, and adequacy of resources. Examples of forward-looking statements are discussions relating to premium and investment income, expenses, operating results, and compliance with contractual and regulatory requirements. Forward-looking statements are not guarantees of future performance and involve risks and uncertainties that are difficult to predict. Therefore, actual outcomes and results may differ materially from what is expressed or forecasted in such forward-looking statements. Among the risks and uncertainties, in addition to those set forth in our filings with the Securities and Exchange Commission, that could cause actual results and future events to differ from those set forth or contemplated in the forward-looking statements include the following:

- dependence upon our relationship with the Erie Insurance Exchange ("Exchange") and the management fee under the agreement with the subscribers at the Exchange;
- dependence upon our relationship with the Exchange and the growth of the Exchange, including:
  - general business and economic conditions;
  - factors affecting insurance industry competition;
  - dependence upon the independent agency system; and
  - ability to maintain our reputation for customer service;
- dependence upon our relationship with the Exchange and the financial condition of the Exchange, including:
  - the Exchange's ability to maintain acceptable financial strength ratings;
  - factors affecting the quality and liquidity of the Exchange's investment portfolio;
  - changes in government regulation of the insurance industry;
  - litigation and regulatory actions;
  - emergence of significant unexpected events, including pandemics and inflation;
  - emerging claims and coverage issues in the industry; and
  - severe weather conditions or other catastrophic losses, including terrorism;
- costs of providing policy issuance and renewal services to the Exchange under the subscriber's agreement;
- ability to attract and retain talented management and employees;
- ability to ensure system availability and effectively manage technology initiatives;
- difficulties with technology or data security breaches, including cyber attacks;
- ability to maintain uninterrupted business operations;

- outcome of pending and potential litigation;
- factors affecting the quality and liquidity of our investment portfolio; and
- our ability to meet liquidity needs and access capital.

A forward-looking statement speaks only as of the date on which it is made and reflects our analysis only as of that date. We undertake no obligation to publicly update or revise any forward-looking statement, whether as a result of new information, future events, changes in assumptions, or otherwise.

RECENT ACCOUNTING STANDARDS

See Item 8. "Financial Statements and Supplementary Data - Note 2, Significant Accounting Policies, of Notes to Financial Statements" contained within this report for a discussion of recently adopted accounting standards and the impact on our financial statements.

OPERATING OVERVIEW

Overview

We are a Pennsylvania business corporation that since 1925 has been the managing attorney-in-fact for the subscribers (policyholders) at the Exchange, a reciprocal insurer that writes property and casualty insurance. Our primary function as attorney-in-fact is to perform policy issuance and renewal services on behalf of the subscribers at the Exchange. We also act as attorney-in-fact on behalf of the Exchange, as well as the service provider for its insurance subsidiaries, with respect to all administrative services.

The Exchange is a reciprocal insurance exchange, which is an unincorporated association of individuals, partnerships and corporations that agree to insure one another. Each applicant for insurance to the Exchange signs a subscriber's agreement, which contains an appointment of Indemnity as their attorney-in-fact to transact the business of the Exchange on their behalf.

Pursuant to the subscriber's agreement for acting as attorney-in-fact in these two capacities, we earn a management fee. Management fee revenue is based upon all direct and affiliated assumed premiums written by the Exchange and the management fee rate, which is not to exceed 25%. Our Board of Directors establishes the management fee rate at least annually, generally in December for the following year. The process of setting the management fee rate includes the evaluation of current year operating results compared to both prior year and industry estimated results for both Indemnity and the Exchange, and consideration of several factors for both entities including: their relative financial strength and capital position; projected revenue, expense and earnings for the subsequent year; future capital needs; as well as competitive position. The management fee rate was set at 25% for 2022, 2021 and 2020. Our Board of Directors set the 2023 management fee rate again at 25%, its maximum level.

Our earnings are primarily driven by the management fee revenue generated for the services we provide to the Exchange. The policy issuance and renewal services we provide to the Exchange are related to the sales, underwriting and issuance of policies. The sales related services we provide include agent compensation and certain sales and advertising support services. Agent compensation includes scheduled commissions to agents based upon premiums written as well as additional commissions and bonuses to agents, which are earned by achieving targeted measures. Agent compensation comprised approximately 66% of our 2022 policy issuance and renewal expenses. The underwriting services we provide include underwriting and policy processing and comprised approximately 10% of our 2022 policy issuance and renewal expenses. The remaining services we provide include customer service and administrative support. We also provide information technology services that support all the functions listed above that comprised approximately 11% of our 2022 policy issuance and renewal expenses. Included in these expenses are allocations of costs for departments that support these policy issuance and renewal functions.

By virtue of its legal structure as a reciprocal insurer, the Exchange does not have any employees or officers. Therefore, it enters into contractual relationships by and through an attorney-in-fact. Indemnity serves as the attorney-in-fact on behalf of the Exchange with respect to its administrative services in accordance with the subscriber's agreement. The Exchange's insurance subsidiaries also utilize Indemnity for these services in accordance with the service agreements between each of the subsidiaries and Indemnity. Claims handling services include costs incurred in the claims process, including the adjustment, investigation, defense, recording and payment functions. Life insurance management services include costs incurred in the management and processing of life insurance business. Investment management services are related to investment trading activity, accounting and all other functions attributable to the investment of funds. In 2022, approximately 71% of the administrative services expenses are entirely attributable to the respective administrative functions (claims handling, life insurance management and investment management), while the remaining 29% of these expenses are allocations of costs for departments that support these administrative functions. The expenses we incur and related reimbursements we receive for administrative services are presented gross in our Statements of Operations. The subscriber's agreement and service agreements provide for reimbursement of amounts incurred for these services to Indemnity. Reimbursements are settled at cost on a monthly basis. State insurance regulations require that intercompany service agreements and any material amendments be approved in advance by the state insurance department.

Our results of operations are tied to the growth and financial condition of the Exchange as the Exchange is our sole customer, and our earnings are largely generated from management fees based on the direct and affiliated assumed premiums written by the Exchange. The Exchange generates revenue by insuring preferred and standard risks, with personal lines comprising 69% of the 2022 direct and affiliated assumed written premiums and commercial lines comprising the remaining 31%. The principal personal lines products are private passenger automobile and homeowners. The principal commercial lines products are commercial multi-peril, commercial automobile and workers compensation.

We generate investment income from our fixed maturity and equity security portfolios. Our portfolio is managed with the objective of maximizing after-tax returns on a risk-adjusted basis. We actively evaluate the portfolios for securities in an unrealized loss position and record impairment write-downs on investments in instances where we have the intent to sell or it's more likely than not that we would be required to sell the security. Impairments resulting from a credit loss are recognized in earnings with a corresponding allowance on the balance sheet.

Risks and Uncertainties
Uncertainty resulting from current events, including but not limited to, post-pandemic conditions, supply chain disruptions and certain geopolitical concerns, have influenced various economic factors, including an elevated inflationary environment and rising interest rates over the past year. As these events continue to evolve, the ultimate impact and duration remain uncertain. The following sections provide a summary of the more relevant financial impacts, risk monitoring activities, and operational considerations for Indemnity and the Exchange.

The impact that the COVID-19 pandemic and post-pandemic inflation has on the premiums written by the Exchange, our sole customer, affects our management fee revenue. While reduced driving conditions resulting from the COVID-19 pandemic prompted the Exchange to implement personal and commercial auto rate reductions in 2020, higher severity from continued supply chain disruptions and inflation impacted rate decisions in 2021, resulting in increased average premiums per policy in 2022. There may also be other market and/or regulatory pressures that could impact the Exchange's operations. Response to the COVID-19 pandemic and various recent geopolitical events have also had a significant impact on the global financial markets, including rising interest rates, which could impact future losses and impairments to the investment portfolio. We have provided additional disclosure of these impacted areas throughout our Management's Discussion and Analysis that follows. A broader discussion of the potential future impacts has also been disclosed in Financial Condition and Liquidity and Capital Resources contained within this report, as well as Part I. Item 1A. "Risk Factors" contained within this report.

While we were not required to close our physical locations under the state mandated closure of nonessential services during the pandemic, out of concern for the health and safety of our employees, over 90% of our workforce had been working remotely from March 2020 through April 2022. We did not experience significant interruptions to our core business processes or systems and did not have significant changes to our financial close reporting processes or related internal controls as a result of remote work. We implemented a phased return of our workforce beginning in April 2022 and transitioned to a predominately hybrid format. Consistent with our process from the beginning of the pandemic, we prioritize the health and safety of our employees and will adjust as appropriate.

Financial Overview

(dollars in thousands, except per share data)	Years ended December 31, 2022	% Change	2021	% Change	2020
Operating income	$ 376,214	18.3 %	$ 318,097	(5.9) %	$ 338,157
Total investment income	632	(99.1)	67,332	NM	32,867
Interest expense, net	2,009	(51.4)	4,132	NM	731
Other income (expense)	1,615	NM	(4,893)	NM	(1,778)
Income before income taxes	376,452	0.0	376,404	2.1	368,515
Income tax expense	77,883	(0.8)	78,544	4.4	75,211
Net income	$ 298,569	0.2 %	$ 297,860	1.6 %	$ 293,304
Net income per share - diluted	$ 5.71	0.3 %	$ 5.69	1.6 %	$ 5.61

NM = not meaningful

Operating income increased in 2022 compared to 2021 as growth in operating revenue outpaced the growth in operating expenses. Management fee revenue is based upon the management fee rate we charge and the direct and affiliated assumed premiums written by the Exchange. The management fee rate was 25% for 2022, 2021, and 2020. The direct and affiliated assumed premiums written by the Exchange increased 9.2% to $8.6 billion in 2022 and 3.3% to $7.9 billion in 2021.

Cost of operations for policy issuance and renewal services increased 7.0% to $1.8 billion in 2022 primarily due to higher scheduled commissions driven by direct and affiliated assumed written premium growth, as well as increased professional fees and technology costs, partially offset by decreased agent incentive compensation driven by higher claims severity and related loss costs experienced by the Exchange. Cost of operations for policy issuance and renewal services increased 5.6% to $1.7 billion in 2021 primarily due to higher commissions driven by direct and affiliated assumed written premium growth, increased technology costs, increased administrative and other costs, and higher agent incentive compensation from profitable growth.

Management fee revenue for administrative services remained consistent at $58.3 million in 2022 compared to a decrease of 2.0% in 2021. The administrative services reimbursement revenue and corresponding cost of operations increased both total operating revenue and total operating expenses by $668.3 million in 2022 and $638.5 million in 2021, but had no net impact on operating income.

Total investment income decreased $66.7 million in 2022 primarily due to a decrease in net investment income as well as net realized and unrealized investment losses in 2022 compared to net gains in 2021. Total investment income increased $34.5 million in 2021 primarily due to an increase in net investment income. The changes in net investment income in both periods were driven by results in our limited partnership portfolio.

General Conditions and Trends Affecting Our Business

Economic conditions

Unfavorable changes in economic conditions, including declining consumer confidence, inflation, high unemployment, and the threat of recession, among others, may lead the Exchange's customers to modify coverage, not renew policies, or even cancel policies, which could adversely affect the premium revenue of the Exchange, and consequently our management fee. The extent to which economic conditions could impact the Exchange's operations and our management fee was exacerbated with the COVID-19 pandemic and the post-pandemic economic environment. In particular, unanticipated increased inflation costs including medical cost inflation, building material cost inflation, auto repair and replacement cost inflation, and tort issues may impact adequacy of estimated loss reserves and future premium rates of the Exchange. The extent and duration of the impacts to economic conditions remain uncertain as post-pandemic conditions continue to evolve. If any of these items impacted the financial condition or operations of the Exchange, it could have an impact on our financial results. See Financial Condition, Liquidity and Capital Resources, and Part I, Item 1A. "Risk Factors" contained within this report for a discussion of potential impacts to our operations or those of the Exchange.

Financial market volatility

Our portfolio of fixed maturity and equity security investments is subject to market volatility especially in periods of instability in the worldwide financial markets. Over time, net investment income could also be impacted by volatility and by the general level of interest rates, which impact reinvested cash flow from the portfolio and business operations. Depending upon market conditions, which are unpredictable and remain uncertain, considerable fluctuation could exist in the fair value of our investment portfolio and reported total investment income, which could have an adverse impact on our financial condition, results of operations, and cash flows. Post-pandemic conditions and various recent geopolitical events have had a significant impact on the global financial markets. The value of our invested assets could be adversely impacted and there is potential for future losses and/or impairments on our investment portfolio resulting from continued supply chain disruptions, further inflationary pressures and rising interest rates.

CRITICAL ACCOUNTING ESTIMATES

The financial statements include amounts based upon estimates and assumptions that have a significant effect on reported amounts of assets and liabilities at the date of the financial statements and the reported amounts of revenues and expenses during the reporting period and related disclosures. We consider an accounting estimate to be critical if 1) it requires assumptions to be made that were uncertain at the time the estimate was made, and 2) different estimates that could have been used, or changes in the estimate that are likely to occur from period-to-period, could have a material impact on our Statements of Operations or Financial Position.

The following presents a discussion of those accounting policies surrounding estimates that we believe are the most critical to our reported amounts and require the most subjective and complex judgment. If actual events differ significantly from the underlying assumptions, there could be material adjustments to prior estimates that could potentially adversely affect our results of operations, financial condition, and cash flows. The estimates and the estimating methods used are reviewed continually, and any adjustments considered necessary are reflected in current earnings.

Investment Valuation

Fair Value Measurements

We make estimates concerning the fair value of our investments using valuation techniques to derive the fair value of the fixed maturity and equity investments we hold. Fair value is the price that would be received to sell an asset in an orderly transaction between willing market participants at the measurement date.

Fair value measurements are based upon observable and unobservable inputs. Observable inputs reflect market data obtained from independent sources, while unobservable inputs reflect our view of market assumptions in the absence of observable market information. We utilize valuation techniques that maximize the use of observable inputs and minimize the use of unobservable inputs. Our investments are categorized into a three-level fair value hierarchy which assigns a Level 1 for highly observable inputs and a Level 3 to unobservable inputs. We continually assess whether or not an active market exists for all of our investments and as of each reporting date we re-evaluate their classification in the fair value hierarchy.

As of each reporting period, financial instruments recorded at fair value are classified based upon the lowest level of input that is significant to the fair value measurement. The presence of at least one unobservable input that has significant impact to the fair value measurement would result in classification as a Level 3 instrument. Our assessment of the significance of a particular input to the fair value measurement requires judgment, and considers factors specific to the asset, such as the relative impact on the fair value as a result of including a particular input and market conditions. While estimates of the fair values of our investment portfolio are obtained from outside pricing services, we ultimately determine whether the inputs used are observable or unobservable.

As of December 31, 2022, substantially all of the securities measured at fair value in our investment portfolio are classified as Level 2. Level 2 securities are valued using industry-standard models that consider various inputs, such as the interest rate and credit spread for the underlying financial instruments. All significant inputs are observable, or derived from observable information in the marketplace, or are supported by observable levels at which transactions are executed in the marketplace. At December 31, 2022, our investments classified as Level 3 were not significant.

See Item 8. "Financial Statements and Supplementary Data - Note 5, Fair Value, of Notes to Financial Statements" contained within this report for additional details on the fair value measurement of our investments.

Impairments

During 2022, as a result of rising interest rates, unrealized losses in our fixed maturity portfolio increased significantly. We regularly monitor our fixed maturity and equity security portfolios for price changes and perform detailed reviews of securities in an unrealized loss position that may indicate that credit-related or other impairments exist. As of December 31, 2022, our intent to sell and credit-related impairments were not material to our financial condition or results of operations.

See Item 8. "Financial Statements and Supplementary Data - Note 2, Significant Accounting Policies, of Notes to Financial Statements" contained within this report for additional details on impairments of available-for-sale securities.

Retirement Benefit Plans for Employees
Our pension plans consist of a noncontributory defined benefit pension plan covering substantially all employees and an unfunded supplemental employee retirement plan ("SERP") for certain members of executive and senior management. Although we are the sponsor of these postretirement plans and record the funded status of these plans, the Exchange and its subsidiaries reimburse us for approximately 58% of the annual benefit expense of these plans, which represents pension benefits for employees performing administrative services and an allocated share of costs for employees in departments that support the administrative functions.

Our pension obligation is developed from actuarial estimates. Several statistical and other factors, which attempt to anticipate future events, are used in calculating the expense and liability related to the plans. Key factors include assumptions about the discount rates and expected rates of return on plan assets. We review these assumptions annually and modify them considering historical experience, current market conditions, including changes in investment returns and interest rates, and expected future trends.

Accumulated and projected benefit obligations are expressed as the present value of future cash payments. We discount those cash payments based upon a yield curve developed from corporate bond yield information with maturities that correspond to the payment of benefits. Lower discount rates increase present values and subsequent year pension expense, while higher discount rates decrease present values and subsequent year pension expense. The construction of the yield curve is based upon yields of corporate bonds rated AA or equivalent quality. Target yields are developed from bonds at various maturity points and a curve is fitted to those targets. Spot rates (zero coupon bond yields) are developed from the yield curve and used to discount benefit payment amounts associated with each future year. The present value of plan benefits is calculated by applying the spot/discount rates to projected benefit cash flows. A single discount rate is then developed to produce the same present value. The cash flows from the yield curve were matched against our projected benefit payments in the pension plan, which have a duration of about 15 years. This yield curve supported the selection of a 5.67% discount rate for the projected benefit obligation at December 31, 2022 and for the 2023 pension expense. The same methodology was used to develop the 3.16% and 2.96% discount rates used to determine the projected benefit obligation for 2021 and 2020, respectively, and the pension expense for 2022 and 2021, respectively. A 25 basis point decrease in the discount rate assumption, with other assumptions held constant, would increase pension cost in the following year by $3.6 million, of which our share would be approximately $1.5 million, and would increase the pension benefit obligation by $32.3 million.

Unrecognized actuarial gains and losses arise from several factors, including experience and assumption changes in the obligations and from the difference between expected returns and actual returns on plan assets. These unrecognized gains and losses are recorded in the pension plan obligation and accumulated other comprehensive income (loss). These amounts are systematically recognized to net periodic pension expense in future periods, with gains decreasing and losses increasing future pension expense. If actuarial net gains or losses exceed 5% of the greater of the projected benefit obligation and the market-related value of plan assets, the excess is recognized through the net periodic pension expense equally over the estimated service period of the employee group, which is currently 14 years.

The expected long-term rate of return for the pension plan represents the average rate of return to be earned on plan assets over the period the benefits included in the benefit obligation are to be paid. To determine the expected long-term rate of return assumption, we utilized models based upon rigorous historical analysis and forward-looking views of the financial markets based upon key factors such as historical returns for the asset class' applicable indices, the correlations of the asset classes under various market conditions and consensus views on future real economic growth and inflation. The expected future return for each asset class is then combined by considering correlations between asset classes and the volatilities of each asset class to produce a reasonable range of asset return results within which our expected long-term rate of return assumption falls. While the expected long-term rate of return is generally less susceptible to annual revisions as there are typically no significant changes in the asset mix, we increased the expected return on asset assumption from 5.50% to 6.50% in 2023 based on the current asset allocation and considering a review of the key factors and expectations of future performance as well as the current market environment. A change of 25 basis points in the expected long-term rate of return assumption, with other assumptions held constant, would have an estimated $2.6 million impact on net pension benefit cost in the following year, of which our share would be approximately $1.1 million.

We use a four-year averaging method to determine the market-related value of plan assets, which is used to determine the expected return component of pension expense. Under this methodology, asset gains or losses that result from returns that differ from our long-term rate of return assumption are recognized in the market-related value of assets on a level basis over a four-year period. The market-related asset experience during 2022 that related to the actual investment return being different from that assumed during the prior year was a loss of $358.6 million. Recognition of this loss will be deferred and recognized over a four-year period, consistent with the market-related asset value methodology. Once factored into the market-related asset value, these experience gains and losses will be amortized over a period of 14 years, which is the remaining service period of the employee group.

We expect our net pension benefit cost to decrease from $44.2 million in 2022 to income of $7.8 million in 2023 primarily due to higher discount rates and expected return on assets, partially offset by lower than expected asset returns during 2022. Our share of the net pension benefit costs after reimbursements was $18.6 million in 2022. We expect our share of the net pension benefit income to be approximately $3.3 million in 2023, of which expense of $11.5 million will be recorded in operating expense and income of $14.8 million will be recorded in other income.

