SOCIETY OF ACTUARIES®

Case Study

FALL 2020

Enterprise Risk Management Exam

EXAM ERM

ERM

ERM Case Study

Introduction and Recommendations

This case study presents information for the following companies:

- Lyon Corporation (a holding company);
- Simple Life (a life insurance company);
- AHA Health (a health insurance company);
- Pryde P&C (a general insurance, that is, property and casualty insurance, company);
- Helios (a non-US insurance company);
- Caerus Consulting (a global risk management and advisory company) and its clients.

When you register for the ERM exam, you will select from one of six reading extensions. Please note that for those who are pursuing an FSA, the extension selected for this exam need not match the track selected for fellowship.

The case study is organized into sections. All candidates are responsible for the material in the first two sections, covering Caerus and its clients (Section 0) and Lyon Corporation (Section 1). Examination questions on both the three-hour core and one-hour extension-specific portions of the exam may be based on material in these common sections of the case study.

The case study also includes extension-specific sections, as described below, that may be the basis for questions appearing in the one-hour extension-specific portion of the exam.

You are encouraged to read this case study in conjunction with the recommended study materials. This will help you become familiar with the information that is provided in this case study and assist you in putting syllabus readings in context. The case study should be read critically, with the understanding that it is meant to represent hypothetical organizations with some good policies and some flaws; it is not a representation of best practices.

All candidates are encouraged to read through the entire case study to gain an overview of the consulting firm, its client companies, and Lyon Corporation.

In addition to Sections 0 and 1, which are applicable to all candidates:

(a) Candidates who elect the Individual Life and Annuities Extension will answer questions based on Section 3. Simple Life Insurance Company, excluding the details of Section 3.14;
(b) Candidates who elect the Group and Health Extension will answer questions based on Section 4. Health Insurance Companies, excluding the details of Section 4.18;
(c) Candidates who elect the General Insurance Extension will answer questions based on Section 5. Pryde Property & Casualty;
(d) Candidates who elect the Retirement Benefits Extension will answer questions based on information about the pension plans sponsored by Simple Life and AHA Health, specifically

Sections 3.14 and 4.18 (but such candidates should review all of Sections 3 and 4 to understand how the pension plans fit within the companies);

(e) Candidates who elect the Investment Extension will answer questions based on investment information for Simple Life and the pension plan sponsored by Simple Life, specifically Sections 3.3 through 3.6, 3.9, and 3.11 through 3.14 (but such candidates should review all of Section 3 to understand how the investments and the pension plan relate to Simple Life); and

(f) Candidates who elect the General Corporate ERM Extension will answer questions based on the information presented for all five Lyon companies in Section 2.

It is important that you become familiar with the information presented in the case study that may pertain to the questions you will attempt in the exam. All candidates are expected to think about ERM holistically and how the issues identified in the core part of the exam and their respective extensions will affect the ERM processes of the organization as a whole.

Exam booklets will contain an exact copy of this case study. You will not be allowed to bring your copy of this case study into the exam room.

The following table of contents should assist you in locating information within the case study.

This and the following pages contain tables for the standard normal distribution. These tables will be available with this case study at the examination and are for use in solving all problems on the examination, including those not related to the case study.

TABLES FOR THE STANDARD NORMAL DISTRIBUTION

Values of z for selected probabilities that $Z \le z$.

$\Pr(Z \le z)$	0.800	0.850	0.900	0.950	0.975	0.990	0.995
z	0.842	1.036	1.282	1.645	1.960	2.326	2.576

Table for $N(x)$ when $x \geq 0$. Use interpolation with these tables. For example, $N(0.6278) = N(0.62) + 0.78[N(0.63) - N(0.62)] = 0.7324 + 0.78(0.7357 - 0.7324) = 0.7350$.

x	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09
0.0	0.5000	0.5040	0.5080	0.5120	0.5160	0.5199	0.5239	0.5279	0.5319	0.5359
0.1	0.5398	0.5438	0.5478	0.5517	0.5557	0.5596	0.5636	0.5675	0.5714	0.5753
0.2	0.5793	0.5832	0.5871	0.5910	0.5948	0.5987	0.6026	0.6064	0.6103	0.6141
0.3	0.6179	0.6217	0.6255	0.6293	0.6331	0.6368	0.6406	0.6443	0.6480	0.6517
0.4	0.6554	0.6591	0.6628	0.6664	0.6700	0.6736	0.6772	0.6808	0.6844	0.6879
0.5	0.6915	0.6950	0.6985	0.7019	0.7054	0.7088	0.7123	0.7157	0.7190	0.7224
0.6	0.7257	0.7291	0.7324	0.7357	0.7389	0.7422	0.7454	0.7486	0.7517	0.7549
0.7	0.7580	0.7611	0.7642	0.7673	0.7704	0.7734	0.7764	0.7794	0.7823	0.7852
0.8	0.7881	0.7910	0.7939	0.7967	0.7995	0.8023	0.8051	0.8078	0.8106	0.8133
0.9	0.8159	0.8186	0.8212	0.8238	0.8264	0.8289	0.8315	0.8340	0.8365	0.8389
1.0	0.8413	0.8438	0.8461	0.8485	0.8508	0.8531	0.8554	0.8577	0.8599	0.8621
1.1	0.8643	0.8665	0.8686	0.8708	0.8729	0.8749	0.8770	0.8790	0.8810	0.8830
1.2	0.8849	0.8869	0.8888	0.8907	0.8925	0.8944	0.8962	0.8980	0.8997	0.9015
1.3	0.9032	0.9049	0.9066	0.9082	0.9099	0.9115	0.9131	0.9147	0.9162	0.9177
1.4	0.9192	0.9207	0.9222	0.9236	0.9251	0.9265	0.9279	0.9292	0.9306	0.9319
1.5	0.9332	0.9345	0.9357	0.9370	0.9382	0.9394	0.9406	0.9418	0.9429	0.9441
1.6	0.9452	0.9463	0.9474	0.9484	0.9495	0.9505	0.9515	0.9525	0.9535	0.9545
1.7	0.9554	0.9564	0.9573	0.9582	0.9591	0.9599	0.9608	0.9616	0.9625	0.9633
1.8	0.9641	0.9649	0.9656	0.9664	0.9671	0.9678	0.9686	0.9693	0.9699	0.9706
1.9	0.9713	0.9719	0.9726	0.9732	0.9738	0.9744	0.9750	0.9756	0.9761	0.9767
2.0	0.9772	0.9778	0.9783	0.9788	0.9793	0.9798	0.9803	0.9808	0.9812	0.9817
2.1	0.9821	0.9826	0.9830	0.9834	0.9838	0.9842	0.9846	0.9850	0.9854	0.9857
2.2	0.9861	0.9864	0.9868	0.9871	0.9875	0.9878	0.9881	0.9884	0.9887	0.9890
2.3	0.9893	0.9896	0.9898	0.9901	0.9904	0.9906	0.9909	0.9911	0.9913	0.9916
2.4	0.9918	0.9920	0.9922	0.9925	0.9927	0.9929	0.9931	0.9932	0.9934	0.9936
2.5	0.9938	0.9940	0.9941	0.9943	0.9945	0.9946	0.9948	0.9949	0.9951	0.9952
2.6	0.9953	0.9955	0.9956	0.9957	0.9959	0.9960	0.9961	0.9962	0.9963	0.9964
2.7	0.9965	0.9966	0.9967	0.9968	0.9969	0.9970	0.9971	0.9972	0.9973	0.9974
2.8	0.9974	0.9975	0.9976	0.9977	0.9977	0.9978	0.9979	0.9979	0.9980	0.9981
2.9	0.9981	0.9982	0.9982	0.9983	0.9984	0.9984	0.9985	0.9985	0.9986	0.9986
3.0	0.9987	0.9987	0.9987	0.9988	0.9988	0.9989	0.9989	0.9989	0.9990	0.9990
3.1	0.9990	0.9991	0.9991	0.9991	0.9992	0.9992	0.9992	0.9992	0.9993	0.9993
3.2	0.9993	0.9993	0.9994	0.9994	0.9994	0.9994	0.9994	0.9995	0.9995	0.9995
3.3	0.9995	0.9995	0.9995	0.9996	0.9996	0.9996	0.9996	0.9996	0.9996	0.9997
3.4	0.9997	0.9997	0.9997	0.9997	0.9997	0.9997	0.9997	0.9997	0.9997	0.9998
3.5	0.9998	0.9998	0.9998	0.9998	0.9998	0.9998	0.9998	0.9998	0.9998	0.9998
3.6	0.9998	0.9998	0.9999	0.9999	0.9999	0.9999	0.9999	0.9999	0.9999	0.9999
3.7	0.9999	0.9999	0.9999	0.9999	0.9999	0.9999	0.9999	0.9999	0.9999	0.9999
3.8	0.9999	0.9999	0.9999	0.9999	0.9999	0.9999	0.9999	0.9999	0.9999	0.9999
3.9	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000

Table for $N(x)$ when $x \leq 0$. Use interpolation (entries are for the row value *minus* the column value). For example, $N(-0.1234) = N(-0.12) - 0.34[N(-0.12) - N(-0.13)] = 0.4522 - 0.34(0.4522 - 0.4483) = 0.4509$.

z	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09
0.0	0.5000	0.4960	0.4920	0.4880	0.4840	0.4801	0.4761	0.4721	0.4681	0.4641
-0.1	0.4602	0.4562	0.4522	0.4483	0.4443	0.4404	0.4364	0.4325	0.4286	0.4247
-0.2	0.4207	0.4168	0.4129	0.4090	0.4052	0.4013	0.3974	0.3936	0.3897	0.3859
-0.3	0.3821	0.3783	0.3745	0.3707	0.3669	0.3632	0.3594	0.3557	0.3520	0.3483
-0.4	0.3446	0.3409	0.3372	0.3336	0.3300	0.3264	0.3228	0.3192	0.3156	0.3121
-0.5	0.3085	0.3050	0.3015	0.2981	0.2946	0.2912	0.2877	0.2843	0.2810	0.2776
-0.6	0.2743	0.2709	0.2676	0.2643	0.2611	0.2578	0.2546	0.2514	0.2483	0.2451
-0.7	0.2420	0.2389	0.2358	0.2327	0.2296	0.2266	0.2236	0.2206	0.2177	0.2148
-0.8	0.2119	0.2090	0.2061	0.2033	0.2005	0.1977	0.1949	0.1922	0.1894	0.1867
-0.9	0.1841	0.1814	0.1788	0.1762	0.1736	0.1711	0.1685	0.1660	0.1635	0.1611
-1.0	0.1587	0.1562	0.1539	0.1515	0.1492	0.1469	0.1446	0.1423	0.1401	0.1379
-1.1	0.1357	0.1335	0.1314	0.1292	0.1271	0.1251	0.1230	0.1210	0.1190	0.1170
-1.2	0.1151	0.1131	0.1112	0.1093	0.1075	0.1056	0.1038	0.1020	0.1003	0.0985
-1.3	0.0968	0.0951	0.0934	0.0918	0.0901	0.0885	0.0869	0.0853	0.0838	0.0823
-1.4	0.0808	0.0793	0.0778	0.0764	0.0749	0.0735	0.0721	0.0708	0.0694	0.0681
-1.5	0.0668	0.0655	0.0643	0.0630	0.0618	0.0606	0.0594	0.0582	0.0571	0.0559
-1.6	0.0548	0.0537	0.0526	0.0516	0.0505	0.0495	0.0485	0.0475	0.0465	0.0455
-1.7	0.0446	0.0436	0.0427	0.0418	0.0409	0.0401	0.0392	0.0384	0.0375	0.0367
-1.8	0.0359	0.0351	0.0344	0.0336	0.0329	0.0322	0.0314	0.0307	0.0301	0.0294
-1.9	0.0287	0.0281	0.0274	0.0268	0.0262	0.0256	0.0250	0.0244	0.0239	0.0233
-2.0	0.0228	0.0222	0.0217	0.0212	0.0207	0.0202	0.0197	0.0192	0.0188	0.0183
-2.1	0.0179	0.0174	0.0170	0.0166	0.0162	0.0158	0.0154	0.0150	0.0146	0.0143
-2.2	0.0139	0.0136	0.0132	0.0129	0.0125	0.0122	0.0119	0.0116	0.0113	0.0110
-2.3	0.0107	0.0104	0.0102	0.0099	0.0096	0.0094	0.0091	0.0089	0.0087	0.0084
-2.4	0.0082	0.0080	0.0078	0.0075	0.0073	0.0071	0.0069	0.0068	0.0066	0.0064
-2.5	0.0062	0.0060	0.0059	0.0057	0.0055	0.0054	0.0052	0.0051	0.0049	0.0048
-2.6	0.0047	0.0045	0.0044	0.0043	0.0041	0.0040	0.0039	0.0038	0.0037	0.0036
-2.7	0.0035	0.0034	0.0033	0.0032	0.0031	0.0030	0.0029	0.0028	0.0027	0.0026
-2.8	0.0026	0.0025	0.0024	0.0023	0.0023	0.0022	0.0021	0.0021	0.0020	0.0019
-2.9	0.0019	0.0018	0.0018	0.0017	0.0016	0.0016	0.0015	0.0015	0.0014	0.0014
-3.0	0.0013	0.0013	0.0013	0.0012	0.0012	0.0011	0.0011	0.0011	0.0010	0.0010
-3.1	0.0010	0.0009	0.0009	0.0009	0.0008	0.0008	0.0008	0.0008	0.0007	0.0007
-3.2	0.0007	0.0007	0.0006	0.0006	0.0006	0.0006	0.0006	0.0005	0.0005	0.0005
-3.3	0.0005	0.0005	0.0005	0.0004	0.0004	0.0004	0.0004	0.0004	0.0004	0.0003
-3.4	0.0003	0.0003	0.0003	0.0003	0.0003	0.0003	0.0003	0.0003	0.0003	0.0002
-3.5	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002
-3.6	0.0002	0.0002	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
-3.7	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
-3.8	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
-3.9	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Table of Contents

0 Caerus Consulting

0.1 Overview

Caerus Consulting is a global risk management and advisory company with headquarters in Boston, MA (USA). Caerus has offices worldwide including Madrid (Spain), Singapore and Shanghai (China). The firm has been in business since 1950, starting out as an automotive industry consultant. In 1980 Caerus expanded into the energy industry and then continued expanding into other markets beginning in 2000.

0.2 Mission Statement

Caerus Consulting is committed to helping clients turn risk into opportunity. We develop and help implement solutions for:

- Managing risk
- Expansion and growth
- Strengthening core markets

Caerus Consulting believes in an innovative work environment that values creativity, diversity and mutual respect.

0.3 Services

- Personnel Resources
- Strategic and Corporate Risk
  - Mergers and Acquisitions
  - New Market Explorations and Investments
- Insurance and Investment Risk
  - Insurance Regulatory Requirements
    - NAIC (U.S. Solvency): ORSA, RBC, etc.
    - MCCSR (Canadian Solvency)
    - Solvency II
  - SEC Requirements
  - Reinsurance
- Accounting Advisory Services
  - Provide guidance on current IFRS, U.S. GAAP, and other global accounting regulations, including proposed changes to such regulations, to ensure proper adherence on financial statements.

0.4 Industries

- Automotive

Caerus has significant experience in this industry, providing consulting to over 20 companies. The firm faced considerable scrutiny ten years ago as it was the advisor to U.S.-based Alpha Automotive at the time that Alpha went into bankruptcy.

- Energy and Power

  Caerus began consulting with global energy companies shortly after the energy crisis of the 1970s. The original consulting focus was on helping energy companies cope with volatile oil prices, complex government regulations, and global competition, but lately Caerus has been asked to consult more on the impact of climate change.

- Robotics / Artificial Intelligence (AI)

  Caerus started consulting with robotics and AI companies within the past five years. Caerus brought on two consultants with over 40 years combined experience working in the robotics industry. The firm would like to grow this field of consultancy. To date, the consultants have only been able to work with small industrial robotics companies, but they would like to expand to a wider range of industries, including consumer, agricultural and medical.

- Insurance

  In 2000 Caerus Consulting merged with an existing insurance consultant in order to expand into this market. The insurance consultant had been in business for over 50 years and had 200 employees, located in offices in Europe and the U.S. This branch is currently doing very well, providing guidance for all lines of insurance on financial, strategic, operational, human capital, and data management issues. Caerus is beginning to offer consulting services on the use of robotics and AI for insurance.

- Banking

  Caerus expanded into the banking industry five years ago. The firm is relying on its insurance industry expertise and a few specialized banking consultants to keep this group going. Caerus has had success with some smaller banks in Africa and the U.S. and would like to branch out to the larger banks in Europe and Asia.

- Tourism

  This is a new industry for Caerus. The expansion to this field was driven by one of the newest board members who felt it would increase the diversity of the company. Consultants whose primary focus has been the automotive industry were asked to work with three new consultants with hotel and tourism experience.

0.5 Board of Directors

The Caerus Board currently consists of nine members; the board must have at least eight members and can have a maximum of fifteen. The Chairman of the Board is is the president of Caerus Consulting. The other eight members are outsiders who have industry experience in areas that

Caerus supports. Outside board members generally serve for three years; they can be re-elected, but cannot serve for more than nine years.

Nicholas Gosselin is the President and Chief Executive Officer of Caerus Consulting. He has over 30 years of consulting experience, including five years as President of Caerus.

John Doe is a retired automotive executive. He has spent over 20 years in the industry working in automotive companies in the U.S. and Asia. He was the CEO of Alpha Automotive in its final five years.

Antonia Smith is the Chief Executive Officer of Mater Motors, an automotive start-up based in the United States that specializes in self-driving vehicles.

Jayson Jones is Chief Executive Officer of Pythia Auto Parts, a company manufacturing and selling car parts throughout Europe and the U.S.

Stavros Pappas is the Chairman and Chief Executive Officer of Grigoro Aftokinito, a family-owned European Sportscar Manufacturer.

Helmut Schmidt is the retired Chief Executive Officer of Gesund Re, a global reinsurer based in Germany. He has over 30 years experience in the banking and insurance industries.

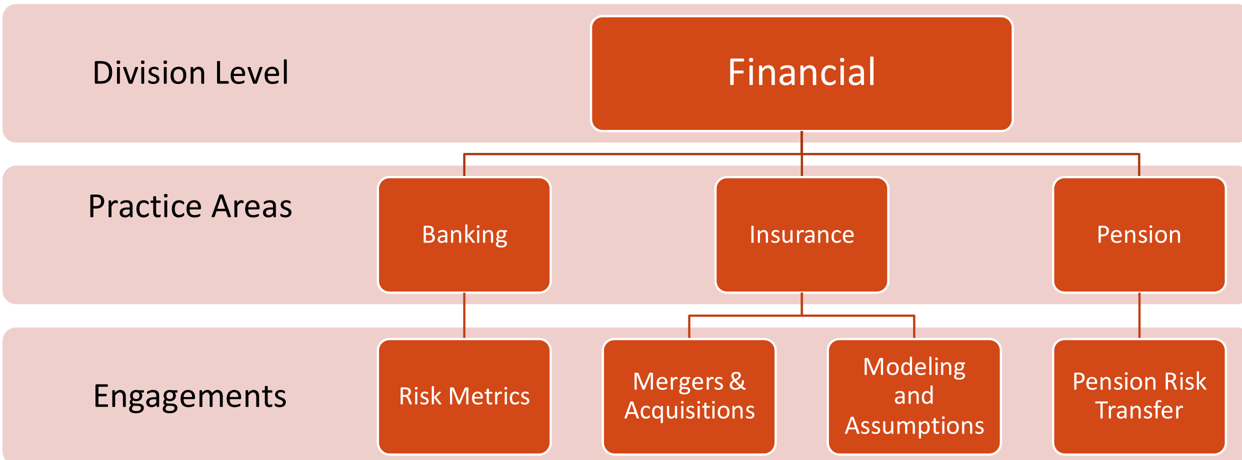
Beini Zhou is the Chief Executive Officer of Contento Life, a Hong Kong based Insurance Company. She has over 20 years experience in the insurance industry.

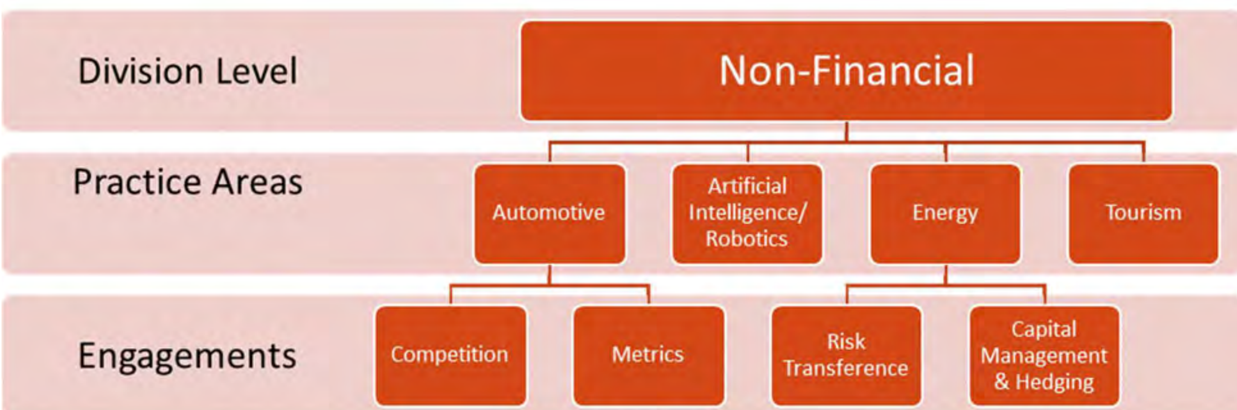
Janine Robins is the President of Ashbury Mutual, a small mutual insurance company based in the United States.

Steve Johnson is the President and Chief Executive Officer of Energia Energy a global energy company based in London, England.

0.6 Organization Chart

Caerus is organized into two divisions – Financial and Non-Financial, based on the types of clients served. A partial organization chart showing practice areas and a sample of current client engagements is shown for each division.





0.7 Financial Engagement – Big Ben Bank

Caerus has analyzed the banking industry and considers its primary risks to be the following.

Banking Industry Key Risks

Strategic/Business Risks

- Significant competition in the rapidly evolving global financial services industry
- Reputational risk for banks

Profitability and Liquidity Risks

- Risks relating to models and assumptions
- Credit risk from failure of customers or counterparties to meet their financial or contractual obligations when due
- Liquidity risk, that banks may be unable to raise funds on a timely basis or at a reasonable cost to fund asset growth or settle liabilities
- Risk of adverse changes in market risk factors such as interest rates, credit spreads, foreign exchange rates, equity prices, mortgage rates, and mortgage liquidity

Operational Risk

- Operational risk resulting from inadequate or failed internal processes and systems

Compliance

- Regulatory capital risk due to increasing stringency of banking regulations
- Fraud or conduct risks due to detrimental practices

Technology

- Competition and disruption emerging from new financial technology firms which develop new services and products based on innovative technologies including cloud, big data analytics, internet of things, and digital payments processes
- Cyber-security breaches

Company Overview

Big Ben Bank is a bank domiciled in Luxembourg.

Big Ben Bank was formed in 2005 under the directorship of Mr. Saleen Patel. Mr. Patel gained his wealth as a self-directed fund manager using fundamental asset selection and key insights into the business models of his investments. The initial focus of Big Ben Bank was finding best-in-class funds for its high net worth (HNW) clients. Mr. Patel’s fund management business was formed in 1994 and its success was primarily built within European financial centers.

Placement within the Banking Industry

A key to growth in the initial years was Big Ben's Asset Management division, which offered exclusive concierge services to its HNW clients. Another competitive advantage that Big Ben enjoyed was Mr. Patel's network of connections, which included many members of New York, London, and Zurich high society. Mr. Patel's reputed fund management and tax management prowess also contributed to the success of Big Ben.

However, the 2008 financial crisis presented some unexpected challenges. The Assets Under Management (AUM) fell dramatically and some of the investors experienced hardships in their own businesses. The fund performance was dramatically negative and the subsequent increase in withdrawals severely impacted the overall AUM and forced a revision in strategy.

Products / Services

Asset Management

Big Ben Bank is a world leader in the exchange-traded fund (ETF) market and has a strong brand and a loyal investor base. Big Ben's asset management products cover a comprehensive list of asset classes including equities, fixed income, real estate, private equity, and sustainable investments. In addition to ETFs, Big Ben offers mutual funds and separately managed accounts.

Advisory teams manage client relationships, provide advice, and enable clients to access Big Ben's asset management products and services. Big Ben also markets its offerings through its Commercial Banking division.

Since its inception, the critical profit driver has been the excess of the management expense ratio (MER) charged on the assets under management over the operational costs of fulfilling the fund management mandate. But MERs for ETFs are coming under increased downward pressure as more competitors come into this fund arena.

Commercial Banking

Traditional commercial banking has been a smaller, but significant, component of Big Ben's revenue pie. The Commercial Banking division's clients are individuals (retail banking) and small businesses. Products offered are checking account services; business, personal, and mortgage loans; and basic financial products such as certificates of deposit (CDs) and savings accounts. The operational model of the commercial banking division is primarily online, rather than through physical branches. This approach was meant to meet the needs of a globally mobile clientele. The physical distribution model is almost non-existent and cannot support broad-based banking.

Big Ben's Private Banking group provides a suite of services to high-net-worth individuals designed to grow wealth. In addition to the traditional commercial banking services, Big Ben provides custom-designed investment, tax, and estate planning solutions. The Private Banking group makes use of Big Ben's Asset Management products as part of its financial planning services.

Investment Banking

Big Ben has a small investment banking division which provides services related to the creation of capital for companies, governments, and other entities. Big Ben underwrites new debt and equity securities, aids in the sale of securities, facilitates mergers and acquisitions, and provides guidance to issuers regarding the issue and placement of stock.

Strategy

Big Ben's strategic plans include expansion of the Investment Banking and Asset Management businesses over the next year. Future plans include an expansion of the Commercial Banking business in the next three to five years.

Big Ben's strategy also includes an expansion of its client base. It will be a priority to lower the minimum investable assets requirement for participation in the services that had been traditionally offered exclusively to the bank's high-net-worth customers. The bank will also offer more holistic wealth management and financial planning services. Big Ben's excess economic capital will be deployed to fund the expansion.

The executive mindset has been to increase focus on the financial planning sales approach and to formulate a one-stop shopping interface to its globally mobile clientele. Big Ben believes that its expertise in emerging technologies will facilitate the execution of this strategy.

Risk Management

Big Ben Bank prides itself on a strong risk culture and has an active risk management function. During the 2008 financial crisis, bank capital was somewhat strained, but Big Ben has regained a good capital position in recent years.

With a greater focus on innovation-based solutions and wealth management solutions, the risk management function will need to evolve and adapt its strengths to a more agile environment.

Big Ben Bank is committed to maintaining a strong capital base to support the risks associated with its businesses. Strength in capital management contributes to safety for Big Ben's customers, fosters investor confidence, and supports high credit ratings, while allowing the bank to take advantage of growth opportunities as they arise and to enhance shareholder returns through increased dividends and share repurchases.

Big Ben recognizes that liquidity risk is significant for banks. It monitors the contractual maturities of its assets and liabilities (See Exhibit B). Big Ben is considering introducing a Liquidity Assessment Program to enhance its liquidity risk management.

As part of Big Ben's asset liability management (ALM) process, the durations of the asset and liability portfolios are monitored and the duration mismatch is not allowed to exceed a specified tolerance. The Board recently voted to establish an Asset Liability Management Committee (ALMCo) to oversee interest rate risk. The Chair of the ALMCo will be a recently hired senior manager from the insurance industry with significant asset liability management experience. The first job of the ALMCo will be to draft an ALM policy statement for approval by the Board. A key metric will be to calculate the sensitivity of assets and liabilities to changes in interest rates. The Board want to be able to withstand a 200 bp parallel shift in the yield curve.

Big Ben uses various models to manage risks and to provide insight into decision making. The most important ones are as follows:

- A model to capture the correlation between mortgage prepayment rates and interest rates using statistical best fit techniques
- An internal model to calculate VaR for the trading book
- An economic capital model based on VaR to determine the amount of required economic capital

Big Ben uses frequency tests to validate VaR risk models based on the number of losses exceeding VaR and a significance level.

Economic Capital

Big Ben uses internal models to determine its required economic capital based on VaR. The quantile used for the VaR calculation is 99.5% over a one-year horizon. The business is modeled as a going concern, and the model has four components: credit risk, market risk, operational risk and business risk.

Credit risk is estimated assuming there is common dependence of borrowers on systematic risk factors, such as country, region, or industry. These risk factors are assumed to fluctuate over time and follow a joint normal distribution. All borrowers are linked to these underlying systematic risk factors to varying degrees and the factors are assumed to move in a correlated way. Results are derived from loss distributions generated using Monte Carlo simulations.

Market risk includes interest rate risk, currency risk and equity market risk. These risks are measured using stochastic simulation. Big Ben's mortgage pre-payment risk model is utilized as part of the economic capital model. Assumptions about customer retention and repricing of interest crediting rates for deposits are also important behavioral assumptions used in the model.

Operational risk is measured through a simple add-on model which estimates the impacts of individual operational risks and aggregates them using simple correlation assumptions. Big Ben has considered more sophisticated modeling, but has found it difficult to identify a single loss distribution function, because operational risk loss data is distributed in two different manners: (i) loss data with high frequency and low magnitude that composes the body of the distribution; and (ii) loss data with low frequency and high magnitude that composes the tail distribution.

Strategic/Business Risk is the probability of loss related to the organization's environment (such as competition, overall economic climate, and government regulation) and sub-optimal business decisions in response to that environment. Big Ben uses scenario analysis to quantify economic capital for business risk.

The diversification benefit is measured using a variance-covariance matrix. This has the benefit of being relatively simple and intuitive, but the correlations are difficult to obtain. As a result, the correlations are updated infrequently. Big Ben has considered other methods of measuring the diversification benefit such as combining the marginal distributions through copula functions.

The economic capital is calculated in aggregate for the company by a team in the Corporate Treasury department. The results are updated quarterly. Allocation of economic capital to the business divisions is done based on simple rules of thumb and is done only upon request. As the EC models impact financial reporting, they are inventoried in the model governance system and subject to formal validation. However, validation of these component models is not scheduled until next year due to the backlog of other validations. As such, the developers are still in the process of completing the model documentation, including the implementation and change management testing, where applicable.

Capital adequacy is assessed as the ratio of the total available economic capital to the total required economic capital. Big Ben requires that each line of business maintain an Internal Capital Adequacy Ratio of 140%.

Capital Adequacy Analysis

in millions of euros	**Dec 31, 2019**	Dec 31, 2018
Economic capital requirement		
Credit risk	**354**	370
Market risk	**394**	471
Operational risk	**283**	277
Business risk	**138**	160
Diversification benefit	**(212)**	(239)
Total required economic capital	**958**	1,039
Total available economic capital	**1,555**	1,642
Internal capital adequacy ratio	**162 %**	158 %

Value-at-Risk for Trading Book

Big Ben’s trading book is its portfolio of financial instruments classified as available for sale. The financial instruments in the trading book are purchased or sold for reasons including to facilitate trading for the institution's customers, to profit from trading spreads between the bid and ask prices, or to hedge against various types of risk.

Big Ben’s value-at-risk (VaR) for the trading book is based on an internal model. Regulatory authorities have approved the internal model for calculating the regulatory market risk capital for general and specific market risks. VaR is calculated using a 99 % confidence level and a one day holding period.

The model uses one year of historical market data as input to calculate VaR. The calculation employs a Monte Carlo Simulation technique, and assumes that changes in risk factors follow a well-defined distribution, e.g. normal distribution or t-distribution. To determine aggregated VaR, Big Ben uses observed correlations between the risk factors during this one-year period.

The VaR model is designed to take into account a comprehensive set of risk factors across all asset classes. Key risk factors are swap curves, index and issuer-specific credit curves, funding spreads, single equity and index prices, foreign exchange rates, and commodity prices as well as their implied volatilities.

A separate VaR is calculated for each risk type, e.g. interest rate risk, credit spread risk, equity risk, foreign exchange risk, and commodity risk. For each risk type this is achieved by deriving the sensitivities to the relevant risk type and then simulating changes in the associated risk drivers. Diversification reflects the fact that the total VaR on a given day will be lower than the sum of the VaR relating to the individual risk types.

VaR metrics are shown below:

99% VaR of Big Ben Bank's Trading Book by Risk Type

in thousands of euros	Total		Diversification effect		Interest rate risk		Credit spread risk		Equity price risk		Foreign exchange risk		Commodity price risk	
	2019	2018	**2019**	2018	**2019**	2018	**2019**	2018	**2019**	2018	**2019**	2018	**2019**	2018
Average	**805**	865	**(759)**	(946)	**546**	532	**532**	719	**235**	251	**227**	289	**22**	19
Maximum	**1,038**	1,605	**(1,016)**	(1,557)	**703**	797	**678**	878	**338**	1,416	**446**	451	**81**	89
Minimum	**543**	551	**(578)**	(692)	**365**	400	**365**	603	**119**	119	**114**	97	**3**	5
Period-end	**786**	814	**(608)**	(997)	**578**	538	**389**	657	**273**	270	**132**	341	**19**	5

Big Ben Bank Exhibits

Exhibit A - Financial Statements

Big Ben – Annual Report 2019 Consolidated Statement of Income			
in millions of euros	**2019**	**2018**	**2017**
Interest income	693	702	676
Interest expense	295	273	290
Net interest income	**397**	**429**	**386**
Provision for credit losses	37	26	31
Net interest income after provision for credit losses	**360**	**403**	**355**
Commissions and fee income	317	345	335
Net gains (losses) on financial assets/liabilities at fair value through profit or loss	38	104	116
Net gains (losses) on financial assets available for sale	18	5	7
Net income (loss) from equity method investments	12	4	17
Other income (loss)	28	18	3
Total noninterest income	**414**	**477**	**478**
Compensation and benefits	321	359	338
General and administrative expenses	428	510	404
Impairment of goodwill and other intangible assets	34	156	3
Restructuring activities	13	19	4
Total noninterest expenses	**796**	**1,045**	**749**
Income (loss) before income taxes	**(22)**	**(165)**	**84**
Income tax expense	**15**	**18**	**39**
Net income (loss)	**(37)**	**(183)**	**46**

Big Ben – Annual Report 2019

Consolidated Balance Sheet

in millions of euros	Dec 31,2019	Dec 31,2018
Assets:		
Cash and central bank balances	4,902	2,620
Interbank balances (w/o central banks)	314	347
Central bank funds sold and securities purchased under resale agreements	440	607
Securities borrowed	543	907
Financial assets at fair value through profit or loss		
Trading assets	4,623	5,298
Positive market values from derivative financial instruments	13,112	13,935
Financial assets designated at fair value through profit or loss	2,367	2,953
Total financial assets at fair value through profit or loss	20,102	22,186
Financial assets available for sale	1,520	1,989
Equity method investments	28	27
Loans	11,052	11,561
Securities held to maturity	87	-
Property and equipment	76	77
Goodwill and other intangible assets	243	272
Other assets	3,407	3,193
Assets for current tax	42	35
Deferred tax assets	234	210
Total assets	**42,988**	**44,031**
Liabilities and equity:		
Deposits	14,870	15,324
Central bank funds purchased and securities sold under repurchase agreements	696	265
Securities loaned	97	88
Financial liabilities at fair value through profit or loss		
Trading liabilities	1,541	1,414
Negative market values from derivative financial instruments	12,537	13,353
Financial liabilities designated at fair value through profit or loss	1,635	1,212
Investment contract liabilities	16	230
Total financial liabilities at fair value through profit or loss	15,729	16,210
Other short-term borrowings	467	757
Other liabilities	4,201	4,730
Provisions	297	249
Liabilities for current tax	36	46
Deferred tax liabilities	13	20
Long-term debt	4,657	4,325
Trust preferred securities	172	190
Total liabilities	**41,236**	**42,203**
Common shares, valued at nominal value per share	95	95
Additional paid-in capital	913	907
Retained earnings	513	572
Accumulated other comprehensive income (loss), net of tax	96	119
Total shareholders' equity	**1,617**	**1,694**
Additional equity components	126	126
Noncontrolling interests	9	7
Total equity	**1,752**	**1,828**
Total liabilities and equity	**42,988**	**44,031**

Big Ben Bank Exhibit B

Maturity of Assets and Liabilities

Analysis of the Earliest Contractual Maturity of Assets

Dec 31, 2019								
in millions of eruos	On demand (incl. Overnight and one day notice)	Up to one month	Over 1 month to no more than 6 months	Over 6 months but no more than 1 year	Over 1 year but no more than 2 years	Over 2 years but no more than 5 years	Over 5 years	Total
Cash and central bank balances	4,801	15	7	79	0	0	0	4,902
Interbank balances (w/o central banks)	158	97	18	24	3	1	13	314
Securities borrowed	528	14	0	0	0	0	0	543
Trading assets	4,623	0	0	0	0	0	0	4,623
Positive market values from derivative financial instruments	13,112	0	0	0	0	0	0	13,112
Financial assets designated at fair value through profit or loss	581	900	306	75	81	76	348	2,367
Financial assets available for sale	13	31	91	114	249	508	514	1,520
Loans to banks	25	53	148	35	41	35	21	359
Loans to customers	471	586	1,350	458	737	1,759	5,332	10,693
Other financial assets	2,839	128	285	64	21	87	175	3,598
Total financial assets	**27,151**	**1,825**	**2,205**	**848**	**1,132**	**2,465**	**6,404**	**42,030**
Other assets	635	0	0	0	0	0	323	958
Total assets	**27,786**	**1,825**	**2,205**	**848**	**1,132**	**2,465**	**6,726**	**42,988**

Analysis of the Earliest Contractual Maturity of Liabilities

Dec 31, 2019								
in millions of eruos	On demand (incl. Overnight and one day notice)	Up to one month	Over 1 month to no more than 6 months	Over 6 months but no more than 1 year	Over 1 year but no more than 2 years	Over 2 years but no more than 5 years	Over 5 years	Total
Deposits due to banks	1,742	260	416	281	51	145	243	3,138
Deposits due to retail customers	2,971	291	2,127	72	21	25	8	5,514
Deposits due to corporate customers	4,200	439	920	414	158	48	40	6,218
Trading securities	1,541	0	0	0	0	0	0	1,541
Negative market values from derivative financial instruments	12,537	0	0	0	0	0	0	12,537
Financial liabilities designed at fair value through profit or loss	54	1,045	279	121	28	27	80	1,635
Short term borrowings	1,003	66	91	81	12	7	0	1,260
Long-term debt	0	28	363	387	1,171	1,526	1,184	4,657
Other financial liabilities	3,470	33	85	80	146	43	111	3,968
Total financial liabilities	**27,518**	**2,161**	**4,282**	**1,435**	**1,587**	**1,820**	**1,665**	**40,469**
Other liabilities	767	0	0	0	0	0	0	767
Total liabilities	**28,285**	**2,161**	**4,282**	**1,435**	**1,587**	**1,820**	**1,665**	**41,236**

Big Ben Bank Exhibit C
Selected Economic Capital Model Results

I. Worst 15 of 1000 scenarios from the credit risk model from the March 31, 2020 model:

Scenario rank	Credit risk scenario #	Credit risk scenario required capital
986	141	350
987	321	353
988	173	355
989	812	357
990	795	360
991	272	362
992	484	363
993	926	364
994	401	364
995	212	365
996	454	367
997	84	369
998	811	371
999	261	373
1000	142	376

II. Worst 15 of 1000 scenarios from the market risk model from the March 31, 2020 model:

Scenario rank	Market risk scenario #	Market risk scenario required capital
986	693	208
987	183	210
988	954	211
989	221	213
990	11	214
991	466	238
992	358	270
993	407	296
994	813	342
995	550	372
996	27	379
997	235	726
998	642	948
999	185	1034
1000	63	1137

III. Allocation of December 31, 2019 economic capital requirement to business divisions:

	Dec 31, 2019			
in millions of euros	**Asset Management**	**Commercial Banking**	**Investment Banking**	**Total**
Economic capital requirement				
Credit risk	177	106	71	**354**
Market risk	197	118	79	**394**
Operational risk	142	85	57	**283**
Business risk	69	41	28	**138**
Diversification benefit	(106)	(64)	(42)	**(212)**
Total required economic capital	**479**	**287**	**192**	**958**
Available economic capital	**778**	**466**	**311**	**1,555**

Potential Caerus Engagement

Big Ben is considering engaging Caerus Consulting for one or more of the following projects:

- Reviewing VaR model for the trading book
- Designing a Liquidity Assessment Program
- Evaluating economic capital process and models
- Assisting with capital allocation decisions
- Developing risk aggregation methodology

Big Ben has provided an internal memo with respect to its modeling processes, for Caerus' review.

To: Jennifer Oakhurst, Deputy CFO, Big Ben

From: Martin Willow, Financial Analyst, Big Ben

Subject: Model Governance

Date: April 12, 2020

Just wanted to give you a status update on the Model Governance framework project. Overall, the implementation is going well.

One of the first things we did was to decide upon the definition of a model, and then determined which models would be subject to the formal model validation aspects of the framework. Models that are excluded from model validation would still be subject to inventorying, documentation and change management controls.

We are defining models to include anything that forecasts values using judgment, approximations or assumptions. However, to be cost effective, we're only going to consider for validation models that are used for financial reporting purposes since these pose the most risk.

As alluded to above, we will create an inventorying system for both the models subject to model validation and those that aren't. For the ones that are subject to model validation, the model user(s) will rank each model as High, Medium or Low risk. The High risk models will be validated on a strict 3-year rotation schedule through a centralized Model Validation group.

Models that are not subject to validation will still need to be reviewed by an independent analyst (i.e., somebody who was not the developer) who is familiar with the model's topic and purpose. This review will be qualitative in nature, with no formal report required, but the reviewer will have to sign off to ensure accountability.

Model documentation requirements include:

- Model purpose
- Significant model output and intended users
- Model methodology with extended commentary if the methodology is in any way considered unorthodox
- A summary of significant assumptions and their bases
- A summary of model testing
    - At implementation and at model revision
    - Ongoing testing
    - Validation testing, if applicable
- A summary of model controls and why they are considered effective and sufficient

Minimal requirements for input and calculation testing by the model developer are static and dynamic validation, respectively. This testing is performed upon model implementation, as well as expected for model change management purposes for material changes (see below). There is no formal testing requirement for output testing, but it is expected that developers will compare current model results to previous model results and qualitatively assess the movement in light of changes to inputs, assumptions or external environment.

We also will be formalizing change management requirements. The model developer will determine if a change is deemed material, and if so, will require a colleague to review both the coding change and model output for unintended consequences. Immaterial changes require the developer to self assess the change for accuracy. While no formal documentation is required, a change log is kept with applicable review signoffs.

The formal model validation exercise will require a report with a pass or fail grade, regardless of the findings. If the model fails, a remediation plan will need to be developed by the developer and executed in a timely manner. Since a model can have many attributes that require assessment, determining pass or fail will necessarily have to be judgmental. While the developer of a passing model is expected to implement suggested remediations, this is not a requirement since the model was deemed fit for purpose by the very definition of "passing".

Every quarter, the Model Validation group will prepare a summary for executive leadership illustrating the total number of inventoried models, their passing status and the number of models reviewed during the period with their validation results.

Sincerely,

Martin Willow
Financial Analyst, Big Ben Bank

Big Ben Bank has also provided minutes from a recent meeting of the Equity Trading team.

To: Big Ben Equity Trading Team

From: Haley MacKenzie, Trading Analyst, Big Ben

Subject: Meeting Minutes – January 8 Team Meeting

Date: January 10, 2020

1. **Opening**
   The meeting was called to order at 10:00 am.

2. **Approval of minutes from prior meeting**

3. **Launch of Quantitative Strategies team**
   Kelvin Woods, Head of Equity Trading, discussed plans to launch a Quantitative Strategies research team in Q3. The team will consist of three PhD graduates with a strong mathematical background whose roles would be exclusively dedicated to researching quantitative trading strategies. Kelvin stressed the importance of having the best and brightest resources dedicated to such a complex area. Kelvin described the rigorous screening process for candidates applying to the role, which will ensure that the individuals selected will be able to deliver timely and accurate work with minimal oversight.

4. **Organizational changes**
   Kelvin announced the CEO's intent to retire in Q4. Kelvin expressed his hope that the board will elect an individual from a Compliance, Operations, or Technology background as the new CEO, given the importance of diversity in leadership.

   Kelvin also announced that, given the recent departure of the Senior Manager of Performance Measurement, the analysts responsible for performance measurement will now report to the Assistant Vice-President of Marketing. The rationale for this reporting line is that investment performance measurement data appears in marketing materials; therefore, it is important that the data is reviewed for accuracy by the Marketing team.

5. **Best practices for workflow documentation**
   Kelvin reminded the team that process documentation files should be continually reviewed to ensure they are up-to-date and easily accessible. Kelvin mentioned that in addition to keeping workflow documentation on hand in hard-copy form, all documents should be backed up on an online server in case of a business continuity event.

6. **Any other business**
   There being no other business, the meeting was adjourned at 11:00 am.

0.8 Automotive Consulting

Caerus' automotive consultants have prepared the following summary of the industry and its key risks.

Automotive Industry Overview

There are significant entry barriers to this industry, including:

- Heavy capital commitments
- Cost effective access to raw materials and parts
- Production processes that seek to optimize the balance between human workers and robotics
- Long lead times from design to production
- Ability to anticipate consumer buying preferences

These entry barriers have led to a few dominant auto makers in each major auto manufacturing country. With globalization, these large auto makers produce parts and vehicles globally and compete in each other's markets. Production capacity significantly exceeds demand.

There are two size measures for auto makers — number of vehicles sold and revenues. Based on the number of vehicles sold, the top ten "mainstream" manufacturers are headquartered in Germany, Japan, the U.S., South Korea, France and Italy, and together have a 67% worldwide market share.

Manufacturer	Headquarters	Vehicles Sold	Revenues
Der Kafer Motors	Germany	10.4 million	$ 260 billion
Korolla Motors	Japan	10.2 million	$ 265 billion
Rogue Motors	Japan	10.1 million	$ 108 billion
Giant Auto Motors	US	7.9 million	$ 157 billion
Korean Motors	Korea	7.3 million	$ 91 billion
Mustang Motors	US	6.3 million	$156 billion
Sivic Motors	Japan	5.4 million	$ 139 billion
Spider Motors	Italy	4.9 million	$ 133 billion
Moteurs de Lion	France	4.2 million	$ 80 billion
Ronin Motors	Japan	3.2 million	$ 40 billion

Industry Key Risks

Strategic Risks

- Many auto companies are exploring one or both of two initiatives: battery-powered vehicles and vehicles with autonomous (self-driving) capabilities. Both of these initiatives require enormous investment and very long lead times from design to production. Customer willingness to change from conventional gasoline or diesel cars, known as Petroleum Combustion Vehicles (**PCV**s), to

Battery Electric Vehicles (**BEV**s) is currently hindered by higher purchase prices, more limited refueling stations, and generally lower driving ranges per "tankful" for BEVs. General autonomous self-driving capabilities are turning out to be much more complex than anticipated, implying this will be a costly option.

- Attracting and retaining key talent in emerging battery and self-driving technologies will be a critical success factor.

Profitability and Liquidity Risks

- BEVs have 80% fewer parts than PCVs (which include gasoline, diesel, and hybrid engines). BEV engines require significantly less maintenance than PCVs (e.g., no oil changes, no transmissions, no tune-ups, no radiators). Currently PCV dealers make more money on maintenance than on car sales. These inherent differences between BEVs and PCVs will have major impacts on the sourcing of raw materials, manufacture of parts, vehicle assembly, and servicing of vehicles if BEVs become mainstream.
- Batteries are the most expensive component of an electric vehicle, but battery technology is relatively new. As production ramps up, it is expected that battery costs will drop significantly in the next five years to the point where a BEV would cost less overall than a PCV (based on higher initial purchase price offset by lower ongoing costs and higher resale values). Futures contracts for lithium batteries were recently added to the commodities exchanges.
- Investments in battery technology and self-driving capabilities will require large upfront investments with lengthy payback periods.
- PCVs have a well developed, cost effective infrastructure to manufacture and deliver parts and fuel. However, facilities that operate below their optimal capacities are not profitable.
- BEVs do not yet have robust recharging or repair networks, which will require further investments.

Operational Risk

- Production generally relies on "just-in-time" processes from a global supply chain. Interruptions in workplace availability (e.g., strikes), raw materials, parts suppliers and shipping could idle production.

Compliance

- Regulations restrict the amount of automotive emissions and require onboard diagnostic systems. Automotive Emission requirements vary by area, with China and the U.S., particularly California, impacting PCV manufacturers the most. Failure in emissions or diagnostics must be remedied by recalls.
- Corporate Fuel Economy Standards must be met in each model year in the U.S., with civil penalties for non-compliance. China applies fuel economy standards both to individual vehicles and fleet averages.
- BEVs are not adversely impacted by emissions and fuel economy standards (and BEV companies can sell credits to PCV manufacturers who need them).

Technology

- As noted earlier, battery technology and self-driving capabilities are in early stages of development. Battery technology includes the ability to tolerate multiple charges and discharges with minimal deterioration as well as the ability to tolerate rapid charging for long distance drives.

Regulatory

- Concerns that PCVs pollute and contribute significantly to global warming have accelerated. Many countries are planning to ban manufacture of new PCVs in the next five to fifteen years. China, the world's largest automotive market, is likely to be one of the first to do so.
- There may be significant technical and regulatory requirements unique to the Chinese market.
- Reduction or elimination of governmental incentives to build or buy electric vehicles could negatively impact demand. New incentives, such as providing tax credits for those trading in a PCV with poor fuel economy for a BEV could increase demand.
- Trade barriers add cost and uncertainty to raw materials, fuel supplies, and parts that cross borders.

Litigation

- Autonomous capabilities may generate legal and reputational risk as accidents occur. Currently, all such capabilities are "driver-assisted", which requires driver attention. However, if full self driving capabilities come into play, accident responsibility could shift to the manufacturer.

Caerus currently has two automotive clients, Giant Auto Motors and Disruptive Energy. Specifics for each company are discussed in the next two sections.

0.9 Giant Auto Motors (GAM)

Overview

Giant Auto Motors is a leading automobile manufacturer that designs, manufactures, markets, and services vehicles. It offers cars, trucks and sport utility vehicles powered by petroleum, hybrid gas/electric and electric motors/batteries. As shown in the industry table above, GAM is the 4th largest auto company based on the number of vehicles sold and 3rd largest by revenue. It is the largest of the U.S. auto companies.

Products / Services

GAM currently sells cars, trucks and sport utility vehicles under six different name brands. GAM manufactures most of its parts in house.

Two years ago, it began developing its own automotive batteries for PCVs. GAM is currently able to produce enough batteries to supply all of its small cars.

Strategy

At times in its long history, GAM has been the largest auto maker in the U.S. and in the world. At its peak, it sold more cars in the U.S. than all other manufacturers put together. It sold its vehicles under more than a dozen different brands. However, following a strategic assessment in 2017, it sold off half of its brands and now focuses on China and North America, which constitute 85% of its sales. It operates in the Chinese market via a joint venture (JV), under which GAM holds a 10% share. Its leading sales are in luxury sedans, trucks and sport utility vehicles.

After a recent board meeting, GAM concluded that it is vital to maintain a strong presence in the PCV market in the hope that continued profits from that business could be used to help cover the high upfront costs of entering the BEV market. However, the CEO is worried that staying in the PCV market is not a viable long-term strategy. You recommend using scenario analysis to gauge the consequences of remaining in the PCV market. Your boss states that it would be a good idea to use a historical scenario for the analysis.

Pension Plan

GAM sponsors traditional defined benefit pension plans for most of its large workforce. Following are the abbreviated 2019/2020 financial results for GAM, including select results for the pension plans:

1/1/20 Balance Sheet	(in billions)
Company Assets	144,600
Pension Assets	108,800
Total Assets	253,400
Company Liabilities	105,600
Pension Liabilities	134,200
Total Debt	239,800
Equity	13,600

Other 2019 Financial Information	(in billions)
Pretax Income	6,000
Components of Pension Expense	
Service Cost	900
Interest Cost	6,100
Expected Return on Assets	(7,500)
(Gain)/Loss Amortization	180
Prior Service Cost Amortization	10
Pension Contribution	2,000
Actual Pension Return	10,100

2019 Cash Flows	(in 000s)
Operating Cash Flow	7,500
Financing Cash Flow	750

2020 Assumptions	
Pension Liability Discount Rate	4.75%
PBGC Variable Rate Premium (as a % of unfunded liabilities)	3.00%

Potential Caerus Engagement

GAM is considering engaging Caerus Consulting for one or more of the following projects:

- Strategic risk analysis and development of competitive strategy
- Development of risk metrics for financial and non-financial risks

0.10 Disruptive Energy (DE)

Overview

Disruptive Energy is a new entrant in the automotive world. Its business includes related energy activities in BEVs, solar energy and back-up power generation.

- DE began its operations in the luxury market, which features more modest vehicle sales but high revenues per sale. It marketed cars and SUVs primarily in the U.S. and Europe. It was the first significant manufacturer of battery-powered vehicles with strong performance and significant driving range (300 miles/475 kilometers). It sold approximately 100,000 vehicles in 2017. Starting in the 3rd quarter of 2018, when it launched a more affordable sedan at the lower end of the luxury market, it sold more vehicles in the U.S. than either of the German luxury car makers. It aspires to become a mainstream manufacturer in the U.S. and China.
- DE bought a solar panel company and developed its own residential solar roof tiles. It sells solar power/battery back-up systems to homeowners. The company is not yet a significant player in these markets as resources were first focused on bringing the more affordable sedan to market.
- DE has installed the first large scale solar/battery back-up system in Australia. That system has been proven to reduce back-up power generation by 90%, using renewable, non-polluting energy. This scalable platform can also reduce peak performance requirements, enabling utilities to defer or eliminate building additional power generation stations. Other competitors providing this new capability are starting to emerge.

These initiatives are led by a brash visionary – Lone Ox, who is active in social media and enjoys a large subscriber base. He plays a central role in planning, product design, introduction of new features and timetables.

Products / Services

DE sells and services its electric cars and SUVs through a network of service centers. DE supplies a large and expanding number of rapid charging stations to facilitate long distance travel. The company provides regular, no-cost updates to its customers' software via the car's existing internet connections. At present, other manufacturers can only update vehicle software at dealerships.

In the residential market, DE markets and installs solar panels and, beginning in 2019, solar tiles. In the utility market, its solar-powered back up systems have been installed in Australia, Hawaii and Puerto Rico.

- Given the global nature of the automobile industry and its plans to enter the mainstream market, DE needs to be able to compete against legacy automakers who have great economies of scale in production and significant financial resources at their disposal.

- DE has significant outstanding loan balances that are coming due. Margins on new sales are used to repay outstanding loans and invest in new capabilities. DE started in the luxury market segment, where margins are highest. Margins may be squeezed as it moves downmarket.
- Having hit its production goals for these affordable sedans and posting positive earnings in September 2018, DE is now turning its attention to the following initiatives:
    - Expanding its product line to affordable SUVs, pick-up trucks, and tractor trailers. Developing a large production facility in China
    - As DE's customer base grows, commensurate increases in parts, repair services, and charging options have become necessary.
- Residential solar activities took a back burner while DE focused on ramping up its more affordable sedan, but are again becoming a priority. DE ended a retail marketing partnership to focus on direct-to-consumer sales to reduce marketing costs. The solar tiles were also redesigned to reduce production and installation costs significantly. Lastly, a large solar tile factory was completed, which provides economies of scale. In addition to solar power generation, DE also developed a residential battery storage system.
- Battery design and management are key components underlying DE's vehicles, residential energy storage, and large-scale solar back-up systems. Current state-of-the-art car batteries are made of lithium, nickel, manganese, cobalt and graphite. Except for manganese, 50% of the supplies originate in one or two countries. Cobalt is sourced primarily in one country, which uses child labor in its mining operations. DE invests heavily in battery design, where it has a two-year lead on the competition in terms of higher efficiency and lower dependence on rare elements. It leverages its battery expertise across all of its activities.

Potential Caerus Engagement

DE is considering engaging Caerus Consulting for one or more of the following projects:

- Identifying emerging risks facing DE
- Setting up hedging strategies to mitigate key risks
- Evaluating the potential for joint ventures

0.11 Non-Financial Engagement – Energetix Power

Caerus has analyzed the energy industry and considers its primary risks to be the following.

Energy Utility Industry Key Risks

Regulatory, Legislative, and Legal risks

- Revenues, earnings and the ability to recover costs are impacted by:
    - Legislation and regulation affecting electric and natural gas generation, distribution, and transmission
    - The rates that state utility commissions allow utilities to charge
    - Regulatory changes related to the impact of global climate change

- Deregulation or restructuring in the electric industry may result in increased competition and additional costs
- Environmental laws and regulations can require significant capital expenditures or cause exposure to environmental liabilities.

Operational risks

- Operating results may be affected by:
    - The overall market and economic conditions
    - Fluctuations in commodity prices
    - Seasonal changes in the weather
    - Extreme weather conditions (including those associated with climate change)
    - Lack of growth, or a decline, in customer demand

- Ability to provide energy and the cost to provide it may be affected by:
    - Natural disasters
    - Operational accidents
    - Availability of adequate interstate pipeline transportation capacity and natural gas supply
    - Terrorist activities, military activity or other government actions
    - Ability to attract and retain an appropriately qualified workforce

- The reputation and financial condition of utilities could be impacted by:
    - Obligations to comply with federal and state regulations, laws, and other legal requirements that govern the operations, assessments, storage, closure, remediation, disposal and monitoring relating to nuclear waste and coal ash (the residue that remains after burning coal to generate electricity).
    - Cyberattacks and data security breaches
    - Construction projects that are started and cancelled prior to completion

Nuclear generation risks

- Utilities with nuclear power plants may incur substantial costs and liabilities due to their ownership and operation of nuclear generating facilities.

Company Overview

Energetix Power Company ("Energetix") is an energy company headquartered in Denver, Colorado. It is a holding company doing business in seven states in the western United States through business segments. The three main operating business segments are:

- Electric Utilities and Infrastructure
- Gas Utilities and Infrastructure
- Commercial Renewables

Within each business segment, Energetix owns multiple subsidiary utilities. Further information on each segment is provided below.

A fourth business segment ("Other") is not an operating segment but deals with company-wide items such as issuance of holding company debt, unallocated corporate costs, and companywide initiatives.

Energetix has 23,570 employees as of the most recent year-end. This total includes 4,819 who are represented by labor unions under various collective bargaining agreements covering wages, benefits, working practices, and other conditions of employment.

Energetix has adopted the following **Mission Statement**:

Provide reliable energy generation and distribution to customers using the lowest cost resources available.

Due to increasing awareness of environmental concerns, Energetix recently updated its Vision statement to the following:

***Vision**: Deliver tomorrow's clean energy solutions today.*

Company and Industry Background

Both the Electric and Gas Utility segments contain a number of subsidiary public utilities, each of which are regulated by various state utility regulatory agencies. In addition, each utility is subject to the rules and regulations of the Federal Energy Regulatory Commission (FERC). The following sections provide additional information on each segment.

Electric Utilities and Infrastructure (EUI)

EUI operates in retail and wholesale electricity markets.

a. In the retail market, its businesses operate as the sole supplier of electricity within their service areas. EUI owns and operates facilities necessary to generate, transmit and distribute electricity. Services are priced by state approved rates designed to include the costs of providing these services and a reasonable return on invested capital.

Competition in the regulated electric distribution business is primarily from the development and deployment of alternative energy sources, such as private on-site solar.

b. In the wholesale market, Energetix competes with other utilities for bulk power sales, sales to municipalities and cooperatives and wholesale transactions under cost-based contracts approved by the FERC. The principal factors in competing for these sales are price, availability of capacity and power, and reliability of service. Prices are influenced primarily by market conditions and fuel costs.

Energy requirements in excess of a utility's own capacity are supplied through contracts with other generators of electricity and purchased on the open market. Factors that could cause EUI to purchase power for its customers may include generating plant outages, extreme weather conditions, demand growth, and price. Each EUI company performs an annual review of each counterparty from which it purchases energy with respect to its financial stability and ability to fulfill projected shortages in its own electricity supply. The EUI companies also complete projections under various scenarios to test what actions would be needed if one or more counterparties failed to provide the contractual amount of energy.

EUI owns the power wires used to transmit electricity to its customers. Several of the EUI subsidiaries have considered making extensive upgrades to their lines and the equipment used to support them. However, these companies delayed doing any maintenance because the wiring is located in difficult-to-reach wooded areas. Since regulators have been focused on regulatory approval of rates charged to EUI customers, there has not been a focus on equipment maintenance.

EUI's generation portfolio is a balanced mix of energy resources having different operating characteristics and fuel sources, designed to provide energy at the lowest possible cost to meet its obligation to serve retail customers. All options, including owned generation resources and purchased power opportunities are evaluated every three to five years to select the lowest-cost resources available to meet system load requirements.

Last year, the state regulator for one of the EUI companies mandated that, within the next 20 years, 50% of all electricity in that state must be generated from renewable resources such as wind or solar energy. Energetix is working on identifying the current and projected renewable energy providers, the amounts of renewable energy that they will be able to provide, and whether the EUI subsidiary can meet the mandate. It is expected that other EUI companies will have to meet similar requirements at some point in the future.