The actuarial assumptions we used in determining our pension obligation may differ materially from actual results due to changing market and economic conditions, higher or lower withdrawal rates, or longer or shorter life spans of participants. While we believe that the assumptions used are appropriate, differences in actual experience or changes in assumptions may materially affect our financial position, results of operations, or cash flows. See Item 8. "Financial Statements and Supplementary Data - Note 9, Postretirement Benefits, of Notes to Financial Statements" contained within this report for additional details on the pension plans.

RESULTS OF OPERATIONS

Management fee revenue

We have two performance obligations in the subscriber's agreement, providing policy issuance and renewal services and acting as attorney-in-fact for the Exchange, as well as the service provider for its insurance subsidiaries, with respect to all administrative services. We earn management fees for acting as the attorney-in-fact for the subscribers at the Exchange in these two capacities and allocate our revenues between our performance obligations.

Management fee rate

The management fee is calculated by multiplying all direct and affiliated assumed premiums written by the Exchange by the management fee rate, which is determined by our Board of Directors at least annually. The management fee rate was set at 25%, the maximum rate, for 2022, 2021 and 2020. Changes in the management fee rate can affect our revenue and net income significantly. The transaction price, including management fee revenue and administrative services reimbursement revenue, includes variable consideration and is allocated based on the estimated standalone selling prices developed using industry information and other available information for similar services. We update the transaction price and the related allocation at least annually based upon the most recent information available or more frequently if there have been significant changes in any components considered in the transaction price. Our current and prior year transaction price allocation reviews resulted in minor changes in the allocation percentages between the two performance obligations in all periods, which did not have a material impact on our financial statements.

The following table presents the allocation and disaggregation of revenue for our two performance obligations:

	Years ended December 31,				
(dollars in thousands)	2022	% Change	2021	% Change	2020
Policy issuance and renewal services					
Direct and affiliated assumed premiums written by the Exchange	$8,595,960	9.2 %	$7,868,311	3.3 %	$7,613,519
Management fee rate	24.3 %		24.3 %		24.2 %
Management fee revenue	2,088,818	9.2	1,912,000	3.8	1,842,472
Change in estimate for management fee returned on cancelled policies (1)	(972)	NM	1,166	NM	(678)
Management fee revenue - policy issuance and renewal services	$2,087,846	9.1 %	$1,913,166	3.9 %	$1,841,794
Administrative services					
Direct and affiliated assumed premiums written by the Exchange	$8,595,960	9.2 %	$7,868,311	3.3 %	$7,613,519
Management fee rate	0.7 %		0.7 %		0.8 %
Management fee revenue	60,172	9.2	55,078	(9.6)	60,908
Change in contract liability (2)	(1,865)	NM	3,195	NM	(1,376)
Change in estimate for management fee returned on cancelled policies (1)	16	24.7	13	NM	(69)
Management fee revenue - administrative services	58,323	0.1	58,286	(2.0)	59,463
Administrative services reimbursement revenue	668,268	4.7	638,483	4.8	609,435
Total revenue from administrative services	$ 726,591	4.3 %	$ 696,769	4.2 %	$ 668,898

NM = not meaningful

(1) *A constraining estimate of variable consideration exists related to the potential for management fees to be returned if a policy were to be cancelled mid-term. Management fees are returned to the Exchange when policies are cancelled mid-term and unearned premiums are refunded.*

(2) *Management fee revenue - administrative services is recognized over time as the services are provided. See Item 8. "Financial Statements - Note 3, Revenue, of Notes to Financial Statements" contained within this report.*

Direct and affiliated assumed premiums written by the Exchange

Direct and affiliated assumed premiums include premiums written directly by the Exchange and premiums assumed from its wholly owned property and casualty subsidiaries. Direct and affiliated assumed premiums written by the Exchange increased 9.2% to $8.6 billion in 2022, from $7.9 billion in 2021, primarily driven by increased personal lines and commercial multi-peril premiums written. Year-over-year policies in force for all lines of business increased 3.6% in 2022 as the result of continuing strong policyholder retention and an increase in new policies written, compared to 3.2% in 2021. The year-over-year average premium per policy for all lines of business increased 5.4% at December 31, 2022, compared to 0.1% at December 31, 2021. The year-over-year average premium per policy at December 31, 2021 was impacted by the rate reductions for personal and commercial auto policies written between January 1, 2021 and June 30, 2021, in response to lower driving activity resulting from the COVID-19 pandemic.

Premiums generated from new business increased 14.5% to $1.1 billion in 2022. Contributing to this change was a 10.4% increase in year-over-year average premium per policy on new business at December 31, 2022 and a 3.7% increase in new business policies written. Premiums generated from new business increased 13.2% to $965 million in 2021. New business policies written increased 9.0% in 2021 and year-over-year average premium per policy on new business increased 3.9% at December 31, 2021.

Premiums generated from renewal business increased 8.5% to $7.5 billion in 2022, and increased 2.1% to $6.9 billion, in 2021. Underlying the trend in renewal business premiums was an increase in year-over-year policies in force of 3.6% and 2.4% in 2022 and 2021, respectively, driven by a slight increase in policy retention ratios, as well as a 4.7% increase in year-over-year average premium per policy at December 31, 2022, compared to a 0.3% decrease at December 31, 2021.

The Exchange implements rate changes in order to meet loss cost expectations. In response to reduced driving conditions in 2020 resulting from the COVID-19 pandemic, the Exchange implemented $200 million in personal and commercial auto rate reductions on policies written between July 1, 2020 and June 30, 2021. These rate reductions resulted in a decrease to Exchange's written premium of approximately $110 million and $90 million for 2021 and 2020, respectively. Claims frequency increased as driving activity returned to near pre-pandemic levels in 2021 and 2022. Inflation-driven severity increases in 2021 and 2022, combined with increasing claim frequency, impacted 2022 underwriting results, and may impact future rate decisions.

As the Exchange writes policies with annual terms only, rate actions take 12 months to be fully recognized in written premium and 24 months to be recognized in earned premiums. Since rate changes are realized at renewal, it takes 12 months to implement a rate change to all policyholders and another 12 months to earn the increased or decreased premiums in full. As a result, certain rate changes approved in 2021 were reflected in 2022, and a portion of the rate actions approved in 2022 will be reflected in 2023. Furthermore, the Exchange writes certain personal auto policies with a rate locking feature, which generally extends the amount of time it takes for rate actions to be recognized. The Exchange continuously evaluates pricing and product offerings to meet consumer demands.

Personal lines – Total personal lines premiums written increased 8.4% to $6.0 billion in 2022, from $5.5 billion in 2021, driven by a 4.4% increase in total personal lines year-over-year average premium per policy and a 3.9% increase in total personal lines policies in force. Total personal lines policies in force increased 3.1% in 2021 and year-over-year average premium per policy decreased 0.6% at December 31, 2021.

Commercial lines – Total commercial lines premiums written increased 11.2% to $2.6 billion in 2022, compared to 2021, driven by a 9.0% increase in the total commercial lines year-over-year average premium per policy and a 2.0% increase in total commercial lines policies in force. Total commercial lines premiums written increased 5.4% in 2021, compared to 2020, driven by a 3.6% increase in total commercial lines policies in force and a 1.7% increase in the total commercial lines year-over-year average premium per policy.

Future trends-premium revenue – Through a careful agency selection process, the Exchange plans to continue its effort to expand the size of its agency force to increase market penetration in existing operating territories to contribute to future growth.

Changes in premium levels attributable to the growth in policies in force directly affect the profitability of the Exchange and have a direct bearing on our management fee. Our continued focus on underwriting discipline and the maturing of pricing sophistication models have contributed to the Exchange's steady policy retention ratios. The continued growth of its policy base is dependent upon the Exchange's ability to retain existing and attract new subscribers/policyholders. A lack of new policy growth or the inability to retain existing customers could have an adverse effect on the Exchange's premium level growth, and consequently our management fee.

Changes in premium levels attributable to rate changes also directly affect the profitability of the Exchange and have a direct bearing on our management fee. Pricing actions contemplated or taken by the Exchange are subject to various regulatory requirements of the states in which it operates. The pricing actions already implemented, or to be implemented, have an effect on the market competitiveness of the Exchange's insurance products. Such pricing actions, and those of the Exchange's competitors, could affect the ability of the Exchange's agents to retain and attract new business; additionally, exposure reductions and/or changes in mix of business as a result of post-pandemic economic conditions or other significant unexpected events could impact the average direct and affiliated assumed premium written by the Exchange, as customers may reduce coverages. Future premiums could also be impacted by changes resulting from the continued inflationary trends and potential regulatory changes resulting from the COVID-19 pandemic, among others. The extent of the impact to the Exchange's premiums and our management fee cannot be estimated with a high degree of certainty at this time given the ongoing developments related to supply chain disruptions and current inflationary trends. See also Part I, Item 1A. "Risk Factors" contained within this report.

Policy issuance and renewal services

	Years ended December 31,				
(dollars in thousands)	2022	% Change	2021	% Change	2020
Management fee revenue - policy issuance and renewal services	$2,087,846	9.1 %	$1,913,166	3.9 %	$1,841,794
Service agreement revenue	25,687	6.8	24,042	(6.8)	25,797
	2,113,533	9.1	1,937,208	3.7	1,867,591
Cost of policy issuance and renewal services	1,795,642	7.0	1,677,397	5.6	1,588,897
Operating income - policy issuance and renewal services	$ 317,891	22.4 %	$ 259,811	(6.8) %	$ 278,694

Policy issuance and renewal services
We allocate a portion of the management fee, which currently equates to 24.3% of the direct and affiliated assumed premiums written by the Exchange, for providing policy issuance and renewal services. The allocation of management fee for these services was 24.3% and 24.2% in 2021 and 2020, respectively. This portion of the management fee is recognized as revenue when the policy is issued or renewed because it is at that time that the services we provide are substantially complete and the executed insurance policy is transferred to the customer. The increase in management fee revenue for policy issuance and renewal services was driven by the increase in the direct and affiliated assumed premiums written by the Exchange discussed previously.

Service agreement revenue
Service agreement revenue primarily consists of service charges we collect from subscribers/policyholders for providing multiple payment plans on policies written by the Exchange and its property and casualty subsidiaries and also includes late payment and policy reinstatement fees. The service charges are fixed dollar amounts per billed installment. In July 2021, we also began receiving service agreement revenue from the Exchange for the use of shared office space, which increased service agreement revenue by $2.0 million in 2022 compared to 2021.

Cost of policy issuance and renewal services

	Years ended December 31,				
(dollars in thousands)	2022	% Change	2021	% Change	2020
Commissions:					
Total commissions	$1,179,569	6.4 %	$1,108,426	5.4 %	$1,051,272
Non-commission expense:					
Underwriting and policy processing	$ 171,625	3.9 %	$ 165,183	2.8 %	$ 160,646
Information technology	198,157	7.1	185,096	6.5	173,827
Sales and advertising	60,000	14.3	52,511	(1.3)	53,212
Customer service	34,333	(6.5)	36,720	6.0	34,638
Administrative and other	151,958	17.4	129,461	12.3	115,302
Total non-commission expense	616,073	8.3	568,971	5.8	537,625
Total cost of policy issuance and renewal services	$1,795,642	7.0 %	$1,677,397	5.6 %	$1,588,897

Commissions – Commissions increased $71.1 million in 2022 compared to 2021, primarily driven by the growth in direct and affiliated assumed written premium, partially offset by a decrease in agent incentive compensation. The profitability component of agent incentive compensation decreased due to higher claims severity and related loss costs in 2022. Commissions increased $57.2 million in 2021 compared to 2020 resulting from higher direct and affiliated assumed written premium, primarily in lines of business that pay a higher commission rate. To a lesser extent, there was also an increase in agent incentive compensation in 2021 compared to 2020 related to profitable growth.

Non-commission expense – Non-commission expense increased $47.1 million in 2022 compared to 2021. Underwriting and policy processing costs increased $6.4 million primarily due to increased underwriting report, printing, and personnel costs. Information technology costs increased $13.1 million primarily due to increased hardware and software costs and professional fees, partially offset by decreased personnel costs. Sales and advertising costs increased $7.5 million primarily due to increased advertising and agent-related expenses. Administrative and other expenses increased $22.5 million primarily due to an increase in personnel costs related to compensation and increased professional fees.

In 2021, non-commission expense increased $31.3 million compared to 2020. Underwriting and policy processing costs increased $4.5 million primarily due to increased personnel costs and underwriting report costs. Information technology costs increased $11.3 million primarily due to increased hardware and software costs and personnel costs. Administrative and other expenses increased $14.2 million primarily due to increased professional fees and building and equipment depreciation. Personnel costs in all categories were impacted by higher medical costs compared to the prior year as the COVID-19 pandemic reduced elective procedures in 2020.

Administrative services

(dollars in thousands)	Years ended December 31, 2022	% Change	2021	% Change	2020
Management fee revenue - administrative services	$ 58,323	0.1 %	$ 58,286	(2.0) %	$ 59,463
Administrative services reimbursement revenue	668,268	4.7	638,483	4.8	609,435
Total revenue allocated to administrative services	726,591	4.3	696,769	4.2	668,898
Administrative services expenses					
Claims handling services	576,799	5.5	546,962	4.2	525,072
Investment management services	36,795	(5.3)	38,862	5.5	36,835
Life management services	54,674	3.8	52,659	10.8	47,528
Operating income - administrative services	$ 58,323	0.1 %	$ 58,286	(2.0) %	$ 59,463

Administrative services
We allocate a portion of the management fee, which currently equates to 0.7% of the direct and affiliated assumed premiums written by the Exchange, to the administrative services. The allocation of management fee for these services was 0.7% and 0.8% in 2021 and 2020, respectively. This portion of the management fee is recognized as revenue over a four-year period representing the time over which the services are provided. We also report reimbursed costs as revenues, which are recognized monthly as services are provided. The administrative services expenses we incur and the related reimbursements we receive are recorded gross in the Statements of Operations.

Cost of administrative services
By virtue of its legal structure as a reciprocal insurer, the Exchange does not have any employees or officers. Therefore, it enters into contractual relationships by and through an attorney-in-fact. Indemnity serves as the attorney-in-fact on behalf of the Exchange with respect to its administrative services in accordance with the subscriber's agreement. The Exchange's insurance subsidiaries also utilize Indemnity for these services in accordance with the service agreements between each of the subsidiaries and Indemnity. The subscriber's agreement and service agreements provide for reimbursement of amounts incurred for these services to Indemnity. Reimbursements due from the Exchange and its insurance subsidiaries are recorded as a receivable and settled at cost.

Total investment income

A summary of the results of our investment operations is as follows for the years ended December 31:

(dollars in thousands)	2022	% Change	2021	% Change	2020
Net investment income	$ 28,585	(54.0) %	$ 62,177	NM %	$ 29,753
Net realized and unrealized investment (losses) gains	(27,286)	NM	4,946	(22.6)	6,392
Net impairment (losses) recoveries recognized in earnings	(667)	NM	209	NM	(3,278)
Total investment income	$ 632	(99.1) %	$ 67,332	NM %	$ 32,867

NM = not meaningful

Net investment income

Net investment income includes interest and dividends on our fixed maturity and equity security portfolios and the results of our limited partnership investments, net of investment expenses. Net investment income decreased $33.6 million in 2022, compared to 2021, and increased $32.4 million in 2021, compared to 2020, primarily due to equity in (losses) earnings of limited partnerships. Net investment income includes equity in losses of limited partnerships of $10.4 million in 2022, equity in earnings of limited partnerships of $31.7 million in 2021, and equity in losses of limited partnerships of $0.6 million in 2020.

In January 2023, the general partner of one of our private equity limited partnerships informed us of a significant decrease in the fair value of one of their underlying investments. The unrealized loss is estimated to be $11 million and will be recorded in net investment income (loss) in our first quarter 2023 financial statements consistent with our policy of recording limited partnership results on a quarter lag.

Net realized and unrealized investment (losses) gains

A breakdown of our net realized and unrealized investment (losses) gains is as follows for the years ended December 31:

(in thousands)	2022	2021	2020
Securities sold:			
Available-for-sale securities	$ (14,050)	$ 5,131	$ 1,335
Equity securities	(1,866)	(76)	(469)
Equity securities change in fair value	(11,372)	(110)	5,525
Miscellaneous	2	1	1
Net realized and unrealized investment (losses) gains	$ (27,286)	$ 4,946	$ 6,392

Net realized and unrealized losses of $27.3 million in 2022 were primarily due to disposals of available-for-sale securities and market value adjustments on equity securities. Net realized and unrealized gains of $4.9 million in 2021 were primarily due to disposals of available-for-sale securities, while gains of $6.4 million in 2020 were primarily due to market value adjustments on equity securities and sales of available-for-sale securities.

Net impairment (losses) recoveries recognized in earnings

Net impairment losses of $0.7 million in 2022 were related to available-for-sale securities and include $0.5 million of credit impairment losses and $0.2 million of securities in an unrealized loss position where we had intent to sell prior to recovery of our amortized cost basis. Net impairment recoveries of $0.2 million in 2021 were primarily the result of a change in the current expected credit loss allowance related to our agent loans. Net impairment losses recognized on available-for-sale securities in 2020 include $2.3 million of securities in an unrealized loss position where we had intent to sell prior to recovery of our amortized cost basis and $0.7 million of credit impairment losses. The remaining 2020 impairments include the change in the current expected credit loss allowance related to our agent loans. The COVID-19 pandemic's impact on financial markets contributed to higher impairment losses on our available-for-sale securities during 2020 compared to other years presented.

Financial Condition of Erie Insurance Exchange

Serving in the capacity of attorney-in-fact for the Exchange, we are dependent on the growth and financial condition of the Exchange, who is our sole customer. The strength of the Exchange and its wholly owned subsidiaries is rated annually by A.M. Best Company through assessing its financial stability and ability to pay claims. The ratings are generally based upon factors relevant to policyholders and are not directed toward return to investors. The Exchange and each of its property and casualty subsidiaries are rated A+ "Superior", the second highest financial strength rating, which is assigned to companies that have achieved superior overall performance when compared to the standards established by A.M. Best and have a superior ability to meet obligations to policyholders over the long term. On August 9, 2022, the outlook for the financial strength rating was affirmed as stable. As of December 31, 2022, only approximately 12% of insurance groups, in which the Exchange is included, are rated A+ or higher.

The financial statements of the Exchange are prepared in accordance with statutory accounting principles prescribed by the Commonwealth of Pennsylvania. Financial statements prepared under statutory accounting principles focus on the solvency of the insurer and generally provide a more conservative approach than under U.S. generally accepted accounting principles. Statutory direct written premiums of the Exchange and its wholly owned property and casualty subsidiaries grew 9.2% to $8.6 billion in 2022 from $7.9 billion in 2021. These premiums, along with investment income, are the major sources of cash that support the operations of the Exchange. Policyholders' surplus, determined under statutory accounting principles, was $10.1 billion and $11.7 billion at December 31, 2022 and 2021, respectively. The Exchange and its wholly owned property and casualty subsidiaries' year-over-year policy retention ratio continues to be high at 90.5% at December 31, 2022 and 90.1% at December 31, 2021.

We have prepared our financial statements considering the financial strength of the Exchange based on its A.M. Best rating and strong level of surplus. While policyholders' surplus declined by $1.6 billion from 2021 driven by higher loss costs and realized and unrealized investment losses resulting from post-pandemic economic conditions, we continue to monitor these conditions and believe that the Exchange falls within established risk tolerances. However, see Part I, Item 1A. "Risk Factors" for possible outcomes that could impact that determination.

FINANCIAL CONDITION

Investments

Our investment portfolio is managed with the objective of maximizing after-tax returns on a risk-adjusted basis. The following table presents the carrying value of our investments as of December 31:

(dollars in thousands)	2022	% to total	2021	% to total
Fixed maturities	$ 894,661	84 %	$ 946,085	83 %
Equity securities	72,560	7	87,743	8
Agent loans (1)	69,476	7	66,368	6
Other investments	30,511	2	36,846	3
Total investments	$ 1,067,208	100 %	$ 1,137,042	100 %

(1) The current portion of agent loans is included in the line item "Prepaid expenses and other current assets" in the Statements of Financial Position.

We continually review our investment portfolio for impairment and determine whether the impairment is a result of credit loss or other factors. We individually analyze all positions with an emphasis on those in a significant unrealized loss position. If we have the intent to sell or it's more likely than not that we would be required to sell the security before recovery of the amortized cost basis, the entire impairment is recognized in earnings. Factors considered in the evaluation of credit loss include the extent to which fair value is less than cost and fundamental factors specific to the issuer such as financial condition, changes in credit ratings, near and long-term business prospects and other factors, as well as the likelihood of recovery of the amortized cost of the security. Impairment resulting from credit loss is recognized in earnings with a corresponding allowance on the balance sheet. We believe our investment valuation philosophy and accounting practices result in appropriate and timely measurement of fair value and recognition of impairment.