EUI relies principally on coal, nuclear fuel and natural gas for its generation of electricity.

a. **Coal** - EUI meets its coal demand through a portfolio of long-term purchase contracts and short-term spot market purchase agreements. Expiration dates for its long-term contracts, which have various price adjustment provisions, range from 2020 to 2024 for its various subsidiaries.

b. **Nuclear**
   - EUI has contracted for uranium materials and services to fuel its nuclear reactors. EUI staggers its contracting so that its portfolio of long-term contracts covers the majority of its fuel requirements in the near term and decreasing portions of its fuel requirements over time thereafter. Near-term requirements not met by long-term supply contracts are fulfilled with spot market purchases.
   - Energetix has a significant financial commitment to dispose of spent nuclear fuel and to decommission each plant safely. EUI is allowed to recover estimated decommissioning costs through rates it charges retail and wholesale customers over the remaining service periods of their nuclear stations.
   - The Nuclear Waste Policy Act (NWPA) provides the framework for development by the federal government of interim storage and permanent disposal facilities for high-level radioactive waste materials. The nuclear power industry faces uncertainties with respect to the cost and long-term availability of disposal sites for spent nuclear fuel and other radioactive waste, compliance with changing regulatory requirements, capital outlays for modifications and new plant construction.

c. **Natural gas** – Supply, transportation and storage for EUI's power stations are purchased under standard industry agreements from various suppliers. Natural gas supply agreements typically provide for a percentage of forecasted usage being procured over time, with varying expiration dates.

EUI purchases a portion of its capacity and system requirements through purchase obligations, leases and purchase capacity contracts. EUI believes it can obtain adequate purchased power capacity to meet future system load needs. However, during periods of high demand, the price and availability of purchased power may be significantly affected.

Gas Utilities and Infrastructure (GUI)

GUI conducts natural gas operations through regulated public utilities in five states. GUI serves residential, commercial, industrial and power generation natural gas customers.

The number of residential, commercial and industrial customers within the GUI service territory is expected to increase over time. Average usage per residential customer is expected to remain flat or decline for the foreseeable future. GUI also owns, operates and has investments in various pipeline transmission and natural gas storage facilities.

GUI is responsible for the distribution of natural gas to retail customers in its service territories. Its natural gas procurement strategy is to contract primarily with major and independent producers and marketers for natural gas supply. It also purchases a diverse portfolio of transportation and storage service from interstate pipelines. This allows GUI to assure reliable natural gas supply and transportation for its customers during peak winter conditions.

GUI’s utilities operate as the sole suppliers of natural gas within their retail service territories. GUI owns and operates facilities necessary to transport and distribute natural gas. Services are priced by state commission approved rates designed to include the costs of providing these services and a reasonable return on invested capital.

Commercial Renewables (CR)

CR primarily acquires, builds, develops and operates wind and solar renewable power generation throughout the continental United States. Revenues are generated by selling the power produced from renewable generation through long-term contracts to utilities, electric cooperatives, municipalities and commercial and industrial customers. In most instances, these customers have obligations under state-mandated renewable energy standards or similar state or local renewable energy goals.

As part of its growth strategy, CR has expanded its investment portfolio through the addition of distributed solar companies and projects, energy storage systems and energy management solutions specifically tailored to commercial businesses.

CR is subject to regulation at the federal level.

The market price of commodities and services, along with the quality and reliability of services provided, drive competition in the wholesale energy business. CR’s main competitors include other nonregulated generators and wholesale power providers.

Pension Plan

Energetix sponsors traditional defined benefit pension plans for all employees. Following are the abbreviated 2019/2020 financial results for Energetix, including select results for the pension plans:

1/1/2020 Balance Sheet	(in 000s)
Company Assets	140,000
Pension Assets	50,000
Total Assets	190,000
Company Liabilities	80,000
Pension Liabilities	80,000
Total Debt	160,000
Equity	30,000

Other 2019 Financial Information	(in 000s)
Pretax Income	1,100
Components of Pension Expense	
Service Cost	2,000
Interest Cost	2,994
Expected Return on Assets	(3,500)
(Gain)/Loss Amortization	(440)
Prior Service Cost Amortization	550
Pension Contribution	2,660
Actual Pension Return	1,770

2019 Cash Flows	(in 000s)
Operating Cash Flow	880
Financing Cash Flow	990

2020 Assumptions	
Pension Liability Discount Rate	3.75%
PBGC Variable Rate Premium (as a % of unfunded liabilities)	3.00%

Potential Caerus Engagement

Energetix is considering engaging Caerus Consulting for one or more of the following projects:

- Evaluation and mitigation of the risks associated with decommissioning nuclear power plants
- Strategic planning relative to emerging risks in the energy industry
- Development of a captive insurance company to self-insure weather-related risks
- Pension plan investment and actuarial consulting

0.12 Financial Engagement – Lyon Corporation

Company Overview

Lyon Corporation is a financial services holding company. It is described in detail in the remaining sections of the case study and therefore the background on the company is not repeated here.

[***Note that for the purposes of any relationships between Lyon and Caerus, all candidates are responsible only for the Lyon information contained in Section 1, Lyon Corporation.*** Candidates further remain responsible for the specific Sections designated for each Extension in the introduction to the case study, but Lyon information in the case study other than Section 1 will only be considered in Extension questions.]

Engagements with Caerus

Over the past ten years Lyon has established a beneficial relationship with Caerus and continues to hire Caerus for periodic consulting engagements. Some previous engagements have focused on the following areas:

- Evaluation of potential and actual acquisitions, including specifically Pryde and Helios
- Advice in the area of board composition and governance
- Education in the development and uses of economic capital models

1 Lyon Corporation

1.1 Overview

Lyon Corporation is a diversified U.S. public holding company with interests in financial services companies.

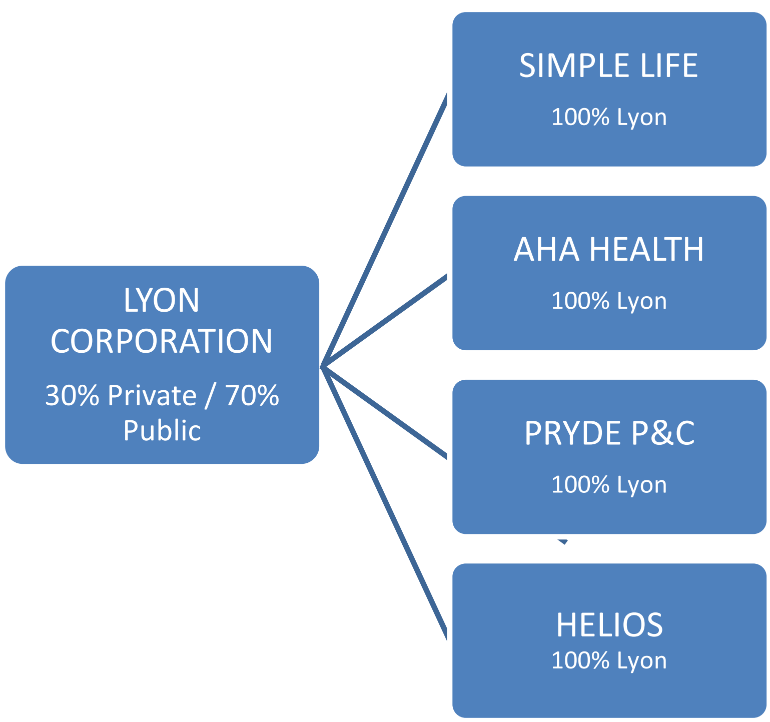
1.2 Mission Statement

Lyon Corporation is committed to enhancing shareholder value through the active management of long-term investments and responsible corporate citizenship. It is of the view that these objectives are best achieved and risks are minimized through geographic diversification.

Lyon Corporation believes that the future belongs to corporations having a well-defined strategic vision anchored in strong core values. These principles guide the Corporation in all of its decisions.

1.3 Structure

Lyon Corporation is a Massachusetts public company (LCC: NYE and TSX) with a significant shareholder, Lyon Family, which owns about 30% of the outstanding shares. The holding company has the following structure:



Percentages denote equity interest and voting rights.

1.4 Simple Life

The Simple Life Insurance Company (SLIC) is a U.S. life insurance company located in Boston, Massachusetts, wholly owned by Lyon Corporation, selling throughout the U.S. SLIC has four lines of business: Universal Life (UL); Level Premium Term Insurance with three available level term periods: 10, 20 and 30 year; Single Premium Immediate Annuities (SPIA); and Variable Annuities with a Return of Premium (ROP) Guaranteed Minimum Death Benefit (GMDB) and an optional Guaranteed Minimum Accumulation Benefit (GMAB) or Guaranteed Minimum Withdrawal Benefit (GWAB). SLIC issues its products only in the United States.

SLIC provides basic life, health and disability benefits to its employees while they are employed by the company.

SLIC sponsors a company-paid final-average-earnings defined benefit pension plan for its employees.

1.5 AHA Health

AHA Health Insurance Company (AHA) is a national insurer located in California with its home office in Los Angeles. AHA is wholly owned by Lyon Corporation. AHA sells individual and group health insurance and has a small block of long term care (LTC) business.

AHA Health provides basic life, health and disability benefits to its employees while they are employed by the company.

AHA Health sponsors a company-paid cash balance defined benefit pension plan for its employees.

1.6 Pryde P&C

Pryde P&C is an Omaha, Nebraska-based U.S. writer with commercial and personal lines products that target a broad range of customers. In 2019, the split of premiums between commercial and personal lines is about 70%/30% respectively. Pryde is licensed in all 50 states. Its products are sold primarily through a career sales force led by sales directors responsible for selecting the product, managing the agency delivery system and serving the business in their territory. A small portion of the business is sold through independent brokers. Pryde P&C is wholly owned by Lyon Corporation.

Pryde P&C provides basic life, health and disability benefits to its employees while they are employed by the company.

Pryde P&C does not sponsor any pension or savings plans for its employees.

1.7 Helios

Helios Life is located in Triangle City, Atlantis, a jurisdiction that uses the Euro as its currency. It is 100% owned by Lyon Corporation. Helios offers life insurance, disability insurance, and a combination illness/disability/life insurance product.

Helios was acquired by Lyon Corporation in 2017. It was hoped that Helios would be a strategic entry into more global markets though Lyon has not as yet devoted much time to developing Helios.

To date, Helios has provided steady profits. Earnings are translated to a dollar basis for reporting Lyon's consolidated financial statements. Lyon has allowed earnings to be retained within Helios to date and has not focused on the currency exchange risk associated with Helios.

1.8 Lyon Board of Directors

The Lyon Board consists of twelve members, four of whom directly or indirectly represent the Lyon family interest. One of these four also serves as the Board Chairman of SLIC. There are six outside board members, four of whom are Chief Executive Officers or Board Chairmen in leading public companies in the United States or Canada. The other two board members are the Board Chairmen of AHA Health and Pryde P&C.

The following are the directors:

George Bell is the Chief Executive Officer of Rocket Aerospace Inc., the largest manufacturer of civil aircraft in the world.

Sarah Hanrahan is the Chief Executive Officer of Transworld Optics, a leading edge and global company in manufacturing of fiber optics.

Andrew Lyon is the Deputy Chairman of the Board and Co-Chief Executive Officer of Lyon Corporation.

Patrick Lyon is Co-Chief Executive Officer of Lyon Corporation.

R. Tomas Lyon III is Founder and Chairman of the Board of Lyon Corporation, Chairman of the Executive Committee, and Chairman and CEO of SLIC.

Jeremy Orr is a retired CEO and currently Chairman of Canada Aqua limited, the largest supplier of natural water in the Canadian marketplace.

Alicia Montgomery is the Chairman, President and Chief Executive Officer of Northern Oil Sands Limited, one of Canada's largest oil sands company.

John Ritchie is a retired lawyer and a senior advisor to the Henderson & Henderson law firm.

Denise Rae is a retired businessperson, formerly CEO and Chairman of Rae Communications, Inc.

R. Tomas Lyon IV has been a director of Lyon Corporation since 1998. He was an insurance broker and President of Risky Life Insurance Company.

Dr. Jerry Graham is the Chairman and CEO of AHA Health.

Roberta James is the Chairman and CEO of Pryde Property & Casualty Company.

Mandate of the Board

The mandate of the Board, which it discharges directly or through one of the five Board Committees, is to supervise the management of the business and affairs of the Corporation. Responsibilities include approval of strategic goals and objectives, review of operations, disclosure and communication policies, oversight of financial reporting and other internal controls, corporate governance, Director orientation and education, senior management compensation and oversight, and Director nomination, compensation and assessment.

Executive Committee

The Executive Committee has and may exercise all or any of the powers vested in and exercisable by the Board, except approval of the annual strategic plan.

Audit Committee

The primary mandate of the Audit Committee is to review the financial statements of the Corporation and public disclosure documents containing financial information and to report on such review to the Board, to be satisfied that adequate procedures are in place for the review of the Corporation's public disclosure documents that contain financial information, to oversee the work and review the independence of the external auditors, and to review any evaluation of the Corporation's internal control over financial reporting.

Compensation Committee

The primary mandate of the Compensation Committee is to approve compensation policies and guidelines for employees of the Corporation, to approve compensation arrangements for executives of the Corporation, to recommend to the Board compensation arrangements for the Directors and for the Co-CEOs, to oversee the management of incentive compensation plans and equity compensation plans, and to review succession plans for senior management.

Related Party and Conduct Review Committee

The primary mandate of the Related Party and Conduct Review Committee is to recommend to the Board procedures for the consideration and approval of transactions with related parties of the Corporation and to review and, if deemed appropriate, to approve such transactions.

Governance and Nominating Committee

The primary mandate of the Governance and Nominating Committee is to oversee the Corporation's approach to governance issues, to recommend to the Board corporate governance practices consistent with the Corporation's commitment to high standards of corporate governance, to assess the effectiveness of the Board of Directors, of Committees of the Board and of the Directors, and to recommend to the Board candidates for election as Directors and for appointment to Board Committees.

Summary of Committee Memberships

The following table (where C = chairperson and M = member) summarizes committee memberships for Lyon's Board of Directors:

	Executive	Audit	Compensation	Related Party and Conduct Review	Governance and Nominating
R. Tomas Lyon III	C				C
R. Tomas Lyon IV	M				M
Patrick Lyon	M				
Jeremy Orr	M		M		M
John Ritchie	M	M			M
George Bell		C		M	
Sarah Hanrahan		M	M		
Alicia Montgomery		M			
Andrew Lyon			C		M
Denise Rae			M	M	

Code of Conduct and Business Ethics

The Board of Directors has adopted a Code of Business Conduct and Ethics to promote and maintain a culture of integrity throughout the Corporation. The Code is applicable to Directors, officers and employees of the Corporation.

Board Minutes

The Board is involved with the management of Lyon at both a strategic and an operational level. Excerpts from the March 12, 2020 Board meeting are provided here.

1. BOARD MEMBERS PRESENT:
    - R. Tomas Lyon III
    - Andrew Lyon
    - Patrick Lyon
    - Sarah Hanrahan

- Jeremy Orr
- Alicia Montgomery
- John Ritchie
- Denise Rae

2. BOARD MEMBERS ABSENT:
   - George Bell
   - R. Tomas Lyon IV
   - Dr. Jerry Graham
   - Roberta James

3. NEW BUSINESS

   a. Development of Corporate Risk Committee

      The Board Risk Subgroup (Andrew Lyon, Sarah Hanrahan, Jeremy Orr, and John Ritchie) presented to the rest of the board their proposal to set up a Corporate Risk Committee. They proposed the following:

      Membership:

      - Promote the CRO of Helios to head this Committee based on his risk experience in Helios and his charismatic style
      - Bring over two actuaries from Pryde P&C's ERM group to join the committee
      - Hire two actuarial students from the outside

      Responsibilities:

      The Corporate Risk Committee will meet regularly with the Lyon subsidiaries to discuss the risk oversight process within each subsidiary. This will alleviate the need for the Board to get involved with details such as metrics that are best understood by the subsidiaries.

      A couple of questions were asked regarding the salaries of the individuals, but the proposal passed with Denise Rae being the only dissenting opinion.

   b. Corporate Audit Head

      On behalf of George Bell, John Ritchie announced that the Audit Committee had recently approved the hire of John Marmot, to be appointed as Head of the Corporate Audit team, reporting to George. John and his team will work under George's leadership to review financial statements, develop a risk management framework, and make sure that we all follow the ERM framework that we established for Lyon and subsidiaries, in alignment with our strategic objectives.

c. Board Member Succession planning

Denise Rae and Jeremy Orr will be stepping down from the board in five months, prior to the end of their terms. Andrew Lyon proposed adding Barbara Lyon and the CEO from Gem Data Analytics to the Board.

John Ritchie expressed concern with having another member of the Lyon family serving on the board given its current size. The discussion became a little contentious, but ultimately the board voted in favor of Andrew Lyon's proposal, with John Ritchie being the only dissenting vote.

John Ritchie and Sarah Hanrahan will reach the end of their two-year commitments to the board in nine months. The board voted to request that Sarah Hanrahan extend her commitment another two years. The board did not extend the commitment of John Ritchie. Although the majority of the board voted for his extension, at least one member of the Lyon family is required to approve the extension in order for the motion to pass.

Andrew Lyon will look for another potential board member to recommend at the next meeting.

d. Review of Current Sales and Potential New Products

Bob Seoul, VP of Operations for AHA Health, reported that AHA is meeting its sales target levels for all current businesses, and his department is now in development of a new Critical Illness product.

Jeremy Orr asked about the viability of a Critical Illness product given that at least three competitors have stopped selling this type of product. Seoul responded that his staff was still validating their market analysis, but felt that the exit of the other companies from this market would only help AHA's proposed sales.

There was a lot of discussion, and Jeremy Orr made a motion to stop the development of the Critical Illness product. The motion was seconded, and passed by a 5 to 3 vote.

e. Review of Potential "quick sale" Acquisition

R. Tomas Lyon III reported that he has been approached about a potential acquisition. Tyger Corporation is looking to exit the annuity market and wants so sell its wholly owned subsidiary CUB Annuity. Because this would be a quick sale, it is being handled outside the company's normal acquisition protocols. CUB Annuity provided financials for the past three years. The data has not been independently validated by an auditor, but Mr. Lyon stated that he knows the CFO of Tyger Corporation very well and would feel comfortable trusting their numbers.

There was extensive discussion, but, since a decision needed to be made prior to the next board meeting, the board decided to vote. The board agreed to sign a letter of commitment for the acquisition by a 4 to 4 vote, with R. Tomas Lyon III having the deciding vote when there is a tie.

1.9 Credit Rating

Lyon Corporation has a financial strength rating of A (Super) from Kelly Ratings for the insurance group. The rating reflects the sufficient capital position of SLIC and Lyon's overall positive financial results. Lyon's debt rating is BBB.

1.10 Oversight of Lyon Companies

Lyon Corporation, SLIC, AHA Health and Pryde P&C are each managed by an executive team (comprising the CEO, CFO, and COO and four to six other executives). Each CEO reports directly to his respective board. SLIC, AHA Health and Pryde P&C each have an independent Board of Directors.

1.11 Lyon Acquisition Activity

Lyon has grown from a simple life insurance company to a multi-line, multi-national insurer through acquisition. It continues to seek out appropriate acquisitions as a means of growth.

Following are potential acquisition targets that Lyon is considering:

1) Single Premium Deferred Annuity (SPDA) writer that has a strong sales-oriented culture

2) Larger block of SPIA business to manage in combination with its small existing block

3) Reinsurer, to allow for both expansion to a new market and the offering of reinsurance solutions to existing subsidiaries

4) Writer of institutional insurance / asset management business

5) Canadian company to increase its presence internationally with moderate risk

6) European insurer to develop a presence in one of the largest insurance markets

Information for three of the potential acquisitions has been gathered for review:

Target 1: SPDA Writer

AnnCo is a single-line US company, which sells only fixed SPDAs. The product is a multi- year guaranteed annuity with 5, 7, or 10-year interest rate guarantees. It has been noted that most annuitants lapse at the end of the initial interest rate guarantee period.

Reserves for the product total about $1 billion. The investment portfolio supporting the product is somewhat aggressive in order to support competitive rate guarantees. It includes a mix of private equity, asset-backed securities, and high-yield bonds, along with traditional fixed income securities.

AnnCo's culture emphasizes sales over any other objectives. The SPDAs are sold through independent agents and other financial advisors. Sales have grown by 10% per year for the past 3 years.

Target 2: SPIA Writer

This block of business is being sold because the current company wants to get out of the market. In recent years the company has faced a significant amount of competition and was able to increase sales in 2019 only by changing its investment strategy in order to obtain a higher yield.

SPIA	**2015**	**2016**	**2017**	**2018**	**2019**
Statutory Income Statement (000s)					
Premiums & Policy Fees	80,888	82,829	28,266	43,398	88,830
Ceded Premiums					
Net Investment Income	50,584	56,894	59,897	63,338	66,784
Total Revenue	**131,472**	**139,723**	**88,163**	**106,736**	**155,614**
Surrender & Annuity Benefits	54,288	58,648	63,029	67,424	71,820
Death Benefits	-	-	-	-	-
Ceded Benefits	-	-	-	-	-
Increase in Net Reserves	55,130	54,803	27,238	27,077	53,845
Expenses	20,934	25,452	30,121	34,945	39,928
Net Transfers to/(from) Separate Account	-	-	-	-	-
Total Benefits & Expenses	**130,352**	**138,902**	**120,388**	**129,447**	**165,593**
Income Before Income Tax	1,120	821	(32,225)	(22,711)	(9,979)
Federal Income Tax	392	287	(11,279)	(4,769)	(2,096)
Net Income	**728**	**534**	**(20,946)**	**(17,941)**	**(7,884)**
Statutory Balance Sheet (000s)					
General account assets	807,736	865,322	903,527	945,389	998,383
Separate account assets	-	-	-	-	-
Total Assets	**807,736**	**865,322**	**903,527**	**945,389**	**998,383**
Net General Account Reserve Liabilities	768,755	823,462	859,757	899,526	949,870
Separate Account Liabilities	-	-	-	-	-
Total Liabilities	**768,755**	**823,462**	**859,757**	**899,526**	**949,870**
Surplus	**38,981**	**41,860**	**43,770**	**45,863**	**48,513**
Total Liabilities and Surplus	**807,736**	**865,322**	**903,527**	**945,389**	**998,383**
Economic Capital Balance Sheet (000s)					
Market Value of Assets	**1,021,673**	**1,097,889**	**1,149,890**	**1,206,852**	**1,278,398**
Economic Reserve	983,236	1,056,502	1,106,508	1,161,287	1,230,082
Required Economic Capital	38,437	41,387	43,382	45,565	48,317
Free Surplus	-	-	-	-	-
Total Liabilities and Surplus	**1,021,673**	**1,097,889**	**1,149,890**	**1,206,852**	**1,278,398**

Target 3: Reinsurer

MPS Re is a reinsurer based in California, USA. It has been in business for 20 years, reinsuring Personal Property, Personal Auto and Construction Insurance.

The aggregate financials for MPS Re are below.

MPS Re	**2015**	**2016**	**2017**	**2018**	**2019**
Statutory Income Statement (000s)					
Underwriting Income					
Premiums earned	1,189,105	951,288	858,269	884,023	910,543
Losses and loss adjustment expenses incurred	801,288	1,300,000	619,454	639,538	660,224
Expenses	**369,942**	**294,771**	**261,286**	**269,123**	**277,199**
Net Underwriting Gain (loss)	**17,875**	**(643,483)**	**(22,471)**	**(24,638)**	**(26,880)**
Investment Income	**81,508**	**68,075**	**56,821**	**55,804**	**57,481**
Income Before Income Tax	**99,383**	**(575,407)**	**34,350**	**31,166**	**30,601**
Federal Income Tax	**34,784**	**(201,393)**	**12,023**	**6,545**	**6,426**
Net Income	**64,599**	**(374,015)**	**22,328**	**24,621**	**24,175**
Statutory Balance Sheet (000s)					
Total Assets	**2,799,951**	**2,009,647**	**2,006,101**	**2,103,384**	**2,203,738**
Losses and loss adjustment expenses	785,262	1,209,300	619,454	639,538	660,224
Unearned Premium	528,493	422,795	435,480	448,543	462,001
Other Liabilities	300,184	237,610	248,223	255,671	263,339
Total Liabilities	**1,613,940**	**1,869,705**	**1,303,158**	**1,343,752**	**1,385,564**
Surplus	**1,186,011**	**139,943**	**702,943**	**759,633**	**818,174**
Total Liabilities and Surplus	**2,799,951**	**2,009,647**	**2,006,101**	**2,103,384**	**2,203,738**
Economic Capital Balance Sheet (000s)					
Market Value of Assets	**3,007,090**	**2,163,329**	**2,165,032**	**2,275,459**	**2,389,721**
Economic Reserve	1,801,085	1,525,198	1,457,343	1,506,641	1,557,584
Required Economic Capital	270,163	228,780	218,601	225,996	233,638
Free Surplus	935,842	409,351	489,088	542,822	598,499
Total Liabilities and Surplus	**3,007,090**	**2,163,329**	**2,165,032**	**2,275,459**	**2,389,721**

1.12 Financials

The current year financial statements are provided for Lyon Corporation on a consolidated basis.

Lyon Consolidated 2019 Statements

2019 FINANCIAL STATEMENTS	SLIC	AHA	Pryde	Helios	Lyon Corporate *	Combined Financials
Income Statement (000s)						
Premiums & Policy Fees	952,071	6,131,868	885,134	166,675	0	8,135,748
Investment Income	255,046	48,555	89,850	89,946	9,765	493,162
TOTAL REVENUE	**1,207,117**	**6,180,423**	**974,984**	**256,622**	**9,765**	**8,628,910**
Property and casualty losses and loss expense	0	0	855,778	0	0	855,778
Life, accident and health benefits	535,256	4,806,518	0	114,655	0	5,456,429
Other expenses	597,787	1,042,482	198,985	118,026	5,281	1,962,561
TOTAL EXPENSES	**1,133,042**	**5,849,000**	**1,054,764**	**232,681**	**5,281**	**8,274,768**
Income Before Income Tax	74,074	331,423	(79,780)	23,941	4,484	354,142
Income Tax	25,926	115,998	(19,945)	5,252	1,300	128,532
Net Income	48,148	215,425	(59,835)	18,688	3,184	225,610
Balance Sheet (000s)						
General account assets	4,872,478	2,750,693	3,549,889	1,581,999	266,577	13,021,636
Separate account assets	1,776,396	0	0	0	0	1,776,396
Total Assets	**6,648,874**	**2,750,693**	**3,549,889**	**1,581,999**	**266,577**	**14,798,032**
Property and casualty loss and other liabilities	0	0	2,467,646	0	0	2,467,646
Separate account liabilities	1,776,396	0	0	0	0	1,776,396
Future policy benefits and claims, other liabilities	4,241,142	1,024,022	0	1,397,199	0	6,662,363
Other liabilities	0	0	0	0	52,235	52,235
Total Liabilities	**6,017,538**	**1,024,022**	**2,467,646**	**1,397,199**	**52,235**	**10,958,640**
Surplus	**631,336**	**1,726,672**	**1,082,243**	**184,800**	**214,341**	**3,839,392**
RBC Ratio	434%	670%	404%			
Total Liabilities and Surplus	**6,648,874**	**2,750,693**	**3,549,889**	**1,581,999**	**266,577**	**14,798,032**
Additional Balance Sheet Information						
Dividend/Capital Transfer from/(to) Lyon	(16,496)	0	(78,429)	0	94,925	0
Economic Capital						
Required Economic Capital	435,092	1,799,520	979,640	170,109	22,126	3,406,488
Excess Capital	75,271	192,959	181,627	63,811	200,361	714,029
Available Economic Capital	**510,364**	**1,992,480**	**1,161,268**	**233,920**	**222,486**	**4,120,517**
* Excluding investments in subsidiaries						

1.13 ORSA

Lyon completes an annual ORSA report, as required by various regulatory authorities. The process for the development of the ORSA involves the following:

- Lyon has a dedicated team whose primary responsibility is completing the ORSA report.
- The team is divided into sub-units, each of which focuses on one of the major subsidiaries – SLIC, AHA, Pryde, and Helios. The material used from each subsidiary is based on the processes that the subsidiary already has in place, in order to reduce the amount of additional work required.
- A separate section of the ORSA report is prepared for each subsidiary.
- The format of the report follows precisely the ORSA regulation enacted in Massachusetts, Lyon's home state.
- The consolidated report is submitted to the Board as part of its reading package for the March Board meeting.

The Executive Summary of the most recent report follows:

"Lyon Corporation has carried out an assessment of all of the risks that it believes can materially affect its business. Lyon has determined its capital requirements based on its current business plan to be $3.542 million as of December 31, 2019. This assessment has been overseen by the Board throughout the process.

"The ORSA process has considered the firm's strategy and business model in light of its business plans, risk tolerances and capital requirements. No immediate changes are proposed in those areas, although several areas for consideration were identified.

"The ORSA process requires that we consider the effectiveness of our risk assessment, risk management and capital management processes within the firm.

"This report which follows is a summary of important results from the ORSA.

Excerpt from the Capital Assessment section of Lyon's ORSA Report:

Lyon determines its capital requirements based on the economic capital process that is already in place within its subsidiary companies.

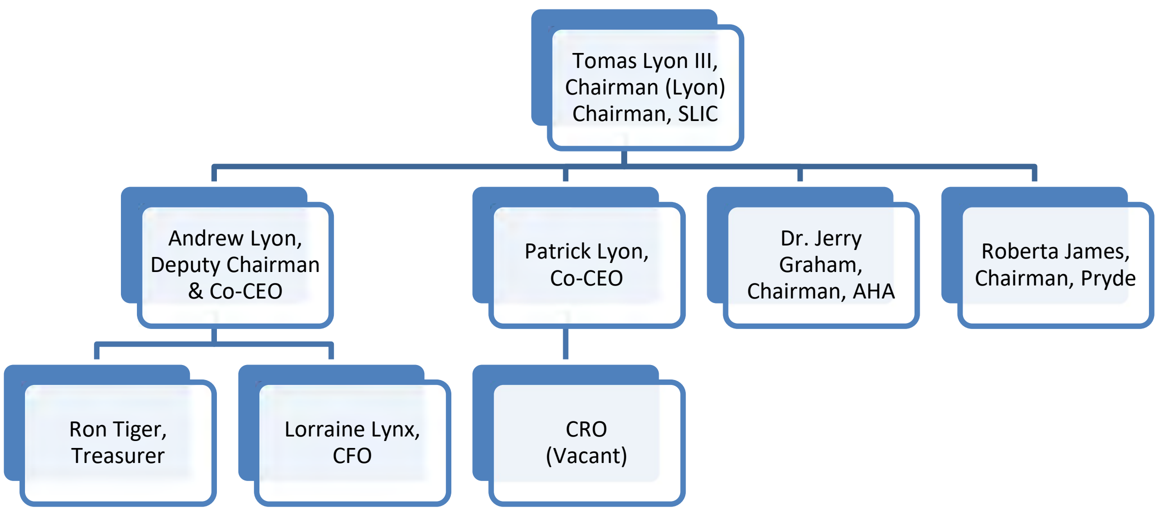
- *SLIC has an internal economic capital model tailored to its own company-specific risks. Risks are quantified based on a one-year 99.0% VaR measure. The model quantifies exposure to interest rate risk, equity price risk, and credit risk.*
- *AHA uses an internal economic capital model calibrated to an AA financial strength based on Kelly ratings, which is considered equivalent to a one-year 99.0% confidence interval.*
- *Pryde follows a similar approach to AHA.*
- *Helios provides economic capital results based on the requirements of its jurisdiction, Atlantis.*

The ORSA capital requirement for Lyon is equal to the sum of the economic capital requirements reported by the subsidiaries plus a credit risk factor applied to the Lyon Corporate assets.

2 Lyon Corporation (Corporate) Functions and Oversight

Lyon Corporation functions as a holding company with four fully-owned subsidiaries: Simple Life Insurance Company (SLIC), AHA Health Insurance Company (AHA), Pryde Property and Casualty, and Helios Insurance Company. Lyon Corporation is publicly-owned, with 30% of the shares held by the Lyon family. The company has $50 million in debt outstanding in the form of 20-year bonds issued in 2003 at 7.75% interest and estimates its after-tax cost of capital at 10%, which it uses to determine the value of an acquisition or a project.

A simplified organization chart for Lyon follows:



Lyon Corporation is in the process of developing a corporate level ERM function. Operational information provided to Corporate from the primary affiliated companies (SLIC, AHA, and Pryde) has been limited up until this time. However, the ERM department recently asked each affiliate to provide a summary description of its company, including product lines, outside relationships, risk assessments and concerns, and current business issues.

Lyon requires its subsidiaries to dividend excess capital up to the holding company. In turn, Lyon will consider providing capital contributions to subsidiaries that fall short of their capital requirements.

The documents in this section of the case study comprise various reports, e-mails, and memos related to the operation of Lyon Corporation.

The first set of reports that follow represent the first submissions from SLIC, AHA, and Pryde in response to Corporate's request for summary descriptions of each company.

2.1 SLIC Report to Corporate

Company Summary

The Simple Life Insurance Company (SLIC) is 100% owned by Lyon Corporation. R. Tomas Lyon III serves as Chairman of the Board, President and CEO.

SLIC is a life insurance company with four lines of business: Term Life, Universal Life (UL), Single Premium Immediate Annuities (SPIAs), and Variable Annuities (VAs).

Capitalization and Investments

The company operates without any long-term debt except for two Surplus Notes with 15-year maturities at issue. $50 million was issued at 7.75% in 2011 and $35 million at 6.0% in 2016.

The company strives to maintain a strong statutory risk-based capital (RBC) ratio, targeting capital at 350% of Company Action Level RBC, and to have an available to required economic capital ratio of 110% or greater. Any surplus in excess of the larger of 400% of Company Action Level RBC and 110% of required economic capital is distributed to Lyon Corporation through a dividend paid in cash annually at the end of the first quarter based on the year-end balance sheet. Surplus positions less than the larger of 300% of Company Action Level RBC and 90% of required economic capital are addressed through a capital contribution from Lyon Corporation or the issuance of additional surplus notes.

The company's general account is invested primarily in fixed-income assets. Variable annuity fixed accounts, which are minimal, are part of the general account; VA separate account investments are held in a segregated account and are managed by a third-party investment advisor.

Within the general account, there are separate investment portfolios for each of the four main product lines.

Risk Policies

Credit Risk: Fixed-income securities in the general account have exposure limits at individual obligor (issuer) and sector levels. For each portfolio, there are weighted average credit quality targets.

Market Risk: The company measures the effective duration of the assets and liabilities, semi-annually within the term, UL and SPIA lines of business. If the asset and liability durations are further apart than 0.5, the asset portfolio is rebalanced within 30 days such that its new effective duration equals that of the liabilities.

For the term, UL, and SPIA lines of business, any non-U.S. dollar fixed income positions are currency-hedged back to U.S. dollars using currency derivatives.

VA hedging is done on an economic basis. The hedging uses a dynamic approach updated monthly for market factors and quarterly for liability inforce changes. The key risk measures are delta and rho, and the program updates its equity and interest rate derivatives such that at least 80% of liability delta and rho are hedged. This “opportunistic” hedging methodology allows the hedging team to take some bets, as long as these hedging targets are met at a minimum.

Liquidity Risk: The liquidity policy requires SLIC to hold sufficient liquid assets to meet expected demands for cash in a unique liquidity stress-test scenario. The scenario focuses on a reputational liquidity crisis basis where markets continue to operate normally and the liquidity crunch affects only the company. The liquidity stress test anticipates situations where the company’s ability to sell assets to meet cash needs from its liability products is hindered by the market taking advantage of the company during the crisis. In addition, testing periodically considers a systemic stress scenario where the entire market is not able to sell assets at a reasonable value. However, SLIC’s liquidity policy does not require it to hold sufficient liquid assets to be able to meet cash demands in such a scenario, since it expects regulatory relief in a systemic crisis.

Operational Risk: The SLIC Chief Risk Officer will be responsible for collecting and disseminating risk information. A report will be prepared monthly and distributed to executive management.

SLIC Risk Management Committee

The committee meets on a quarterly basis. Meetings focus on reviewing internal risk reports and interviews with key employees in finance, systems, and audit.

The committee recently recommended the hiring of a Chief Risk Officer (CRO), who will create and lead an independent Enterprise Risk Management (ERM) department. The CRO will be responsible for developing and implementing a comprehensive company-wide ERM program and serve as the risk liaison across various business segments to address significant emerging concerns.

The Board has determined that the Risk Management Committee will be redundant once the CRO is in place and has sufficient experience. Thus, the Risk Management Committee will be disbanded on the date the CRO becomes an officer of SLIC.

Initial Product Report

Level Premium Term Insurance

Product Description: The term life insurance line has two series of products. The fully underwritten line, Secure Term, offers three term periods: 10, 20 and 30 year. The simplified issue line, Simple Term, offers a 10-year level term product. Both lines are convertible to the currently issued UL product during the level term period.

For both term insurance lines, SLIC makes use of reinsurance, the terms of which have been fairly consistent for many product generations. The fully underwritten line is coinsured at 60% to Trust Us Re, and any single life issue over $1 million is 100% facultatively reinsured with the same reinsurer. The simplified issue line is reinsured under YRT treaties to a pool of four reinsurers, each with an 8% quota share.

Market Position: Sales have been strong, due to competitive pricing, higher-than-average first year sales compensation, and a strong advertising campaign.

Experience: The fully underwritten line has shown improving mortality relative to pricing and lower-than-priced lapse rates. In contrast, the simplified issue line shows deteriorating mortality relative to pricing and higher-than-priced lapse rates.

The SLIC Pricing department has implemented cutting edge approaches to assess mortality experience, including performing predictive modeling exercises to determine and better understand sensitivity to various independent variables (e.g., policy year, income, geography, etc.). In addition, SLIC participates in and uses Society of Actuaries (SOA) industry studies to assess its relative experience. The SOA studies span the last five years of mortality incidence and are refreshed annually. Pricing systematically distributes the experience study report to other modeling areas, so their assumptions can be kept current.

A recent study of the term conversion experience has shown a sharp increase in utilization of the conversion privilege and poor mortality experience on the conversions.

SLIC's current annual lapse experience studies are based on the last five years of experience but are being refined. Currently, studies exist for aggregate experience by issue age and policy year, but enhancements are planned to include splits for gender and underwriting risk class.

Based on the emerging experience results and increasing face amounts for these products, SLIC is re-evaluating its reinsurance agreements and retention limits.

Variable Annuity

Product Description: All Variable Annuity contracts provide a Return of Premium (ROP) GMDB. Partial withdrawals are permitted, with the GMDB reduced dollar for dollar by the amount of the withdrawal. The VA offers a collection of eight proprietary mutual fund choices (seven domestic and one foreign) and a fixed fund invested in the general account.

Two optional Guaranteed Living Benefits (GLBs) are offered as riders, only one of which may be chosen for a single underlying contract: (i) a Guaranteed Minimum Accumulation Benefit (GMAB), which guarantees the contract holder's account value will not drop below the premium deposit (reduced by any withdrawals) as of the 10^{th} year anniversary; or (ii) a Guaranteed Minimum Withdrawal Benefit (GMWB) that guarantees the contractholder the ability to withdraw 5% of the benefit base per year for life, regardless of whether the account value is sufficient to support these withdrawals.

The most recent sales mix, as measured by account value, shows 30% without a GLB, 20% with a GMAB and 50% with a GMWB.

Market Position: Sales are flat compared to prior years, probably attributable to other competitors offering a wider range of funds and rider options.

Over the prior year, National Bank has begun selling a product to compete with the GMAB written by the insurance industry. The product adds a guarantee on an S&P 500 mutual fund investment that promises return of principal for a 2% annual fee applied to the fund value. National Bank has numerous branches throughout the country and seems to have a strong marketing department.

Experience: Annual studies spanning the prior calendar year experience are used for the full surrenders, where experience is distributed across contract year. Pricing performs these studies and distributes them to other modeling groups upon request.

All SLIC VA modeling applications use industry mortality experience as published by a large actuarial consulting firm seven years ago.

Proposed Product Improvements: SLIC plans to add new fund families over the next nine months. The new fund options will be available on existing and new VA GMAB or GMWB contracts as well as on the new enhanced VA product described in the next paragraph.

SLIC is considering an enhanced product called VA Plus, which provides the same benefits as the existing products but also includes a ratchet on the GLB and GMDB benefits. A ratchet provides that on every contract anniversary the benefit base is set equal to the greater of the account value and the prior year benefit base rolled up 5%.

SLIC will be fast-tracking the product development and implementation process, resulting in a very aggressive time schedule. As part of the implementation process, the administrative system needs additional programming to handle an increased slate of fund and rider offerings.

SLIC is also considering development of a new indexed annuity product, which might be offered with an optional GMWB rider. This project is at the initial discussion stage.

Universal Life

Product Description: When SLIC began selling Universal Life in 2000, the company sold a mix of various UL products, with 4% guarantees, which were common at that time. Some of those products are still in force.

The company's current universal life offerings consist of two different products:

The Saver Supreme product is designed to accumulate high cash surrender values relative to the death benefit over time. The Protector Plus product is designed for the consumer who wants death benefit protection at the lowest possible premium; it guarantees that the policy will stay in force if the specified premium is paid each year.

For both products, the annual minimum guaranteed credited rate on the accumulation fund is 3%. SLIC targets a 2% investment spread.

Market Position: Sales of the current UL offerings have been much lower than expected, but the company is anticipating that the 3% floor on investment returns will become more attractive and result in higher future sales. For the UL product, like the VA, the Company has decided that "fast-follower" is the preferred product development method for the near future.

Current Issues: The administrative system needs additional programming to handle some product features that are now available to the policyholder. To date these features selections have been tracked through electronic notes in the policy file.

Three of the Company's competitors in the UL market have recently formed an administrative services company, called UL Admin Co, to administer their universal life contracts. UL Admin Co performs all of the UL administrative tasks for the three companies, such as policy administration, valuation, and cash flow and reserve projections for planning and risk purposes. In recognition of the expense savings achieved, the three companies have given an extra-contractual benefit to their policyholders by reducing their annual policy maintenance charge.

Experience: Policy issuance as a percentage of applications has been much lower than expected. Lapse rates in the first year are lower than anticipated in pricing. Recent mortality experience has been approximately equal to expected mortality, but SLIC has little exposure to date.

SLIC has not yet implemented a separate mortality study for its UL product. Instead, SLIC bases its UL mortality assumption for all modeling applications on the Secure Term mortality experience studies, since both products have the same risk classes and underwriting criteria.

SLIC's lapse study on the UL product is fairly comprehensive, reflecting the surrender charge period and the dynamic impacts of crediting rates. It includes the last five years of lapse experience and is updated semi-annually by Pricing, which then systematically distributes these reports to all other modeling groups.

The UL product is not currently reinsured, but SLIC is beginning to investigate reinsurance alternatives for the line.

The Company's investment plan for this segment consists primarily of ten-year A and BBB rated corporate bonds. Smaller amounts of the portfolio are invested in high yielding foreign sovereign paper of mixed maturity periods and some exclusive opportunities in private equity.

Proposed New Product: SLIC is considering adding an Indexed UL product, a hot product in the current market. An Indexed UL product is a fixed UL product with an indexed account option. The interest credits on the indexed account are based on the return on an index, such as the S&P 500, subject to a stated cap and a floor of zero. It is attractive to policyholders who want to participate in the future price appreciation in stocks in the S&P 500 without the risk of negative returns.

For the basic product, SLIC would enter a swap agreement to exchange a specified investment income for a return on an S&P index with a zero floor and a specified cap, which would allow SLIC effectively to transfer out the embedded market risk. More sophisticated Indexed UL products could be offered in the future with multiple indexed accounts based on different indices or different time periods of index growth and indexed interest crediting.

To facilitate pricing and implementation, the features for the basic product are proposed to be similar to the current UL product with some exceptions. The product design actuaries have proposed that the UL investment portfolio support both the UL and the new Indexed UL products. The indexed interest would be hedged by purchasing the equivalent swap on the underlying index, initially the S&P 500.

Single Premium Immediate Annuity

Product Description: The product offered is a straight life annuity with issue ages 65 and above, with no death benefit.

Experience: Recent mortality studies have shown mortality about equal to what was expected in pricing. However, mortality seems to be improving faster than expected.

SLIC's pricing mortality assumption is based on Pricing's annual experience study spanning the last two years of experience. Pricing makes this study available to the other modeling groups upon request. The mortality improvement assumption for all modeling applications is based on industry experience as released in a study performed by a large consulting firm two years ago. A more recent study received a few weeks ago showed an uptick in mortality improvement at older ages, which SLIC has not yet reflected in pricing.

Market Position: The product is selling well, but decreasing interest rates are a matter of concern. Traditionally, assets supporting this block have been investments in high quality long term corporate bonds and treasuries. However, in response to the recent economic environment and the uptick in mortality improvement, higher yielding exotic investments have been considered to help meet the desired profit margin. These potential new investments include such assets as real estate, domestic private equity and emerging markets common equity.

2.2 AHA Report to Corporate

Note to File with respect to AHA's report, from Jean Manx, Lyon Risk Manager:

Because Lyon management has little experience with health insurance, the company has been content to allow the AHA management a great deal of autonomy. AHA feels this arrangement has continued to work well and AHA objected to any additional oversight by Corporate. AHA was reluctant to provide a very thorough report to Lyon – so the report that follows is abbreviated.

Company Summary

AHA Health Insurance Company (AHA) is a national insurance company located in California with its home office in Los Angeles. AHA is wholly-owned by Lyon Corporation.

AHA sells individual and group health insurance in California and 14 other states. It is in both the small and large group markets in all states. In addition, AHA has a small block of long-term care (LTC) business with policyholders located all over the country.

Operations

AHA negotiates with physician and hospital providers in each state in which it is licensed and continually monitors these provider networks. It has contracted with Networks 'R Us to use its provider networks when members need services outside of states in which it is licensed.

AHA has its own centralized medical management staff that administers its medical management policies consistently in all states in which it is licensed. AHA's staff continually reviews and revises policies to keep costs down and to keep up with the latest developments. Its vendors, Networks 'R Us, Carefree Rx, and Painless Dental, work with AHA to make sure their medical management policies do not conflict with those of AHA.

AHA has a claims system developed and maintained by a well-respected national vendor. AHA maintains a close relationship with this vendor to make sure that the system meets all of its needs. AHA's claim department is experienced and fully staffed.

AHA underwrites large group business coverage, using credibility rating. While the underwriting decision is systematically determined in most cases, the Senior Pricing Actuary makes the ultimate underwriting decision for the largest cases, relying on his extensive experience in the industry.

AHA's robust data collection process includes categorizing data in numerous different ways, allowing all parts of the company to use the same database. The database is used for actively monitoring claims experience, which results in up-to-date pricing and forecasting assumptions. In addition, the database is used for research and ad hoc financial analyses, group reporting, and financial reporting. In fact, the group reports have proved helpful in showing groups how to lower their costs.

Risk Management

AHA management believes the company can prosper by being aggressive and willing to take risks. The company does not have a named CRO, but has a risk committee with limited scope and authority. Various senior managers take on a CRO role as needed.

AHA currently targets holding capital at 600% of Authorized Control Level RBC (300% of Company Action Level RBC). Surplus in excess of 700% of Authorized Control Level RBC (350% of Company Action Level RBC) is distributed annually to Lyon Corporation through a dividend paid in cash at the end of the first quarter based on the year-end balance sheet. Surplus positions less than 500% of Authorized Control Level RBC (250% of Company Action Level RBC) are considered deficient and result in a request for a capital contribution from Lyon Corporation.

AHA's management team has a generous incentive plan. The incentive compensation plan criteria include membership growth, profitability, and quality of care. AHA's plan covers management staff from top management to frontline management. The goal is to have all management focused on the key drivers of success.

AHA is also implementing a set of contingent compensation agreements for its brokers.

Healthcare Reform & Other Regulatory Issues

AHA's claim experience varies by state and market (Individual, Small Group and Large Group, and LTC). The Affordable Care Act's federal and state health insurance exchanges were introduced in 2014. AHA decided to participate in a few Exchanges as a pilot program. AHA is monitoring its experience to assess the effect of the ACA on its business.

Through 2017, AHA had three primary concerns with its exchange experience. First, although the risk adjustment pool was designed to protect carriers from anti-selection, the transfers to and from the pool have not aligned well with AHA's claim experience. Second, any pricing error would be exploited very quickly for plans on the Exchange, so a large volume of underpriced new business could be sold very quickly. Finally, a rate increase would take months to implement given the time-consuming rate approval process.

Recent changes in regulation will impact AHA's future ACA experience, and AHA is currently evaluating the impact of those changes.

Other Initiatives

AHA management is looking into purchasing one of two health companies.

Eureka is a health insurance company domiciled in New York. The driving force behind this acquisition would be to help AHA enter a new market without having to build a lot of infrastructure. Initially, the Eureka management would remain in place to run the company and integration would proceed over several years. AHA management is putting together a due diligence team including staff from AHA finance, actuarial, marketing, and medical management.

Alternatively, AHA is considering the purchase of Columbia, a New York health insurer offering LTC and small group products. Columbia is active in most U.S. states.

AHA – Initial Product Report

Product Summary: AHA's individual and group health policies include comprehensive major medical coverage of hospital services, physician services, and prescription drugs. In addition, the group policies include dental coverage. Dental is offered as a rider to the medical policies.

AHA negotiates physician and hospital contracts in each state in which it is licensed and has contracted with a provider network for services outside of states in which it is licensed. In addition, AHA has contracted with a nationwide drug plan to manage its prescription drug coverage and a dental administrator to manage its dental plans.

2.3 Pryde Report to Corporate

Company Summary

Pryde is an Omaha, Nebraska-based U.S. general insurer with commercial and personal lines products that target a broad market. It is 100% owned by Lyon Corporation.

Exited Markets

Beginning in 2012, Pryde's previous management team decided to pursue a growth and acquisition strategy and decentralization of its personal lines operations, which led to rate inadequacy and adverse loss reserve development. As a result, Pryde's management is now taking a less aggressive approach to managing its operations.

Pryde also experimented with new production sources and customer segments with which management was unfamiliar. The new markets included customer groups that were much more price-conscious and claims-conscious than Pryde's traditional customers. Pryde subsequently exited these segments because of higher than expected growth in non-profitable products contributing to poor operating results. The financial losses from these experiments resulted in greater scrutiny from the parent company, Lyon.

Risk and Capital Analysis

Pryde has approximately $3.5 billion in assets and $1 billion in capital and surplus. Pryde retained Hawthorne Consulting in 2015 to guide the company in developing a "risk and capital" model to aid management in gauging the adequacy of overall capitalization of the company and allocating capital to lines of business.

Hawthorne recommended using a risk adjusted return on required capital (RAROC) approach and used VaR and TVaR to assess capital needs. Overall, Hawthorne's work showed that Pryde's current capital and surplus (at that time) exceeded the amount needed to support its businesses on a risk-adjusted basis.

Pryde currently targets holding capital at 350% of Company Action Level RBC. Surplus in excess of 400% of Company Action Level RBC is distributed annually to Lyon Corporation through a dividend paid in cash at the end of the first quarter based on the year-end balance sheet. Surplus positions less than 300% of Company Action Level RBC are considered deficient and result in a request for a capital contribution from Lyon Corporation.

Pryde does not currently have a formal risk management process. The CFO is responsible for assuring that risk is appropriately accounted for in the financial statements.

Pryde – Initial Product Report

Personal: The two major personal lines of business written are:

- Personal Automobile
- Personal Property

Commercial: The two major lines of commercial business written are:

- Commercial Multi-Peril
- Workers Compensation

Pryde is licensed in all 50 states and the District of Columbia. The split of premium between commercial and personal lines is about 70%/30% respectively. Pryde's products are sold primarily through a captive career sales force.

Pryde's business is geographically spread throughout the United States with its largest state (California) representing 17% of total premium volume. The next largest states include Texas, (6.0%); Georgia (5.5 %); Florida (5.4%); and Mississippi (5.3%), all of which are located in the area of the U.S. most prone to hurricanes. The 46 other jurisdictions constitute 61.3% of the total business, with no single state having a share greater than 5%.

<u>Personal Auto</u>

Pryde offers standard personal auto policies to individuals in every U.S. state. Its policies provide basic coverages: property damage, bodily injury, personal injury protection, collision and comprehensive.

Personal Property

Pryde offers homeowners and renters insurance to individuals and families in every U.S. state. The company's best-selling product is an all-perils policy designed for single family homes in upscale markets. Renters insurance and lower benefit basic homeowner coverage constitute a minor portion of the total personal property policies that Pryde sells.

Commercial Multiple Peril

Pryde sells a wide range of commercial multi-peril insurance policies. The policies may cover various types of business risk (business continuation, fraud, business automobiles, keyman insurance), risks to mechanical equipment, physical damage to business facilities, and general liability. Pryde is willing to work with customers to offer unusual coverages, as requested, and to bundle coverages in whatever combinations the client requests.

Workers Compensation

Pryde's Workers Compensation policies provide typical coverage of medical expenses and loss of salary due to work-related injuries. Pryde's stated target market is upscale, low-risk companies. However, the actual mix of business has gradually trended toward a higher percentage of industrial enterprises.

Exposures and Reinsurance

The group's primary catastrophe exposure stems from hurricanes and earthquakes. However, the risk of wildfires in California has also been increasing over the past several years.

The hurricane and earthquake exposures are mitigated through excess of loss reinsurance, as well as catastrophe protection that has enabled the group to improve its net catastrophe leverage to a very manageable level. As a result, the group's estimated net probable maximum losses (PML) stemming from a combined 1-in-250-year hurricane and a 1-in-250-year earthquake depicted in a PML analysis represents approximately 5% of capital and surplus, which is significantly less than the 10% limit set by the Chief Actuary years ago.

Pryde maintains quota-share reinsurance and excess-of-loss reinsurance for property risks, and a working layer treaty reinsurance plus an aggregate excess of loss treaty for casualty risks.

2.4 Corporate Financial Statements

Memorandum to Lyon Senior Management

Date: February 27, 2020

Subject: Corporate Financial Statements

Please find below the Corporation's financial statements, as recently completed for year-end 2019.

The current year financial statements are provided for Lyon Corporation on a consolidated basis, and multi-year summary statements are provided for each of the subsidiaries. Note that capital requirements shown in the Lyon Corporate column reflect a diversification benefit from our various business lines. In the subsidiary statements, 2018 and 2019 are actual results; 2020–2022 are projections.

Lyon Consolidated 2019 Statements

2019 FINANCIAL STATEMENTS	SLIC	AHA	Pryde	Helios	Lyon Corporate *	Combined Financials
Income Statement (000s)						
Premiums & Policy Fees	952,071	6,131,868	885,134	166,675	0	8,135,748
Investment Income	255,046	48,555	89,850	89,946	9,765	493,162
TOTAL REVENUE	**1,207,117**	**6,180,423**	**974,984**	**256,622**	**9,765**	**8,628,910**
Property and casualty losses and loss expense	0	0	855,778	0	0	855,778
Life, accident and health benefits	535,256	4,806,518	0	114,655	0	5,456,429
Other expenses	597,787	1,042,482	198,985	118,026	5,281	1,962,561
TOTAL EXPENSES	**1,133,042**	**5,849,000**	**1,054,764**	**232,681**	**5,281**	**8,274,768**
Income Before Income Tax	74,074	331,423	(79,780)	23,941	4,484	354,142
Income Tax	25,926	115,998	(19,945)	5,252	1,300	128,532
Net Income	48,148	215,425	(59,835)	18,688	3,184	225,610
Balance Sheet (000s)						
General account assets	4,872,478	2,750,693	3,549,889	1,581,999	266,577	13,021,636
Separate account assets	1,776,396	0	0	0	0	1,776,396
Total Assets	**6,648,874**	**2,750,693**	**3,549,889**	**1,581,999**	**266,577**	**14,798,032**
Property and casualty loss and other liabilities	0	0	2,467,646	0	0	2,467,646
Separate account liabilities	1,776,396	0	0	0	0	1,776,396
Future policy benefits and claims, other liabilities	4,241,142	1,024,022	0	1,397,199	0	6,662,363
Other liabilities	0	0	0	0	52,235	52,235
Total Liabilities	**6,017,538**	**1,024,022**	**2,467,646**	**1,397,199**	**52,235**	**10,958,640**
Surplus	**631,336**	**1,726,672**	**1,082,243**	**184,800**	**214,341**	**3,839,392**
RBC Ratio	434%	670%	404%			
Total Liabilities and Surplus	**6,648,874**	**2,750,693**	**3,549,889**	**1,581,999**	**266,577**	**14,798,032**
Additional Balance Sheet Information						
Dividend/Capital Transfer from/(to) Lyon	(16,496)	0	(78,429)	0	94,925	0
Economic Capital						
Required Economic Capital	435,092	1,799,520	979,640	170,109	22,126	3,406,488
Excess Capital	75,271	192,959	181,627	63,811	200,361	714,029
Available Economic Capital	**510,364**	**1,992,480**	**1,161,268**	**233,920**	**222,486**	**4,120,517**
* Excluding investments in subsidiaries						

SLIC Financial Statements

TOTAL	2018	2019	2020	2021	2022
Statutory Income Statement (000s)					
Premiums & Policy Fees	1,410,009	1,519,039	1,643,355	1,782,693	1,938,874
Ceded Premiums	(516,395)	(566,968)	(624,848)	(691,301)	(767,773)
Net Investment Income	243,760	255,046	271,368	288,580	306,461
Total Revenue	**1,137,374**	**1,207,117**	**1,289,875**	**1,379,971**	**1,477,562**
Surrender & Annuity Benefits	121,968	135,447	147,961	162,258	176,378
Death Benefits	683,220	750,718	816,056	898,535	993,695
Ceded Benefits	(312,639)	(350,910)	(382,219)	(424,317)	(473,625)
Increase in Net Reserves	284,431	313,518	342,614	369,303	397,208
Expenses	170,249	182,852	196,350	211,827	229,568
Net Transfers to/(from) Separate Account	117,154	101,417	92,708	83,097	72,489
Total Benefits & Expenses	**1,064,382**	**1,133,042**	**1,213,470**	**1,300,702**	**1,395,713**
Income Before Income Tax	72,992	74,074	76,404	79,269	81,849
Federal Income Tax	25,547	25,926	26,742	27,744	28,647
Net Income	**47,445**	**48,148**	**49,663**	**51,525**	**53,202**
Statutory Balance Sheet (000s)					
General account assets	4,527,307	4,872,478	5,232,992	5,644,396	6,053,722
Separate account assets	1,376,883	1,776,396	2,035,331	2,306,969	2,591,399
Total Assets	**5,904,190**	**6,648,874**	**7,268,324**	**7,951,365**	**8,645,122**
Net General Account Reserve Liabilities	3,927,623	4,241,142	4,583,756	4,953,058	5,350,267
Separate Account Liabilities	1,376,883	1,776,396	2,035,331	2,306,969	2,591,399
Total Liabilities	**5,304,506**	**6,017,538**	**6,619,087**	**7,260,028**	**7,941,666**
Surplus	**599,684**	**631,336**	**649,237**	**691,338**	**703,456**
RBC Ratio	426%	434%	425%	426%	409%
Total Liabilities and Surplus	**5,904,190**	**6,648,874**	**7,268,324**	**7,951,365**	**8,645,122**
Additional Balance Sheet Information					
Dividend/Capital Transfer (to)/from Lyon	(11,445)	(16,496)	(31,762)	(9,424)	(41,084)
Economic Capital Balance Sheet (000s)					
Market Value of Assets	**6,152,166**	**6,948,073**	**7,580,862**	**8,309,177**	**9,034,152**
Economic Reserve	5,674,697	6,437,709	7,061,845	7,720,103	8,417,703
Required Economic Capital	419,066	435,092	463,265	498,173	534,079
Excess Capital	58,403	75,271	55,751	90,901	82,370
Total Liabilities and Surplus	**6,152,166**	**6,948,073**	**7,580,862**	**8,309,177**	**9,034,152**

AHA Financial Statements

TOTAL	2018	2019	2020	2021	2022
Statutory Income Statement (000s)					
Earned Premiums	5,633,910	6,131,868	6,751,482	7,359,037	7,915,398
Health benefits	4,449,968	4,806,518	5,328,245	5,837,425	6,285,837
General expenses	963,620	1,042,482	1,087,044	1,030,441	1,070,014
Total Expenses	**5,413,588**	**5,849,000**	**6,415,289**	**6,867,866**	**7,355,851**
Investment Income	**39,251**	**48,555**	**54,216**	**61,257**	**70,335**
Income Before Income Tax	**259,573**	**331,423**	**390,409**	**552,429**	**629,882**
Federal Income Tax	**90,851**	**115,998**	**136,643**	**193,350**	**220,459**
Net Income	**168,723**	**215,425**	**253,766**	**359,079**	**409,424**
Statutory Balance Sheet (000s)					
Total Assets	**2,443,659**	**2,750,693**	**3,107,935**	**3,568,476**	**3,918,494**
Liability for unpaid claims and claim adjustment expenses	605,645	674,505	742,663	809,494	870,694
Other Liabilities	326,767	349,516	384,834	419,465	451,178
Total Liabilities	**932,412**	**1,024,022**	**1,127,498**	**1,228,959**	**1,321,872**
Surplus	**1,511,247**	**1,726,672**	**1,980,438**	**2,339,516**	**2,596,623**
RBC Ratio	641%	670%	696%	749%	770%
Total Liabilities and Surplus	**2,443,659**	**2,750,693**	**3,107,935**	**3,568,476**	**3,918,494**
Additional Balance Sheet Information					
Surplus Transfer from/(to) Corporate	0	0	0	0	0
Dividend/Capital Transfer (to)/from Lyon	0	0	0	0	(152,317)
Economic Capital Balance Sheet (000s)					
Market Value of Assets	**2,936,103**	**3,300,934**	**3,728,856**	**4,267,956**	**4,682,754**
Economic Reserve	1,188,193	1,308,454	1,444,921	1,578,973	1,702,536
Required Economic Capital	1,576,155	1,799,520	2,065,976	2,436,425	2,704,440
Excess Capital	171,754	192,959	217,959	252,558	275,778
Total Liabilities and Surplus	**2,936,103**	**3,300,934**	**3,728,856**	**4,267,956**	**4,682,754**
Additional Metrics					
Enrollment (000s)					
Members	1,928	2,001	2,095	2,165	2,224
Member Months	21,253	22,258	23,088	23,975	24,743
Utilization (per 1,000 members)					
Physician Visits	4,520	4,374	4,389	4,395	4,396
Hospital Days	407	381	377	378	378

Pryde Financial Statements

TOTAL	2018	2019	2020	2021	2022
Statutory Income Statement (000s)					
Underwriting Income					
Premiums earned	941,046	885,134	874,321	897,483	921,264
Losses and loss adjustment expenses incurred	689,952	855,778	604,739	620,779	637,247
Expenses	**212,284**	**198,985**	**189,783**	**194,812**	**199,976**
Net Underwriting Gain (loss)	**38,810**	**(169,630)**	**79,799**	**81,893**	**84,041**
Investment Income	**86,588**	**89,850**	**86,912**	**89,407**	**91,485**
Income Before Income Tax	**125,399**	**(79,780)**	**166,711**	**171,300**	**175,526**
Federal Income Tax	**31,350**	**(19,945)**	**41,678**	**42,825**	**43,881**
Net Income	**94,049**	**(59,835)**	**125,034**	**128,475**	**131,644**
Statutory Balance Sheet (000s)					
Total Assets	**3,525,938**	**3,549,889**	**3,594,632**	**3,678,081**	**3,772,623**
Losses and loss adjustment expenses	1,594,048	1,793,727	1,701,504	1,744,751	1,789,101
Unearned Premium	453,687	431,446	442,875	454,609	466,655
Other Liabilities	257,694	242,473	252,439	259,127	265,994
Total Liabilities	**2,305,430**	**2,467,646**	**2,396,817**	**2,458,487**	**2,521,750**
Surplus	**1,220,507**	**1,082,243**	**1,197,815**	**1,219,594**	**1,250,872**
RBC Ratio	**427%**	**404%**	**439%**	**436%**	**436%**
Total Liabilities and Surplus	**3,525,938**	**3,549,889**	**3,594,632**	**3,678,081**	**3,772,623**
Additional Balance Sheet Information					
Surplus Transfer from/(to) Corporate	0	0	0	0	0
Dividend/Capital Transfer (to)/from Lyon	0	(78,429)	(9,462)	(106,695)	(100,366)
Economic Capital Balance Sheet (000s)					
Market Value of Assets	**3,470,731**	**3,526,705**	**3,537,734**	**3,634,522**	**3,739,117**
Economic Reserve	2,199,736	2,365,438	2,307,298	2,376,483	2,447,708
Required Economic Capital	1,040,839	979,640	996,789	1,024,947	1,054,541
Excess Capital	230,156	181,627	233,646	233,092	236,868
Total Liabilities and Surplus	**3,470,731**	**3,526,705**	**3,537,734**	**3,634,522**	**3,739,117**

2.5 Rating Agency Report

Lyon Corporation is preparing for a financial strength rating review by Kelly Rating Agency, an internationally recognized rating agency. Kelly has previously focused on its ratings of stand-alone insurance companies, such as SLIC and Pryde, but beginning last year required that insurance groups be rated in aggregate for the group. During its review last year, Kelly identified several issues that it expects Lyon to address before the next review, scheduled for later this year. Correspondence related to the prior review and Kelly's most recent rating report are provided starting on the following page.