Fixed maturities

Under our investment strategy, we maintain a fixed maturity portfolio that is of high quality and well diversified within each market sector. This investment strategy also achieves a balanced maturity schedule. Our fixed maturity portfolio is managed with the goal of achieving reasonable returns while limiting exposure to risk.

Fixed maturities are carried at fair value with unrealized gains and losses, net of deferred taxes, included in shareholders' equity. Net unrealized losses on fixed maturities, net of deferred taxes, totaled $52.5 million at December 31, 2022, compared to net unrealized gains of $6.2 million at December 31, 2021. The increase in investment portfolio positions with unrealized losses contributed to an increase in our deferred tax assets. Our evaluation of deferred tax assets and the need for a valuation allowance included available tax planning strategies that could be implemented, if necessary, to support the realizability of deferred tax assets. We believe those tax strategies are feasible and prudent.

The following table presents a breakdown of the fair value of our fixed maturity portfolio by industry sector and rating as of December 31, 2022: (1)

(in thousands)	AAA	AA	A	BBB	Non-investment grade	Fair value
Basic materials	$ 0	$ 0	$ 0	$ 4,445	$ 6,048	$ 10,493
Communications	0	2,850	12,605	12,285	15,300	43,040
Consumer	0	4,876	12,164	70,397	36,073	123,510
Diversified	0	0	0	0	439	439
Energy	0	0	3,780	22,622	5,903	32,305
Financial	0	0	95,076	115,064	13,629	223,769
Industrial	0	0	10,102	16,297	20,393	46,792
Structured securities (2)	132,698	173,793	20,938	12,863	0	340,292
Technology	1,866	0	5,287	19,973	13,241	40,367
Utilities	0	0	3,378	26,954	3,322	33,654
Total	$ 134,564	$ 181,519	$ 163,330	$ 300,900	$ 114,348	$ 894,661

(1) Ratings are supplied by S&P, Moody's, and Fitch. The table is based upon the lowest rating for each security.

(2) Structured securities include residential and commercial mortgage-backed securities, collateralized debt obligations, and asset-backed securities.

Equity securities

Equity securities primarily include nonredeemable preferred stocks and are carried at fair value in the Statements of Financial Position with all changes in unrealized gains and losses reflected in the Statements of Operations.

The following table presents an analysis of the fair value of our equity securities by sector as of December 31:

(in thousands)	2022	2021
Financial services	$ 61,084	$ 71,722
Utilities	5,708	6,259
Energy	3,576	6,448
Consumer	1,854	3,314
Communications	338	0
Total	$ 72,560	$ 87,743

Shareholders' Equity

Postretirement benefit plans

The funded status of our postretirement benefit plans is recognized in the Statements of Financial Position, with a corresponding adjustment to accumulated other comprehensive income (loss), net of tax. At December 31, 2022, shareholders' equity amounts related to these postretirement plans increased by $76.5 million, net of tax, of which $6.9 million represents amortization of the prior service cost and net actuarial loss and $69.6 million represents the current period actuarial gain. The 2022 actuarial gain was driven by the higher discount rate, offset by lower than expected return on plan assets. At December 31, 2021, shareholders' equity amounts related to these postretirement plans increased by $70.0 million, net of tax, of which $13.9 million represents amortization of the prior service cost and net actuarial loss and $56.1 million represents the current period actuarial gain. The 2021 actuarial gain was primarily due to higher than expected return on plan assets. Although we are the sponsor of these postretirement plans and record the funded status of these plans, the Exchange and its subsidiaries reimburse us for approximately 58% of the annual benefit expense of these plans, which represents pension benefits for employees performing administrative services and an allocated share of costs for employees in departments that support the administrative functions.

LIQUIDITY AND CAPITAL RESOURCES

We continue to monitor the sufficiency of our liquidity and capital resources given the potential impact of recent geopolitical events and ongoing post-pandemic conditions, including rising interest rates and inflationary costs. While we did not see a significant impact on our sources or uses of cash in 2022, future disruptions in the markets could occur which may affect our liquidity position. If our normal operating and investing cash activities were to become insufficient to meet future funding requirements, we believe we have sufficient access to liquidity through our cash position, liquid marketable securities and our $100 million line of credit that does not expire until October 2026. See broader discussions of potential risks to our operations in the Operating Overview and Part I, Item 1A. "Risk Factors" contained within this report.

Sources and Uses of Cash

Liquidity is a measure of a company's ability to generate sufficient cash flows to meet the short- and long-term cash requirements of its business operations and growth needs. Our liquidity requirements have been met primarily by funds generated from management fee revenue and income from investments. Cash provided from these sources is used primarily to fund the costs of our management operations including commissions, salaries and wages, pension plans, share repurchases, dividends to shareholders, the purchase and development of information technology, and other capital expenditures. We expect that our operating cash needs will be met by funds generated from operations. Cash in excess of our operating needs is primarily invested in investment grade fixed maturities. As part of our liquidity review, we regularly evaluate our capital needs based on current and projected results and consider the potential impacts to our liquidity, borrowing capacity, financial covenants and capital availability.

We have certain obligations and commitments to make future payments under various agreements. Cash requirements within the next twelve months include accounts payable, accrued liabilities, and other current obligations.

Our long-term cash requirements under various contractual obligations and commitments include:

- *Pension* – We have a funded noncontributory defined benefit pension plan covering substantially all employees and an unfunded supplemental employee retirement plan ("SERP") for certain members of executive and senior management. See Part II, Item 8. "Financial Statements and Supplementary Data – Note 9. Postretirement Benefits, of Notes to Financial Statements" for the funding policy for our defined benefit pension plan and accumulated benefit obligation for our unfunded SERP.

- *Deferred compensation* – We have two deferred compensation plans for our executives, senior vice presidents, and other selected officers and two deferred compensation plans for our outside directors. See Part II, Item 8. "Financial Statements and Supplementary Data – Note 10. Incentive and Deferred Compensation Plans, of Notes to Financial Statements" for additional details of these obligations and estimated future payments.

- *Other commitments* – We have commitments for approximately $438 million which include agreements for various services, including information technology, support and maintenance obligations, operating leases for equipment, vehicles, and real estate, and other obligations in the ordinary course of business. We expect to make future cash payments according to the contract terms. These agreements are enforceable and legally binding and specify fixed amounts or minimum quantities to be purchased. Some agreements may contain cancellation provisions, some of which may require us to pay a termination fee. Over half of these commitments are due in the next 12 months. We are reimbursed from the Exchange and its subsidiaries for the portion of these costs related to administrative services.

We believe that our current cash, cash equivalents and marketable securities and cash generated from operations will be sufficient to meet our current and future cash requirements.

Volatility in the financial markets presents challenges to us as we occasionally access our investment portfolio as a source of cash. Some of our fixed income investments, despite being publicly traded, may be illiquid. Volatility in these markets could impair our ability to sell certain fixed income securities or cause such securities to sell at deep discounts. We believe we have sufficient liquidity to meet our needs from sources other than the liquidation of securities.

Cash flow activities

The following table provides condensed cash flow information for the years ended December 31:

(in thousands)	2022	2021	2020
Net cash provided by operating activities	$ 366,152	$ 402,794	$ 342,595
Net cash used in investing activities	(106,922)	(185,490)	(243,225)
Net cash used in financing activities	(300,842)	(194,842)	(274,869)
Net (decrease) increase in cash	$ (41,612)	$ 22,462	$ (175,499)

Net cash provided by operating activities was $366.2 million in 2022, compared to $402.8 million in 2021 and $342.6 million in 2020. Decreased cash provided by operating activities in 2022 was primarily due to increases in cash paid for agent commissions of $75.9 million due to higher scheduled commissions driven by premium growth, administrative services expenses paid of $35.0 million and pension contributions of $25.0 million. Partially offsetting this decrease in cash provided by operating activities was an increase in management fees received of $118.9 million driven by growth in direct and affiliated assumed premiums written by the Exchange, compared to 2021. Increased cash provided by operating activities in 2021 was primarily due to an increase in management fees received driven by growth in direct and affiliated assumed premiums written by the Exchange of $94.6 million and an increase in administrative service reimbursements received of $46.9 million. Partially offsetting the increase in cash provided by operating activities was an increase in cash paid for agent commissions of $37.4 million due to higher scheduled commission driven by premium growth, an increase in administrative services expenses paid of $33.8 million and an increase in agent bonuses of $15.4 million, compared to 2020.

Net cash used in investing activities totaled $106.9 million in 2022, compared to $185.5 million in 2021 and $243.2 million in 2020. In 2022, net cash used in investing activities was primarily driven by fixed asset purchases of $67.2 million, which were mostly related to software and home office renovations. Additionally, purchases of investments exceeded proceeds generated from sales and maturities/calls of investments. In 2021, net cash used in investing activities was mainly driven by fixed asset purchases of $148.8 million, which included the purchase of the home office from the Exchange. To a lesser extent, purchases of investments exceeded proceeds generated from sales and maturities/calls of investments. In 2020, net cash used in investing activities was primarily driven by purchases of investments exceeding proceeds generated from sales and maturities/calls of investments.

Net cash used in financing activities totaled $300.8 million in 2022, compared to $194.8 million in 2021 and $274.9 million in 2020. The increase in cash used in 2022, compared to 2021, was primarily due to the repayment of the remaining $93.2 million balance on the term loan in 2022. The decrease in cash used in 2021, compared to 2020, was due to a decrease in dividends paid to shareholders of $80.1 million. In addition to the normal quarterly dividends paid in 2020, the Board also declared a special one-time cash dividend of $2.00 on each Class A share and $300 on each Class B share totaling $93.1 million, which was paid in December 2020.

Capital Outlook

We regularly prepare forecasts evaluating the current and future cash requirements for both normal and extreme risk events, including the current post-pandemic economic environment. Should an extreme risk event result in a cash requirement exceeding normal cash flows, we have the ability to meet our future funding requirements through various alternatives available to us.

Outside of our normal operating and investing cash activities, future funding requirements could be met through: 1) unpledged cash and cash equivalents, which total approximately $128.8 million at December 31, 2022, 2) $100 million available bank revolving line of credit, and 3) liquidation of unpledged assets held in our investment portfolio, including equity securities and investment grade bonds which totaled approximately $738.3 million at December 31, 2022. Volatility in the financial markets could impair our ability to sell certain fixed income securities or cause such securities to sell at deep discounts. Additionally, we have the ability to curtail or modify discretionary cash outlays such as those related to shareholder dividends and share repurchase activities.

As of December 31, 2022, we have access to a $100 million bank revolving line of credit with a $25 million letter of credit sublimit that expires on October 29, 2026. As of December 31, 2022, a total of $99.1 million remains available under the facility due to $0.9 million outstanding letters of credit, which reduce the availability for letters of credit to $24.1 million. We had no borrowings outstanding on our line of credit as of December 31, 2022. Investments with a fair value of $114.6 million were pledged as collateral on the line of credit at December 31, 2022. These investments have no trading restrictions and are reported as available-for-sale securities and cash and cash equivalents in the Statement of Financial Position. The bank requires compliance with certain covenants, which include leverage ratios and debt restrictions. We were in compliance with our bank covenants at December 31, 2022.

Enterprise Risk Management

The role of our Enterprise Risk Management ("ERM") function is to ensure that all significant risks are clearly identified, understood, proactively managed and consistently monitored to achieve strategic objectives for all stakeholders. Our ERM program views risk holistically across our entire group of companies. It ensures implementation of risk responses to mitigate potential impacts. See Part I, Item 1A. "Risk Factors" contained in this report for a list of risk factors.

Our ERM process is founded on a governance framework that includes oversight at multiple levels of our organization, including our Board of Directors and executive management. Accountability to identify, manage, and mitigate risk is embedded within all functions and areas of our business. We have defined risk tolerances to monitor and manage significant risks within acceptable levels. In addition to identifying, evaluating, prioritizing, monitoring, and mitigating significant risks, our ERM process includes extreme event analyses and scenario testing. Given our defined tolerance for risk, risk model output is used to quantify the potential variability of future performance and the sufficiency of capital and liquidity levels.

Cybersecurity Risk Management

Our Board of Directors has a process in place to monitor management's oversight of cybersecurity. This is done primarily through regular reports to its Risk Committee as well as reports to the full Board of Directors. Management reports on our cybersecurity risk management program, including our risk evaluation and the results of independent third-party security assessments, and our efforts to manage cyber related risks.

We employ a company-wide cybersecurity program of technical, administrative and physical controls intended to reduce the risk of cyber threats and protect our information, as well as documented processes to determine and make appropriate disclosures regarding potential material threats and incidents. Our cybersecurity philosophy and approach align to the National Institute of Standards and Technology Cybersecurity Framework and its core elements to identify, protect, detect, respond and recover from the various forms of cyber threats. Our practices include, but are not limited to, cybersecurity protocols and controls, system monitoring and detection, communication of incidents to appropriate management, third-party risk management, including assessments of emerging threats and vulnerabilities, and ongoing privacy and cybersecurity training for employees and contractors concerning cyber risk. We periodically assess the effectiveness of our cybersecurity efforts including independent validation and verification and security assessments conducted by independent third parties.

TRANSACTIONS/AGREEMENTS WITH RELATED PARTIES

Board Oversight

Our Board of Directors has a broad oversight responsibility over our intercompany relationships with the Exchange. As a consequence, our Board of Directors may be required to make decisions or take actions that may not be solely in the interest of our shareholders, such as setting the management fee rate paid by the Exchange to us and ratifying any other significant activity.

Insurance Holding Company System

Most states have enacted legislation that regulates insurance holding company systems, defined as two or more affiliated persons, one or more of which is an insurer. The Exchange has the following wholly owned property and casualty subsidiaries: Erie Insurance Company, Erie Insurance Company of New York, Erie Insurance Property & Casualty Company and Flagship City Insurance Company, and a wholly owned life insurance company, Erie Family Life Insurance Company. Indemnity and the Exchange, and its wholly owned subsidiaries, meet the definition of an insurance holding company system.

All transactions within a holding company system affecting the member insurers of the holding company system must be fair and reasonable and any charges or fees for services performed must be reasonable. Approval by the applicable insurance commissioner is required prior to the consummation of transactions affecting the members within a holding company system.

Intercompany Agreements

<u>Subscriber's and services agreements</u>

We serve as attorney-in-fact for the subscribers at the Exchange, a reciprocal insurance exchange. Each applicant for insurance to a reciprocal insurance exchange signs a subscriber's agreement that contains an appointment of an attorney-in-fact. Through the designation of attorney-in-fact, we are required to provide policy issuance and renewal services and act as the attorney-in-fact for the Exchange with respect to all administrative services, as discussed previously. Pursuant to the subscriber's agreement, we earn a management fee for these services calculated as a percentage of the direct and affiliated assumed premiums written by the Exchange. By virtue of its legal structure as a reciprocal insurer, the Exchange does not have any employees or officers. Therefore, it enters into contractual relationships by and through the attorney-in-fact. The Exchange's insurance subsidiaries also utilize Indemnity for all administrative services in accordance with the service agreements between each of the subsidiaries and Indemnity. The subscriber's agreement and service agreements provide for reimbursement of amounts incurred for these services to Indemnity. Reimbursements are settled at cost on a monthly basis. State insurance regulations require that intercompany service agreements and any material amendments be approved in advance by the state insurance department.

<u>Shared facilities</u>

The Exchange and its subsidiaries have a service agreement with Indemnity to use space in Indemnity-owned properties. See Part II, Item 8. "Financial Statements and Supplementary Data - Note 14. Related Party, of Notes to Financial Statements" for additional details.

Cost Allocation

The allocation of costs affects our financial condition and that of the Exchange and its wholly owned subsidiaries. Management's role is to determine that allocations are consistently made in accordance with the subscriber's agreement with the subscribers at the Exchange, intercompany service agreements, and applicable insurance laws and regulations. Allocation of costs under these various agreements requires judgment and interpretation, and such allocations are performed using a consistent methodology, which is intended to adhere to the terms and intentions of the underlying agreements.

Intercompany Receivables

We have significant receivables from the Exchange and its affiliates that result in a concentration of credit risk. Net receivables from the Exchange and other affiliates were $524.9 million, or 23.4% of total assets, at December 31, 2022 and $479.1 million, or 21.4% of total assets, at December 31, 2021. These receivables include management fees due for policy issuance and renewal services performed by us under the subscriber's agreement, and certain costs we incur acting as the attorney-in-fact on behalf of the Exchange as well as the service provider for its insurance subsidiaries with respect to all administrative services, as discussed previously. These receivables from the Exchange and other affiliates are settled monthly. We continually monitor the financial strength of the Exchange.

ITEM 7A. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK

The significant volatility in the financial markets and uncertainty resulting from current events and post-pandemic conditions, resulting in continued supply chain disruptions and certain geopolitical events, have influenced various economic factors, including an elevated inflationary environment and rising interest rates. As these events continue to evolve, the ultimate impact and duration remain uncertain. We could experience future losses and/or impairments to the portfolio given the above impacts on market conditions.

Market Risk

Market risk is the risk of loss arising from adverse changes in interest rates, credit spreads, equity prices, or foreign exchange rates, as well as other relevant market rate or price changes. The volatility and liquidity in the markets in which the underlying assets are traded directly influence market risk. The following is a discussion of our primary risk exposures, including interest rate risk, investment credit risk, concentration risk, liquidity risk, and equity price risk, and how those exposures are currently managed as of December 31, 2022.

Interest Rate Risk

We invest primarily in fixed maturity investments, which comprised 84% of our invested assets at December 31, 2022. The value of the fixed maturity portfolio is subject to interest rate risk. As market interest rates decrease, the value of the portfolio increases with the opposite holding true in rising interest rate environments. We do not hedge our exposure to interest rate risk. A common measure of the interest sensitivity of fixed maturity assets is effective duration, a calculation that utilizes maturity, coupon rate, yield, and call terms to calculate an expected change in fair value given a change in interest rates. The longer the duration, the more sensitive the asset is to market interest rate fluctuations. Duration is analyzed quarterly to ensure that it remains in the targeted range.

A sensitivity analysis is used to measure the potential loss in future earnings, fair values, or cash flows of interest-sensitive instruments resulting from one or more selected hypothetical changes in interest rates and other market rates or prices over a selected period. The following pro forma information is presented assuming a 100-basis point parallel increase in interest rates across the yield curve at December 31 of each year and reflects the estimated effect on the fair value of our fixed maturity portfolio.

Fixed maturities interest-rate sensitivity analysis

(dollars in thousands)	At December 31, 2022	At December 31, 2021
Fair value of fixed maturity portfolio	$ 894,661	$ 946,085
Fair value assuming 100-basis point rise in interest rates	$ 868,919	$ 921,642
Effective duration (as a percentage)	2.9	2.6

While the fixed maturity portfolio is sensitive to interest rates, the future principal cash flows that will be received by contractual maturity date are presented below at December 31, 2022 and 2021. Actual cash flows may differ from those stated as a result of calls, prepayments, or defaults.

Contractual repayments of principal by maturity date

(in thousands)

Fixed maturities:	December 31, 2022
2023	$ 24,561
2024	104,164
2025	125,785
2026	79,745
2027	116,571
Thereafter	500,905
Total	$ 951,731
Fair value	$ 894,661

(in thousands)

Fixed maturities:	December 31, 2021
2022	$ 38,122
2023	89,184
2024	131,577
2025	108,165
2026	71,375
Thereafter	472,350
Total	$ 910,773
Fair value	$ 946,085

Investment Credit Risk

Our objective is to earn competitive returns by investing in a diversified portfolio of securities. Our portfolios of fixed maturity securities, equity securities and, to a lesser extent, short-term investments are subject to credit risk. This risk is defined as the potential loss in fair value resulting from adverse changes in the borrower's ability to repay the debt. We manage this risk by performing upfront underwriting analysis and ongoing reviews of credit quality by position and for the portfolio in total. We do not hedge the credit risk inherent in our fixed maturity and equity securities investments.

Generally, the fixed maturities in our portfolio are rated by external rating agencies. If not externally rated, we rate them internally on a basis consistent with that used by the rating agencies. We classify all fixed maturities as available-for-sale securities, allowing us to meet our liquidity needs and provide greater flexibility to appropriately respond to changes in market conditions.