Kelly Ratings & Analysis - When it comes to ratings, clearly you need Kelly

1 Kelly Drive, Capital City ph 123/555-6500

February 10, 2020
R. Tomas Lyon III
Lyon Corporation

Dear Mr. Lyon:

It is time once again for Kelly Ratings & Analysis' annual review of Lyon Corporation. I will call you next week to set up a date. Ideally, Paula Silver, Director of our Financial Services Practice, and I would like to meet with Lyon Corporation sometime in early April. As in past years, we will come to your offices for a day of meetings with your senior management team. Count on the presentation from Lyon Corporation taking the first half of the meeting; the second half will be a free form Q&A with your management. We can finalize the agenda during next week's call.

Attached is Kelly's rating rationale from last year. Due to last year being the initial group-level review and the lack of available group financial data, the rationale was based primarily on our qualitative assessment of the group and its component companies. Please look through this document and make note of any aspects that you wish to discuss. In addition, we will need your 2019 financial information. I would like to receive that in advance of our meeting.

I want to remind you: since last year was the first year for a group-level rating review, our Kelly Financial Wherewithal Rating™ (commonly known as the "Kelly Rating") was not publicly disclosed. It was intended to help you understand our group assessment criteria and how Lyon Corporation would be evaluated, so you would have an opportunity to improve any deficient processes before this year's public rating. The financial strength rating determined for Lyon Corporation last year was **A**.

Evaluating implementation and effectiveness of insurers' ERM processes has become an increasingly important part of Kelly's evaluation and rating of insurer's financial strength. During this year's annual review, we would also like to start having more discussions with Lyon Corporation management on several aspects related to the risk management processes, such as ERM culture and policies, risk governance, risk control and mitigation processes, strategic risk management, as well as management of specific risks (e.g., ALM, credit risk, liquidity risk, operational risk).

Sincerely,

Otto Gold
Director, Financial Services Rating Bureau

LYON CORPORATION

2018 Kelly Financial Wherewithal Rating™ - Group Level

Based on our opinion of the company's financial strength, it is assigned a **Kelly Financial Wherewithal Rating™ of A**(Super). The company's Financial Size Category is Class VIII.

Rating Rationale

Rating Rationale: The financial strength rating for Lyon Corporation reflects the company's strong capital position, reasonable operating performance and the long-term stability of its management. However, profitability has not been as strong as its rating peers, and Lyon Corporation will continue to face challenges as a public company.

Rating History

No history – Initial Group Rating

Business Review

Lyon Corporation began operations in 1905. For most of its history, it has been controlled by the Lyon family. R. Tomas Lyon III is its fourth-generation leader.

Lyon Corporation began as a life insurance company selling innovative term life insurance at very aggressive rates. That continues to be a hallmark of the company today.

The company began to broaden its scope in the 1990's by offering public stock. The Lyon Family originally maintained a majority ownership of the company, but has subsequently divested a substantial portion of its shares. The Lyon Corporation is now 30% privately held by the Lyon Family. A holding company structure was put in place. The original life insurance company became Simple Life (SLIC), owned 100% by Lyon Corporation. The Corporation also acquired a health insurance company, AHA Health, early in 2002 and a property and casualty company, Pryde P&C, in 2007. Lyon Corporation became an international group in 2016 with the acquisition of Atlantis-based Helios Insurance Company. All of the subsidiaries are owned 100% by Lyon Corporation.

SLIC has significantly increased its product offerings beyond term insurance and now has a growing SPIA line of business, as well as universal life and variable annuities. However, all of the SLIC products face competitive pressures and likely will require updated features and pricing.

AHA has provided solid results and takes a proactive approach to the health market. Pryde has been a less positive addition to the Lyon Corporation, showing unfavorable results in recent years, particularly when Pryde management experimented with unfamiliar production sources and customer segments in the late starting in 2012. Losses eroded Pryde's capital position, but recent changes seem to be putting the subsidiary back on track.

Helios has shown steady profitability and has provided a reasonable means for Lyon Corporation to gain international experience on a small scale.

Investment operations have not performed especially well on a risk-adjusted basis and there is some concern if the low interest rate environment persists.

After several years of sluggish growth, Lyon Corporation has set some very aggressive growth targets for the future. The company appears to have the capital to fund this growth internally; however, the plan to actually achieve sales at these levels remains unclear.

Earnings

Lyon Corporation's earnings have benefited over the years from solid product profitability in most lines of business. We expect product earnings to decline in the future as the company attempts to grow its business in a very competitive market. The current low interest rate environment will also continue to put pressure on earnings.

Profitability Analysis

(in millions of dollars)

Net Op Gain*	2015	2016	2017	2018
SLIC	41.4	50.5	49.1	50.4
AHA	163.0	155.0	77.0	169.1
Pryde	118.4	107.7	104.3	94.4
Other	12.2	13.8	14.0	14.2
Total	335.0	327.0	244.3	328.1

* Net Op Gain excludes non-business-related impacts in Net Income, such as realized capital gains and losses.

Capitalization

Capital and surplus within the subsidiaries is quite strong, totaling $3.5 billion. It appears that the company's excess capital could be deployed more effectively to increase earnings and returns for shareholders. The company's growth strategy may be a means to accomplish this, if implemented appropriately.

However, we note that Lyon Corporation has not made any significant efforts to measure capital requirements on a risk-adjusted basis. Therefore, it is difficult for Lyon Corporation to evaluate the appropriateness of its growth strategy or other potential strategic initiatives. We believe that this needs to be a future focus for corporate management if Lyon Corporation wishes to demonstrate that it is being run effectively.

We also note that the company continues to operate with minimal long-term debt. While this capital structure can be appropriate for a corporation, in our opinion, Lyon Corporation has not done any evaluation to justify that this is the best structure for the company.

Investments and Liquidity

Lyon Corporation maintains a conservative investment portfolio, based primarily on high-quality investment grade corporates and Treasuries. As a result, default experience in the fixed income portfolio has been very good and can be viewed as much better than insurance industry averages over the most recent years. The portfolio has also provided sufficient liquidity.

We understand that Lyon Corporation is exploring the possibility of moving to more aggressive portfolios for select lines of business by adding high yield and BBB-rated debt securities, as well as equities. This is an area that Kelly will continue to monitor.

Officers

Chairman (Lyon Corporation); Chairman and CEO (SLIC) -- R. Tomas Lyon III
Deputy Chairman of the Board, Co-CEO (Lyon Corporation) – Andrew Lyon
Co-CEO (Lyon Corporation) – Patrick Lyon
Chairman and CEO (AHA Health) – Dr. Jerry Graham
Chairman and CEO (Pryde) – Roberta James

2.6 Corporate ERM Department

Memorandum: To All Lyon and Affiliate Executive Staff

From: Patrick Lyon, Co-CEO

Subject: Corporate ERM Department

We are pleased to announce the creation of the new Corporate ERM Department. This action is being taken in recognition of increased rating agency focus on ERM and regulatory expectations for a formal ERM process. The appointment of a Chief Risk Officer (CRO) is expected shortly.

The Corporate ERM Department will be housed within the Treasurer's Division, and the new CRO will report to Ron Tiger, Treasurer. The CRO will have access to staff from Treasury operations, on an "as needed" basis.

The objectives of the Corporate ERM Department are:

- Establish a consistent ERM process among the Lyon Corporation companies
- Promote a strong risk culture within Lyon Corporation
- Develop a corporate-level Economic Capital modeling process
- Create a risk appetite statement and assess overall risk exposure in relation to risk appetite
- Develop a strategic risk profile in conjunction with the Corporate Strategic Planning Department

As part of the development of our ERM function, it is important that we convey an appropriate risk culture to all of our staff and affiliates. Lyon Corporation defines risk culture as the norms of behavior for employees in Corporate and the affiliates to accept or take risks within the prescribed risk limits, and the ability to identify, understand, discuss and act on the risk at the Corporate as well as affiliate levels. Once the ERM processes are fully established, Lyon Corporation expects that all employees will fully understand the ERM processes and have the conviction to openly discuss risk issues with their managers. Lyon expects to include risk competency in the compensation and reward framework.

Until the CRO is appointed, Internal Audit will take a large role in developing the program.

Several status reports are attached to bring all of you up to speed on the ERM-related activities that are already underway. Tomas, Andrew, and I expect your complete cooperation and support for this new initiative.

Economic Capital Modeling

The three affiliated companies have provided information on the status of economic capital modeling within their organizations. The statutory and economic balance sheets for each affiliate are independent of each other. The amount of assets assigned to a line of business is based on the required capital, either on an economic basis or a statutory basis. That is, the assets backing the liabilities on an economic basis are not the same as the assets allocated on a statutory basis.

SLIC

SLIC has implemented an internal economic capital model tailored to its own company-specific risks. The intent is to quantity the risks to the company's net equity (on a market-consistent basis) using a one-year 99.0% Value at Risk (VaR) measure. The model quantifies exposure to interest rate risk, equity price risk, and credit risk.

Interest rates are modeled stochastically using a single-factor model calibrated to monthly historical data for 10-year U.S. Treasury yields since 1999. Equity returns are modeled stochastically using a regime-switching lognormal distribution that is calibrated to thirty years of daily S&P 500 equity index returns.

For term, UL, and SPIA products, a traditional actuarial approach is used to estimate the economic reserves and revalue them under different interest rate scenarios in the VaR calculation. Max Hawke has proposed changing the liability modeling approach to use replicating portfolios.

For the VA and its GMAB and GMWB, the VaR is calculated with liabilities net of hedging assets and derivatives. Implied volatility is derived from current exchange-traded 10-year at-the-money equity puts. As an approximation, the test assumes expiring derivatives can be replaced with current at-the-money instruments.

For credit risk, the model assumes that existing investment grade fixed income assets are sold immediately if they fall below investment grade. Therefore, the company does not quantify the risk of credit default or loss given default. Credit risk is modeled through the stochastic simulation of credit ratings migration. The calibration uses ten years of historical data for corporate bond ratings migrations and yield spreads. Since the company has a general buy and hold investment strategy, credit spreads are only considered to be a risk factor if and when investment grade assets are downgraded below investment grade. SLIC calculates the risk of fluctuations in market value due to credit spread movements in the absence of ratings downgrades, but excludes the results since its statutory surplus is based upon asset book value and it has a general buy and hold investment strategy.

For each insurance risk (e.g., mortality, longevity, lapse):

- The economic balance sheet is recalculated using the stressed assumption (with the other risks at the baseline assumptions)
- The required economic capital for that risk equals the decrease in economic surplus as a result of that stress

At this point, the Company does not have an operational risk model and, therefore, operational risk is estimated to be 10% of the fair value of liabilities, whose calculation excludes any provisions for this risk.

Procedurally, the economic capital for each risk is calculated for each line of business; these values are then aggregated for that line of business using a correlation matrix derived from the prior ten years of market movements. All negative correlations are floored at zero. Operational risks are assumed to have zero correlation with other factors. The economic capital for each product line is then summed to get SLIC's total economic capital.

AHA

AHA uses an internal Economic Capital Model. The Model targets a total economic capital level that is calibrated to an AA financial strength based on Kelly ratings. AHA defines the Model economic capital required as being the capital required to protect AHA's policyholders in order to meet all of their claims with a confidence level of 99.0 percent over a one-year time horizon.

Pryde

Pryde retained Hawthorne Consulting in 2015 to guide the company in developing a "risk and capital" model. Pryde wished to measure the risk adjusted return on capital (RAROC) by segment to aid in its business planning for 2016 and beyond. Hawthorne's approach recognized that there is a trade-off between having enough capital to minimize insurance company failures and having the minimum amount of required capital so that excess capital can be deployed.

Building on the work completed with Hawthorne, Pryde has developed an internal Economic Capital Model. The model targets a total economic capital level that is calibrated to an AA financial strength based on Kelly ratings. Pryde defines the model economic capital required as being the capital necessary to protect Pryde's policyholders in order to meet all of their claims on a VaR basis with a confidence level of 99.0 percent over a one-year time horizon.

Strategic Risk Analysis

Risk Appetite

In the absence of a CRO, the Lyon Audit Committee has commenced work on developing a risk appetite statement for Lyon Corporation. The head of internal audit has prepared the initial draft of a risk appetite statement.

Risk Appetite Statement (Draft)

Lyon recognizes that it will take on certain business risks in an informed and proactive manner, such that the level of risk is aligned with its strategic business objectives. Lyon's most important strategic objectives include:

- Maintaining a stable dividend on its stock, which is dependent upon consistent dividends from its subsidiaries
- Maintaining financial flexibility, which is dependent on being able to issue debt at a reasonable cost
- Maintaining positive brand recognition and its current reputation as a responsible corporate citizen

Using these strategic objectives, as well as industry norms, the consultant has drafted the following risk appetite statement components:

Insurance Risk - Lyon cannot suffer more than a $400 million increase in required Economic Capital for a 1-in-200-year event due to insurance risk.

Liquidity Risk – Lyon needs to maintain a liquidity level to meet payment requirements for a 1-in - 200-year event for a continuing period of three months.

Market Risk - Lyon cannot suffer more than a 10% decrease in economic available capital due to market risk for a 1-in-200-year event.

Lyon's risk management process is designed to facilitate management's regular review of current risk exposures against Lyon's risk appetite. Any risk with the potential to have a material impact on shareholder value will be included within the scope of the risk management process. The Board will, on a regular basis, review and approve Lyon's risk appetite.

AHA Data Breach – E-mail Correspondence

Date: October 24, 2019
To: Patrick Lyon, Co-CEO
From: B.G. Bucks, CFO, AHA

Patrick,

I felt I should make you aware of a potential problem that's just come up at AHA. I'm forwarding a copy of the note I just sent to Bob Seoul. I'll certainly keep you informed of the steps we're taking to address this.

Sincerely,

B.G.

Date: October 24, 2019
Subject: Customer Data Integrity
To: Bob Seoul, VP Operations, AHA
From: B.G. Bucks, CFO, AHA

Bob,

I'm extremely concerned about the data breach that occurred this week in our individual health customer data base. You're aware that there are both serious financial implications for AHA and sensitive public relations issues as a result.

Your team needs to get on top of this right away –

- What do we need to do at this point to address the immediate problems resulting from the breach?
- How do we mitigate the risk of this situation occurring again in the future?

I'd like to meet on Wednesday to discuss the first item and to see your plans for responding to the second.

Cybersecurity

In light of recent highly publicized information security breaches, the Lyon Board has mandated the Corporate ERM Department to implement a cybersecurity program. This initiative is a top priority for senior management, and they have been keen to extend their strong risk management culture to encompass information security as well. As Lyon is constrained with respect to resources and capabilities in the cybersecurity space, Lyon contracted a well-known security software vendor, DataShield, to establish an effective cybersecurity framework. DataShield's report is provided below.

From: John Argus, CEO of DataShield

To: Lyon Corporate ERM Department

Date: April 1, 2020

DataShield has completed a review of Lyon's information security vulnerabilities at all the subsidiaries, and we have developed a customized cybersecurity solution to meet your needs. The implementation of your cybersecurity framework is complete.

The scope of our software includes all subsidiary servers and personal computers. We have encrypted all these devices and established a permissions-based access protocol which is administered by the IT departments. It is our understanding that these departments are responsible for cybersecurity at Lyon. Additionally, we provide external monitoring of these devices and immediately notify your cybersecurity designate of potential breaches.

We are also providing the ERM department with the appropriate cyber risk assessment tools to integrate with your broader ERM processes. These assessment tools will allow you to produce heat maps of known cyber threats to Lyon and the subsidiaries.

We believe these steps should protect you against any foreseeable cybersecurity threat.

We expect that our cybersecurity platform is 100% effective for your company, and we look forward to protecting your organization's sensitive information.

SLIC Alternate Distribution Method – E-mail Correspondence

Date: April 4, 2020

To: Lorraine Lynx, CFO

From: Pierre LeGrouse, CFO, SLIC

Lorraine,

FYI – thought you would be interested in hearing about the alternate distribution method we are looking into at SLIC.

Pierre

Date: April 1, 2020

Subject: Alternative Distribution Method

To: Pierre LeGrouse

From: Henri Jay

Hi Pierre,

Over the last year or so I've been monitoring the emergence of online distribution of insurance products within the industry, especially paying attention to new companies that focus solely on online marketing, sales, and administration.

These online channels offer products with limited underwriting from the perspective of the policyholder. Surprisingly, policies can be issued only minutes after the policyholder submits an online application. However, behind the scenes, the companies acquire data (e.g., driving record, prescription history) that in fact does allow them to do extensive underwriting. It's amazing how much information is out there about each of us.

The products tend to look a lot like traditional products, but are often cheaper because there are no commissions paid and underwriting costs are lower. The policies may also incorporate other attractive features, such as donating a portion of insurer profits to charities of the policyholder's choice.

I plan to continue monitoring these emerging products, but for now I believe we'll be most successful by continuing to focus only on our existing distribution channel. However, let's touch base on this topic next quarter.

Henri

AHA Contingent Compensation Program for Brokers – Email Correspondence

Date: January 24, 2020

To: Patrick Lyon, Co-CEO

From: Jean Manx, Lyon Risk Manager

You asked me to get further information on the new compensation program that AHA intends to put in place for the brokers. I learned the following from AHA:

For brokers, AHA has implemented a set of contingent compensation agreements to provide for payment when the broker achieves pre-set goals for: (i) volume and (ii) growth and retention. A broker may have separate contingent compensation plans with our different business units. AHA will evaluate performance against pre-set goals annually. If the broker has met the goals, the payment amount is usually a percentage of the premium a broker has placed with us for specific types of insurance. The sales department will monitor this system.

The contingent compensation plan will use one or more goals, separately or in combination, to determine if a broker will receive a payment. These goals may include:

Volume

AHA will measure the premium volume of policies a broker places with us. We may measure one or more types of insurance.

Growth and Retention

AHA will measure whether the amount of business a broker has with us is increasing or decreasing. We may look at change in premium volume, change in the actual number of policies, number of newly written polices, policy-renewal ratios, or a combination of these. These calculations may vary by type of insurance.

Profitability has been excluded from the plan due to the timing difficulties of measuring profitability by case in the year of the sale

Patrick, please let me know if you have any concerns or want me to do further follow-up.

Wildfire Risk at Pryde – Email Correspondence

To: Patrick Lyon, Co-CEO

From: Lorraine Lynx, CFO

Date: March 1, 2020

Patrick,

I was just made aware of the following discussion that's been taking place within Pryde. It came from one of my contacts there, not through official channels, but I thought you should be informed.

Lorraine

Forwarding E-mail from Pryde

To: Jane Williams, VP, Operations, Pryde

From: Karl Michaels, Chief Actuary, Pryde

Date: February 20, 2020

As you're aware, the risk of wildfires in California has been increasing over the past several years. The actuaries have responded by incorporating rate increases into our homeowners' insurance rates.

These rate increases are keyed off of the county that is input when an application is input into the HO application system. This was a quick fix approach to incorporate wildfire risk in rates as quickly as possible. Our career sales agents have learned that if they leave the county input field blank, the applications go through without error, but the rate increases related to wildfire risk are not incorporated into the rate quote.

Here's the problem that we're now seeing: Since our competitors have incorporated similar wildfire rate increases, leaving the county input field blank makes Pryde's homeowners' rates in some wildfire-prone areas of California more competitive. This has increased Pryde's exposure to wildfire dramatically over the past 12 months.

It is not clear that the wildfire risk will be covered under our excess of loss treaties, as some reinsurers have started arguing that wildfire is an excluded risk.

Could we set up a meeting next week to discuss how to address this situation?

Merger and Acquisition – Email Correspondence

From: Ron Tiger, Treasurer

To: Lorraine Lynx, CFO

Date: March 20, 2020

Lorraine,

As you're aware, Lyon Corporation does not currently pursue acquisitions at the Corporate level. Our policy has been to allow the affiliates to pursue potential acquisitions if they are supported by the affiliate business plan approved by the Lyon Board. I've become aware of certain activity occurring within AHA, and I think we need to keep ourselves informed of how these potential transactions are progressing.

The Lyon Board has three overarching principles for approval of any acquisition identified by the affiliates:

1. The acquisition should be strategic to the affiliate.

2. The acquisition should provide clearly identifiable benefits.

3. The risks involved in the integration must be clearly identified, along with appropriate risk management responses to be taken.

I'm not sure that AHA is appropriately focused on these principles.

I have obtained the following summaries from B.G. Bucks, the AHA CFO. I'd appreciate it if you could make sure he keeps you up-to-date on AHA's progress.

Potential Acquisitions

I. Currently, AHA has targeted Eureka Insurance Company (Eureka), a health insurance company, as a potential acquisition target. Eureka is domiciled in New York and is in the small and large group medical and LTC markets in the state of New York. About 40% of Eureka's large group premium represents employer groups with less than 101 employees. This business was reclassified as small group in 2017 due to the Affordable Care Act.

Eureka's products include comprehensive major medical coverage of hospital services, physician services, dental services, and prescription drugs. Dental is offered as a rider to medical. Eureka is not writing any new LTC business.

Eureka has contracted with Networks 'R Us to use their provider networks for physician and hospital services. It also has contracts with Carefree Rx, a Prescription Benefit Management company (PBM), and Painless Dental to manage and administer their prescription drug and dental plans, respectively. In order to lower costs, it periodically puts its network contracts out to bid. While this may lower premiums, it has been disruptive to members in the past.

Eureka uses the standard medical management from its vendors. The company has a medical management staff that coordinates with the vendors' medical managers to ensure that the vendors meet New York requirements and that their policies are consistent with the Eureka product language.

According to B.G., due diligence related to the potential acquisition identified certain key issues that need closer review:

1. Determine whether the Eureka administration system, which is a home-grown system, is compatible with AHA's system.

2. Ensure that the policy and claims reserves at Eureka are adequate and that the underlying assumptions and calculations are reasonable.

3. Understand why the broker and administrative costs are higher than expected.

4. Decide how to deal with human resource issues, for example, consolidating Eureka employees into the AHA pension plan.

Two years of historical financial statements and a one-year projection for Eureka are attached at the end of this report, as well as an internal memo from the manager B.G. assigned to oversee this project. AHA would value the acquisition of Eureka at a hurdle rate of 10%.

II. Recently, AHA has become aware of another potential acquisition target, Columbia Health. Through research, AHA has learned the following information about this potential target:

-Industry: Columbia operates primarily in the LTC market, along with having some small group health business. It offers its health products in most states in the U.S.

-Geography: Although Columbia is based in New York, it operates in almost all U.S. States. It focuses its efforts in smaller cities and towns where it perceives that there is less competition.

-Products: Columbia offers long term care insurance to individuals and small groups, as well as medical health insurance that reimburses patients for physician services and hospital emergency visits. Columbia does not offer prescription drugs. Columbia does not sell any other insurance products, and the company does not have any insurance subsidiaries.

-Distribution channels: Columbia negotiates contracts directly with external providers. It targets individual primary care doctors, who are sole practitioners, and home care agencies for its LTC product; as a result, Columbia is able to negotiate more profitable arrangements than might otherwise be available. However, Columbia is unable to take a similarly strategic approach with hospitals due to concentration in that industry. Instead, it must operate within the same general cost parameters as the rest of the health insurance industry.

-Internal administration processes and systems: Columbia has contracted out all aspects of this function. Policyholders submit claims to an external third-party administrator, and payments are processed by that company.

-Underwriting function: Most of Columbia's underwriters have been with the company since its inception and have developed close relationships with their small business clients. For cases with unusual features, Columbia relies on its reinsurer for advice.

-Governance: Managed by its founder, Columbia is a very conservative company. The founder treats his employees as if they are family members. Their compensation is well above industry average and is totally fixed; there is no variable compensation. Columbia does not have an internal ERM function. It relies on external consultants for all regulatory considerations, such as valuation reports, economic capital, and rate filings.

III. AHA is also taking a preliminary look at acquiring an LTC company, Sartori Insurance. This is just getting started, so we do not have much information yet, but I would be concerned about how this one fits with AHA's business plan.

Attachment I: Eureka Financial Statements

2018 – 2019 are actual results; 2020 is projected

TOTAL	2018	2019	2020
Statutory Income Statement (000s)			
Earned Premiums	1,449,283	1,460,556	1,472,408
Health benefits	1,209,507	1,198,706	1,217,317
General expenses	269,862	270,152	273,353
Total Expenses	**1,479,370**	**1,468,859**	**1,490,670**
Investment Income	**7,561**	**7,715**	**8,173**
Income Before Income Tax	**(22,525)**	**(588)**	**(10,090)**
Federal Income Tax	**(7,884)**	**(206)**	**(3,531)**
Net Income	**(14,641)**	**(382)**	**(6,558)**
Statutory Balance Sheet (000s)			
Total Assets	**367,736**	**371,410**	**366,831**
Liability for unpaid claims and claim adjustment expenses	155,798	160,661	161,965
Other Liabilities	84,058	83,252	83,927
Total Liabilities	**239,856**	**243,913**	**245,892**
Surplus	**127,880**	**127,498**	**120,939**
Total Liabilities and Surplus	**367,736**	**371,410**	**366,831**

Attachment II: Project Manager Memo – Eureka Acquisition

Date: March 15, 2020

Subject: Eureka Acquisition

To: B. G. Bucks, CFO

From: Sue Mahi, MBA, Project Manager

I have been working with our consultant and broker on this project and I believe it is an important and exciting opportunity for our organization. Our consultant's actuaries and financial folks asked that I pass along several minor details that they have found while digging around in the publicly available data and financials. They say they need to look at these areas more closely during due diligence.

- They think the medical loss ratio is low.
- Broker fees and administrative costs are a bit high.
- Low surplus backed by illiquid assets.

None of these items are insurmountable, especially considering our financial strength and marketing expertise. As a result, I do not see any deal breakers here.

Again, I cannot stress enough the fact that this is an important and exciting opportunity.

From: Ron Tiger, Treasurer

To: Lorraine Lynx, CFO

Date: March 22, 2020

Lorraine,

A quick follow-up to my March 20th e-mail above, with respect to potential acquisitions. I've just learned that Pryde is also looking into the idea of making some kind of acquisition. No specific information has been provided at this time, just that they are considering acquiring either a block of business or an entire company. An important point to note is they may look outside the U.S. for appropriate targets.

I don't think you need to take any action right now, just be aware of the possibility and monitor the situation.

Thanks,
Ron

Date: October 24, 2019

To: Andrew Lyon

From: Lorraine Lynx

Subject: Acquisition Financing

Andrew,

Here is that summary of financing options for potential future acquisitions that you asked for. Each source may be appropriate on its own or in combination with other sources on the list, depending upon the financing needs.

1. Use Retained Earnings
2. Issue Long term debt
    a. Fixed interest rate
    b. Variable interest rate
    c. Call option
3. Issue Intermediate term debt

4. Borrow from bank
5. Issue common stock
6. Issue preferred stock
7. Issue subordinated debt (if senior debt threshold is met)
8. Issue new surplus notes
9. Use Reinsurance financing (coinsure with an Experience Rating Refund less a financing fee based on the capital financed)

As you know, these options each have strengths and weaknesses that vary with the specific acquisition's characteristics.

Sincerely,

Lorraine

3 Simple Life Insurance Company (SLIC)

The Simple Life Insurance Company (SLIC) is 100% owned by Lyon Corporation.

SLIC is a life insurance company with four lines of business: Term Life, Universal Life, Single Premium Immediate Annuities, and Variable Annuities.

The Company, founded as Term Life Insurance Company, made its name selling term life insurance, and this continues to be a hallmark of the company today. The Company is at a crossroads where competition has required significant compression of margins. The goal is to capture a portion of the asset build-up within the "baby boomer" generation as its members find that term insurance is insufficient for their needs and wish to change their desired insurance products. To reflect the expanded product offering, the Company was renamed and rebranded as Simple Life Insurance Company at the end of 2011.

3.1 Board of Directors

R. Tomas Lyon III- Chairman, President and CEO

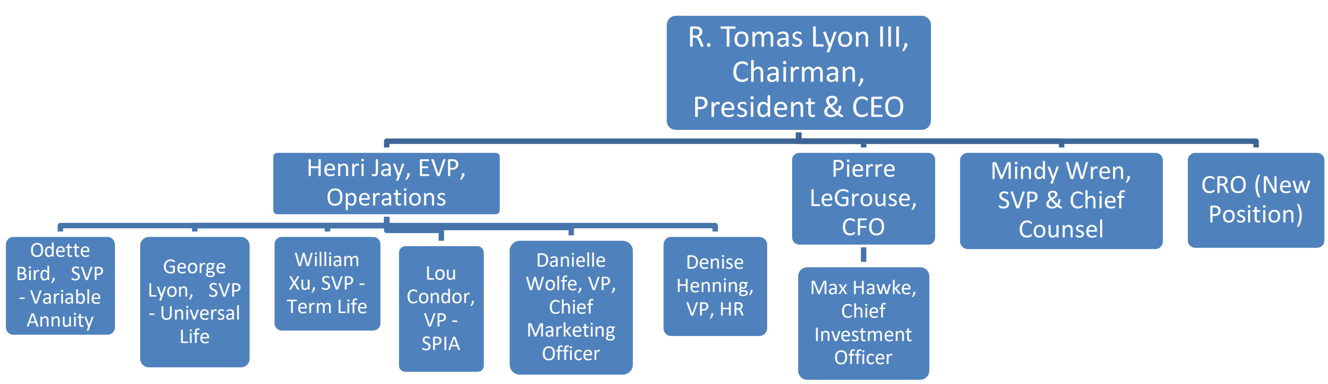
Karl Palomino - former CFO, SLIC

Jeanne Holstein-Palomino - Philanthropist

Ivan X. Salmon - former Chief Legal Counsel, SLIC

Hermione Dauphin - former accounting partner for Dollars 'R Us, former insurance regulator for Insurance Department of Illinois

3.2 Organization Chart



3.3 Capitalization

The company operates without any long-term debt except for two Surplus Notes with 15-year maturities at issue. $50 million was issued at 7.75% in 2011 and $35 million at 6.0% in 2016.

The company strives to maintain a strong capital position on both a statutory and an economic capital basis. SLIC currently targets holding capital at 350% of Company Action Level RBC, an A+ capital level, and at 100% of required economic capital. Any surplus in excess of the larger of 400% of RBC or 110% of required economic capital is distributed to Lyon Corporation through a dividend annually at the end of the first quarter based on the year-end balance sheet. Surplus positions less than the larger of 300% of RBC and 90% of required economic capital are addressed through a capital contribution from Lyon Corporation or the issuance of additional surplus notes.

Statutory capital is allocated to the LOBs as follows: Each reporting period the Financial Reporting Department calculates the required statutory capital for each of the four lines of business (LOB): Term, UL, VAs, and SPIAs. At the end of each reporting period, each LOB holds exactly its required capital, which is achieved by the LOB transferring any excess statutory capital to the SLIC Corporate Account or by receiving a statutory capital contribution from the SLIC Corporate Account. Thus, the SLIC Corporate Account invests statutory capital in the LOB and each period either receives returns or makes further investments in the LOB.

3.4 Investment Policy and Strategy

The investment department manages the general account investments. The Chief Investment Officer (CIO) reports to the CFO. Investment policy and strategy is reviewed and approved by an internal management committee consisting of the CEO, CFO, CIO, and SVPs (or VPs) of its four main business lines. Internal management committee decisions are subject to review by the SLIC Board’s investment committee. The internal management committee meets quarterly and is responsible for reviewing investment results and approving the use of new investment instruments. Day-to-day decision-making authority is delegated to the CIO, up to specified limits. The CIO may delegate approval authority to his or her subordinates. Transactions in excess of the CIO’s approval limit require approval by the CEO and CFO.

The company’s general account is invested primarily in fixed-income assets. Variable annuity (VA) separate account investments are held in a segregated account and are managed by a third-party investment advisor, while VA fixed accounts are part of the company’s general account.

Within the general account, there are separate investment portfolios for each of the four main product lines and the Corporate Account.

3.5 Specified Risk Policies

Credit Risk

Fixed-income securities in the general account have exposure limits at individual obligor (issuer) and sector levels. Obligor-level limits vary according to asset type and credit quality, as determined by external rating agencies. The investment department monitors compliance of the exposure limits.

For each portfolio, there are weighted average credit quality targets. Portfolio credit quality is measured by converting each asset's external credit rating into a numerical score. Scores are a linear function of credit ratings (AAA = 1, AA = 2, etc.). Sub-category ratings (i.e., + or -) are ignored in the scale. The company prefers to maintain a score of 3.5 or better quality for each line of business.

Market Risk

Semi-annually within the term, UL and SPIA lines of business, the company measures the effective duration of the assets and liabilities. If the asset and liability durations are further apart than 0.5, the asset portfolio is rebalanced within 30 days such that its new effective duration equals that of the liabilities. The assets in the SLIC Corporate Account are also managed within +/- 0.5 year of the target duration of 5 years.

For the term, UL, and SPIA lines of business and the Corporate Account, any non-US Dollar fixed income positions are currency-hedged back to US Dollars using currency derivatives. Investment policy states that equity and real estate investments are allowed only in the Corporate Account, up to a maximum of 20% of the portfolio.

VA hedging is done on an economic basis. The hedging uses a dynamic approach updated monthly for market factors and quarterly for liability changes. The key risk measures are delta and rho, and the program updates its equity and interest rate derivatives such that at least 80% of liability delta and rho are hedged. This "opportunistic" hedging methodology allows the hedging team to take some bets, as long as these hedging targets are met. Reports are produced and hedges adjusted approximately six weeks following each quarter end.

The VA liability delta and rho measures are estimated from an actuarial projection model using a home-grown computing platform. Actuarial assumptions are mostly updated annually, and are based on historical experience when possible, and pricing assumptions otherwise. The inforce contract data comes from an extract from the contract administration system and are subsequently aggregated into modeling cells for computing efficiency. Model access and changes to it are controlled, while its documentation is routinely updated.

A modeling actuary from the valuation group prepares a quarterly report for the hedging group, who then passes along buy and sell instructions to their traders. After completing the transactions, the traders confirm the trades in a report to the hedging group.

Liquidity Risk

The liquidity policy requires SLIC to hold sufficient liquid assets to meet expected demands for cash in a unique liquidity stress-test scenario. The scenario focuses on a reputational liquidity crisis basis where markets continue to operate normally and the liquidity crunch affects only the company. The liquidity stress test anticipates situations where the company's ability to sell assets to meet cash needs from its liability products is hindered by the market taking advantage of the company during the crisis. In addition, testing periodically considers a systemic stress scenario where the entire market is not able to sell assets at a reasonable value. However, SLIC's liquidity policy does not require it to hold sufficient liquid assets to be able to meet cash demands in such a scenario, since it expects regulatory relief in a systemic crisis.

Operational Risk

The CRO will be responsible for collecting and disseminating risk information. A report will be prepared monthly and distributed to executive management.

3.6 Economic Capital Model

SLIC has implemented an economic capital model tailored to its own company-specific risks. SLIC uses an internal economic capital model. The model targets a total economic capital level that is calibrated to an AA financial strength based on Kelly ratings. SLIC defines the "model required economic capital" as being the capital required to protect SLIC's policyholders in order to meet all of their claims with a confidence level of 99.0 percent over a one-year time horizon.

The Statutory and Economic balance sheets are independent of each other. The amount of assets assigned to a line of business is based on the required capital, either on an economic basis or a statutory basis. That is, the assets backing the liabilities on an economic basis are not the same as the assets allocated on a statutory basis.

The intent of the economic capital model is to quantify the risks to the company's net equity (on a market-consistent basis) using a one-year 99.0% Value at Risk (VaR) measure. The model quantifies exposure to interest rate risk, equity price risk, and credit risk.

Interest rates are modeled stochastically using a single-factor model calibrated to monthly historical data for 10-year US Treasury yields from 1999. Equity returns are modeled stochastically using a regime-switching lognormal distribution that is calibrated to thirty years of daily S&P 500 equity index returns.

For term, UL, and SPIA products, a traditional actuarial approach is used to estimate the economic reserves and revalue them under different interest rate scenarios in the VaR calculation.

For the VA and its GMAB and GMWB, the VaR is calculated with liabilities net of hedging assets and derivatives. Implied volatility is derived from current exchange-traded 10-year at-the-money equity puts. As an approximation, the test assumes expiring derivatives can be replaced with current at-the-money instruments.

For credit risk, the model assumes that existing investment grade fixed income assets are sold immediately if they fall below investment grade. Therefore, the company does not quantify the risk of credit default or loss given default. Credit risk is modeled through the stochastic simulation of credit ratings migration. The calibration uses ten years of historical data for corporate bond ratings migrations and yield spreads. Since the company has a general buy and hold investment strategy, credit spreads are only considered to be a risk factor if and when investment grade assets are downgraded below investment grade. SLIC calculates the risk of fluctuations in market value due to credit spread movements in the absence of ratings downgrades, but excludes the results since its statutory surplus is based upon asset book value and it has a general buy and hold investment strategy.

Insurance risks (mortality, longevity, lapse) are modeled in a simplified way in order to avoid stochastic-on-stochastic modeling. For each risk:

- The economic balance sheet is recalculated using the stressed assumption (with the other risks at the baseline assumptions)
- The required economic capital for that risk equals the decrease in economic surplus as a result of that stress

At this point, the Company does not have an operational risk model and, therefore, operational risk is estimated to be 10% of the fair value of liabilities, whose calculation excludes any provisions for this risk.

Procedurally, the economic capital for each risk is calculated for each line of business. These values are then aggregated for that line of business using a correlation matrix derived from the prior ten years of market movements. All negative correlations are floored at zero. Operational risks are assumed to have zero correlation with other factors. The economic capital for each product line is then summed to get SLIC's total economic capital.

<u>Stress Testing</u>

Stochastic scenario testing is supplemented with deterministic scenario-based stress tests, performed annually. Each test is applied as an instantaneous shock to the economic conditions as of the valuation date. Interest rates have a floor of 0.10%.

Proposed Liability Modeling Strategy: The following memo relates to the CIO's proposal of a new modeling strategy for its product liabilities.

Date: April 1, 2020

Subject: Liability Modeling Approach

To: Internal Management Committee

From: Max Hawke, Chief Investment Officer

Dear Committee Members,

As our products expand and reporting requirements increase it is becoming increasingly difficult to support the modeling of our liabilities using traditional actuarial methods. These models are complex and are difficult to run given tight turnaround times for reporting on changes in market conditions.

I propose changing our approach to liability modeling from an actuarial method to use replicating portfolios. This approach will allow us to efficiently calculate regulatory metrics such as VaR as well as to better integrate our analysis of both assets and liabilities. The approach will also allow us to better integrate our existing business units.

There will be considerable development time and cost required to develop these replicating portfolios. I propose first developing a proof of concept on our Universal Life block to show its benefits, and expanding to other products in future years. This change will allow us to keep up with our need for increasingly faster reporting and analysis, as well as the use of new, more complex, risk management metrics.

Please provide any feedback that you have at your earliest convenience so that we may proceed.

Max Hawke
Chief Investment Officer

3.7 Risk Management Committee

The committee meets on a quarterly basis. Meetings focus on reviewing internal risk reports and interviews with key employees in finance, systems, and audit.

At its third quarter meeting, the committee unanimously recommended the hiring of a Chief Risk Officer (CRO), who will create and lead an independent Enterprise Risk Management (ERM) department. The CRO will be responsible for developing and implementing a comprehensive company-wide ERM program and serve as the risk liaison across various business segments to address significant emerging concerns. The committee also recommended that the CRO report on risk-related issues at its quarterly meeting.

However, during the debate of this recommendation with the Board, Mr. Lyon expressed the opinion that the Risk Management Committee would be redundant once the CRO started. His preference was that the CRO report to the EVP-Planning as someone with significant experience who knew the company well and could serve as a guide to the CRO. Mr. Lyon recommended that the new CRO become an officer of the company following three to five years of experience at the company. The Board concurred with Mr. Lyon and the Risk Management Committee will be disbanded on the date the CRO becomes an officer of SLIC.

3.8 Product Distribution:

The Company distributes its products through an independent brokerage system. The Company supplies marketing materials and product descriptions. Brokers are responsible for their own training. The Company has relied upon its distribution system to clarify and explain the change in name of the Company.

Date: April 1, 2020

Subject: Alternative Distribution Method

To: Pierre LeGrouse

From: Henri Jay

Hi Pierre,

Over the last year or so I've been monitoring the emergence of online distribution of insurance products within the industry, especially paying attention to new companies that focus solely on online marketing, sales, and administration.

These online channels offer products with limited underwriting from the perspective of the policyholder. Surprisingly, policies can be issued only minutes after the policyholder submits an online application. However, behind the scenes, the companies acquire data (e.g., driving record, prescription history) that in fact does allow them to do extensive underwriting. It's amazing how much information is out there about each of us.

The products tend to look a lot like traditional products, but are often cheaper because there are no commissions paid and underwriting costs are lower. The policies may also incorporate other attractive features, such as donating a portion of insurer profits to charities of the policyholder's choice.

I plan to continue monitoring these emerging products, but for now I believe we'll be most successful by continuing to focus only on our existing distribution channel. However, let's touch base on this topic next quarter.

Sincerely,

Henri

3.9 Product Descriptions

Level Premium Term Insurance

The term life insurance line has two series of products, Secure Term and Simple Term

	Secure Term	Simple Term
Underwriting	Full	Simplified Issue
Risk Classes	3 non-smoker, 1 smoker	1 aggregate
Max Issue Face Amount	No specified maximum	$1 million
Level Term Period (years)	10, 20, or 30	10
Conversion Privileges	Allowed to end of Level Period	Allowed to end of Level Period
Reinsurance		
Quota Share	60%	32%
Structure	Coinsurance	YRT
First Year Expense Allowance	100%	100%
Renewal Expense Allowance	2%	0%

Both lines are renewable after the level term period with a sharply increasing annually renewable term premium schedule. They are also both convertible to the currently issued UL product during the level term period. There are no cash surrender values for either product.

Simple Term's simplified underwriting process involves a questionnaire with five simple yes/no questions.

Secure Term is coinsured at 60% to Trust Us Re. In addition, any single life issue over $1 million is 100% facultatively reinsured.

Simple Term is reinsured under YRT treaties to a pool of four reinsurers, each with an 8% quota share. The YRT reinsurance premium rate for all four reinsurers is set to 105% of the pricing mortality.

The SLIC Pricing department has implemented cutting edge approaches to assess mortality experience, including performing predictive modeling exercises to determine and better understand sensitivity to various independent variables (e.g., policy year, income, geography, etc.). In addition, SLIC participates in and uses Society of Actuaries (SOA) industry studies to assess its relative experience. The SOA studies span the last five years of mortality incidence and are refreshed annually. Pricing systematically distributes the experience study report to other modeling areas, so their assumptions can be kept current.

SLIC's current annual lapse experience studies are based on the last five years of experience, but are being refined. Currently, studies exist for aggregate experience by issue age and policy year, but enhancements are planned to include splits for gender and underwriting risk class.

Current experience studies have shown Secure Term to have improving mortality relative to pricing and lower-than-priced lapse rates. In contrast, Simple Term shows deteriorating mortality relative to pricing and higher-than-priced lapse rates.

Based on the emerging experience results and increasing face amounts for these products, SLIC is re-evaluating its reinsurance agreements and retention limits.

Sales have been strong, due to competitive pricing, higher-than-average first year sales compensation, and a strong advertising campaign. Because the products are selling well and the Company sees limited downside risk in this simplistic product, the product pricing review will be postponed until next year.

Correspondence related to Term Conversions:

From: William Xu, SVP

To: Henri Jay, EVP

George Lyon, SVP

Date: November 15, 2019

As you're aware, term conversions have been allowed into the Protector Plus product through the end of the level term period for both Secure Term and Simple Term. Policyholders are allowed to convert into the COI scale at their attained age as of the conversion date. Secure Term policyholders get the same risk class as they were originally issued at, while Simple Term policyholders use the Standard risk class.

As you know, utilization of the conversion privilege has been increasing sharply over the past few years. We have finally been able to analyze the mortality experience for these conversions, and the news is not good. The loss ratio relative to the COIs is over 100%. We're still trying to figure out what to do about it, but some options include:

- Create a special UL policy for conversion purposes
- Shorten the allowable conversion period to disallow conversions after the fifth policy year
- Disallow conversions altogether
- Eliminate commissions on term conversions to encourage agents to issue a new policy

These are just some options, and they all have pros and cons. However, we're still in the brainstorming phase so we may come up with other alternatives.

I'll keep you posted.

Sincerely,

William

Variable Annuity

Current Product: The Variable Annuity has a Return of Premium (ROP) GMDB. Partial withdrawals are permitted, with the GMDB reduced dollar for dollar by the amount of the withdrawal. The contract has a policy fee of $100 per year if the account value is less than $100,000; no policy fee if account value is $100,000 or greater. The annual mortality and expense fee is 1% of the separate account investments.

The VA offers a collection of eight proprietary mutual fund choices (seven domestic and one foreign) and a fixed fund invested in the general account.

The sales force is compensated with a commission of 5% of the first-year deposits. The product has a surrender charge that starts at 5% and reduces to 0% over a five-year period.

The product has two optional guaranteed living benefits (GLB) riders, only one of which may be chosen for a single underlying contract.

The Guaranteed Minimum Accumulation Benefit (GMAB) option guarantees the contract holder's account value will not drop below the premium deposit (reduced by any withdrawals) as of the 10^{th}year anniversary. If the account value is below this value, it is "trued-up" to this value as of this date. The fee for this benefit is 0.5% per year of the account value during this 10-year protection period.

The Guaranteed Minimum Withdrawal Benefit (GMWB) option guarantees the contractholder the ability to withdraw 5% of the benefit base per year for life, regardless of whether the account value is sufficient to support these withdrawals. The benefit base equals net deposits rolled up at 5% per year until the contractholder starts to take withdrawals. The annual fee for this rider is 1% of the benefit base. The GMWB is typically purchased by individuals in their fifties prior to retirement.

The most recent sales mix, as measured by account value, shows 30% without a GLB, 20% with a GMAB and 50% with a GMWB.

Annual experience studies spanning the prior calendar year experience are used for the full surrenders, where experience is distributed across contract year. Pricing performs these studies and distributes them to other modeling groups upon request.

All SLIC VA modeling applications use industry mortality experience as published by a large actuarial consulting firm seven years ago.

Proposed Product Improvements: The following email correspondence relates to proposed product improvements.

Date: April 1, 2019

Subject: Variable annuity sales

To: Odette Bird

From: Danielle Wolf

Hi Odette,

Variable annuity sales are flat compared to last year. The absence of growth may be due to other competitors offering a wider range of funds and rider options.

Our brokers seem to appreciate the new product that the National Bank has developed recently to compete with GMABs written by the insurance industry. The product adds a guarantee on an S&P 500 mutual fund investment that promises return of principal for a 1% annual fee applied to the fund value. National Bank has numerous branches throughout the country and seems to have a strong marketing department.

Could you come up with an easily implementable solution that would allow us to compete against this product and increase our sales? What time frame could be considered for the implementation?

Danielle Wolf
VP – Chief Marketing Officer

Date: April 6, 2019

Subject: RE: Variable annuity sales

To: Danielle Wolf

From: Odette Bird

Hi Danielle,

Here are my suggestions for product improvements that would be easy to implement:

- Add new funds family that would be available on new and existing VA GMAB or GMWB contracts as well as on the new enhanced VA product described in the next bullet.

- Launch an enhanced product, VA Plus, which would provide the same benefits as the existing products but also includes a ratchet on the GLB and GMDB benefits. The ratchet provides that on every contract anniversary the benefit base is set equal to the greater of the account value and the prior year benefit base rolled up 5%.

Regarding the time frame, I think that we could accelerate the development to have the new riders available in nine months. A key issue regarding this very aggressive time schedule would be to have the administrative system doing the additional programing needed to handle an increased slate of fund and rider offerings.

Could you please schedule a meeting next week with everyone to build a solid plan to meet this tight schedule?

Odette Bird
SVP – Variable Annuity

Date: November 27, 2019

Subject: VA GMWB – New Fund

To: Pierre LeGrouse, Odette Bird

From: Max Hawke

As you're both aware, we added a new equity fund option to the VA GMWB contracts back in July, known as the Diverse Equity Fund. The fund has been well-received by clients and has grown to $40 million.

The fund is invested in a diverse range of domestic equity holdings spanning various sectors, market capitalizations, and dividend yields. Regression analysis reveals that the common movement in the equity holdings may be materially explained by movement in the S&P 500 market index.

Because the fund has proved to be popular, I want to be sure we are appropriately assessing the risk of the portfolio. I have one of my investment actuaries doing some analysis.

I'll keep you informed as we complete our review.

Matthew Hawke
Chief Investment Officer

Date: November 1, 2019

Subject: Updates to VA Hedge Program

To: Odette Bird

From: Henri Jay

As you are aware, the NAIC's VA reform proposal (VM21) is expected to take effect in January 2020. Under the proposal the RBC C3 charge calculation is now based on CTE 98 rather than CTE 90.

Please let me know the impact this regulatory change is expected to have on our hedging methodology and final required capital results. If there are significant impacts, please include recommendations on how to address.

Regards,

Henry Jay
EVP Operations

Date: November 1, 2019

Subject: Indexed Annuity

To: Odette Bird

From: Danielle Wolf

Hi Odette,

Our brokers have told us that the recent market volatility may yield a market opportunity for an investment product that offers participation in the equity markets, but with downside principal protection (i.e., an indexed annuity). We want to look into this opportunity while also taking advantage of the popularity of the GMWB feature on our current VA product. So, we're wondering if you can put together an indexed annuity that can be optionally sold with a GMWB rider.

I know you Pricing guys have a lot to think about, as this is a fundamentally different product than our existing VA. Some things to consider, off the top of my head, include:

- Interest Crediting Mechanism
- GMWB
- Hedging
- Commission schedules
- Administration system
- Reserve and capital considerations
- Target Profitability and cash flow pattern
- Regulatory environment / rating agency response
- Strategic Risk

Anyway, please let me know what you think by the end of the week.

Danielle Wolf
VP – Chief Marketing Officer

Universal Life

When SLIC began selling Universal Life in 2000, the company sold a mix of various UL products, with 4% interest crediting guarantees, which were common at that time. Some of those policies are still in force.

The company's current universal life offerings consist of two products:

The Saver Supreme product is designed to accumulate high cash surrender values relative to the death benefit over time. The Protector Plus product is designed for the consumer who wants death benefit protection at the lowest possible premium; it guarantees that the policy will stay in force if the specified premium is paid each year.

Key terms for both products are as follows:
- Fully underwritten
- Face Amount offered from $25,000 to $5,000,000
- Surrender charge is significant to start, grading down to zero in policy year 11
- Annual minimum guaranteed crediting rate on the accumulation fund 3%. SLIC targets a 2% investment spread.
- Underwriting guidelines and risk classes are the same as for Secure Term (i.e., three non-smoker and one smoker)

Sales of the current UL offerings have been much lower than expected, but the company is anticipating that the 3% floor on investment returns will become more attractive and result in higher future sales. For the UL product, like the VA, the Company has decided that "fast-follower" is the preferred product development method for the near future.

Policy issuance as a percentage of applications has been much lower than expected. Lapse rates in the first year are lower than anticipated in pricing. Recent mortality experience has been approximately equal to expected mortality, but SLIC has little exposure to date.

SLIC has not yet implemented a separate mortality study for its UL product. Instead, SLIC bases its UL mortality assumption for all modeling applications on the Secure Term mortality experience studies, since both products have the same risk classes and underwriting criteria.

SLIC's lapse study on the UL product is fairly comprehensive, reflecting the surrender charge period and the dynamic impacts of crediting rates. It includes the last five years of lapse experience and is updated semi-annually by Pricing, which then systematically distributes these reports to all other modeling groups.

The Company's investment plan for this segment consists primarily of ten-year A and BBB rated corporate bonds, plus mortgages and asset-backed securities. Smaller amounts of the portfolio are invested in high yielding foreign sovereign paper of mixed maturity periods and some exclusive opportunities in private equity.

Date: October 2, 2019

Subject: UL Update – Administrative and Competitive Issues

To: Henri Jay, EVP

From: George Lyon, SVP

Henri,

I want to update you on some issues related to our current UL portfolio.

First, as you are aware, we have recently added new product features that are now available to the clients. Our UL administrative system needs additional programming in order to handle some of these enhancements. To date, the client selections with respect to these features have been tracked through electronic notes in the policy file, which is increasingly becoming unworkable.

But the more important issue relates to changes that I've observed in the marketplace.

Three of our competitors in the UL market have recently formed an administrative services company, called UL Admin Co. This admin company provides end-to-end administration services for the UL policies of the three insurers, including creating and issuing annual policy reports to the policyholders and executing policyholder transactions. UL Amin Co also handles back office activities, such as reserve valuation and cash flow and reserve projections for planning and risk purposes.

The three competitors have cut their products' annual policy maintenance charge by an average of $30, presumably in recognition of realized expense savings.

George Lyon
SVP - Universal Life

Date: March 1, 2020

Subject: UL Lapse Rate Study

To: George Lyon

From: Life Pricing Team

George,

Our team has completed the comprehensive lapse rate study for the two UL products. For this study, we have evaluated lapse experience for 2014-2019. Overall, lapse rates have decreased slightly compared to past studies. Based on more detailed analysis of the data, we make the following three observations:

1. Surrender charge period: On the Saver Supreme product, the amount of surrender activity in the year following the expiration of the surrender charge period is significantly higher than pricing assumptions. This has been noted in past studies but hasn't been a cause for concern due to the relatively small number of policies and lack of credibility. We recommend continuing to closely monitor this activity over the next few years.

2. Investor-owned policies: We discovered that an increasing number of our inforce policies are owned by third party companies. We met with the administration area to understand this activity. What we learned is that these policies were originally purchased by the insured individuals and later sold to investors. Typically, these sales occurred during the surrender charge period when cash surrender values were very low. In studying these policies further, investor-owned policies tend to exhibit the following characteristics: high face amounts, older attained ages, and volatile premium activity with minimal cash surrenders.

3. Attained age observations: While most attained age bands have exhibited slightly lower lapse rates, the exception is the 35-44 age band. For these ages, surrender activity has started to increase over the past few years. Because this age group represents a relatively small amount of the UL portfolio, it did not impact the overall lapse rates significantly.

After you have had a chance to review and approve the detailed study results, we can share the results with the modeling department.

Date: December 11, 2019

Subject: UL Reinsurance

To: Risk Management Committee

From: George Lyon

Per our discussion, I've started to pull together the information on a variety of reinsurance quotes we received last year on our UL line. As you can see from the table below, this process is incomplete at this time.

Proposal	New / Existing Business	Reinsurance Basis	Quota Share	Expense Allowance (%)	Experience Rating Refund	Recapture Options
A		YRT	80%	N/A	None	Not allowed
B		YRT - Excess	100%	N/A	None	Not allowed
C		YRT - Stop Loss	100%	N/A	None	Not allowed
D		Coinsurance	100%	100 / 5	None	After 10 years
E		Coinsurance	50%	50 / 10	None	After 20 years
F		Coinsurance Funds Withheld	75%	100 / 1	Minimal	After 5 years
G	EB only	Combo YRT / Coins FW	100%	N/A	Significant	Special Provisions
H		ModCo	75%	N/A	Significant	Not allowed

Notes:

(a) Expense Allowance: percentage of the coinsured premium that the reinsurer pays to the ceding company
(b) Experience Rating Refund: good claims experience results in a refund of a formulaically determined portion of the reinsurance premium back to the ceding company
(c) Recapture: option granted to the ceding company to terminate the treaty after specified conditions are met; specified years are from treaty inception
(d) YRT-Excess: YRT in excess of a specified amount per life
(e) YRT-Stop Loss: YRT in excess of a specified amount of losses incurred
(f) All YRT proposals include a provision under which the reinsurer can raise future rates up to a guaranteed maximum

In addition, I have summarized some of the objectives identified by this group that we wished to address via reinsurance. Please let me know if I missed anything here …

1. Reduce mortality volatility
2. Reduce initial strain on new business
3. Improve statutory capital ratio for UL business
4. Improve economic capital ratio for UL business

George Lyon
SVP - Universal Life

Proposed New Product:

Date: July 10, 2019

Subject: RE: Diversifying UL Product Portfolio and Increasing Sales

To: George Lyon, SVP

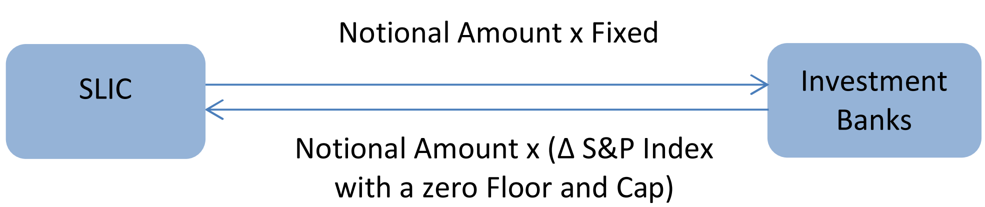
From: Danielle Wolfe, VP and Chief Marketing Officer

George,

I'd like to suggest that we investigate broadening SLIC's UL product line by adding an Indexed UL product, a hot product in the current market. Our working name for the product is "Index Incubator".