The following tables show our fixed maturity investments by rating[1]:

(dollars in thousands)	At December 31, 2022		
	Amortized cost	Fair value	Percent of total
AAA, AA, A	$ 518,088	$ 479,413	54 %
BBB	318,801	300,900	33
Total investment grade	836,889	780,313	87
BB	45,784	41,978	5
B	66,574	62,530	7
CCC, CC, C, and below	11,888	9,840	1
Total non-investment grade	124,246	114,348	13
Total	$ 961,135	$ 894,661	100 %

(dollars in thousands)	At December 31, 2021		
	Amortized cost	Fair value	Percent of total
AAA, AA, A	$ 506,271	$ 508,610	54 %
BBB	295,681	299,270	31
Total investment grade	801,952	807,880	85
BB	45,541	46,922	5
B	76,144	76,913	8
CCC, CC, C, and below	14,642	14,370	2
Total non-investment grade	136,327	138,205	15
Total	$ 938,279	$ 946,085	100 %

(1) Ratings are supplied by S&P, Moody's, and Fitch. The table is based upon the lowest rating for each security.

We are also exposed to a concentration of credit risk with the Exchange. See the "Transactions/Agreements with Related Parties, Intercompany Receivables" section of Item 7. "Management's Discussion and Analysis of Financial Condition and Results of Operations" contained within this report for further discussion of this risk.

Concentration Risk

While our portfolio is well diversified within each market sector, there is an inherent risk of concentration in a particular industry or sector. We continually monitor our level of exposure to individual issuers as well as our allocation to each industry and market sector against internally established policies. See the "Financial Condition" section of Item 7. "Management's Discussion and Analysis of Financial Condition and Results of Operations" contained within this report for details of investment holdings by sector.

Liquidity Risk

Periods of volatility in the financial markets can create conditions where fixed maturity investments, despite being publicly traded, can become illiquid. However, we actively manage the maturity profile of our fixed maturity portfolio such that scheduled repayments of principal occur on a regular basis.

Equity Price Risk

Our portfolio of equity securities, which primarily includes nonredeemable preferred stock, is carried on the Statements of Financial Position at estimated fair value. Equity securities are exposed to the risk of potential loss in estimated fair value resulting from an adverse change in prices ("price risk"). We do not hedge our exposure to price risk inherent in our equity investments.

ITEM 8. FINANCIAL STATEMENTS AND SUPPLEMENTARY DATA

INDEX TO FINANCIAL STATEMENTS

Report of Independent Registered Public Accounting Firm

To the Shareholders and the Board of Directors of Erie Indemnity Company

Opinion on the Financial Statements

We have audited the accompanying statements of financial position of Erie Indemnity Company (the Company) as of December 31, 2022 and 2021, the related statements of operations, comprehensive income, shareholders' equity and cash flows for each of the three years in the period ended December 31, 2022, and the related notes (collectively referred to as the "financial statements"). In our opinion, the financial statements present fairly, in all material respects, the financial position of the Company at December 31, 2022 and 2021, and the results of its operations and its cash flows for each of the three years in the period ended December 31, 2022, in conformity with U.S. generally accepted accounting principles.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the Company's internal control over financial reporting as of December 31, 2022, based on criteria established in Internal Control-Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission (2013 framework) and our report dated March 1, 2023, expressed an unqualified opinion thereon.

Basis for Opinion

These financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on the Company's financial statements based on our audits. We are a public accounting firm registered with the PCAOB and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audits in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement, whether due to error or fraud. Our audits included performing procedures to assess the risks of material misstatement of the financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the financial statements. We believe that our audits provide a reasonable basis for our opinion.

Critical Audit Matter

The critical audit matter communicated below is a matter arising from the current period audit of the financial statements that was communicated or required to be communicated to the audit committee and that: (1) relates to accounts or disclosures that are material to the financial statements and (2) involved our especially challenging, subjective or complex judgments. The communication of the critical audit matter does not alter in any way our opinion on the financial statements, taken as a whole, and we are not, by communicating the critical audit matter below, providing a separate opinion on the critical audit matter or on the accounts or disclosures to which it relates.

Proportional Cost Allocation

Description of the Matter

For the year ended December 31, 2022, the Company's administrative services reimbursement revenue totaled $668.3 million. The Company's primary function, as attorney-in-fact, is to perform certain services on behalf of the subscribers at the Erie Insurance Exchange (Exchange) and its insurance subsidiaries, in accordance with the subscriber's agreement and the service agreements with each of the Exchange's insurance subsidiaries. As explained in Note 2 of the financial statements, pursuant to the approved subscriber's agreement and service agreements, administrative services, which include costs associated with claims handling services, life insurance related operating activities, investment management, and operating overhead incurred by the Company on behalf of the Exchange and its insurance subsidiaries, are reimbursed to the Company at cost and recorded as administrative services reimbursement revenue, based on the nature of the cost or relevant utilization statistic.

Auditing management's proportional cost allocations was complex due to the multiple costs that are allocated, the extensiveness of the allocation process, and the degree of auditor judgement needed to design the nature and extent of audit procedures required to address the matter.

How We Addressed the Matter in Our Audit

We obtained an understanding, evaluated the design and tested the operating effectiveness of controls over the Company's proportional cost allocations process. This included, among others, testing management's review controls over the determination of the utilization statistics and ultimate allocation of costs to the Exchange and its insurance subsidiaries.

To test the Company's proportional cost allocations, our procedures included, among others, evaluating that the costs included in the allocations are in accordance with the subscriber's agreement and the service agreements with each of the Exchange's insurance subsidiaries. We tested the completeness and accuracy of the costs subjected to allocation through testing the reconciliation of the costs recorded in the source systems to the costs that are allocated, testing a sample of cost allocations, and testing the reconciliation of the cost allocation output to the general ledger. We evaluated the allocation of costs to the Exchange and its insurance subsidiaries with the costs allocated in prior periods.

/s/ Ernst & Young LLP

We have served as the Company's auditor since 2003.

Cleveland, Ohio
March 1, 2023

ERIE INDEMNITY COMPANY
STATEMENTS OF OPERATIONS
Years ended December 31, 2022, 2021 and 2020
(dollars in thousands, except per share data)

	2022	2021	2020
Operating revenue			
Management fee revenue - policy issuance and renewal services	$ 2,087,846	$ 1,913,166	$ 1,841,794
Management fee revenue - administrative services	58,323	58,286	59,463
Administrative services reimbursement revenue	668,268	638,483	609,435
Service agreement revenue	25,687	24,042	25,797
Total operating revenue	2,840,124	2,633,977	2,536,489
Operating expenses			
Cost of operations - policy issuance and renewal services	1,795,642	1,677,397	1,588,897
Cost of operations - administrative services	668,268	638,483	609,435
Total operating expenses	2,463,910	2,315,880	2,198,332
Operating income	376,214	318,097	338,157
Investment income			
Net investment income	28,585	62,177	29,753
Net realized and unrealized investment (losses) gains	(27,286)	4,946	6,392
Net impairment (losses) recoveries recognized in earnings	(667)	209	(3,278)
Total investment income	632	67,332	32,867
Interest expense, net	2,009	4,132	731
Other income (expense)	1,615	(4,893)	(1,778)
Income before income taxes	376,452	376,404	368,515
Income tax expense	77,883	78,544	75,211
Net income	**$ 298,569**	**$ 297,860**	**$ 293,304**
Earnings Per Share			
Net income per share			
Class A common stock – basic	$ 6.41	$ 6.40	$ 6.30
Class A common stock – diluted	**$ 5.71**	**$ 5.69**	**$ 5.61**
Class B common stock – basic and diluted	$ 962	$ 959	$ 945
Weighted average shares outstanding – Basic			
Class A common stock	46,188,916	46,188,806	46,188,659
Class B common stock	2,542	2,542	2,542
Weighted average shares outstanding – Diluted			
Class A common stock	52,297,990	52,307,302	52,313,360
Class B common stock	2,542	2,542	2,542

See accompanying notes to Financial Statements. See Note 13, "Accumulated Other Comprehensive Income (Loss)", for amounts reclassified out of accumulated other comprehensive income (loss) into the Statements of Operations.

ERIE INDEMNITY COMPANY
STATEMENTS OF COMPREHENSIVE INCOME
Years ended December 31, 2022, 2021 and 2020
(in thousands)

	2022	2021	2020
Net income	$ 298,569	$ 297,860	$ 293,304
Other comprehensive income, net of tax			
Change in unrealized holding (losses) gains on available-for-sale securities	(58,692)	(17,112)	18,738
Pension and other postretirement plans	76,566	69,967	19,987
Total other comprehensive income, net of tax	17,874	52,855	38,725
Comprehensive income	$ 316,443	$ 350,715	$ 332,029

See accompanying notes to Financial Statements. See Note 13, "Accumulated Other Comprehensive Income (Loss)", for amounts reclassified out of accumulated other comprehensive income (loss) into the Statements of Operations.

ERIE INDEMNITY COMPANY
STATEMENTS OF FINANCIAL POSITION
At December 31, 2022 and 2021
(dollars in thousands, except per share data)

	2022	2021
Assets		
Current assets:		
Cash and cash equivalents	$ 142,090	$ 183,702
Available-for-sale securities	24,267	38,396
Receivables from Erie Insurance Exchange and affiliates, net	524,937	479,123
Prepaid expenses and other current assets	79,201	56,206
Accrued investment income	8,301	6,303
Total current assets	778,796	763,730
Available-for-sale securities, net	870,394	907,689
Equity securities	72,560	87,743
Fixed assets, net	413,874	374,802
Agent loans, net	60,537	58,683
Deferred income taxes, net	0	145
Other assets	43,295	49,265
Total assets	**$ 2,239,456**	**$ 2,242,057**
Liabilities and shareholders' equity		
Current liabilities:		
Commissions payable	$ 300,028	$ 270,746
Agent bonuses	95,166	120,437
Accounts payable and accrued liabilities	165,915	138,317
Dividends payable	55,419	51,693
Contract liability	36,547	34,935
Deferred executive compensation	12,036	12,637
Current portion of long-term borrowings	—	2,098
Total current liabilities	665,111	630,863
Defined benefit pension plans	51,224	130,383
Long-term borrowings	—	91,734
Contract liability	17,895	17,686
Deferred executive compensation	13,724	14,571
Deferred income taxes, net	14,075	0
Other long-term liabilities	29,019	14,342
Total liabilities	791,048	899,579
Shareholders' equity		
Class A common stock, stated value $0.0292 per share; 74,996,930 shares authorized; 68,299,200 shares issued; 46,189,068 shares outstanding	1,992	1,992
Class B common stock, convertible at a rate of 2,400 Class A shares for one Class B share, stated value $70 per share; 3,070 shares authorized; 2,542 shares issued and outstanding	178	178
Additional paid-in-capital	16,481	16,496
Accumulated other comprehensive loss	(7,414)	(25,288)
Retained earnings	2,583,261	2,495,190
Total contributed capital and retained earnings	2,594,498	2,488,568
Treasury stock, at cost; 22,110,132 shares held	(1,168,949)	(1,167,828)
Deferred compensation	22,859	21,738
Total shareholders' equity	**1,448,408**	**1,342,478**
Total liabilities and shareholders' equity	**$ 2,239,456**	**$ 2,242,057**

See accompanying notes to Financial Statements.

ERIE INDEMNITY COMPANY
STATEMENTS OF SHAREHOLDERS' EQUITY
Years ended December 31, 2022, 2021 and 2020
(dollars in thousands, except per share data)

	Class A common stock	Class B common stock	Additional paid-in-capital	Accumulated other comprehensive (loss) income	Retained earnings	Treasury stock	Deferred compensation	Total shareholders' equity
Balance, December 31, 2019	$ 1,992	$ 178	$ 16,483	$ (116,868)	$ 2,377,558	$ (1,158,910)	$ 12,820	$ 1,133,253
Cumulative effect adjustment [1]					(1,075)			(1,075)
Net income					293,304			293,304
Other comprehensive income				38,725				38,725
Dividends declared:								
Class A $5.93 per share					(273,902)			(273,902)
Class B $889.50 per share					(2,261)			(2,261)
Net purchase of treasury stock [2]			4			0		4
Deferred compensation						(5,465)	5,465	0
Rabbi trust distribution [3]						705	(705)	0
Balance, December 31, 2020	$ 1,992	$ 178	$ 16,487	$ (78,143)	$ 2,393,624	$ (1,163,670)	$ 17,580	$ 1,188,048
Net income					297,860			297,860
Other comprehensive income				52,855				52,855
Dividends declared:								
Class A $4.215 per share					(194,687)			(194,687)
Class B $632.25 per share					(1,607)			(1,607)
Net purchase of treasury stock [2]			9			0		9
Deferred compensation						(5,131)	5,131	0
Rabbi trust distribution [3]						973	(973)	0
Balance, December 31, 2021	$ 1,992	$ 178	$ 16,496	$ (25,288)	$ 2,495,190	$ (1,167,828)	$ 21,738	$ 1,342,478
Net income					298,569			298,569
Other comprehensive income				17,874				17,874
Dividends declared:								
Class A $4.52 per share					(208,775)			(208,775)
Class B $678.00 per share					(1,723)			(1,723)
Net purchase of treasury stock [2]			(15)			0		(15)
Deferred compensation						(2,975)	2,975	0
Rabbi trust distribution [3]						1,854	(1,854)	0
Balance, December 31, 2022	$ 1,992	$ 178	$ 16,481	$ (7,414)	$ 2,583,261	$ (1,168,949)	$ 22,859	$ 1,448,408

(1) The cumulative effect adjustment in 2020 is related to the implementation of credit loss allowance accounting guidance effective January 1, 2020. See Note 2, "Significant Accounting Policies."

(2) Net purchases of treasury stock in 2020, 2021 and 2022 include the repurchase of our Class A common stock in the open market that were subsequently distributed to satisfy stock-based compensation awards. See Note 10, "Incentive and Deferred Compensation Plans".

(3) Distributions of our Class A shares were made from the rabbi trust to a retired director and an incentive compensation deferral plan participant in both 2020 and 2021, and to four incentive compensation deferral plan participants in 2022. See Note 10, "Incentive and Deferred Compensation Plans".

See accompanying notes to Financial Statements.

ERIE INDEMNITY COMPANY
STATEMENTS OF CASH FLOWS
Years ended December 31, 2022, 2021 and 2020
(in thousands)

	2022	2021	2020
Cash flows from operating activities			
Management fee received	$ 2,100,989	$ 1,982,092	$ 1,887,537
Administrative services reimbursements received	668,857	634,300	587,347
Service agreement revenue received	25,515	24,014	25,797
Net investment income received	40,161	45,830	35,740
Commissions paid to agents	(1,042,158)	(966,285)	(928,864)
Agents bonuses paid	(136,403)	(123,583)	(108,227)
Salaries and wages paid	(208,575)	(204,279)	(188,070)
Pension contribution and employee benefits paid	(68,433)	(32,836)	(33,098)
General operating expenses paid	(263,524)	(235,294)	(253,545)
Administrative services expenses paid	(667,524)	(632,530)	(598,753)
Income taxes paid	(80,619)	(84,494)	(82,576)
Interest paid	(2,134)	(4,141)	(693)
Net cash provided by operating activities	366,152	402,794	342,595
Cash flows from investing activities			
Purchase of investments:			
Available-for-sale securities	(465,071)	(380,017)	(396,014)
Equity securities	(18,929)	(58,191)	(79,518)
Other investments	(157)	(1,646)	(1,142)
Proceeds from investments:			
Available-for-sale securities sales	295,996	150,153	101,718
Available-for-sale securities maturities/calls	130,401	184,820	118,852
Equity securities	20,456	64,118	70,405
Other investments	429	1,076	613
Purchase of fixed assets	(67,204)	(148,800)	(55,528)
Proceeds from disposal of fixed assets	265	—	15
Loans to agents	(11,631)	(6,382)	(10,098)
Collections on agent loans	8,523	9,379	7,472
Net cash used in investing activities	(106,922)	(185,490)	(243,225)
Cash flows from financing activities			
Dividends paid to shareholders	(206,772)	(192,801)	(272,902)
Proceeds from short-term borrowings	55,000	—	—
Payments on short-term borrowings	(55,000)	—	—
Payments on long-term borrowings	(94,070)	(2,041)	(1,967)
Net cash used in financing activities	(300,842)	(194,842)	(274,869)
Net (decrease) increase in cash and cash equivalents	(41,612)	22,462	(175,499)
Cash and cash equivalents, beginning of year	183,702	161,240	336,739
Cash and cash equivalents, end of year	$ 142,090	$ 183,702	$ 161,240
Supplemental disclosure of noncash transactions			
Liability incurred to purchase fixed assets	$ 26,386	$ 12,802	$ 14,214
Operating lease assets obtained in exchange for lease liabilities	$ 7,650	$ 3,447	$ 4,943
Transfer of investments from other investments to equity securities	$ —	$ —	$ 13,041

See accompanying notes to Financial Statements. See Note 17, "Supplementary Data on Cash Flows", for additional supplemental cash flow information.

ERIE INDEMNITY COMPANY
NOTES TO FINANCIAL STATEMENTS

Note 1. Nature of Operations

Erie Indemnity Company ("Indemnity", "we", "us", "our") is a publicly held Pennsylvania business corporation that has since its incorporation in 1925 served as the attorney-in-fact for the subscribers (policyholders) at the Erie Insurance Exchange ("Exchange"). The Exchange, which also commenced business in 1925, is a Pennsylvania-domiciled reciprocal insurer that writes property and casualty insurance.

Our primary function as attorney-in-fact is to perform policy issuance and renewal services on behalf of the subscribers at the Exchange. We also act as attorney-in-fact on behalf of the Exchange with respect to all claims handling and investment management services, as well as the service provider for all claims handling, life insurance, and investment management services for its insurance subsidiaries, collectively referred to as "administrative services". Acting as attorney-in-fact in these two capacities is done in accordance with a subscriber's agreement (a limited power of attorney) executed individually by each subscriber (policyholder), which appoints us as their common attorney-in-fact to transact certain business on their behalf. Pursuant to the subscriber's agreement for acting as attorney-in-fact in these two capacities, we earn a management fee calculated as a percentage of the direct and affiliated assumed premiums written by the Exchange.

The policy issuance and renewal services we provide to the Exchange are related to the sales, underwriting and issuance of policies. The sales related services we provide include agent compensation and certain sales and advertising support services. Agent compensation includes scheduled commissions to agents based upon premiums written as well as additional commissions and bonuses to agents, which are earned by achieving targeted measures. Agent compensation comprised approximately 66% of our 2022 policy issuance and renewal expenses. The underwriting services we provide include underwriting and policy processing and comprised approximately 10% of our 2022 policy issuance and renewal expenses. The remaining services we provide include customer service and administrative support. We also provide information technology services that support all the functions listed above that comprised approximately 11% of our 2022 policy issuance and renewal expenses. Included in these expenses are allocations of costs for departments that support these policy issuance and renewal functions.

The Exchange, by virtue of its legal structure as a reciprocal insurer, does not have any employees or officers. Therefore, it enters into contractual relationships by and through an attorney-in-fact. Indemnity serves as the attorney-in-fact on behalf of the Exchange with respect to its administrative services in accordance with the subscriber's agreement. The Exchange's insurance subsidiaries also utilize Indemnity for these services in accordance with the service agreements between each of the subsidiaries and Indemnity. Claims handling services include costs incurred in the claims process, including the adjustment, investigation, defense, recording and payment functions. Life insurance management services include costs incurred in the management and processing of life insurance business. Investment management services are related to investment trading activity, accounting and all other functions attributable to the investment of funds. Included in these expenses are allocations of costs for departments that support these administrative functions. The subscriber's agreement and service agreements provide for reimbursement of amounts incurred for these services to Indemnity. Reimbursements are settled at cost. State insurance regulations require that intercompany service agreements and any material amendments be approved in advance by the state insurance department.

Our results of operations are tied to the growth and financial condition of the Exchange. If any events occurred that impaired the Exchange’s ability to grow or sustain its financial condition, including but not limited to reduced financial strength ratings, disruption in the independent agency relationships, significant catastrophe losses, or products not meeting customer demands, the Exchange could find it more difficult to retain its existing business and attract new business. A decline in the business of the Exchange almost certainly would have as a consequence a decline in the total premiums paid and a correspondingly adverse effect on the amount of the management fees we receive. We also have an exposure to a concentration of credit risk related to the unsecured receivables due from the Exchange for its management fee and cost reimbursements. See Note 15, "Concentrations of Credit Risk".