An Indexed UL product is a fixed UL product with an indexed account option. The interest credits on the indexed account are based on the greater of the return on an index, such as the S&P 500, or zero. It is attractive to policyholders who want to participate in the future price appreciation in stocks in the S&P 500 without the risk of negative returns. To the policyholder, the risk/return of an Indexed UL policy falls somewhere between the relatively low risk/low return of a UL policy and the relatively high risk/high return of a Variable UL policy.

For the basic product SLIC would enter a swap agreement to exchange a specified investment income for the return on an S&P index with a zero floor and a specified cap, which would allow SLIC effectively to transfer out the embedded market risk.



I believe that more sophisticated Indexed UL products could be offered in the future with multiple indexed accounts based on different indices or different time periods of index growth and indexed interest crediting.

Regards,

Danielle

Date: August 15, 2019

Subject: RE: Diversifying UL Product Portfolio and Increasing Sales

To: Danielle Wolfe, VP and Chief Marketing Officer

From: George Lyon, SVP

Danielle,

I had my product development actuaries put together a basic indexed UL product that we feel will meet your requirements. To facilitate pricing and implementation, the features are proposed to be the same as the current UL product with the following exceptions:

- To simplify hedging, the swap will be purchased on a quarterly basis for the aggregate premiums paid into the indexed account within the quarter.
- Initial premiums are assumed to be allocated 40% to the Fixed Account and 60% to the Indexed Account.
- The Fixed Account crediting rate is equal to the portfolio yield less a 2% target investment spread, subject to a minimum guaranteed rate of 2%.The Indexed Account credits interest annually based on the increase in the S&P 500 index, excluding dividends, up to a declared cap, which will be determined for each quarter, driven by swap prices. The declared cap and S&P index value in effect on the policy anniversary are used to determine the indexed interest credits in the following policy year. The minimum guaranteed cap is 2%. The minimum guaranteed crediting rate is 0% on the Indexed Account.

We propose that the UL investment portfolio support both the UL and the new Indexed UL products. The indexed interest would be hedged by purchasing the equivalent swap on the underlying index, initially the S&P 500.

Please provide feedback on this proposal at your earliest convenience, so that we can refine specifications, as necessary.

Sincerely,

George

Single Premium Immediate Annuity

The major product features and pricing characteristics of the only single premium immediate annuity that SLIC has ever sold include:

- Single Premium = 110% of present value of expected payments discounted at the 10-year U.S. Treasury + BBB spread
- Prices for new sales are reset as frequently as monthly
- Straight Life Annuity (no certain period)
- Issued to all ages 50 and over
- No death benefit
- Expected mortality equals 100% of the 2000 US Annuity Table with Projection Scale X
- Commission equals 5% of premium

Through interviews with select brokers, SLIC has noticed an odd correlation - it seems many of the Company's annuitants have also taken out term life insurance contracts with "We-Serve-the-Healthy" Life in amounts equal to the annuity single premium.

Recent mortality studies have shown mortality about equal to what was expected in pricing; however, mortality seems to be improving faster than expected.

SLIC's pricing mortality assumption is based on Pricing's annual experience study spanning the last two years of experience. Pricing makes this study available to the other modeling groups upon request. The mortality improvement assumption for all modeling applications is based on industry experience as released in a study performed by a large consulting firm two years ago. A more recent study received a few weeks ago showed an uptick in mortality improvement at older ages, which SLIC has not yet reflected in pricing.

Correspondence related to SPIA Investment Strategy:

Date: April 1, 2019

Subject: SPIA Investment Strategy

To: Henri Jay, EVP

From: Lou Condor, VP - SPIA

The sustained low interest rate environment has been a challenge for my SPIA product line's profitability. The product is selling well, but decreasing interest rates are a matter of concern. Traditionally, this block has been supported by fixed income assets. However, in response to the recent economic environment and the uptick in mortality improvement, I'm considering supporting this block's reserves with higher yielding exotic investments to help meet our desired profit margin. These potential new investments include such assets as real estate, domestic private equity and emerging markets common equity. I expect this investment strategy change to also give us a leg up on our competition, and significantly increase sales.

3.10 Financial Statements

Multi-year financial statements are provided for each of the product lines and for SLIC in total. Statements are provided on both a Statutory and an Economic basis. The Statutory and Economic balance sheets are independent of each other. The amount of assets assigned to a line of business is based on the required capital for each respective basis.

2018–2019 are actual results; 2020–2022 are projections.

TERM	2018	2019	2020	2021	2022
Statutory Income Statement (000s)					
Premiums & Policy Fees	956,961	1,048,585	1,153,597	1,274,062	1,412,404
Ceded Premiums	(516,395)	(566,968)	(624,848)	(691,301)	(767,773)
Net Investment Income	94,780	98,579	104,550	112,674	122,981
Total Revenue	**535,346**	**580,197**	**633,299**	**695,434**	**767,612**
Surrender & Annuity Benefits	0	0	0	0	0
Death Benefits	581,250	643,408	697,082	768,600	851,974
Ceded Benefits	(312,639)	(350,910)	(382,219)	(424,317)	(473,625)
Increase in Net Reserves	121,274	142,319	163,352	185,574	208,928
Expenses	121,086	132,136	143,859	157,506	173,385
Net Transfers to/(from) Separate Account	0	0	0	0	0
Total Benefits & Expenses	**510,970**	**566,953**	**622,073**	**687,363**	**760,662**
Income Before Income Tax	24,376	13,243	11,226	8,072	6,950
Federal Income Tax	8,532	4,635	3,929	2,825	2,432
Net Income	**15,844**	**8,608**	**7,297**	**5,247**	**4,517**
Statutory Balance Sheet (000s)					
General account assets	1,573,926	1,729,472	1,907,299	2,109,740	2,337,773
Separate account assets	0	0	0	0	0
Total Assets	**1,573,926**	**1,729,472**	**1,907,299**	**2,109,740**	**2,337,773**
Net General Account Reserve Liabilities	1,441,829	1,584,148	1,747,499	1,933,074	2,142,001
Separate Account Liabilities	0	0	0	0	0
Total Liabilities	**1,441,829**	**1,584,148**	**1,747,499**	**1,933,074**	**2,142,001**
Surplus	**132,097**	**145,325**	**159,800**	**176,666**	**195,772**
Total Liabilities and Surplus	**1,573,926**	**1,729,472**	**1,907,299**	**2,109,740**	**2,337,773**
Additional Balance Sheet Information					
Surplus Transfer from/(to) Corporate	(5,427)	4,619	7,178	11,620	14,588
Economic Capital Balance Sheet (000s)					
Market Value of Assets	**908,119**	**991,885**	**1,087,021**	**1,194,981**	**1,315,970**
Economic Reserve	785,797	857,024	938,407	1,030,328	1,133,119
Required Economic Capital	122,322	134,861	148,614	164,653	182,851
Excess Capital	0	0	0	0	0
Total Liabilities and Surplus	**908,119**	**991,885**	**1,087,021**	**1,194,981**	**1,315,970**
Additional EC Balance Sheet Information					
Transfer from/(to) Corporate	(10,153)	(12,407)	(13,747)	(15,313)	(17,097)

UNIVERSAL LIFE	2018	2019	2020	2021	2022
Statutory Income Statement (000s)					
Premiums & Policy Fees	196,447	210,789	224,661	238,006	250,218
Ceded Premiums	0	0	0	0	0
Net Investment Income	98,433	100,642	107,003	112,846	118,657
Total Revenue	**294,880**	**311,431**	**331,664**	**350,852**	**368,874**
Surrender & Annuity Benefits	69,685	72,760	77,637	84,017	89,961
Death Benefits	81,322	81,413	88,217	93,561	98,890
Ceded Benefits	0	0	0	0	0
Increase in Net Reserves	88,393	96,600	104,349	108,249	112,483
Expenses	23,775	24,877	25,916	26,945	27,932
Net Transfers to/(from) Separate Account	0	0	0	0	0
Total Benefits & Expenses	**263,176**	**275,649**	**296,119**	**312,772**	**329,267**
Income Before Income Tax	31,704	35,782	35,546	38,080	39,607
Federal Income Tax	11,096	12,524	12,441	13,328	13,863
Net Income	**20,608**	**23,258**	**23,105**	**24,752**	**25,745**
Statutory Balance Sheet (000s)					
General account assets	1,906,597	2,011,783	2,125,380	2,243,211	2,365,621
Separate account assets	0	0	0	0	0
Total Assets	**1,906,597**	**2,011,783**	**2,125,380**	**2,243,211**	**2,365,621**
Net General Account Reserve Liabilities	1,752,086	1,848,687	1,953,035	2,061,284	2,173,768
Separate Account Liabilities	0	0	0	0	0
Total Liabilities	**1,752,086**	**1,848,687**	**1,953,035**	**2,061,284**	**2,173,768**
Surplus	**154,511**	**163,096**	**172,345**	**181,927**	**191,854**
Total Liabilities and Surplus	**1,906,597**	**2,011,783**	**2,125,380**	**2,243,211**	**2,365,621**
Additional Balance Sheet Information					
Surplus Transfer from/(to) Corporate	(12,718)	(14,673)	(13,856)	(15,170)	(15,818)
Economic Capital Balance Sheet (000s)					
Market Value of Assets	2,402,840	2,539,417	2,689,005	2,846,688	3,017,630
Total Assets	**2,402,840**	**2,539,417**	**2,689,005**	**2,846,688**	**3,017,630**
Economic Reserve	2,230,406	2,357,075	2,495,979	2,642,567	2,801,986
Required Economic Capital	172,434	182,342	193,026	204,122	215,643
Excess Capital	0	0	0	0	0
Total Liabilities and Surplus	**2,402,840**	**2,539,417**	**2,689,005**	**2,846,688**	**3,017,630**
Additional EC Balance Sheet Information					
Transfer from/(to) Corporate	1,207	(3,647)	(3,571)	(3,470)	(3,342)

VARIABLE ANNUITIES	2018	2019	2020	2021	2022
Statutory Income Statement (000s)					
Premiums & Policy Fees	234,132	236,657	241,542	246,515	251,578
Ceded Premiums	0	0	0	0	0
Net Investment Income	26,056	28,959	31,355	34,092	36,959
Total Revenue	**260,188**	**265,616**	**272,897**	**280,607**	**288,537**
Surrender & Annuity Benefits	37,203	46,396	52,815	59,512	66,467
Death Benefits	20,648	25,898	30,758	36,374	42,830
Ceded Benefits	0	0	0	0	0
Increase in Net Reserves	59,450	59,376	59,781	60,436	60,840
Expenses	12,699	12,882	13,184	13,486	13,791
Net Transfers to/(from) Separate Account	117,154	101,417	92,708	83,097	72,489
Total Benefits & Expenses	**247,154**	**245,968**	**249,246**	**252,905**	**256,417**
Income Before Income Tax	13,035	19,648	23,651	27,701	32,119
Federal Income Tax	4,562	6,877	8,278	9,696	11,242
Net Income	**8,472**	**12,771**	**15,373**	**18,006**	**20,878**
Statutory Balance Sheet (000s)					
General account assets	613,256	665,139	727,576	793,174	859,581
Separate account assets	1,376,883	1,776,396	2,035,331	2,306,969	2,591,399
Total Assets	**1,990,138**	**2,441,535**	**2,762,907**	**3,100,143**	**3,450,981**
Net General Account Reserve Liabilities	520,166	579,541	639,323	699,759	760,599
Separate Account Liabilities	1,376,883	1,776,396	2,035,331	2,306,969	2,591,399
Total Liabilities	**1,897,048**	**2,355,937**	**2,674,654**	**3,006,728**	**3,351,999**
Surplus	**93,090**	**85,598**	**88,253**	**93,415**	**98,982**
Total Liabilities and Surplus	**1,990,138**	**2,441,535**	**2,762,907**	**3,100,143**	**3,450,981**
Additional Balance Sheet Information					
Surplus Transfer from/(to) Corporate	(3,922)	(20,264)	(12,717)	(12,844)	(15,311)
Economic Capital Balance Sheet (000s)					
Market Value of Assets	**2,405,354**	**2,941,669**	**3,328,353**	**3,733,829**	**4,155,424**
Economic Reserve	2,298,673	2,843,403	3,226,862	3,626,215	4,041,199
Required Economic Capital	106,681	98,266	101,491	107,614	114,225
Excess Capital	0	0	0	0	0
Total Liabilities and Surplus	**2,405,354**	**2,941,669**	**3,328,353**	**3,733,829**	**4,155,424**
Additional EC Balance Sheet Information					
Transfer from/(to) Corporate	(1,280)	(11,792)	(6,089)	(6,618)	(7,196)

SPIA	2018	2019	2020	2021	2022
Statutory Income Statement (000s)					
Premiums & Policy Fees	22,469	23,008	23,555	24,110	24,675
Ceded Premiums	0	0	0	0	0
Net Investment Income	14,051	15,804	16,638	17,594	18,551
Total Revenue	**36,521**	**38,812**	**40,192**	**41,704**	**43,225**
Surrender & Annuity Benefits	15,080	16,291	17,508	18,729	19,950
Death Benefits	0	0	0	0	0
Ceded Benefits	0	0	0	0	0
Increase in Net Reserves	15,314	15,223	15,132	15,043	14,957
Expenses	1,385	1,427	1,469	1,512	1,555
Net Transfers to/(from) Separate Account	0	0	0	0	0
Total Benefits & Expenses	**31,780**	**32,941**	**34,110**	**35,284**	**36,463**
Income Before Income Tax	4,741	5,870	6,083	6,421	6,763
Federal Income Tax	1,659	2,055	2,129	2,247	2,367
Net Income	**3,082**	**3,816**	**3,954**	**4,173**	**4,396**
Statutory Balance Sheet (000s)					
General account assets	224,371	240,367	256,268	272,076	287,793
Separate account assets	0	0	0	0	0
Total Assets	**224,371**	**240,367**	**256,268**	**272,076**	**287,793**
Net General Account Reserve Liabilities	213,543	228,766	243,898	258,942	273,898
Separate Account Liabilities	0	0	0	0	0
Total Liabilities	**213,543**	**228,766**	**243,898**	**258,942**	**273,898**
Surplus	**10,828**	**11,601**	**12,370**	**13,134**	**13,894**
Total Liabilities and Surplus	**224,371**	**240,367**	**256,268**	**272,076**	**287,793**
Additional Balance Sheet Information					
Surplus Transfer from/(to) Corporate	(2,304)	(3,042)	(3,185)	(3,409)	(3,636)
Economic Capital Balance Sheet (000s)					
Market Value of Assets	**283,798**	**304,969**	**326,144**	**347,323**	**368,510**
Economic Reserve	273,121	293,507	313,897	334,294	354,698
Required Economic Capital	10,676	11,462	12,246	13,029	13,811
Excess Capital	0	0	0	0	0
Total Liabilities and Surplus	**283,798**	**304,969**	**326,144**	**347,323**	**368,510**
Additional EC Balance Sheet Information					
Transfer from/(to) Corporate	(886)	(940)	(992)	(1,042)	(1,091)

CORPORATE	2018	2019	2020	2021	2022
Statutory Income Statement (000s)					
Premiums & Policy Fees	0	0	0	0	0
Ceded Premiums	0	0	0	0	0
Net Investment Income	10,439	11,061	11,822	11,374	9,314
Total Revenue	**10,439**	**11,061**	**11,822**	**11,374**	**9,314**
Surrender & Annuity Benefits	0	0	0	0	0
Death Benefits	0	0	0	0	0
Ceded Benefits	0	0	0	0	0
Increase in Net Reserves	0	0	0	0	0
Expenses	11,303	11,530	11,923	12,378	12,904
Net Transfers to/(from) Separate Account	0	0	0	0	0
Total Benefits & Expenses	**11,303**	**11,530**	**11,923**	**12,378**	**12,904**
Income Before Income Tax	(864)	(469)	(101)	(1,004)	(3,590)
Federal Income Tax	(302)	(164)	(35)	(351)	(1,256)
Net Income	**(562)**	**(305)**	**(65)**	**(653)**	**(2,333)**
Statutory Balance Sheet (000s)					
General account assets	209,158	225,716	216,469	226,195	202,954
Separate account assets	0	0	0	0	0
Total Assets	**209,158**	**225,716**	**216,469**	**226,195**	**202,954**
Net General Account Reserve Liabilities	0	0	0	0	0
Separate Account Liabilities	0	0	0	0	0
Total Liabilities	**0**	**0**	**0**	**0**	**0**
Surplus	**209,158**	**225,716**	**216,469**	**226,195**	**202,954**
Total Liabilities and Surplus	**209,158**	**225,716**	**216,469**	**226,195**	**202,954**
Additional Balance Sheet Information					
Transfer from/(to) Lines	24,370	33,360	22,580	19,803	20,176
Dividend/Capital Transfer (to)/from Lyon	(11,445)	(16,496)	(31,762)	(9,424)	(41,084)
Economic Capital Balance Sheet (000s)					
Market Value of Assets	**152,056**	**170,133**	**150,339**	**186,355**	**176,619**
Economic Reserve	86,700	86,700	86,700	86,700	86,700
Required Economic Capital	6,953	8,162	7,888	8,754	7,549
Excess Capital	58,403	75,271	55,751	90,901	82,370
Total Liabilities and Surplus	**152,056**	**170,133**	**150,339**	**186,355**	**176,619**

TOTAL	2018	2019	2020	2021	2022
Statutory Income Statement (000s)					
Premiums & Policy Fees	1,410,009	1,519,039	1,643,355	1,782,693	1,938,874
Ceded Premiums	(516,395)	(566,968)	(624,848)	(691,301)	(767,773)
Net Investment Income	243,760	255,046	271,368	288,580	306,461
Total Revenue	**1,137,374**	**1,207,117**	**1,289,875**	**1,379,971**	**1,477,562**
Surrender & Annuity Benefits	121,968	135,447	147,961	162,258	176,378
Death Benefits	683,220	750,718	816,056	898,535	993,695
Ceded Benefits	(312,639)	(350,910)	(382,219)	(424,317)	(473,625)
Increase in Net Reserves	284,431	313,518	342,614	369,303	397,208
Expenses	170,249	182,852	196,350	211,827	229,568
Net Transfers to/(from) Separate Account	117,154	101,417	92,708	83,097	72,489
Total Benefits & Expenses	**1,064,382**	**1,133,042**	**1,213,470**	**1,300,702**	**1,395,713**
Income Before Income Tax	72,992	74,074	76,404	79,269	81,849
Federal Income Tax	25,547	25,926	26,742	27,744	28,647
Net Income	**47,445**	**48,148**	**49,663**	**51,525**	**53,202**
Statutory Balance Sheet (000s)					
General account assets	4,527,307	4,872,478	5,232,992	5,644,396	6,053,722
Separate account assets	1,376,883	1,776,396	2,035,331	2,306,969	2,591,399
Total Assets	**5,904,190**	**6,648,874**	**7,268,324**	**7,951,365**	**8,645,122**
Net General Account Reserve Liabilities	3,927,623	4,241,142	4,583,756	4,953,058	5,350,267
Separate Account Liabilities	1,376,883	1,776,396	2,035,331	2,306,969	2,591,399
Total Liabilities	**5,304,506**	**6,017,538**	**6,619,087**	**7,260,028**	**7,941,666**
Surplus	**599,684**	**631,336**	**649,237**	**691,338**	**703,456**
RBC Ratio	426%	434%	425%	426%	409%
Total Liabilities and Surplus	**5,904,190**	**6,648,874**	**7,268,324**	**7,951,365**	**8,645,122**
Additional Balance Sheet Information					
Dividend/Capital Transfer (to)/from Lyon	(11,445)	(16,496)	(31,762)	(9,424)	(41,084)
Economic Capital Balance Sheet (000s)					
Market Value of Assets	**6,152,166**	**6,948,073**	**7,580,862**	**8,309,177**	**9,034,152**
Economic Reserve	5,674,697	6,437,709	7,061,845	7,720,103	8,417,703
Required Economic Capital	419,066	435,092	463,265	498,173	534,079
Excess Capital	58,403	75,271	55,751	90,901	82,370
Total Liabilities and Surplus	**6,152,166**	**6,948,073**	**7,580,862**	**8,309,177**	**9,034,152**

3.11 Portfolio Summary

The following is a breakdown by asset class of the market value of SLIC's general account investment portfolios ($ million) as of 12/31/2019, excluding derivatives and variable annuity separate (segregated) accounts.

LOB	US Govt	US Corporate Investment Grade Public	US Corporate Investment Grade Private	US Corp Below Inv Grade	US CMBS/ ABS	Mortgages	Real Estate	Common Stock	Cash & Short-Term	Other	Total
Term	65	608	173	33	374	344	0	0	66	65	1,729
UL	73	531	291	54	455	482	0	0	72	54	2,012
VA	28	334	64	27	96	74	0	0	35	6	665
SPIA	7	43	18	4	55	42	0	0	31	41	240
Corp	5	72	9	5	13	15	19	9	47	31	226
Total	178	1,589	555	123	993	958	19	9	251	197	4,872

The "Other" investment class includes foreign sovereign debt, private equity, and other assets outside the traditional categories.

Other asset portfolio characteristics by line of business are as follows:

	Average Duration	Average Book Yield	Average Quality*
Term	7.61	5.52%	3.02
UL	7.91	4.90%	3.53
VA	4.51	3.45%	3.06
SPIA	9.18	5.70%	3.29
Corporate	4.82	3.88%	2.89

* Quality Ratings: Aaa=1, Aa=2, A=3, Baa=4

For the Corporate account, non-fixed income assets (e.g., Real Estate and Common Stock) are excluded from the calculations of average duration, average book yield, and average quality.

Proposed Investment in New Asset Classes: The following memo relates to the CIO's proposal of a new investment strategy.

Date: April 1, 2019

Subject: Investment in Structured Securities

To: Internal Management Committee

From: Max Hawke, Chief Investment Officer

Dear Committee Members,

Due to the recent prolonged low-interest rate environment, the yield of our investment portfolios has declined over time, resulting in a reduction in the Company's investment income. In order to enhance the portfolio yields and also to broaden our portfolio's coverage of various asset classes, we seek the Committee's approval to invest in structured securities such as Collateralized Debt Obligations (CDO) up to $1 billion in SLIC's total investment portfolios.

Our analysis demonstrates that the investment in these asset classes is attractive, typically providing 60 - 100 bps additional yield over corporate bonds with the same credit rating and similar duration. In order to increase our total return, we may be able to borrow funds to make these investments.

I don't think that we need to obtain additional approval from the Risk Management Committee since this strategy would still be compliant with the existing risk policies. We plan on acquiring these new assets with high credit quality such that the overall average portfolio credit quality can be maintained compliant (3.5 or higher) with our credit risk policies. Also, these new assets will replace existing assets in a duration-neutral way, so that the duration of the asset portfolio remains unaffected by this new investment strategy, thereby remaining compliant with our market risk policies.

We do not currently have the capabilities to value assets such as CDOs. We propose developing a Gaussian Copula model for this purpose due to its simplicity and ease of implementation.

Please let me know if you have any questions. Otherwise, as soon as we get the approval of this Committee, we will begin implementing this investment strategy.

Max Hawke
Chief Investment Officer

3.12 Historical Market Data

In preparation for a review of its economic capital model assumptions, SLIC has compiled the following summary of historical index returns for various asset classes.

Summary of Monthly Index Returns, 1/31/1998 to 12/31/2017

	Barclays Capital U.S. Bond Indices						Equity Indices	
	Treasuries	**Mortgage Backed Securities**	**Corporate Investment Grade**	**Corporate High Yield**	**Aggregate**	**Long Treasuries**	**S&P 500**	**MSCI EAFE**
Compound Annual Return	4.54%	4.76%	5.76%	6.93%	4.89%	7.09%	8.07%	6.33%
Annualized Volatility	4.34%	2.53%	5.30%	9.16%	3.36%	10.26%	14.90%	16.63%
Skewness	-0.07	0.14	-0.75	-1.00	-0.31	0.20	-0.67	-0.67
Kurtosis	4.56	5.29	8.75	11.56	4.42	4.76	4.32	4.52
Correlations								
Treasuries	1.00							
Mortgage Backed Securities	0.82	1.00						
Corporate Investment Grade	0.59	0.64	1.00					
Corporate High Yield	-0.19	0.02	0.53	1.00				
Aggregate	0.91	0.90	0.84	0.16	1.00			
Long Treasuries	0.92	0.72	0.59	-0.15	0.85	1.00		
S&P 500	-0.32	-0.15	0.19	0.62	-0.10	-0.29	1.00	
MSCI EAFE	-0.27	-0.09	0.29	0.66	-0.01	-0.25	0.86	1.00
Bond Index Data as of 12/31/2017								
Duration	6.24	5.3	7.59	3.92	6.23	17.56		
Convexity	0.87	-1.86	1.11	-0.33	0.13	4.04		
Yield to Maturity	2.19%	2.91%	3.25%	5.72%	2.71%	2.69%		
OAS to Treasuries	0.00%	0.25%	0.93%	3.43%	0.36%	0.00%		

Source: Barclays Capital, Bloomberg

3.13 SLIC Disaster and Business Continuity Program

Each department within SLIC maintains a Business Continuity Policy (BCP) under the direction and advice of the Business Buoyancy Department (BBD). As part of this process, SLIC senior management has designated business continuity coordinators for each of their respective departments. These coordinators maintain and update business continuity plans, keep inventories of vital records and establish an appropriate record retention schedule. Each quarter, the business continuity coordinators are required to complete a check-box report to senior management to indicate that they have fulfilled their duties.

In addition to complying with the program developed by the BBD, each department is encouraged to institute and maintain a Risk Mitigation Policy (RMP) to help SLIC rebuild in the event of a catastrophe. The RMP includes development and maintenance of rebuild instructions and management succession instructions. The RMP is reviewed and updated on an annual basis.

Periodic disaster recovery exercises are performed where SLIC personnel (with the exception of senior management) are required to work from an offsite location. SLIC has contracted out this offsite service from a third-party, Disasters-R-Us™, that specializes in providing shared disaster recovery capabilities.

Although Disasters-R-Us™ is located a fair distance from SLIC and Disasters-R-Us™ contracts out the same equipment to multiple clients on a first-come, first-serve basis, SLIC senior management believed that the price was affordable.

Each year SLIC conducts a fire drill exercise where SLIC personnel (with the exception of senior management) are required to leave the building, meet at nearby pre-determined rallying points and wait for instructions. Those employees with SLIC-issued laptops are required to take their laptops with them, proceed to a nearby coffee shop, purchase a small coffee with the unlimited refill option and continue work by connecting to the coffee shop's Wi-Fi hotspot.

Each year, SLIC senior management participates in an offsite workshop to review all of the operating policies in the disaster and business continuity program as well as the effectiveness of the most recent disaster recovery and fire drill exercises.

3.14 SLIC Salaried Pension Plan

The following pages contain financial and demographic information about the SLIC Salaried Pension Plan, as well as information about the Statement of Funding Policies and Procedures for the Plan and the Statement of Investment Policies and Procedures for the Plan.

SLIC, through its Board of Directors, has delegated responsibility for the day-to-day management of the Plan to the Vice-President, Human Resources and the Chief Financial Officer. The CFO's focus is on financial reporting and cash contribution requirements, the VP HR is largely responsible for all other activities.

Pension Plan - Benefit Provisions and Financial Information

The information on the following pages enumerates the current provisions of the Pension Plan and provides certain historical financial information.