Risks and uncertainties
In March 2020, the outbreak of COVID-19 was declared a global pandemic. Post-pandemic conditions have created an inflationary environment which may impact the adequacy of estimated loss reserves and future premium rates of the Exchange in addition to overall financial market volatility, which may impact our investment results. The uncertainty of the current economic environment continues to evolve. We are unable to predict the duration or extent of the financial impacts.

Note 2. Significant Accounting Policies

Basis of presentation
The accompanying financial statements have been prepared in conformity with U.S. generally accepted accounting principles ("GAAP").

Use of estimates
The preparation of financial statements in conformity with GAAP requires us to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the financial statements and the reported amounts of revenues and expenses during the reporting period. Actual results could differ from those estimates.

Recently adopted accounting standards
We adopted Accounting Standards Update ("ASU") 2016-13, *"Financial Instruments-Credit Losses"* which applies to our receivable from Erie Insurance Exchange and affiliates, agent loans, and investments, on January 1, 2020. The guidance requires financial assets measured at amortized cost to be presented at the net amount expected to be collected through the use of a new forward-looking current expected credit loss model and credit losses relating to available-for-sale debt securities to be recognized through an allowance for credit losses.

For assets measured at amortized cost for which a current expected credit loss allowance was required, we adopted the guidance using the modified-retrospective approach. At January 1, 2020, we recorded current expected credit loss allowances related to agent loans of $0.8 million and receivables from Erie Insurance Exchange and affiliates of $0.6 million. This resulted in the recording of a cumulative effect adjustment, net of taxes, to retained earnings of $1.1 million. Our available-for-sale investments are not measured at amortized cost, and therefore do not require the use of a current expected credit loss model. Any credit losses, however, are required to be recorded as an allowance for credit losses rather than a reduction of the carrying value of the asset. For available-for-sale securities, we adopted the guidance using the prospective approach and recorded an initial allowance for credit losses of $0.6 million at March 31, 2020.

Cash and cash equivalents – Cash, money market accounts and other short-term, highly liquid investments with a maturity of three months or less at the date of purchase, are considered cash and cash equivalents.

Investments
Available-for-sale securities – Fixed maturity debt securities and redeemable preferred stock are classified as available-for-sale and reported at fair value with unrealized investment gains and losses, net of income taxes, recognized in other comprehensive income. Available-for-sale securities with a remaining maturity of 12 months or less and any security that we intend to sell as of the reporting date are classified as current assets.

Available-for-sale securities in an unrealized loss position are evaluated to determine whether the impairment is a result of credit loss or other factors. If we have the intent to sell or it's more likely than not that we would be required to sell the security before recovery of the amortized cost basis, the entire impairment is recognized in earnings. Securities that have experienced a decline in fair value that we do not intend to sell, and that we will not be required to sell before recovery, are evaluated to determine if the decline in fair value is credit related. Impairment resulting from a credit loss is recognized in earnings with a corresponding allowance on the balance sheet. Future recoveries of credit loss result in an adjustment to the allowance and earnings in the period the credit conditions improve. Factors considered in the evaluation of credit loss include the extent to which fair value is less than cost and fundamental factors specific to the issuer such as financial condition, changes in credit ratings, near and long-term business prospects and other factors, as well as the likelihood of recovery of the amortized cost of the security. If the qualitative review indicates credit impairment, the allowance for credit loss is measured as the amount that the security's amortized cost exceeds the present value of cash flows expected to be collected and is limited to the amount that fair value is below amortized cost.

Equity securities – Equity securities primarily include non-redeemable preferred stocks and are reported at fair value with changes in fair value recognized in net realized and unrealized investment gains (losses). Securities that we intend to sell as of the reporting date are classified as current assets.

Realized gains and losses and investment income – Realized gains and losses on sales of available-for-sale and equity securities are recognized in income based upon the specific identification method and reported in net realized and unrealized investment gains (losses). Interest income is recognized as earned and includes amortization of premium and accretion of discount. Income is recognized based on the constant effective yield method, which includes periodically updated prepayment assumptions obtained from third party data sources on our prepaying securities. The effective yield for prepaying securities is recalculated on a retrospective basis. Dividend income is recognized at the ex-dividend date. Interest and dividend income and the results of our limited partnership investments are reported as net investment income. We do not record an allowance for credit losses on accrued investment income as any amount deemed uncollectible is reversed from interest income in the period the expected payment defaults.

Deferred taxes

Deferred tax assets and liabilities are recorded for temporary differences between the tax basis of assets and liabilities and the reported amounts in the financial statements, using the statutory tax rates in effect for the year in which the differences are expected to settle or be realized. The effect on deferred tax assets and liabilities of a change in tax rates is recognized in the results of operations in the period that includes the enactment date under the law. The need for valuation allowances on deferred tax assets are estimated based upon our assessment of the realizability of such amounts.

Fixed assets

Fixed assets are stated at cost less accumulated depreciation and amortization. Fixed assets are primarily comprised of software, which includes internally used capitalized software and development costs, as well as building and building improvements, equipment, furniture and fixtures, and leasehold improvements. Assets in use are depreciated using the straight-line method over the estimated useful life except for leasehold improvements, which are depreciated over the shorter of their economic useful life or the lease term. Software is depreciated over periods ranging from 3-7 years, buildings and building improvements are depreciated over 20-45 years, equipment is depreciated over 3-10 years, and furniture and fixtures are depreciated over 7 years. We review long-lived assets for impairment whenever events or changes indicate that the carrying value may not be recoverable. Under these circumstances, if the fair value were less than the carrying amount of the asset, we would recognize a loss for the difference. We capitalize applicable interest charges incurred during the construction period of significant long-term building projects as part of the historical cost of the asset.

Agent loans

Agent loans, the majority of which are senior secured, are carried at unpaid principal balance net of a current expected credit loss allowance with interest recorded in investment income as earned. The allowance is estimated using available loss history and/or external loss rates based on comparable loan losses and considers current market conditions and forecasted information. Changes to the allowance are recognized in earnings as adjustments to net impairment recoveries (losses). The current portion of agent loans is recorded in prepaid expenses and other current assets.

Other assets

Other assets primarily include limited partnership investments which are recorded using the equity method of accounting. Other assets also include operating lease assets and other long-term prepaid assets.

Agent bonus liability

Our more significant agent bonus plan is based upon an individual agency's property and casualty underwriting profitability and also includes a component for growth in agency property and casualty premiums if the agency's underwriting profitability targets for the book of business are met. The estimated liability for this agent bonus plan is based upon the performance over 36 months, and is modeled on a monthly basis using actual underwriting results for the two prior years and current year-to-date actual results and forecasted results for the remainder of the year. Our second agent bonus plan is based on an agency's one-year underwriting profitability and uses a similar model but considers actual and forecasted results for a calendar year only. At December 31 of each year, we use actual data available and record an accrual based upon the expected payment amount. These costs are included in cost of operations - policy issuance and renewal services.

Recognition of management fee revenue

We earn management fees from the Exchange under the subscriber’s agreement for services provided. Pursuant to the subscriber’s agreement, we may retain up to 25% of all direct and affiliated assumed premiums written by the Exchange. The management fee rate is set at least annually by our Board of Directors. The management fee revenue is calculated by multiplying the management fee rate by the direct and affiliated assumed premiums written by the Exchange and is allocated between the two performance obligations we have under the subscriber's agreement. The first performance obligation is to provide policy issuance and renewal services. The second performance obligation is acting as the attorney-in-fact with respect to the administrative services.

Management fee revenue allocated to the policy issuance and renewal services is recognized at the time of policy issuance or renewal, because it is at the time of policy issuance or renewal when the economic benefit of the service we provide (the substantially completed policy issuance or renewal service) and the control of the promised asset (the executed insurance policy) transfers to the customer.

Management fee revenue allocated to the second performance obligation relates to us acting as the attorney-in-fact on behalf of the Exchange, as well as the service provider for its insurance subsidiaries, with respect to the administrative services and is recognized over a four-year period representing the time over which the economic benefit of the services provided (i.e. management of the administrative services) transfers to the customer.

Administrative services

By virtue of its legal structure as a reciprocal insurer, the Exchange does not have any employees or officers. Therefore, it enters into contractual relationships by and through an attorney-in-fact. Indemnity serves as the attorney-in-fact on behalf of the Exchange with respect to its administrative services in accordance with the subscriber's agreement. The Exchange's insurance subsidiaries also utilize Indemnity for these services in accordance with the service agreements between each of the subsidiaries and Indemnity. Claims handling services include costs incurred in the claims process, including the adjustment, investigation, defense, recording and payment functions. Life insurance management services include costs incurred in the management and processing of life insurance business. Investment management services are related to investment trading activity, accounting and all other functions attributable to the investment of funds. Common overhead expenses and certain service department costs incurred by us on behalf of the Exchange and its insurance subsidiaries are reimbursed by the proper entity based upon relevant utilization statistics specifically measured to accomplish proportional allocations, which we believe are reasonable. In 2022, approximately 71% of the administrative services expenses are entirely attributable to the respective administrative functions (claims handling, life insurance management and investment management), while the remaining 29% of these expenses are allocations of costs for departments that support these administrative functions. The expenses we incur and related reimbursements we receive for administrative services are presented gross in our Statements of Operations. The subscriber's agreement and service agreements provide for reimbursement of amounts incurred for these services to Indemnity. Reimbursements are settled at cost on a monthly basis. State insurance regulations require that intercompany service agreements and any material amendments be approved in advance by the state insurance department.

Recognition of service agreement revenue

Service agreement revenue primarily consists of service charges we collect from policyholders for providing multiple payment plans on policies written by the Exchange and its property and casualty subsidiaries. Service charges, which are flat dollar charges for each installment billed beyond the first installment, are recognized as revenue when bills are rendered to the policyholder. Service agreement revenue also includes late payment and policy reinstatement fees, which are also recognized as revenue when bills are rendered to the policyholder. We also have a service agreement with the Exchange for the use of shared office space. Revenue related to this agreement is recognized at the time the space is used based on relevant utilization statistics.

Note 3. Revenue

The majority of our revenue is derived from the subscriber's agreement between us and the subscribers (policyholders) at the Exchange. Pursuant to the subscriber's agreement, we earn a management fee calculated as a percentage, not to exceed 25%, of all direct and affiliated assumed written premiums of the Exchange. We allocate a portion of our management fee revenue, currently 25% of the direct and affiliated assumed written premiums of the Exchange, between the two performance obligations we have under the subscriber's agreement. The first performance obligation is to provide policy issuance and renewal services to the subscribers (policyholders) at the Exchange, and the second is to act as attorney-in-fact on behalf of the Exchange, as well as the service provider for its insurance subsidiaries, with respect to all administrative services.

The transaction price, including management fee revenue and administrative services reimbursement revenue, includes variable consideration and is allocated based on the estimated standalone selling prices developed using industry information and other available information for similar services. A constraining estimate of variable consideration exists related to the potential for management fees to be returned if a policy were to be cancelled mid-term. Management fees are returned to the Exchange when policyholders cancel their insurance coverage mid-term and premiums are refunded to them. The constraining estimate is determined using the expected value method, based on both historical and current information. The estimated transaction price, as reduced by the constraint, reflects consideration expected for performance of our services. We update the transaction price and the related allocation at least annually based upon the most recent information available or more frequently if there have been significant changes in any components considered in the transaction price.

The first performance obligation is to provide policy issuance and renewal services that result in executed insurance policies between the Exchange or one of its insurance subsidiaries and the subscriber (policyholder). The subscriber (policyholder) receives economic benefits when substantially all the policy issuance or renewal services are complete and an insurance policy is issued or renewed by the Exchange or one of its insurance subsidiaries. It is at the time of policy issuance or renewal that the allocated portion of revenue is recognized.

The Exchange, by virtue of its legal structure as a reciprocal insurer, does not have any employees or officers. Therefore, it enters into contractual relationships by and through an attorney-in-fact. Indemnity serves as the attorney-in-fact on behalf of the Exchange with respect to its administrative services in accordance with the subscriber's agreement. The Exchange's insurance subsidiaries also utilize Indemnity for these services in accordance with the service agreements between each of the subsidiaries and Indemnity. Collectively, these services represent a second performance obligation under the subscriber's agreement and the service agreements. The revenue allocated to this performance obligation is recognized over a four-year period representing the time over which these services are provided. The portion of revenue not yet earned is recorded as a contract liability in the Statements of Financial Position. For the years ended December 31, 2022, 2021, and 2020, we recognized revenue of $34.9 million, $36.9 million, and $35.9 million, respectively, that was included in the contract liability balance at the beginning of the respective periods. The administrative services expenses we incur and the related reimbursements we receive are recorded gross in the Statements of Operations.

Indemnity records a receivable from the Exchange for management fee revenue when the premium is written or assumed from affiliates by the Exchange. Indemnity collects the management fee from the Exchange when the Exchange collects the premiums from the subscribers (policyholders). As the Exchange issues policies with annual terms only, cash collections generally occur within one year.

The following table disaggregates revenue by our two performance obligations for the years ended December 31:

(in thousands)	2022	2021	2020
Management fee revenue - policy issuance and renewal services	$ 2,087,846	$ 1,913,166	$ 1,841,794
Management fee revenue - administrative services	58,323	58,286	59,463
Administrative services reimbursement revenue	668,268	638,483	609,435
Total revenue from administrative services	$ 726,591	$ 696,769	$ 668,898

Note 4. Earnings Per Share

Class A and Class B basic earnings per share and Class B diluted earnings per share are calculated under the two-class method. The two-class method allocates earnings to each class of stock based upon its dividend rights. Class B shares are convertible into Class A shares at a conversion ratio of 2,400 to 1. See Note 12, "Capital Stock".

Class A diluted earnings per share are calculated under the if-converted method, which reflects the conversion of Class B shares to Class A shares. Diluted earnings per share calculations include the dilutive effect of assumed issuance of stock-based awards under compensation plans that have the option to be paid in stock using the treasury stock method. See Note 10, "Incentive and Deferred Compensation Plans".

A reconciliation of the numerators and denominators used in the basic and diluted per-share computations is presented as follows for each class of common stock:

(dollars in thousands, except per share data)	For the years ended December 31,								
	2022			2021			2020		
	Allocated net income (numerator)	Weighted shares (denominator)	Per-share amount	Allocated net income (numerator)	Weighted shares (denominator)	Per-share amount	Allocated net income (numerator)	Weighted shares (denominator)	Per-share amount
Class A – Basic EPS:									
Income available to Class A stockholders	$ 296,125	46,188,916	$ 6.41	$ 295,421	46,188,806	$ 6.40	$ 290,902	46,188,659	$ 6.30
Dilutive effect of stock-based awards	0	8,274	—	0	17,696	—	0	23,901	—
Assumed conversion of Class B shares	2,444	6,100,800	—	2,439	6,100,800	—	2,402	6,100,800	—
Class A – Diluted EPS:									
Income available to Class A stockholders on Class A equivalent shares	$ 298,569	52,297,990	$ 5.71	$ 297,860	52,307,302	$ 5.69	$ 293,304	52,313,360	$ 5.61
Class B – Basic EPS:									
Income available to Class B stockholders	$ 2,444	2,542	$ 962	$ 2,439	2,542	$ 959	$ 2,402	2,542	$ 945
Class B – Diluted EPS:									
Income available to Class B stockholders	$ 2,444	2,542	$ 962	$ 2,438	2,542	$ 959	$ 2,401	2,542	$ 945

Note 5. Fair Value

Financial instruments carried at fair value
Our available-for-sale and equity securities are recorded at fair value, which is the price that would be received to sell the asset in an orderly transaction between willing market participants as of the measurement date.

Valuation techniques used to derive the fair value of our available-for-sale and equity securities are based upon observable and unobservable inputs. Observable inputs reflect market data obtained from independent sources. Unobservable inputs reflect our own assumptions regarding fair market value for these securities. Financial instruments are categorized based upon the following characteristics or inputs to the valuation techniques:

- Level 1 – Quoted prices (unadjusted) in active markets for identical assets or liabilities that the reporting entity can access at the measurement date.

- Level 2 – Inputs other than quoted prices included within Level 1 that are observable for the asset or liability, either directly or indirectly.

- Level 3 – Unobservable inputs for the asset or liability.

Estimates of fair values for our investment portfolio are obtained primarily from a nationally recognized pricing service. Our Level 1 securities are valued using an exchange traded price provided by the pricing service. Pricing service valuations for Level 2 securities include multiple verifiable, observable inputs including benchmark yields, reported trades, broker/dealer quotes, issuer spreads, two-sided markets, benchmark securities, bids, offers, and reference data. Pricing service valuations for Level 3 securities are based upon proprietary models and are used when observable inputs are not available or in illiquid markets.

Although virtually all of our prices are obtained from third party sources, we also perform internal pricing reviews, including evaluating the methodology and inputs used to ensure that we determine the proper classification level of the financial instrument and reviewing securities with price changes that vary significantly from current market conditions or independent price sources. Price variances are investigated and corroborated by market data and transaction volumes. We have reviewed the pricing methodologies of our pricing service as well as other observable inputs and believe that the prices adequately consider market activity in determining fair value.

In limited circumstances we adjust the price received from the pricing service when, in our judgment, a better reflection of fair value is available based upon corroborating information and our knowledge and monitoring of market conditions such as a disparity in price of comparable securities and/or non-binding broker quotes. In other circumstances, certain securities are internally priced because prices are not provided by the pricing service.

When a price from the pricing service is not available, values are determined by obtaining broker/dealer quotes and/or market comparables. When available, we obtain multiple quotes for the same security. The ultimate value for these securities is determined based upon our best estimate of fair value using corroborating market information. As of December 31, 2022, nearly all of our available-for-sale and equity securities were priced using a third party pricing service.

The following tables present our fair value measurements on a recurring basis by asset class and level of input as of:

	December 31, 2022			
(in thousands)	Total	Level 1	Level 2	Level 3
Available-for-sale securities:				
Corporate debt securities	$ 553,382	$ 0	$ 549,696	$ 3,686
Collateralized debt obligations	102,537	0	102,537	0
Commercial mortgage-backed securities	66,054	0	55,144	10,910
Residential mortgage-backed securities	150,415	0	146,231	4,184
Other debt securities	22,273	0	22,273	0
Total available-for-sale securities	894,661	0	875,881	18,780
Equity securities:				
Financial services sector	61,084	0	57,305	3,779
Utilities sector	5,708	0	5,708	0
Energy sector	3,576	0	3,576	0
Consumer sector	1,854	0	1,854	0
Communications sector	338	0	338	0
Total equity securities	72,560	0	68,781	3,779
Total	$ 967,221	$ 0	$ 944,662	$ 22,559

	December 31, 2021			
(in thousands)	Total	Level 1	Level 2	Level 3
Available-for-sale securities:				
Corporate debt securities	$ 573,165	$ 0	$ 567,909	$ 5,256
Collateralized debt obligations	115,462	0	115,462	0
Commercial mortgage-backed securities	89,324	0	73,596	15,728
Residential mortgage-backed securities	139,922	0	131,108	8,814
Other debt securities	23,920	0	23,920	0
U.S. Treasury	4,292	0	4,292	0
Total available-for-sale securities	946,085	0	916,287	29,798
Equity securities:				
Financial services sector	71,722	1,624	68,015	2,083
Utilities sector	6,259	0	6,259	0
Energy sector	6,448	10	6,438	0
Consumer sector	3,314	0	3,314	0
Total equity securities	87,743	1,634	84,026	2,083
Total	$ 1,033,828	$ 1,634	$ 1,000,313	$ 31,881

We review the fair value hierarchy classifications each reporting period. Transfers between hierarchy levels may occur due to changes in available market observable inputs.

Level 3 Assets – 2022 Year-to-Date Change:

(in thousands)	Beginning balance at December 31, 2021	Included in earnings[(1)]	Included in other comprehensive income	Purchases	Sales	Transfers into Level 3[(2)]	Transfers out of Level 3[(2)]	Ending balance at December 31, 2022
Available-for-sale securities:								
Corporate debt securities	$ 5,256	$ 2	$ (437)	$ 6,290	$ (4,810)	$ 9,689	$ (12,304)	$ 3,686
Commercial mortgage-backed securities	15,728	(1,060)	(1,132)	0	(3,825)	11,494	(10,295)	10,910
Residential mortgage-backed securities	8,814	(693)	(1,951)	4,887	(10,229)	39,452	(36,096)	4,184
Total available-for-sale securities	29,798	(1,751)	(3,520)	11,177	(18,864)	60,635	(58,695)	18,780
Equity securities	2,083	(304)	0	2,000	0	0	0	3,779
Total Level 3 securities	$ 31,881	$ (2,055)	$ (3,520)	$ 13,177	$(18,864)	$ 60,635	$ (58,695)	$ 22,559

Level 3 Assets – 2021 Year-to-Date Change:

(in thousands)	Beginning balance at December 31, 2020	Included in earnings[(1)]	Included in other comprehensive income	Purchases	Sales	Transfers into Level 3[(2)]	Transfers out of Level 3[(2)]	Ending balance at December 31, 2021
Available-for-sale securities:								
Corporate debt securities	$ 5,825	$ 34	$ 68	$ 5,502	$ (2,681)	$ 4,290	$ (7,782)	$ 5,256
Collateralized debt obligations	0	0	0	750	0	0	(750)	0
Commercial mortgage-backed securities	19,462	(375)	(782)	3,073	(5,378)	11,933	(12,205)	15,728
Residential mortgage-backed securities	937	(5)	(69)	576	(2,229)	12,692	(3,088)	8,814
Other debt securities	0	0	0	2,588	(832)	0	(1,756)	0
Total available-for-sale securities	26,224	(346)	(783)	12,489	(11,120)	28,915	(25,581)	29,798
Equity securities	0	(5)	0	1,000	0	2,183	(1,095)	2,083
Total Level 3 securities	$ 26,224	$ (351)	$ (783)	$ 13,489	$(11,120)	$ 31,098	$ (26,676)	$ 31,881

(1) These amounts are reported as net investment income and net realized and unrealized investment (losses) gains for each of the periods presented above.

(2) Transfers into and/or (out) of Level 3 are primarily attributable to the availability of market observable information and the re-evaluation of the observability of pricing inputs.

Financial instruments not carried at fair value

The following table presents the carrying values and fair values of financial instruments categorized as Level 3 in the fair value hierarchy that are recorded at carrying value as of:

	December 31, 2022		December 31, 2021	
(in thousands)	Carrying Value	Fair Value	Carrying Value	Fair Value
Agent loans [(1)]	$ 69,476	$ 62,954	$ 66,368	$ 68,957
Long-term borrowings	—	—	94,070	103,981

(1) The discount rate used to calculate fair value at December 31, 2022 is reflective of an increase in the BB+ financial yield curve from December 31, 2021.

Note 6. Investments

Available-for-sale securities

See Note 5, "Fair Value" for additional fair value disclosures. The following tables summarize the cost and fair value, net of credit loss allowance, of our available-for-sale securities as of:

	December 31, 2022			
(in thousands)	Amortized cost	Gross unrealized gains	Gross unrealized losses	Estimated fair value
Corporate debt securities	$ 588,536	$ 657	$ 35,811	$ 553,382
Collateralized debt obligations	107,730	11	5,204	102,537
Commercial mortgage-backed securities	73,855	157	7,958	66,054
Residential mortgage-backed securities	166,412	72	16,069	150,415
Other debt securities	24,602	0	2,329	22,273
Total available-for-sale securities, net	$ 961,135	$ 897	$ 67,371	$ 894,661

	December 31, 2021			
(in thousands)	Amortized cost	Gross unrealized gains	Gross unrealized losses	Estimated fair value
Corporate debt securities	$ 565,997	$ 9,663	$ 2,495	$ 573,165
Collateralized debt obligations	115,344	456	338	115,462
Commercial mortgage-backed securities	88,636	1,465	777	89,324
Residential mortgage-backed securities	140,217	1,007	1,302	139,922
Other debt securities	23,859	197	136	23,920
U.S. Treasury	4,226	73	7	4,292
Total available-for-sale securities, net	$ 938,279	$ 12,861	$ 5,055	$ 946,085

The amortized cost and estimated fair value of available-for-sale securities at December 31, 2022 are shown below by remaining contractual term to maturity. Expected maturities may differ from contractual maturities because borrowers may have the right to call or prepay obligations with or without call or prepayment penalties.

	December 31, 2022	
(in thousands)	Amortized cost	Estimated fair value
Due in one year or less	$ 24,580	$ 24,089
Due after one year through five years	427,919	403,985
Due after five years through ten years	198,287	186,693
Due after ten years	310,349	279,894
Total available-for-sale securities, net [(1)]	$ 961,135	$ 894,661

(1) The contractual maturities of our available-for-sale securities are included in the table. However, given our intent to sell certain impaired securities, these securities are classified as current assets in our Statement of Financial Position at December 31, 2022.

The below securities have been evaluated and determined to be temporary declines in fair value for which we expect to recover our entire principal plus interest. The following tables present available-for-sale securities based on length of time in a gross unrealized loss position as of:

	December 31, 2022						
	Less than 12 months		12 months or longer		Total		
(dollars in thousands)	Fair value	Unrealized losses	Fair value	Unrealized losses	Fair value	Unrealized losses	No. of holdings
Corporate debt securities	$ 397,511	$ 21,371	$ 121,094	$ 14,440	$ 518,605	$ 35,811	916
Collateralized debt obligations	44,823	2,529	55,335	2,675	100,158	5,204	159
Commercial mortgage-backed securities	41,139	5,124	15,864	2,834	57,003	7,958	131
Residential mortgage-backed securities	109,499	9,131	31,465	6,938	140,964	16,069	161
Other debt securities	15,682	1,323	6,591	1,006	22,273	2,329	46
Total available-for-sale securities	$ 608,654	$ 39,478	$ 230,349	$ 27,893	$ 839,003	$ 67,371	1,413
Quality breakdown of available-for-sale securities:							
Investment grade	$ 525,805	$ 31,904	$ 215,742	$ 25,205	$ 741,547	$ 57,109	761
Non-investment grade	82,849	7,574	14,607	2,688	97,456	10,262	652
Total available-for-sale securities	$ 608,654	$ 39,478	$ 230,349	$ 27,893	$ 839,003	$ 67,371	1,413

	December 31, 2021						
	Less than 12 months		12 months or longer		Total		
(dollars in thousands)	Fair value	Unrealized losses	Fair value	Unrealized losses	Fair value	Unrealized losses	No. of holdings
Corporate debt securities	$ 179,281	$ 1,912	$ 12,494	$ 583	$ 191,775	$ 2,495	441
Collateralized debt obligations	64,270	278	9,370	60	73,640	338	104
Commercial mortgage-backed securities	28,001	595	917	182	28,918	777	61
Residential mortgage-backed securities	89,460	1,278	441	24	89,901	1,302	98
Other debt securities	14,576	136	0	0	14,576	136	24
U.S. Treasury	388	7	0	0	388	7	1
Total available-for-sale securities	$ 375,976	$ 4,206	$ 23,222	$ 849	$ 399,198	$ 5,055	729
Quality breakdown of available-for-sale securities:							
Investment grade	$ 330,697	$ 3,801	$ 17,112	$ 434	$ 347,809	$ 4,235	366
Non-investment grade	45,279	405	6,110	415	51,389	820	363
Total available-for-sale securities	$ 375,976	$ 4,206	$ 23,222	$ 849	$ 399,198	$ 5,055	729

Credit loss allowance on investments

The current expected credit loss allowance on agent loans was $1.0 million at both December 31, 2022 and December 31, 2021. The current expected credit loss on available-for-sale securities was $0.2 million at December 31, 2022 and less than $0.1 million at December 31, 2021.

Net investment income

Investment income (loss), net of expenses, was generated from the following portfolios for the years ended December 31:

(in thousands)	2022	2021	2020
Available-for-sale securities	$ 31,913	$ 23,795	$ 22,631
Equity securities	3,904	4,321	4,147
Limited partnerships	(10,446)	31,701	(602)
Cash equivalents and other	4,510	3,609	5,038
Total investment income	29,881	63,426	31,214
Less: investment expenses	1,296	1,249	1,461
Net investment income	$ 28,585	$ 62,177	$ 29,753

We include equity in (losses) earnings of limited partnerships, which includes both realized gains (losses) and unrealized valuation changes, in "Net investment income" in our Statements of Operations. In January 2023, the general partner of one of our private equity limited partnerships informed us of a significant decrease in the fair value of one of their underlying investments. The unrealized loss is estimated to be $11 million and will be recorded in net investment income (loss) in our first quarter 2023 financial statements consistent with our policy of recording limited partnership results on a quarter lag. Our limited partnership investments are included in the line item "Other assets" in the Statements of Financial Position. We have made no new significant limited partnership commitments since 2006, and the balance of limited partnership investments is expected to decline over time as additional distributions are received.

Net realized and unrealized investment (losses) gains

Realized and unrealized (losses) gains on investments were as follows for the years ended December 31:

(in thousands)	2022	2021	2020
Available-for-sale securities:			
Gross realized gains	$ 1,169	$ 6,884	$ 3,920
Gross realized losses	(15,219)	(1,753)	(2,585)
Net realized (losses) gains on available-for-sale securities	(14,050)	5,131	1,335
Equity securities	(13,238)	(186)	5,056
Miscellaneous	2	1	1
Net realized and unrealized investment (losses) gains	$ (27,286)	$ 4,946	$ 6,392

The portion of net unrealized (losses) gains recognized during the reporting period related to equity securities held at the reporting date is calculated as follows for the years ended December 31:

(in thousands)	2022	2021	2020
Equity securities:			
Net (losses) gains recognized during the period	$ (13,238)	$ (186)	$ 5,056
Less: net losses recognized on securities sold	(1,866)	(76)	(469)
Net unrealized (losses) gains recognized on securities held at reporting date	$ (11,372)	$ (110)	$ 5,525

Net impairment (losses) recoveries recognized in earnings

Impairments on available-for-sale securities and agent loans were as follows for the years ended December 31:

(in thousands)	2022	2021	2020
Available-for-sale securities:			
Intent to sell	$ (167)	$ (10)	$ (2,274)
Credit (impaired) recovered	(500)	67	(707)
Total available-for-sale securities	(667)	57	(2,981)
Agent loans - expected credit recoveries (losses)	0	152	(297)
Net impairment (losses) recoveries recognized in earnings	$ (667)	$ 209	$ (3,278)

Note 7. Fixed Assets

The following table summarizes our fixed assets by category as of December 31:

(in thousands)	2022	2021
Software	$ 312,126	$ 259,586
Land, buildings, and building improvements	213,263	211,624
Equipment	43,430	42,295
Furniture and fixtures	21,794	21,694
Leasehold improvements	1,393	1,342
Projects in progress	63,317	34,569
Total fixed assets, gross	655,323	571,110
Less: Accumulated depreciation and amortization	(241,449)	(196,308)
Fixed assets, net	$ 413,874	$ 374,802

Software increased primarily due to the renewal of desktop and mainframe software licenses as well as internally developed software projects completed and placed in service.

Projects in progress include certain computer software and software developments costs for internal use that are not yet subject to amortization as well as home office renovations that are not yet subject to depreciation. The increase in projects in progress is primarily due to an increase in software development costs.

Depreciation and amortization of fixed assets totaled $45.9 million, $37.2 million and $21.2 million for the years ended December 31, 2022, 2021 and 2020, respectively, and is included in cost of operations - policy issuance and renewal services.

Note 8. Borrowing Arrangements

Term Loan Credit Facility
In 2016, we entered into a credit agreement for a $100 million senior secured draw term loan credit facility ("Credit Facility") for the acquisition of real property and construction of an office building that now serves as part of our principal headquarters. On January 1, 2019, the Credit Facility converted to a fully-amortized term loan with monthly payments of principal and interest at a fixed rate of 4.35% over a period of 28 years. In May 2022, we repaid the remaining $93.2 million balance on the term loan. In conjunction with the payoff, pledged collateral was released and we accelerated amortization of $0.2 million related to unamortized loan origination and commitment fees which is included in interest expense in the Statement of Operations for the year ended December 31, 2022.

Bank Line of Credit
We have access to a $100 million bank revolving line of credit with a $25 million letter of credit sublimit that expires on October 29, 2026. In May 2022, we borrowed on the line of credit to support the payoff of the term loan. As of December 31, 2022, outstanding borrowings on the line of credit have been repaid and a total of $99.1 million remains available under the facility due to $0.9 million outstanding letters of credit, which reduce the availability for letters of credit to $24.1 million. Investments with a fair value of $114.6 million were pledged as collateral on the line of credit at December 31, 2022. These investments have no trading restrictions and are reported as available-for-sale securities and cash and cash equivalents on our Statement of Financial Position as of December 31, 2022. The bank requires compliance with certain covenants, which include leverage ratios and debt restrictions for our line of credit. We are in compliance with all covenants at December 31, 2022.

Note 9. Postretirement Benefits

Pension plans

Our pension plans consist of a noncontributory defined benefit pension plan covering substantially all employees and an unfunded supplemental employee retirement plan ("SERP") for certain members of executive and senior management. The pension plan provides benefits to covered individuals satisfying certain age and service requirements. The defined benefit pension plan and SERP each provide benefits through a final average earnings formula.

Although we are the sponsor of these postretirement plans and record the funded status of these plans, the Exchange and its subsidiaries reimburse us for approximately 58% of the annual benefit expense of these plans, which represents pension benefits for employees performing administrative services and an allocated share of costs for employees in departments that support the administrative functions. For our funded pension plan, amounts are settled in cash for the portion of pension costs allocated to the Exchange and its subsidiaries. For our unfunded SERP, we pay the obligations when due and amounts are settled in cash between entities when there is a payout.

Cost of pension plans

Pension plan cost includes the following components for the years ended December 31:

(in thousands)

	2022	2021	2020
Service cost for benefits earned	$ 50,242	$ 53,041	$ 43,492
Interest cost on benefit obligation	39,764	36,824	37,578
Expected return on plan assets	(54,557)	(50,275)	(49,411)
Prior service cost amortization	1,443	1,428	1,343
Net actuarial loss amortization	7,320	16,106	12,125
Pension plan cost (1)	$ 44,212	$ 57,124	$ 45,127

(1) Pension plan costs represent the total cost before reimbursements to Indemnity from the Exchange and its subsidiaries. The components of pension plan costs other than the service cost components are included in the line item "Other income (expense)" in the Statements of Operations after reimbursements from the Exchange and its subsidiaries.

Actuarial assumptions

The following table describes the assumptions at December 31 used to measure the year-end obligations and the net periodic benefit costs for the subsequent year:

	2022	2021	2020	2019
Employee pension plan:				
Discount rate	5.67 %	3.16 %	2.96 %	3.59 %
Expected return on assets	5.50	5.50	6.00	6.00
Rate of compensation increase (1)	3.21	3.21	3.21	3.21
SERP:				
Discount rate – pre-retirement/post-retirement (2)	5.46	3.11	2.86	3.59/3.09
Rate of compensation increase	5.00	5.00	5.00	5.00

(1) The rate of compensation increase for the employee plan is age-graded. An equivalent single compensation increase rate of 3.21% in 2022, 2021 and 2020 would produce similar results.

(2) In 2020, the SERP discount rate methodology was revised to utilize SERP specific cash outflows independent of the employee pension plan discount rate, eliminating a difference between pre-retirement and post-retirement rates.

The economic assumptions that have the most impact on the postretirement benefits expense are the discount rate and the long-term rate of return on plan assets. The discount rate assumption used to determine the benefit obligation for all periods presented was based upon a yield curve developed from corporate bond yield information.

The pension plan's expected long-term rate of return represents the average rate of return to be earned on plan assets over the period the benefits included in the benefit obligation are to be paid. To determine the expected long-term rate of return assumption, we utilized models based upon historical analysis and forward-looking views of the financial markets based upon key factors such as historical returns for the asset class' applicable indices, the correlations of the asset classes under various market conditions and consensus views on future real economic growth and inflation. The expected future return for each asset class is then combined by considering correlations between asset classes and the volatilities of each asset class to produce a reasonable range of asset return results within which our expected long-term rate of return assumption falls.

Funding policy/funded status

Our funding policy is generally to contribute an amount equal to the greater of the target normal cost for the plan year, or the amount necessary to fund the plan to 100%. Accordingly, we made a $25 million contribution during 2022. We expect to contribute an estimated $95 million in 2023. Actual contributions may vary from the current estimate depending on changes in assumptions, regulatory requirements and funding decisions, or due to future plan changes. The following table sets forth the funded status of the pension plans and the amounts recognized in the Statements of Financial Position at December 31:

(in thousands)

	2022	2021
Funded status at end of year	$ (53,948)	$ (132,411)
Pension liabilities – due within one year [(1)]	$ (2,724)	$ (2,028)
Pension liabilities – due after one year	(51,224)	(130,383)
Net amount recognized	$ (53,948)	$ (132,411)

(1) The current portion of pension liabilities is included in accounts payable and accrued liabilities.

Benefit obligations

Benefit obligations are described in the following tables. Accumulated and projected benefit obligations represent the obligations of a pension plan for past service as of the measurement date. The accumulated benefit obligation is the present value of pension benefits earned as of the measurement date based on employee service and compensation prior to that date. It differs from the projected benefit obligation in that the accumulated benefit obligation includes no assumptions to reflect expected future compensation. The following table sets forth a reconciliation of beginning and ending balances of the projected benefit obligation, as well as the accumulated benefit obligation at December 31:

(in thousands)

	2022	2021
Projected benefit obligation, beginning of year	$ 1,272,654	$ 1,246,159
Service cost for benefits earned	50,242	53,041
Interest cost on benefit obligation	39,764	36,824
Plan amendments	1,620	4,059
Actuarial gain	(448,330)	(38,400)
Benefits paid	(32,136)	(29,029)
Projected benefit obligation, end of year	$ 883,814	$ 1,272,654
Accumulated benefit obligation, end of year	$ 762,180	$ 1,037,820

Projected benefit obligations decreased $388.8 million at December 31, 2022 compared to December 31, 2021 primarily due to the higher discount rate used to measure the future benefit obligations. The discount rate for the employee pension plan increased to 5.67% in 2022 from 3.16% in 2021.

Both the defined benefit pension plan and SERP had projected benefit obligations in excess of plan assets at December 31:

(in thousands)

	2022	2021
Projected benefit obligation	$ 883,814	$ 1,272,654
Plan assets	829,866	1,140,243

The SERP had accumulated benefit obligations in excess of plan assets at December 31:

(in thousands)

	2022	2021
Accumulated benefit obligation	$ 21,577	$ 29,190
Plan assets	—	—

<u>*Pension assets*</u>

The following table sets forth a reconciliation of beginning and ending balances of the fair value of plan assets at December 31:

(in thousands)

	2022	2021
Fair value of plan assets, beginning of year	$ 1,140,243	$ 1,081,061
Actual return on plan assets	(304,005)	86,966
Employer contributions	25,764	1,245
Benefits paid	(32,136)	(29,029)
Fair value of plan assets, end of year	$ 829,866	$ 1,140,243

<u>*Accumulated other comprehensive (income) loss*</u>

Net actuarial (gain) loss and prior service cost included in accumulated other comprehensive (income) loss that were not yet recognized as components of net benefit costs were as follows at December 31:

(in thousands)

	2022	2021
Net actuarial (gain) loss	$ (69,564)	$ 27,524
Prior service cost	12,378	12,201
Net amount not yet recognized	$ (57,186)	$ 39,725

<u>*Other comprehensive income*</u>

Amounts recognized in other comprehensive income for pension plans were as follows for the years ended December 31:

(in thousands)

	2022	2021
Net actuarial gain arising during the year	$ (89,768)	$ (75,091)
Amortization of net actuarial loss	(7,320)	(16,106)
Amortization of prior service cost	(1,443)	(1,428)
Plan amendments (1)	1,620	4,059
Total recognized in other comprehensive income	$ (96,911)	$ (88,566)

(1) Plan amendments relate to new SERP participants.

Asset allocation

The employee pension plan utilizes a return seeking and a liability asset matching allocation strategy. It is based upon the understanding that 1) equity investments are expected to outperform debt investments over the long-term, 2) the potential volatility of short-term returns from equities is acceptable in exchange for the larger expected long-term returns, and 3) a portfolio structured across investment styles and markets (both domestic and foreign) reduces volatility. As a result, the employee pension plan's investment portfolio utilizes a broadly diversified asset allocation across domestic and foreign equity and debt markets. The investment portfolio is composed of commingled pools, an exchange traded fund, and a separate account that are dedicated exclusively to the management of employee benefit plan assets.

The target and actual asset allocations for the portfolio are as follows for the years ended December 31:

Asset allocation:	Target asset allocation 2022	Target asset allocation 2021	Actual asset allocation 2022	Actual asset allocation 2021
Equity securities:				
U.S. equity securities	27 % (1)	27 %	27 %	27 %
Non-U.S. equity securities	18 (2)	18	19	18
Total equity securities	45	45	46	45
Debt securities	54 (3)	54	53	54
Other	1 (4)	1	1	1
Total	100 %	100 %	100 %	100 %

(1) U.S. equity securities – 100% seek to achieve excess returns relative to the Russell 3000 Index.

(2) Non-U.S. equity securities – 11% are allocated to international small cap investments, while another 20% are allocated to international emerging market investments. The remaining 69% of the Non-U.S. equity securities are allocated to investments seeking to achieve excess returns relative to an international market index.

(3) Debt securities – 58% are allocated to long U.S. Treasury Strips, 42% are allocated to U.S. corporate bonds with an emphasis on long duration bonds rated A or better.

(4) Institutional money market fund.

The following tables present fair value measurements for the pension plan assets by major category and level of input as of:

	December 31, 2022				
(in thousands)	Total	Level 1 Fair Value	Level 2 Fair Value	Level 3 Fair Value	Net Asset Value (NAV)
Equity securities:					
U.S. equity securities	$ 219,410	$ 204,838	$ 0	$ 0	$ 14,572
Non-U.S. equity securities	160,009	110,799	0	0	49,210
Total equity securities	379,419	315,637	0	0	63,782
Debt securities	439,004	0	0	0	439,004
Other	11,443	11,443	0	0	0
Total	$ 829,866	$ 327,080	$ 0	$ 0	$ 502,786

	December 31, 2021				
(in thousands)	Total	Level 1 Fair Value	Level 2 Fair Value	Level 3 Fair Value	Net Asset Value (NAV) (1)
Equity securities:					
U.S. equity securities	$ 305,440	$ 0	$ 0	$ 0	$ 305,440
Non-U.S. equity securities	200,949	139,688	0	0	61,261
Total equity securities	506,389	139,688	0	0	366,701
Debt securities	620,337	0	0	0	620,337
Other	13,517	13,517	0	0	0
Total	$ 1,140,243	$ 153,205	$ 0	$ 0	$ 987,038

(1) Amounts were reclassified from Level 2 fair value to NAV to conform to current period presentation.

Estimates of fair values of the pension plan assets are obtained primarily from the trustee and custodian of our pension plan. Our Level 1 category includes a money market mutual fund, an exchange traded fund, and a separate account for which the fair value is determined using an exchange traded price provided by the trustee and custodian. Commingled pools are valued based on NAV per share or unit as a practical expedient as reported by the fund manager, multiplied by the number of shares or units held as of the measurement date. Accordingly, these NAV-based investments have been excluded from the fair value hierarchy. These investments have minimal redemption notice periods and are redeemable daily at the NAV, less transaction fees, without significant restrictions. There are no significant unfunded commitments related to these investments.

Estimated future benefit payments

The following table sets forth amounts of benefits expected to be paid over the next 10 years from our pension plans as of:

(in thousands)

Year ending December 31,	Expected future benefit payments
2023	$ 33,827
2024	36,175
2025	39,205
2026	41,731
2027	44,904
2028 - 2032	276,456

Employee savings plan
All full-time and regular part-time employees are eligible to participate in a qualified 401(k) savings plan. We match 100% of the participant contributions up to 3% of compensation and 50% of participant contributions over 3% and up to 5% of compensation. Matching contributions paid to the plan were $16.7 million in 2022, $16.1 million in 2021, and $15.8 million in 2020. The Exchange and its subsidiaries reimbursed us for approximately 59% of the matching contributions. Employees are permitted to invest the employer-matching contributions in our Class A common stock. Employees, other than executive and senior officers, may sell the shares at any time without restriction, provided they are in compliance with applicable insider trading laws; sales by executive and senior officers are subject to additional pre-clearance restrictions imposed by our insider trading policies. The plan acquires shares in the open market necessary to meet the obligations of the plan. Plan participants held 0.1 million and 0.2 million shares of our Class A common stock at December 31, 2022 and 2021, respectively.

Note 10. Incentive and Deferred Compensation Plans

We have two incentive plans and two deferred compensation plans for our executives, senior vice presidents and other selected officers, and two deferred compensation plans for our outside directors.

Annual incentive plan
Our annual incentive plan ("AIP") is a bonus plan that pays cash to our executives, senior vice presidents and other selected officers annually. Participants can elect to defer up to 100% of the award under either the deferred compensation plan or the incentive compensation deferral plan. If the funding qualifier is met, plan participants are eligible to receive the incentive based upon attainment of corporate and individual performance measures, which can include various financial measures. The measures are established at the beginning of each year by the Executive Compensation and Development Committee of our Board of Directors ("ECDC"), with ultimate approval by the full Board of Directors. The corporate performance measures included the reported growth in direct written premium and statutory combined ratio of the Exchange and its property and casualty subsidiaries for all periods presented. For 2022 and 2021, growth in policies in force was also included as a performance measure.

Long-term incentive plan
Our long-term incentive plan ("LTIP") is a performance based incentive plan designed to reward executives, senior vice presidents and other selected officers who can have a significant impact on our long-term performance, and to further align the interests of such employees with those of our shareholders. The LTIP permits grants of performance shares or units, or phantom shares, to be satisfied with shares of our Class A common stock or cash payment as determined by the ECDC. Participants can elect to defer up to 100% of the award under the incentive compensation deferral plan. The ECDC determines the form of the award to be granted at the beginning of each performance period, which is generally a three-year period. The number of shares of our common stock authorized for grant under the LTIP is 1.5 million shares, with no one person able to receive more than 250,000 shares or the equivalent of $5 million during any one performance period. We repurchase our Class A common stock on the open market to settle stock awards under the plan. We do not issue new shares of common stock to settle stock awards. LTIP awards are considered vested at the end of each applicable performance period.

The LTIP provides the recipient the right to earn performance shares or units, or phantom stock, based on the level of achievement of performance goals as defined by us. Performance measures and a peer group of property and casualty companies to be used for comparison are determined by the ECDC. The performance measures for all periods presented were the reported growth in direct written premium and statutory combined ratio of the Exchange and its property and casualty subsidiaries and return on invested assets over a three-year performance period as compared to the results of the peer group over the same period. Because the award is based upon a comparison to results of a peer group over a three-year period, the award accrual is based upon estimates of probable results for the remaining performance period. This estimate is subject to variability if our results or the results of the peer group are substantially different than the results we project.

The fair value of LTIP awards is measured at each reporting date at the current share price of our Class A common stock. A liability is recorded and compensation expense is recognized ratably over the performance period.

At December 31, 2022, the plan awards for the 2020-2022 performance period, which will be granted as a cash award, were fully vested. Distributions will be made in 2023 once peer group financial information becomes available. The total estimated plan award based upon the peer group information as of September 30, 2022 is $5.4 million. At December 31, 2021, the fully vested cash awards for the 2019-2021 performance period that were not deferred totaled $3.8 million and were paid to participants in June 2022. At December 31, 2020, the fully vested cash awards for the 2018-2020 performance period that were not deferred totaled $10.9 million and were paid to participants in June 2021. At December 31, 2019, the fully vested cash awards for the 2017-2019 performance period that were not deferred totaled $7.4 million and were paid to participants in June 2020. The ECDC has determined that the plan awards for the 2021-2023 and 2022-2024 performance periods will be paid in cash.

The Exchange and its subsidiaries reimburse us for compensation costs of employees performing administrative services. Earned compensation costs are allocated to these entities and reimbursed to us in cash once the payout is made. The total compensation cost charged to operations related to these LTIP awards, net of forfeitures, was $3.4 million in 2022, $3.0 million in 2021, and $12.0 million in 2020. The related tax benefits recognized in income were $0.7 million in 2022, $0.6 million in 2021, and $2.5 million in 2020. The Exchange and its subsidiaries reimburse us for approximately 41% of the annual compensation cost of these plans. At December 31, 2022, there was $5.9 million of total unrecognized compensation cost for non-vested LTIP awards related to open performance periods. Unrecognized compensation is expected to be recognized over a period of two years.

Deferred compensation plan

Our deferred compensation plan allows executives, senior vice presidents and other selected officers to elect to defer receipt of a portion of their compensation and AIP cash awards until a later date. Employer 401(k) matching contributions that are in excess of the annual contribution or compensation limits are also credited to the participant accounts for those who elected to defer receipt of some portion of their base salary. Participants select hypothetical investment funds for their deferrals, which are credited with the hypothetical returns generated.

Incentive compensation deferral plan

We have an unfunded, non-qualified incentive compensation deferral plan for participants of the AIP and LTIP. Participants can elect to defer up to 100% of their annual AIP award and/or up to 100% of their LTIP award for each performance period. Deferred awards will be credited to a deferred stock account as credits denominated in shares of our Class A common stock until retirement or other separation from service. Participants are 100% vested at date of deferral. The shares are held in a rabbi trust, which was established to hold the shares earned under both the incentive compensation deferral plan and the deferred stock compensation plan for outside directors. The rabbi trust is classified and accounted for as equity in a manner consistent with the accounting for treasury stock. Dividends received on the shares in the rabbi trust are used to purchase additional shares. Vested share credits will be paid to participants from the rabbi trust upon separation from service in approximate equal annual installments of Class A shares for a period of three years. In 2022, the rabbi trust purchased 2,879 shares of our common stock in the open market at an average price of $173.52 for $0.5 million to satisfy the liability for the 2021 AIP awards and 4,167 shares at an average price of $178.45 for $0.7 million to satisfy the liability for the 2019-2021 LTIP performance period awards deferred under the incentive compensation deferral plan. In 2021, the rabbi trust purchased 2,570 shares of our common stock in the open market at an average price of $232.81 for $0.6 million to satisfy the liability for the 2020 AIP awards and 17,881 shares at an average share price of $191.25 for $3.4 million to satisfy the liability for the 2018-2020 LTIP performance period awards deferred under the incentive compensation deferral plan. In 2020, the rabbi trust purchased 3,934 shares of our common stock in the open market at an average price of $155.92 for $0.6 million to satisfy the liability for the 2019 AIP awards deferred under the incentive compensation deferral plan and 18,126 shares at an average price of $185.31 for $3.4 million to satisfy the liability for the 2017-2019 LTIP performance period awards deferred under the incentive compensation deferral plan.

Deferred compensation plans for outside directors

We have a deferred compensation plan for our outside directors that allows participants to defer receipt of a portion of their annual compensation until a later date. Participants select hypothetical investment funds for their deferrals, which are credited with the hypothetical returns generated.

We also have a deferred stock compensation plan for our outside directors to further align the interests of directors with those of our shareholders that provides for a portion of the directors' annual compensation in shares of our Class A common stock. Each director vests in the grant 25% every three months over the course of a year. Dividends paid by us are credited to each director's account and vest immediately. We do not issue new shares of common stock to directors. Our practice is to repurchase shares of our Class A common stock in the open market to satisfy these awards, which are held in the rabbi trust.

The rabbi trust purchased 6,048 shares of our common stock on the open market at an average price of $201.93 for $1.2 million in 2022, 5,238 shares at an average price of $212.41 for $1.1 million in 2021, and 7,401 shares at an average price of $201.78 for $1.5 million in 2020 to satisfy the liability of the stock compensation plan for outside directors. The shares are distributed to the outside director from the rabbi trust upon ending board service. Director compensation charged to operations related to these awards totaled $0.8 million in both 2022 and 2021, and $0.9 million in 2020.

The following table sets forth a reconciliation of beginning and ending balances of our deferred executive compensation liability as of December 31:

(in thousands)

	2022	2021	2020
Deferred executive compensation, beginning of the year	$ 27,208	$ 32,223	$ 24,616
Annual incentive plan awards	6,305	6,768	5,619
Long-term incentive plan awards	3,417	3,471	12,381
Employer match and hypothetical earnings on deferred compensation	404	3,043	2,962
Total plan awards and earnings	10,126	13,282	20,962
Total plan awards paid	(10,413)	(16,647)	(10,121)
Compensation deferred	2,528	4,765	4,668
Distributions from the deferred compensation plans	(742)	(811)	(2,081)
Forfeitures (1)	—	(473)	(356)
Funding of rabbi trust for deferred stock compensation plan for outside directors	(1,221)	(1,113)	(1,493)
Funding of rabbi trust for incentive compensation deferral plan (2)	(1,726)	(4,018)	(3,972)
Deferred executive compensation, end of the year	$ 25,760	$ 27,208	$ 32,223

(1) Forfeitures are the result of plan participants who separated from service and are recognized in the year they occur.

(2) In 2022, funding includes $0.5 million representing shares held back to satisfy tax withholding on rabbi trust distributions that reduced funding requirements for performance award deferrals.

Equity compensation plan

We also have an equity compensation plan ("ECP") designed to reward key employees, as determined by the ECDC or the chief executive officer, who can have a significant impact on our long-term performance, and to further align the interests of such employees with those of our shareholders. The ECP permits grants of restricted shares, restricted share units and other share based awards, to be satisfied with shares of our Class A common stock or cash. The ECDC determines the form of the award to be granted at the beginning of each performance period. The number of shares of our Class A common stock authorized for grant under the ECP is 100,000 shares, with no one person able to receive more than 10,000 shares in a calendar year. We do not issue new shares of common stock to satisfy plan awards. Share awards are settled through the repurchase of our Class A common stock on the open market. Restricted share awards may be entitled to receive dividends payable during the performance period, or, if subject to performance goals, to receive dividend equivalents payable upon vesting. Dividend equivalents may provide for the crediting of interest or hypothetical investment experience, payable after expiration of the performance period. Vesting conditions are determined at the time the award is granted and may include continuation of employment for a specific period, satisfaction of performance goals and the defined performance period, and the satisfaction of any other terms and conditions as determined to be appropriate. The ECP expires December 31, 2031, unless earlier amended or terminated by our Board of Directors.

To date, all awards have been satisfied with shares of our Class A common stock. In 2022, we purchased 1,786 Class A shares with an average share price of $190.68 and a market value of $0.3 million to satisfy the liability for the 2019 plan year. In 2021, we purchased 978 Class A shares with an average share price of $242.01 and a market value of $0.2 million to satisfy the liability for the 2018 plan year. In 2020, we purchased 1,787 shares with an average share price of $165.82 and a market value of $0.3 million to satisfy the liability for the 2017 plan year. The total compensation charged to operations related to these ECP awards was $0.8 million in 2022, $0.2 million in 2021, and $0.7 million in 2020. The Exchange and its subsidiaries reimburse us for earned compensation costs of employees performing administrative services, which can fluctuate each year based on the plan participants. The Exchange and its subsidiaries reimbursed us for approximately 3%, 33%, and 59% of the awards paid in 2022, 2021, and 2020 respectively. Unearned compensation expense of $1.3 million is expected to be recognized over a period of three years.

Note 11. Income Taxes

The provision for income taxes consists of the following for the years ended December 31:

(in thousands)

	2022	2021	2020
Current income tax expense	$ 68,415	$ 80,398	$ 80,373
Deferred income tax expense (benefit)	9,468	(1,854)	(5,162)
Income tax expense	$ 77,883	$ 78,544	$ 75,211

A reconciliation of the provision for income taxes, with amounts determined by applying the statutory federal income tax rate to pre-tax income, is as follows for the years ended December 31:

(in thousands)

	2022	2021	2020
Income tax at statutory rate	$ 79,055	$ 79,045	$ 77,388
Other, net	(1,172)	(501)	(2,177)
Income tax expense	$ 77,883	$ 78,544	$ 75,211

Temporary differences and carry-forwards, which give rise to deferred tax assets and liabilities, are as follows as of December 31:

(in thousands)

	2022	2021
Deferred tax assets:		
Other employee benefits	$ 16,358	$ 15,273
Unrealized losses on investments	15,403	—
Deferred revenue	3,710	3,963
Allowance for management fee returned on cancelled policies	3,405	3,330
Pension and other postretirement benefits	—	21,545
Other	3,902	3,484
Total deferred tax assets	42,778	47,595
Deferred tax liabilities:		
Depreciation	37,682	35,204
Pension and other postretirement benefits	15,473	—
Prepaid expenses	1,731	2,458
Unrealized gains on investments	—	8,713
Other	1,967	1,075
Total deferred tax liabilities	56,853	47,450
Net deferred tax (liability) asset	$ (14,075)	$ 145

If we determine that any of our deferred tax assets will not result in future tax benefits, a valuation allowance must be established for the portion of the assets that are not expected to be realized. We had no valuation allowance recorded at December 31, 2022 or 2021.

We do not have any unrecognized tax benefit that, if recognized, would affect our effective tax rate as of December 31, 2022 and 2021. Any interest expense related to uncertain tax positions would be recognized in income tax expense.

Tax years ending December 31, 2021, 2020 and 2019 remain open to IRS examination. We are not currently under IRS audit, nor have we been notified of an upcoming IRS audit.

We are the attorney-in-fact for the subscribers (policyholders) at the Exchange, a reciprocal insurance exchange. In that capacity, we provide all services and facilities necessary to conduct the Exchange's insurance business. Indemnity and the Exchange together constitute a single insurance business. Consequently, we are not subject to state corporate income or franchise taxes in states where the Exchange conducts its business and the states collect premium tax in lieu of corporate income or franchise tax, as a result of the Exchange's remittance of premium taxes in those states.

Note 12. Capital Stock

Class A and B common stock

We have two classes of common stock: Class A, which has a dividend preference, and Class B, which has voting power and a conversion right. Each share of Class A common stock outstanding at the time of the declaration of any dividend upon shares of Class B common stock shall be entitled to a dividend payable at the same time, at the same record date, and in an amount at least equal to 2/3 of 1.0% of any dividend declared on each share of Class B common stock. We may declare and pay a dividend in respect to Class A common stock without any requirement that any dividend be declared and paid in respect to Class B common stock. Sole shareholder voting power is vested in Class B common stock except insofar as any applicable law shall permit Class A common shareholders to vote as a class in regards to any changes in the rights, preferences, and privileges attaching to Class A common stock. Holders of Class B shares may, at their option, convert their shares into Class A shares at the rate of 2,400 Class A shares per Class B share. There were no shares of Class B common stock converted into Class A common stock in 2022, 2021 or 2020.

Stock repurchases

Our Board of Directors authorized a stock repurchase program effective January 1, 1999 allowing the repurchase of our outstanding Class A nonvoting common stock. In 2011, our Board of Directors approved a continuation of the current stock repurchase program for a total of $150 million, with no time limitation. Treasury shares are recorded in the Statements of Financial Position at total cost based upon trade date. There were no shares repurchased under this program during 2022, 2021 or 2020. We had approximately $17.8 million of repurchase authority remaining under this program at December 31, 2022, based upon trade date.

We made stock repurchases in 2022, 2021, and 2020 outside of our publicly announced share repurchase program related to stock-based awards. See Note 10, "Incentive and Deferred Compensation Plans" for additional information.

Note 13. Accumulated Other Comprehensive Income (Loss)

Changes in accumulated other comprehensive income ("AOCI") (loss) by component, including amounts reclassified to other comprehensive income ("OCI") (loss) and the related line item in the Statements of Operations where net income is presented, are as follows for the year ended December 31:

(in thousands)	2022			2021			2020		
	Before Tax	Income Tax	Net	Before Tax	Income Tax	Net	Before Tax	Income Tax	Net
Investment securities:									
AOCI, beginning of year	$ 7,722	$ 1,621	$ 6,101	$ 29,384	$ 6,171	$ 23,213	$ 5,664	$ 1,189	$ 4,475
OCI (loss) before reclassifications	(89,010)	(18,692)	(70,318)	(16,474)	(3,460)	(13,014)	22,074	4,636	17,438
Realized investment losses (gains)	14,050	2,951	11,099	(5,131)	(1,078)	(4,053)	(1,335)	(280)	(1,055)
Impairment losses (recoveries)	667	140	527	(57)	(12)	(45)	2,981	626	2,355
OCI (loss)	(74,293)	(15,601)	(58,692)	(21,662)	(4,550)	(17,112)	23,720	4,982	18,738
AOCI (loss), end of year	$ (66,571)	$ (13,980)	$ (52,591)	$ 7,722	$ 1,621	$ 6,101	$ 29,384	$ 6,171	$ 23,213
Pension and other postretirement plans:									
AOCI (loss), beginning of year	$ (39,734)	$ (8,345)	$ (31,389)	$ (128,300)	$ (26,944)	$ (101,356)	$ (153,600)	$ (32,257)	$ (121,343)
OCI before reclassifications	88,148	18,511	69,637	71,032	14,917	56,115	11,832	2,485	9,347
Amortization of prior service costs [(1)]	1,443	303	1,140	1,428	300	1,128	1,343	282	1,061
Amortization of net actuarial loss [(1)]	7,329	1,540	5,789	16,106	3,382	12,724	12,125	2,546	9,579
OCI	96,920	20,354	76,566	88,566	18,599	69,967	25,300	5,313	19,987
AOCI (loss), end of year	$ 57,186	$ 12,009	$ 45,177	$ (39,734)	$ (8,345)	$ (31,389)	$ (128,300)	$ (26,944)	$ (101,356)
Total									
AOCI (loss), beginning of year	$ (32,012)	$ (6,724)	$ (25,288)	$ (98,916)	$ (20,773)	$ (78,143)	$ (147,936)	$ (31,068)	$ (116,868)
Investment securities	(74,293)	(15,601)	(58,692)	(21,662)	(4,550)	(17,112)	23,720	4,982	18,738
Pension and other postretirement plans	96,920	20,354	76,566	88,566	18,599	69,967	25,300	5,313	19,987
OCI	22,627	4,753	17,874	66,904	14,049	52,855	49,020	10,295	38,725
AOCI (loss), end of year	$ (9,385)	$ (1,971)	$ (7,414)	$ (32,012)	$ (6,724)	$ (25,288)	$ (98,916)	$ (20,773)	$ (78,143)

(1) *These components of AOCI (loss) are included in the computation of net periodic pension cost. See Note 9, "Postretirement Benefits", for additional information.*

Note 14. Related Party

Management fee
A management fee is charged to the Exchange for services we provide under the subscriber's agreement with subscribers at the Exchange. The fee is a percentage of direct and affiliated assumed premiums written by the Exchange. This percentage rate is determined at least annually by our Board of Directors but cannot exceed 25%. The management fee rate charged the Exchange was 25% in 2022, 2021 and 2020. The Board of Directors elected to maintain the fee at 25% beginning January 1, 2023.

There is no provision in the subscriber's agreement for termination of our appointment as attorney-in-fact by the subscribers at the Exchange and the appointment is not affected by a policyholder's disability or incapacity.

Insurance holding company system
Most states have enacted legislation that regulates insurance holding company systems, defined as two or more affiliated persons, one or more of which is an insurer. The Exchange has the following wholly owned property and casualty subsidiaries: Erie Insurance Company, Erie Insurance Company of New York, Erie Insurance Property & Casualty Company and Flagship City Insurance Company, and a wholly owned life insurance company, Erie Family Life Insurance Company. Indemnity and the Exchange, and its wholly owned subsidiaries, meet the definition of an insurance holding company system.

All transactions within a holding company system affecting the member insurers of the holding company system must be fair and reasonable and any charges or fees for services performed must be reasonable. Approval by the applicable insurance commissioner is required prior to the consummation of transactions affecting the members within a holding company system.

Shared facilities
We leased the home office from the Exchange until December 31, 2021, at which time we purchased the home office properties from the Exchange at the appraised value of $97.5 million to align the ownership interest of these facilities with the functions being performed at the home office campus, which are mainly Indemnity's management operations. Lease expense totaled $6.1 million in both 2021 and 2020. Operating expenses, including utilities, cleaning, repairs, real estate taxes, property insurance, and leasehold improvements totaled $15.7 million in both 2021 and 2020. The Exchange and its subsidiaries reimbursed us for rent costs and related operating expenses of shared facilities used to perform administrative services, which are allocated based upon usage or square footage occupied. Reimbursements related to the use of this space totaled $4.8 million and $4.6 million in 2021 and 2020, respectively.

Effective July 1, 2021, the Exchange and its subsidiaries entered into a service agreement with Indemnity to use space in Indemnity-owned properties. The home office was added to this agreement effective January 1, 2022. The amount charged is based on rental rates of like property in Erie, Pennsylvania and the usage or square footage occupied. In 2022 and 2021, income earned from the Exchange and its subsidiaries for the use of space totaled $2.2 million and $0.2 million, respectively. Operating expenses for Indemnity-owned properties under this service agreement include utilities, cleaning, repairs, real estate taxes, property insurance, and leasehold improvements. These expenses totaled $19.5 million and $0.8 million in 2022 and 2021, respectively. The Exchange and its subsidiaries reimbursed us for operating expenses of shared facilities used to perform administrative services, which are allocated based upon usage or square footage occupied. Reimbursements related to the use of this space totaled $4.1 million and $0.1 million in 2022 and 2021, respectively.

Note 15. Concentrations of Credit Risk

Financial instruments could potentially expose us to concentrations of credit risk, including our unsecured receivables from the Exchange. The majority of our revenue and receivables are from the Exchange and its affiliates. See also Note 1, "Nature of Operations". Net management fee amounts and other reimbursements due from the Exchange and its affiliates were $524.9 million and $479.1 million at December 31, 2022 and 2021, respectively. Upon adoption of ASU 2016-13 in 2020, we recorded an allowance for current expected credit losses of $0.6 million related to the receivables from the Exchange and affiliates. See also Note 2, "Significant Accounting Policies". The current expected credit loss allowance was $0.6 million and $0.5 million at December 31, 2022 and 2021, respectively.

Note 16. Commitments and Contingencies

We have an agreement with a bank for an agent loan participation program. The maximum amount of loans to be funded through this program is $100 million. We have committed to fund a minimum of 30% of each loan executed through this program. As of December 31, 2022, loans executed under this agreement totaled $51.2 million, of which our portion of the loans is $17.4 million. Additionally, we have agreed to guarantee a portion of the funding provided by the other participants in the program in the event of default. As of December 31, 2022, our maximum potential amount of future payments on the guaranteed portion is $6.3 million. All loan payments under the participation program are current as of December 31, 2022.

We are involved in litigation arising in the ordinary course of conducting business. In accordance with current accounting standards for loss contingencies and based upon information currently known to us, we establish reserves for litigation when it is probable that a loss associated with a claim or proceeding has been incurred and the amount of the loss or range of loss can be reasonably estimated. When no amount within the range of loss is a better estimate than any other amount, we accrue the minimum amount of the estimable loss. To the extent that such litigation against us may have an exposure to a loss in excess of the amount we have accrued, we believe that such excess would not be material to our financial condition, results of operations, or cash flows. Legal fees are expensed as incurred. We believe that our accruals for legal proceedings are appropriate and, individually and in the aggregate, are not expected to be material to our financial condition, results of operations, or cash flows.

We review all litigation on an ongoing basis when making accrual and disclosure decisions. For certain legal proceedings, we cannot reasonably estimate losses or a range of loss, if any, particularly for proceedings that are in their early stages of development or where the plaintiffs seek indeterminate damages. Various factors, including, but not limited to, the outcome of potentially lengthy discovery and the resolution of important factual questions, may need to be determined before probability can be established or before a loss or range of loss can be reasonably estimated. If the loss contingency in question is not both probable and reasonably estimable, we do not establish an accrual and the matter will continue to be monitored for any developments that would make the loss contingency both probable and reasonably estimable. In the event that a legal proceeding results in a substantial judgment against, or settlement by, us, there can be no assurance that any resulting liability or financial commitment would not have a material adverse effect on our financial condition, results of operations, or cash flows.

Note 17. Supplementary Data on Cash Flows

A reconciliation of net income to net cash provided by operating activities as presented in the Statements of Cash Flows is as follows for the years ended December 31:

(in thousands)	2022	2021	2020
Cash flows from operating activities:			
Net income	$ 298,569	$ 297,860	$293,304
Adjustments to reconcile net income to net cash provided by operating activities:			
Depreciation and amortization	46,166	37,210	21,195
Deferred income tax expense (benefit)	9,468	(1,854)	(5,162)
Lease amortization expense	5,554	11,887	13,108
Losses (gains) and impairment losses (recoveries) on investments	27,953	(2,307)	(3,114)
Loss (gain) on disposal of fixed assets	172	(13)	(15)
Net investment loss (income)	12,916	(25,944)	5,878
(Decrease) increase in deferred compensation	(1,463)	(5,006)	7,611
(Increase) decrease in receivables from affiliates	(45,814)	15,514	(26,548)
Increase in accrued investment income	(1,998)	(157)	(713)
Increase in pension liability	15,647	52,755	41,227
(Increase) decrease in prepaid expenses and other assets	(25,843)	12,161	(4,771)
Increase (decrease) in accounts payable and accrued expenses	18,993	(4,823)	(14,307)
Increase (decrease) in commissions payable	29,282	8,408	(625)
(Decrease) increase in accrued agent bonuses	(25,271)	10,279	14,105
Increase (decrease) in contract liability	1,821	(3,176)	1,422
Net cash provided by operating activities	$ 366,152	$ 402,794	$342,595

Note 18. Subsequent Events

No items were identified in this period subsequent to the financial statement date that required adjustment or additional disclosure, other than the disclosure made in Note 6, "Investments" regarding limited partnerships.

ITEM 9. CHANGES IN AND DISAGREEMENTS WITH ACCOUNTANTS ON ACCOUNTING AND FINANCIAL DISCLOSURE

None.

ITEM 9A. CONTROLS AND PROCEDURES

Evaluation of Disclosure Controls and Procedures

We maintain disclosure controls and procedures designed to ensure that information required to be disclosed in our reports filed under the Securities Exchange Act of 1934, as amended, is recorded, processed, summarized and reported within the time periods specified in the Securities and Exchange Commission rules and forms, and that such information is accumulated and communicated to management, including our Chief Executive Officer and Chief Financial Officer, as appropriate, to allow for timely decisions regarding required disclosures.

As required by the Securities and Exchange Commission Rule 13a-15(e), we carried out an evaluation, under the supervision and with the participation of management, including our Chief Executive Officer and Chief Financial Officer, of the effectiveness of the design and operation of our disclosure controls and procedures as of December 31, 2022. Based upon the foregoing, our Chief Executive Officer and Chief Financial Officer concluded that our disclosure controls and procedures were effective.

Changes in Internal Control over Financial Reporting

There has been no change in our internal controls over financial reporting during our most recent fiscal quarter that has materially affected, or is reasonably likely to materially affect our internal controls over financial reporting. Our process for evaluating controls and procedures is continuous and encompasses constant improvement of the design and effectiveness of established controls and procedures.

Management's Report on Internal Control over Financial Reporting

Management is responsible for establishing and maintaining adequate internal control over financial reporting of Erie Indemnity Company, as defined in Rules 13a-15(f) under the Exchange Act. Under the supervision and with the participation of our management, including our Chief Executive Officer and Chief Financial Officer, we conducted an evaluation of the effectiveness of the Erie Indemnity Company's internal control over financial reporting based upon the framework in the *Internal Control-Integrated Framework* issued in 2013 by the Committee of Sponsoring Organizations of the Treadway Commission. Based upon our evaluation under the framework in the *Internal Control-Integrated Framework* issued in 2013, management has concluded that Erie Indemnity Company's internal control over financial reporting was effective as of December 31, 2022.

/s/ Timothy G. NeCastro	/s/ Gregory J. Gutting	/s/ Jorie L. Novacek
Timothy G. NeCastro President and Chief Executive Officer March 1, 2023	Gregory J. Gutting Executive Vice President and Chief Financial Officer March 1, 2023	Jorie L. Novacek Senior Vice President and Controller March 1, 2023

Our independent auditor, Ernst & Young LLP, a registered public accounting firm, has issued an attestation report on our internal control over financial reporting. This report appears on the following page.

ITEM 9B. OTHER INFORMATION

There was no additional information in the fourth quarter of 2022 that has not already been filed in a Form 8-K.

Report of Independent Registered Public Accounting Firm

To the Shareholders and the Board of Directors of Erie Indemnity Company

Opinion on Internal Control over Financial Reporting

We have audited Erie Indemnity Company's internal control over financial reporting as of December 31, 2022, based on criteria established in Internal Control-Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission (2013 framework) (the COSO criteria). In our opinion, Erie Indemnity Company (the Company) maintained, in all material respects, effective internal control over financial reporting as of December 31, 2022, based on the COSO criteria.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the statements of financial position of the Company as of December 31, 2022 and 2021, the related statements of operations, comprehensive income, shareholders' equity, and cash flows for each of the three years in the period ended December 31, 2022 and the related notes of the Company and our report dated March 1, 2023 expressed an unqualified opinion thereon.

Basis for Opinion

The Company's management is responsible for maintaining effective internal control over financial reporting and for its assessment of the effectiveness of internal control over financial reporting included in the accompanying Management's Report on Internal Control over Financial Reporting. Our responsibility is to express an opinion on the Company's internal control over financial reporting based on our audit. We are a public accounting firm registered with the PCAOB and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audit in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether effective internal control over financial reporting was maintained in all material respects.

Our audit included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, testing and evaluating the design and operating effectiveness of internal control based on the assessed risk, and performing such other procedures as we considered necessary in the circumstances. We believe that our audit provides a reasonable basis for our opinion.

Definition and Limitations of Internal Control Over Financial Reporting

A company's internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles. A company's internal control over financial reporting includes those policies and procedures that (1) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (2) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the company are being made only in accordance with authorizations of management and directors of the company; and (3) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the company's assets that could have a material effect on the financial statements.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

/s/ Ernst & Young LLP

Cleveland, Ohio
March 1, 2023

PART III

ITEM 10. DIRECTORS, EXECUTIVE OFFICERS AND CORPORATE GOVERNANCE

The information with respect to our outside directors, audit committee and audit committee financial experts and Section 16(a) beneficial ownership reporting compliance, is incorporated herein by reference to the information statement on Schedule 14C to be filed with the Securities and Exchange Commission no later than 120 days after December 31, 2022.

We have adopted a Code of Conduct that applies to all of our outside directors, officers and employees. We have previously filed a copy of the Code of Conduct as Exhibit 14.3 to the Registrant's Form 10-K filed with the Securities and Exchange Commission on February 25, 2016. In addition to this, we have adopted a Code of Ethics for Senior Financial Officers that also applies to our Chief Executive Officer, Chief Financial Officer, Chief Accounting Officer and any other person performing similar functions. We have previously filed a copy of the Code of Ethics for Senior Financial Officers as Exhibit 14.4 to the Registrant's Form 8-K filed with the Securities and Exchange Commission on June 1, 2016. Our Code of Conduct and Code of Ethics for Senior Financial Officers are also available on our website at www.erieinsurance.com.

Executive Officers of the Registrant

Name	Age as of 12/31/2022	Principal Occupation and Positions for Past Five Years
President & Chief Executive Officer:		
Timothy G. NeCastro	62	President and Chief Executive Officer of the Company since August 2016; Director, Erie Family Life Insurance Company ("EFL"), Erie Insurance Company ("EIC"), Flagship City Insurance Company ("Flagship"), Erie Insurance Company of New York ("ENY") and Erie Insurance Property & Casualty Company ("EPC").
Executive Vice Presidents:		
Brian W. Bolash	57	Executive Vice President, Secretary and General Counsel since January 2022; Senior Vice President, Secretary and General Counsel, October 2018 through December 2021; Senior Counsel and Corporate Secretary, January 2016 through September 2018; Director, EFL, EIC, Flagship, ENY and EPC.
Lorianne Feltz	53	Executive Vice President, Claims & Customer Service since November 2016.
Gregory J. Gutting	59	Executive Vice President and Chief Financial Officer since August 2016; Director, EFL, EIC, Flagship, ENY and EPC.
Douglas E. Smith	48	Executive Vice President, Sales & Products since November 2016.
Parthasarathy Srinivasa	51	Executive Vice President and Chief Information Officer since joining the Company in April 2022. Prior to joining the Company: Senior Vice President and Chief Data and Insurance Information Officer Verisk Analytics, 2019 through April 2022; Chief Information and Operations Officer Safe Auto Insurance (now Allstate Corporation), 2016 through 2019.
Appointed Executive Officers:[1]		
Sean Dugan	54	Senior Vice President, Human Resources since 2020; Corporate Human Resources Officer, 2018 through 2020; Vice President, Talent Acquisition and Community Outreach, 2014 through 2018.
Julie M. Pelkowski	53	Senior Vice President, Enterprise Office since March 2022; Senior Vice President and Controller, August 2016 through March 2022; Director, EFL, EIC, Flagship, ENY and EPC.

[1] *As of December 31, 2022, the Company announced appointments for Mr. Dugan and Ms. Pelkowski for Executive Vice President roles, but the appointments were not yet effective. Mr. Dugan became Executive Vice President, Human Resources & Corporate Services effective January 1, 2023. Ms. Pelkowski will be Executive Vice President and Chief Financial Officer effective May 1, 2023 following the retirement of Mr. Gutting.*

ITEM 11. EXECUTIVE COMPENSATION

The information required by this item with respect to executive compensation is incorporated by reference to the information statement on Schedule 14C to be filed with the Securities and Exchange Commission no later than 120 days after December 31, 2022.

ITEM 12. SECURITY OWNERSHIP OF CERTAIN BENEFICIAL OWNERS AND MANAGEMENT AND RELATED STOCKHOLDER MATTERS

The information with respect to security ownership of certain beneficial owners and management and securities authorized for issuance under equity compensation plans, is incorporated by reference to the information statement on Schedule 14C to be filed with the Securities and Exchange Commission no later than 120 days after December 31, 2022.

ITEM 13. CERTAIN RELATIONSHIPS AND RELATED TRANSACTIONS, AND DIRECTOR INDEPENDENCE

Information with respect to certain relationships with our outside directors is incorporated by reference to the information statement on Schedule 14C to be filed with the Securities and Exchange Commission no later than 120 days after December 31, 2022.

ITEM 14. PRINCIPAL ACCOUNTANT FEES AND SERVICES

The information required by this item is incorporated by reference to the information statement on Schedule 14C to be filed with the Securities and Exchange Commission no later than 120 days after December 31, 2022.

PART IV

ITEM 15. EXHIBITS AND FINANCIAL STATEMENT SCHEDULES

(a) The following documents are filed as part of this report:

1. Financial Statements
   Included in Part II, Item 8. "Financial Statements and Supplementary Data" contained in this report.

   Erie Indemnity Company:
   - Report of Independent Registered Public Accounting Firm on the Effectiveness of Internal Control over Financial Reporting
   - Report of Independent Registered Public Accounting Firm on the Financial Statements
   - Statements of Operations for the three years ended December 31, 2022, 2021 and 2020
   - Statements of Comprehensive Income for the three years ended December 31, 2022, 2021 and 2020
   - Statements of Financial Position as of December 31, 2022 and 2021
   - Statements of Shareholders' Equity for the three years ended December 31, 2022, 2021 and 2020
   - Statements of Cash Flows for the three years ended December 31, 2022, 2021 and 2020
   - Notes to Financial Statements

2. Financial Statement Schedules
   All schedules are not required, not applicable, or the information is included in the financial statements or notes thereto.

		Page
3.	Exhibit Index	79

ITEM 16. FORM 10-K SUMMARY

None.

SIGNATURES

Pursuant to the requirements of Section 13 or 15(d) of the Securities Exchange Act of 1934, the Registrant has duly caused this report to be signed on its behalf by the undersigned, thereunto duly authorized.

March 1, 2023

ERIE INDEMNITY COMPANY
(Registrant)

By: /s/ Timothy G. NeCastro
Timothy G. NeCastro, President and CEO
(Principal Executive Officer)

Pursuant to the requirements of the Securities Exchange Act of 1934, this report has been signed below by the following persons on behalf of the Registrant and in the capacities and on the date indicated.

March 1, 2023

/s/ Timothy G. NeCastro
Timothy G. NeCastro, President and CEO
(Principal Executive Officer)

/s/ Gregory J. Gutting
Gregory J. Gutting, Executive Vice President and CFO
(Principal Financial Officer)

/s/ Jorie L. Novacek
Jorie L. Novacek, Senior Vice President and Controller
(Principal Accounting Officer)

Board of Directors:

/s/ J. Ralph Borneman, Jr.
J. Ralph Borneman, Jr.

/s/ Eugene C. Connell
Eugene C. Connell

Salvatore Correnti

/s/ LuAnn Datesh
LuAnn Datesh

/s/ Jonathan Hirt Hagen
Jonathan Hirt Hagen

/s/ Thomas B. Hagen
Thomas B. Hagen, Chairman

/s/ C. Scott Hartz
C. Scott Hartz

/s/ Brian A. Hudson, Sr.
Brian A. Hudson, Sr.

/s/ George R. Lucore
George R. Lucore

/s/ Thomas W. Palmer
Thomas W. Palmer

Elizabeth Hirt Vorsheck

[THIS PAGE INTENTIONALLY LEFT BLANK]

Member • Erie Insurance Group

Home Office • 100 Erie Insurance Place on Perry Square • Erie, Pennsylvania 16530
814.870.2000 • erieinsurance.com • An Equal Opportunity Employer