Extracts of Retirement Benefits Provisions and Financial Information
SLIC Salaried Pension Plan

Eligibility	Immediate
Vesting	100% after 5 years of plan membership
Normal Retirement Age	65
Early Retirement Age	55 with 5 years of plan membership
Best Average Earnings	Average earnings during 60 consecutive months of highest earnings
Earnings	Base Pay, excluding overtime and bonuses
Normal Retirement Benefit	2% of best average earnings times service years, subject to maximum
Accrued Benefit	Benefit calculated as under the normal retirement benefit formula using best average earnings and service as the valuation date
Early Retirement Benefit	Accrued benefit reduced by 0.25% per month that early retirement precedes age 62 for each month that early retirement precedes age 62; no reduction for early retirement at age 62+
Form of Benefit	If with spouse, 60% joint & survivor benefit; else single life annuity
Optional Forms of Benefit	None
Indexing	None
Termination Benefit	At termination, participant can elect between: (1) Immediately-payable lump sum value equal to actuarial present value of age 65 accrued benefit; or (2) Deferred pension payable at age 65
Pre-Retirement Death Benefit	Lump sum value equal to actuarial present value of accrued pension payable at age 65 to named beneficiary
Disability Benefit	Accrual of service while on long term disability and immediate pension without a reduction upon permanent and total disability

SLIC Salaried Pension Plan
Historical Actuarial Valuation Results

Participant Summary - January 1

	2015	2016	2017	2018	2019
Active Participants					
(a) count	975	966	959	950	933
(b) average age	50.9	51.2	51.2	51.4	52.0
(c) average service	17.3	17.5	17.7	17.8	17.8
(d) average future working lifetime	11	11	11	11	11
(e) average plan earnings (prior year)	95,000	95,100	95,200	95,000	94,900
Deferred Vested Participants					
(a) count	-	-	-	-	-
Pensioners (incl beneficiaries)					
(a) count	915	915	916	916	921
(b) average age	74.2	74.2	73.9	73.5	73.0
(c) average annual benefit	47,500	47,600	47,700	47,700	47,500

Plan Assets (numbers in $000's) *

	2015	2016	2017	2018	2019
Change in Plan Assets during Prior Year:					
Market Value of Assets at January 1 of prior year	-	664,572	739,477	729,736	666,525
Employer Contributions during prior year	-	-	-	1,572	45,876
Benefit Payments during prior year	-	(44,763)	(44,654)	(45,693)	(45,393)
Expenses during prior year	-	(19,900)	(22,200)	(21,900)	(20,000)
Investment return during prior year	-	139,567	57,114	2,809	56,598
Market Value of Assets at January 1 of current year	664,572	739,477	729,736	666,525	703,606
Rate of return during prior year	0%	22%	8%	0%	8.5%
Average Portfolio Mix During Prior Year:					
(a) Domestic Large Cap Equities	0%	40%	39%	33%	36%
(b) Domestic Small Cap Equities	0%	20%	20%	15%	16%
(c) Domestic Fixed Income	0%	30%	30%	42%	39%
(d) International Equities	0%	4%	5%	5%	4%
(e) Real Estate	0%	4%	4%	2%	3%
(f) Cash	0%	2%	2%	3%	2%
(g) Total	0%	100%	100%	100%	100%
Asset Class Returns during Prior Year:					
(a) Domestic Large Cap Equities	0%	32%	14%	1%	12%
(b) Domestic Small Cap Equities	0%	38%	7%	-4%	18%
(c) Domestic Fixed Income	0%	1%	1%	1%	3%
(d) International Equities	0%	22%	-6%	0%	3%
(e) Real Estate	0%	2%	30%	2%	8%
(f) Cash	0%	0%	0%	0%	0%

** numbers may not add due to rounding*

SLIC Salaried Pension Plan

Historical Actuarial Valuation Results

Select Funding Valuation Results - January 1 (numbers in $000's) *

	2015	2016	2017	2018	2019
1. Funding Target:					
(a) Active participants	200,054	276,622	273,159	288,328	298,921
(b) Deferred vested participants	-	-	-	-	-
(c) Pensioners	404,851	412,573	420,817	436,786	449,054
(d) Total	604,906	689,195	693,976	725,114	747,975
2. Actuarial Value of Assets	664,572	739,477	729,736	666,525	703,606
3. Shortfall/(Surplus): (1d)-(2)	(59,666)	(50,281)	(35,761)	58,589	44,369
4. Funding Standard Carryover Balance	-	-	-	-	-
5. Prefunding Balance	-	-	-	-	-
6. Target Normal Cost	34,740	38,000	37,333	36,196	37,896
7. Net Shortfall Amortization Installment	-	-	-	9,680	8,425
8. Minimum Required Contribution: (6) + (7) + if < 0, (3)	-	-	1,572	45,876	46,320
9. Funding Target Attainment Percentage	109.86%	107.29%	105.15%	91.92%	94.06%
10. Adjusted Funding Target Attainment Percentage	109.86%	107.29%	105.15%	91.92%	94.06%
11. Actuarial Basis					
(a) Effective Interest Rate	6.60%	6.42%	6.22%	6.03%	5.84%
(b) Salary scale	3.75%	4.00%	3.50%	3.50%	3.50%
(c) Consumer Price Index	3.00%	3.00%	2.50%	2.50%	2.50%
(d) Mortality	2015 430(h) required mortality	2016 430(h) required mortality	2017 430(h) required mortality	2018 430(h) required mortality	2019 430(h) required mortality
(e) Turnover			None		
(f) Retirement age			Age 62		
(g) Proportion married and age difference			80% married, husbands 3 years older than wives		
(h) Expenses	19,900	22,200	21,900	20,000	21,100
(i) Asset Valuation Method			Market value of assets		
(j) Actuarial Cost Method			Unit Credit		

** numbers may not add due to rounding*

SLIC Salaried Pension Plan
Historical Actuarial Valuation Results

Select Accounting Valuation Results - January 1 (numbers in $000's) *

	2015	2016	2017	2018	2019
1. Reconciliation of funded status at valuation date:					
(a) Accrued Benefit Obligation (ABO)	(850,248)	(764,089)	(802,431)	(797,835)	(798,928)
(b) Projected Benefit Obligation (PBO)	(985,837)	(891,111)	(932,125)	(927,614)	(931,209)
(c) Fair Value of Assets	664,572	739,477	729,736	666,525	703,606
(d) Funded Status: (b) + (c)	(321,265)	(151,635)	(202,389)	(261,089)	(227,603)
(e) Unrecognized Prior Service Cost	-	-	-	-	-
(f) Unrecognized (Gain)/Loss	311,492	92,218	114,363	145,327	120,114
(g) Accumulated Other Comprehensive Expense/(Income)	311,492	92,218	114,363	145,327	120,114
2. Net Periodic Benefit Cost:					
(a) Service Cost	28,014	23,969	25,010	24,496	24,177
(b) Interest Cost	32,223	37,942	35,036	37,177	37,308
(c) Expected Return on Assets	(44,953)	(48,408)	(47,768)	(43,340)	(45,750)
(d) Amortization of Unrecognized Prior Service Cost	-	-	-	-	-
(e) Amortization of Unrecognized (Gain)/Loss	34,359	15,106	17,031	19,271	17,316
(f) Net Periodic Benefit Cost:	49,643	28,609	29,309	37,604	33,050
3. Actuarial Basis and Supplemental Data					
(a) Discount Rate	3.25%	4.25%	3.75%	4.00%	4.00%
(b) Return on Assets	7.00%	6.75%	6.75%	6.50%	6.50%
(c) Salary Scale	4.00%	4.00%	4.00%	3.50%	3.50%
(d) Consumer Price Index	2.75%	3.00%	3.00%	3.00%	3.00%
(e) Mortality	RP-2000 / Scale AA Generational	RP-2000 / Scale AA Generational	RP-2000 / Scale AA Generational	RP-2000 / Scale AA Generational	RP-2000 / Scale AA Generational
(f) Turnover			None		
(g) Proportion Married and Age Difference			80% married, husbands 3 years older than wives		
(h) Retirement Age			Age 62		
(i) Expenses			Included in return on assets assumption		
(j) Asset Valuation Method			Market value of assets		
(k) Actuarial Cost Method			Projected unit credit		
(l) Employer Contributions	-	-	1,572	45,876	45,876
(m) Benefit Payments	(44,763)	(44,654)	(45,693)	(45,393)	(45,393)

** numbers may not add due to rounding*

SLIC Salaried Pension Plan
Reconciliation of Plan Participants (2015-2019)

	Active	*Pensioners/ Beneficiaries*	*Total*
1. Participants as of January 1, 2015	**975**	**915**	**1,890**
- New Entrants/Rehires	9	-	9
- Terminated Nonvested	(3)	-	(3)
- Terminated Vested (Lump Sum Cashout)	(8)	-	(8)
- Retirement	(7)	7	-
- Death w/ Beneficiary	-	3	3
- Deaths	-	(10)	(10)
- Net change	(9)	-	(9)
2. Participants as of January 1, 2016	**966**	**915**	**1,881**
- New Entrants/Rehires	11	-	11
- Terminated Nonvested	(3)	-	(3)
- Terminated Vested (Lump Sum Cashout)	(7)	-	(7)
- Retirement	(8)	8	-
- Death w/ Beneficiary	-	3	3
- Deaths	-	(10)	(10)
- Net change	(7)	1	(6)
3. Participants as of January 1, 2017	**959**	**916**	**1,875**
- New Entrants/Rehires	9	-	9
- Terminated Nonvested	(3)	-	(3)
- Terminated Vested (Lump Sum Cashout)	(7)	-	(7)
- Retirement	(7)	7	-
- Death w/ Beneficiary	(1)	7	6
- Deaths	-	(14)	(14)
- Net change	(9)	-	(9)
4. Participants as of January 1, 2018	**950**	**916**	**1,866**
- New Entrants/Rehires	4	-	4
- Terminated Nonvested	(2)	-	(2)
- Terminated Vested (Lump Sum Cashout)	(7)	-	(7)
- Retirement	(11)	11	-
- Death w/ Beneficiary	(1)	7	6
- Deaths	-	(13)	(13)
- Net change	(17)	5	(12)
5. Participants as of January 1, 2019	**933**	**921**	**1,854**

SLIC Salaried Pension Plan
Age/Svc/Earnings as of January 1, 2019

					Service (Years)			
			< 5	5-10	10-15	15-20	>20	Totals
Age (Years)	< 25	# Participants	-	-	-	-	-	-
		Average Salary	-	-	-	-	-	-
	25-35	# Participants	7	45	-	-	-	52
		Average Salary	58,800	66,600	-	-	-	65,600
	35-45	# Participants	22	14	43	54		133
		Average Salary	59,500	82,900	87,700	95,400		85,700
	45-55	# Participants	4	20	48	149	148	369
		Average Salary	60,500	81,600	90,100	94,500	94,500	92,900
	55-65	# Participants	10	19	58	129	113	329
		Average Salary	55,000	80,200	85,100	92,400	130,600	102,400
	> 65	# Participants	6	10	6	14	14	50
		Average Salary	72,600	91,900	111,200	121,000	149,900	116,300
	Totals	# Participants	49	108	155	346	275	933
		Average Salary	60,200	76,200	88,400	94,900	112,200	95,000

Avg Age	52.0
Avg Svc	17.8
Avg Salary	94,900

Statement of Funding Policies and Procedures -SLIC

The Company has prepared a Statement of Funding Policies and Procedures ("Statement") to document the governance of the Plan. The Company has also prepared a Statement of Investment Policies and Procedures. Extracts of the Statement are provided below followed by a summary of the Statement contents.

Allocation of Responsibilities

SLIC, through its Board of Directors, has delegated responsibility for the day-to-day management of the Plan to the Vice-President, Human Resources and the Chief Financial Officer. The CFO's focus is on financial reporting and cash contribution requirements, the VP HR is largely responsible for all other activities.

The Company has delegated the management of Plan funding as follows:

The Company, acting through Management, will:

- Establish, review and amend, as required, the Statement of Funding Policies and Procedures;
- Select the Pension Consultant and the Actuary;
- Review funding reports prepared by the Actuary regarding the funding of the Plan; and
- Be responsible for the assumption or delegation of any responsibilities not specifically mentioned.

The Pension Consultant and Actuary will:

- Assist, as required, the Company in the preparation of the Statement of Funding Policies and Procedures;
- Present to the Company, as required by the Statement of Funding Policies and Procedures, reviews and reports regarding the funding of the Plan; and
- Comment to the Company on any changes in plan design, contribution flow or pension legislation that may affect the funding of the Plan.

Funding Policy Principles

The Company is the primary risk bearer under the Plan. As a result, the funding objective of the Company is the accumulation of assets that will secure the Plan's benefits in respect of service already rendered. The accumulation of assets should be reasonable, without significant volatility or further recourse to the Company's assets.

The Company believes management of the Plan on a going concern basis is the most suitable means to achieve these objectives.

Management of Risks

The Company has adopted the following policies to mitigate their risks:

- Going-concern valuations are to be prepared using best estimate assumptions adjusted to include margins for adverse deviation. The Company will consult with the Pension Consultant and Actuary regarding the adoption of margins for adverse deviation.

- Emerging experience may differ from the assumptions made for going-concern purposes. The Pension Consultant and Actuary will monitor emerging experience and recommend revisions to the going-concern assumptions as appropriate.
- Plan provisions are managed to mitigate, to the extent possible, demographic and economic risks. Benefit improvements under the Plan will be made with due regard to the Plan's funded status.
- Investment activity will be carried out with due regard to the liability structure of the Fund, to the cash flow requirements of the Fund, and to the risks and rewards inherent in the defined benefit investments. The Statement of Investment Policies and Procedures documents the Company's policies regarding investment risk.

Funding Target

The funding target for the Plan is to have a funded ratio (assets divided by liabilities) of 100% on a going-concern basis.

Funding Risks

The Company bears the following funding risks:

- The Plan's demographic experience may differ from best-estimate assumptions. The Plan provides for subsidized early retirement provision and bears the risk of overutilization of the provision by the Plan membership.
- The Plan's economic experience may differ from best-estimate assumptions. In addition to investment risks, the Company bears the risks associated with providing a final average earnings benefit.
- The Plan's liabilities are debt-like in nature and have a long term to maturity. As a result of the current investment strategy and nature of the Plan's liabilities, there is the risk of an asset-liability mismatch.

* * * * * * * *

The contents of the Statement follow:

- PURPOSE
- BACKGROUND, PLAN TYPE AND LIABILITIES
- ALLOCATION OF RESPONSIBILITIES
- FUNDING POLICY PRINCIPLES
- FUNDING RISKS
- MANAGEMENT OF RISKS
- FUNDING TARGET
- ELIMINATION OF DEFICITS
- UTILIZATION OF EXCESSES
- FREQUENCY OF VALUATIONS
- COMMUNICATION

- APPENDIX 1 – Summary of Roles
- APPENDIX 2 – Summary of Liabilities, Assets and Membership Data
- APPENDIX 3 – History of SFP&P Review and Amendments

Statement of Investment Policies and Procedures - Excerpts

Following are excerpts from the Statement of Investment Policies and Procedures for the SLIC Insurance Company's Pension Plan.

Investment Risk

- Investment risk is borne by the Company
- Going-concern surplus, subject to any legislative restrictions, can be applied against the Company's Normal Actuarial Cost

Allocation of Responsibilities

The Company, acting through the HR Department, will:

- Establish, review and amend, as required, the Statement of Investment Policies and Procedures;
- Select one or more fund managers ("Fund Managers"), the Pension Consultant and the Actuary;
- Select the Custodian to hold pension fund assets;
- Review the performance of the Fund and the Fund Managers at least annually; and
- Be responsible for the assumption or delegation of any responsibilities not specifically mentioned.

The Fund Managers will:

- Manage the asset mix and select securities within each Investment Fund Option, subject to applicable legislation and the constraints set out in this Statement.

The Pension Consultant and Actuary will:

- Assist, as required, the Company in the preparation of the Statement of Investment Policies and Procedures; and
- Comment to the Company on any changes in plan design or contribution flow that may affect the investment of assets.

The Custodian will:

- Fulfil the regular duties required by law of the Custodian in accordance with the Plan;
- Participate in annual reviews of the Statement of Investment Policies and Procedures;
- Present to the Company, at least annually, reviews and reports of investment performance of the Fund Managers;
- Provide the Company with monthly updates on the performance of the Fund Managers;
- Provide the Company with information, on an ongoing basis, about changes at the Fund

Managers that could affect investment performance;
- Present to the Company, at least annually, reviews and reports of all investment Fund assets and transactions for the period;
- Monitor actual investments as appropriate to ensure compliance with the Pension Protection Act; and
- Rebalance the Plan portfolios as requested by the Company.

Investment Objectives

- to preserve the capital;
- to provide sufficient funds to meet payments as they become due; and
- to maintain sufficient assets over actuarial requirements to meet unforeseen liabilities.

Rate of Return Objectives

- to achieve an average annual rate of return, net of investment expenses, of at least the funding valuation rate of return (currently 6.0%) per year, measured over moving, four-year periods;
- to achieve top third performance, relative to the peer group of fund managers, measured over moving, four-year periods;
- to exceed the passive benchmark for the Pension Fund by 1.00% per annum, measured on a four-year moving average basis; and
- to achieve at least the increase in the Consumer Price Index plus 3%, on a four-year moving average basis.

Asset Allocation Guidelines

The following normal policy allocation, and associated range for strategic deviation at any time, has been adopted by the Company:

Percentages of Fund at Market Value	**Normal**	**Minimum**	**Maximum**
Domestic Equities	40%	30%	50%
International Equities	23%	15%	25%
Domestic Fixed Income	35%	15%	45%
Cash	2%	0%	4%

Within the ranges noted above, the Fund Managers may actively vary the asset mix in an effort to achieve the investment objectives of the Company.

Passive Management Benchmarks

The rate of return expected to be achieved through passive management of the assets in the Plan Fund will be based on the normal allocation of assets. The passive return shall be set equal to the sum of:

- 45.0% of the S&P 500 Index return for the year;
- 20.0% of the MSCI EAFE Index return for the year; and
- 35.0% of the Barclays Capital Aggregate Bond Index return for the year.

Active Management Objectives

Domestic equities and fixed income are actively managed and tracked against the S&P 500 and Barclays Capital Aggregate Bond Index respectively.

Rebalancing

The Company will direct the re-balancing of the assets in the component pooled funds annually, when it deems rebalancing to be appropriate to re-align with the asset allocation guidelines when asset allocation guidelines are exceeded.

Appendix

The investment consultant for SLIC's DB Plan has supplied the following economic and plan data, based on recent experience:

Economic Data:

	Equity Indices		Barclay's Capital U.S. Bond Indices	
	S&P 500	**MSCI EAFE**	**Aggregate**	**Aggregate 10+ Year Maturity**
Expected Returns	8.07%	6.33%	4.89%	6.96%
Annualized Volatility	14.90%	16.63%	3.36%	8.47%
Duration	0.00	0.00	6.23	15.39
Skewness	-0.67	-0.67	-0.31	-0.04
Kurtosis	4.32	4.52	4.42	5.28

	Equity Indices		**Barclay's Capital**	
			U.S. Bond Indices	
Correlations	**S&P 500**	**MSCI EAFE**	**Aggregate**	**Aggregate 10+ Year Maturity**
S&P 500	1.00			
MSCI EAFE	0.86	1.00		
Aggregate	-0.10	-0.01	1.00	
Aggregate 10+ Year Maturity	-0.08	-0.01	0.92	1.00

Plan Investment Data

SLIC DB Plan:

Portfolio Managers US Fixed Income	Current % Allocation	Expected Tracking Error (TE)	TE Volatility
Core Plus Managers	50%	1.2%	4%
DB Asset Management	50%	2.5%	5%
Portfolio Managers US Equity	% Allocation	Expected Tracking Error (TE)	TE Volatility
Alpha Management	50%	2.5%	5%
Beyond Beta Group	50%	2.0%	5%

SLIC Salaried Pension Plan
Interest Sensitivity and Cash Flows

Rate	Actives Liability	Pensioners Liability	Total Liability
6.0%	298,850	437,475	736,325
5.5%	319,342	455,513	774,855
6.5%	280,263	420,636	700,899
Duration (5.5%)	13.1	7.8	10.0
Convexity (5.5%)	255.9	108.2	168.2

Five Years Ending Dec 31	Actives Cash Flow	Pensioners Cash Flow	Total Cash Flow
2020	55,820	202,178	257,999
2025	109,795	182,938	292,733
2030	133,794	153,109	286,903
2035	130,148	114,525	244,673
2040	117,900	72,565	190,465
2045	95,959	36,274	132,233
2050	66,814	13,415	80,229
2055	39,858	3,423	43,281
2060	20,616	541	21,158
2065	9,201	49	9,250
2070	3,357	2	3,359
2075	871	-	871
2080	124	-	124
2085	8	-	8
2090	0	-	0
2095	-	-	-

SLIC DB Plan	Market Value ($000)	Duration	KRD 1 Yr	KRD 3 Yr	KRD 5 yr	KRD 10 Yr	KRD 20 Yr	KRD 30 Yr	Beta
Plan Actives	298,850	13.1	0.05	0.25	1.08	3.60	4.50	3.62	1.3
Plan Pensioners	437,475	7.8	0.20	0.52	1.35	2.85	2.22	0.66	1.1
Plan Total Liabilities	736,325	10.0	0.15	0.42	1.25	3.16	3.15	1.87	1.2
Plan Assets	703,606	8.0	0.20	0.54	1.52	2.80	3.00	1.50	0.9

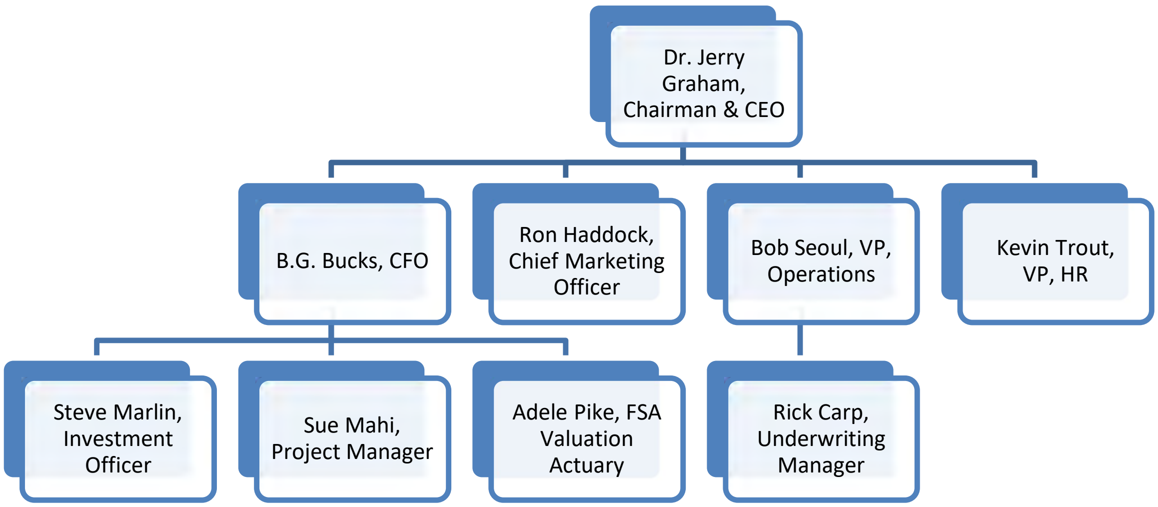
4 Health Insurance Companies

4.1 Background

AHA Health Insurance Company (AHA) is a national insurance company located in California with its home office in Los Angeles. AHA is wholly owned by Lyon Corporation.

4.2 Organization Chart

A simplified organization chart for AHA follows:



4.3 Employee Benefits

AHA Health provides basic life, health and disability benefits to its employees while they are employed by the company. For each employee who elects health coverage, AHA contributes 75% of the composite rate for the employee and his or her dependents; the employee is required to contribute the remaining 25%. AHA provides these health benefits on a self-insured basis.

The employee benefits do not continue after employees leave the company.

AHA Health sponsors a company-paid cash balance defined benefit pension plan for its employees.

4.4 Product Lines

AHA sells individual and group health insurance in California and 14 other states. It is in both the small and large group markets in all states. In addition, AHA has a small block of long-term care (LTC) business with policyholders located all over the country.

Products are sold primarily by brokers, who maintain a relationship with AHA.

4.5 Product Structure

AHA's policies include comprehensive major medical coverage of hospital services, physician services, and prescription drugs. AHA's policies are sold to group customers as well as individuals via the Affordable Care Act exchange. In addition, the group policies also include dental coverage. Dental is offered as a rider to the medical policies.

4.6 Provider Networks & Medical Management

AHA has staff that negotiates with physician and hospital providers in each state in which it is licensed and continually monitors these provider networks. It has contracted with Networks 'R Us to use its provider networks when members need services outside of states in which it is licensed. In addition, AHA has contracted with Carefree Rx, a nationwide drug plan, to manage and administer its prescription drug coverage. Finally, AHA has a contract with Painless Dental to manage and administer its dental plans.

AHA has its own centralized medical management staff that administers its medical management policies consistently in all states in which it is licensed. AHA's staff continually reviews and revises policies to keep costs down and to keep up with the latest developments. Its vendors, Networks 'R Us, Carefree Rx, and Painless Dental, work with AHA to make sure their medical management policies do not conflict with those of AHA.

4.7 Operations

AHA has a claims system developed and maintained by a well-respected national vendor. AHA maintains a close relationship with this vendor to make sure that the system meets all of its needs.

AHA's claim department is experienced and fully staffed. AHA performs annual claim audits. They have found the claim department to be accurate and efficient. The claim adjudication rate and backlog vary with staff turnover, vacations and holidays. The claim department produces quarterly aging reports that provide the number of claims in backlog.

AHA underwrites large group business coverage, using credibility rating. While the underwriting decision is systematically determined in most cases, the Senior Pricing Actuary makes the ultimate underwriting decision for the largest cases, relying on his extensive experience in the industry.

The underwriting department produces a monthly renewal summary report showing renewal action by group and state for group business and by state for individual business. The final renewal increases are net of any plan changes implemented at renewal. The underwriters and customer service representatives are eligible for a bonus if persistency exceeds a certain level.

AHA's robust data collection process includes categorizing it in numerous different ways that allows all parts of the company to use the same database. For example, Medical Management can use the corporate database to determine which of its initiatives have been successful. Their data are used for actively monitoring claims experience, which results in up-to-date pricing and forecasting assumptions. In addition, their data is used for research and ad hoc financial analyses, group reporting, and financial reporting. In fact, the group reports have proved helpful in showing groups how to lower their costs.

4.8 Management/Culture

Lyon Corporation management has little experience in health insurance. As a result, they are content to allow the AHA management a great deal of autonomy. This arrangement has worked well in the past.

AHA's management tends to be aggressive and willing to take risks. AHA's stated risk limit is to maintain capital to achieve an AA rating. The fact that their business is spread over a large membership base in 15 states may give them a sense of security. AHA does not currently and has never had a CRO. The company has a risk committee with limited scope and authority that reacts to emerging risk as necessary, and different senior managers take on a CRO role as needed.

The risk committee issues reports as deemed necessary to affected Departments. Risks are managed in silos, relying on the expertise within each Department.

The management team has a generous incentive plan. AHA's plan criteria include membership growth, profitability, and quality of care. AHA's plan covers management staff from top management to frontline management. The goal is to have all management focused on the key drivers of success.

AHA is planning to implement a set of contingent compensation agreements for its brokers.

4.9 Affordable Care Act & Other Regulatory Issues

AHA's staff made all required system, product, underwriting, pricing, and administrative changes to be compliant with the Affordable Care Act (ACA). Due to the pressure on profit margin from the ACA minimum loss ratio rebates, AHA's management decided to freeze hiring of new staff. Instead, current AHA staff members have increased responsibilities in the post-ACA environment. As a result of natural attrition staffing levels remain inadequate, and staff morale and performance are strained.

AHA cancelled individual policies that were not compliant with the ACA. Although policyholders in all states were dissatisfied with the loss of coverage, the most complaints have come from policyholders in Nevada, California and Ohio. AHA is concerned that the resulting negative reputation will hurt its business in general going forward.

The company developed new billing and claim systems to administer its new ACA-compliant plans. These systems work properly for the most part, though occasionally longer-term employees, who were very capable in the pre-ACA environment, use them incorrectly because they do not understand how to use them in a post-ACA environment.

Next year, AHA will undergo its triennial audit by the California Department of Insurance. Management anticipates that there will not be any problems but this audit entails a substantial effort from Finance, Internal Audit, Actuarial, and other areas.

4.10 Statutory and Economic Capital

Statutory Capital

Statutory capital is allocated to the LOBs as follows. Each reporting period the Financial Reporting Department calculates the required statutory capital for each of the four lines of business (LOB): LTC, Individual, Small Group and Large Group. AHA currently targets holding capital at 600% of Authorized Control Level RBC (300% of Company Action Level RBC), an A+ capital level. At the end of each reporting period, each LOB holds exactly its required capital which is achieved by the LOB transferring any excess statutory capital to the AHA Corporate LOB or by receiving a statutory capital contribution from AHA Corporate. Thus, Corporate invests statutory capital in the LOB and each period either receives returns or makes further investments in the LOB. AHA invests in liquid, highly rated bonds with asset/liability matching to support their health and LTC liabilities. Their investment returns are sufficient to support their pricing.

Economic Capital

AHA uses an internal Economic Capital Model. The model targets a total economic capital level that is calibrated to an AA financial strength based on Kelly ratings. AHA defines the model economic capital required as being the capital required to protect AHA's policyholders in order to meet all of their claims with a confidence level of 99.0 percent over a one-year time horizon.

The Statutory and Economic Balance Sheets are independent of each other. The amount of assets assigned to a LOB is based on the required capital, either on an economic basis or a statutory basis. That is, the assets backing the liabilities on an economic basis are not the same as the assets allocated on a statutory basis.

Surplus in excess of 700% of RBC (which is 117% of the 600% target) is distributed to Lyon Corporation through a dividend annually at the end of the first quarter based on the year-end balance sheet. Surplus positions less than 500% of RBC (which is 83% of the 600% target) result in a capital contribution from Lyon Corporation or the issuance of Surplus Notes.

4.11 Future Considerations – ACA Impacts

AHA's claim experience varies by state and market (Individual, Small Group, Large Group, and LTC). The Affordable Care Act's federal and state health insurance exchanges were introduced in 2014. AHA decided to participate in a few Exchanges as a pilot program. AHA is monitoring its experience to assess the effect of the ACA on its business.

Through 2017, AHA had three primary concerns with its exchange experience. First, although the risk adjustment pool was designed to protect carriers from anti-selection, the transfers to and from the pool have not aligned well with AHA's claim experience. Second, any pricing error would be exploited very quickly for plans on the Exchange, so a large volume of underpriced new business could be sold very quickly. Finally, a rate increase would take months to implement given the time-consuming rate approval process.

Looking ahead, the current administration has made three recent changes that will impact future ACA experience:

1) Low-income members are eligible for reduced cost sharing under ACA compliant health plans. Through 2017, the federal government reimbursed AHA for the cost-sharing reductions (CSR). However, the CSR reimbursements were eliminated effective in 2018. AHA will no longer be reimbursed for the reduced cost sharing that they must allow for low-income members.
2) The individual health mandate, which imposed a tax penalty for not having health insurance, was repealed effective 2019.
3) Short-term medical plans, which offer limited coverage and are not ACA compliant, are currently available only for a three-month duration. Under a proposed rule change, short-term medical plans would become available for up to one year.

4.12 Acquisitions

AHA management is looking into one of two possible acquisition targets.

The primary target for purchase is Eureka Insurance Company (Eureka), a health insurance company domiciled in New York with its home office in Albany, NY. The driving force behind this potential acquisition is to help AHA enter a new market without having to build a lot of infrastructure. Initially, the Eureka management would remain in place to run the company and integration would proceed over several years. AHA management is putting together a due diligence team including staff from AHA finance, actuarial, marketing, and medical management.

Recently, AHA has become aware of another potential acquisition target, Columbia Health, and has just begun evaluating the company. Columbia is an LTC and small group health insurer, also located in New York.

Further information about both companies follows in the next two sections.

4.13 Report on Eureka Insurance Company

To: Dr. Jerry Graham, CEO
B.G. Bucks, CFO

From: Denise Codd, Risk Analyst

CONFIDENTIAL

Information for the following report has been developed through our review of Eureka public financial statements and preliminary discussions with Eureka management. More substantive due diligence is needed before any decision is made about proceeding with the acquisition.

Employee Benefits

Eureka provides basic life, health and disability benefits to its employees while they are employed by the company. These benefits do not continue after employees leave the company.

Eureka does not sponsor any pension or savings plans for its employees.

Product Lines

Eureka is in the small and large group medical and LTC markets in the state of New York. It does not participate in the ACA Exchanges. About 40% of Eureka's large group premium represents employer groups with less than 101 employees. This business was reclassified as small group in 2016 due to the Affordable Care Act.

Product Structure

Eureka's products include LTC and comprehensive major medical coverage of hospital services, physician services, dental services, and prescription drugs. Dental is offered as a rider to medical.

Eureka is not writing any new LTC business. The closed LTC block remains on Eureka's financial statements with a low average lapse rate.

Provider Networks & Medical Management

Eureka has contracted with Networks 'R Us to use its provider networks for physician and hospital services. It also has contracts with Carefree Rx, a Prescription Benefit Management company (PBM), and Painless Dental to manage and administer Eureka's prescription drug and dental plans, respectively. In order to lower costs, it periodically puts its network contracts out to bid. While this may lower premiums, it has been disruptive to members in the past.

Eureka uses the standard medical management from its vendors. The company has medical management staff that coordinate with the vendors' medical managers to ensure that the vendors meet New York requirements and that their policies are consistent with the Eureka product language.

Operations

Eureka has a “home grown” claims system that has performed well over the years. However, modifications are difficult and take time which has resulted in payment errors. Their controls in many areas differ from those of AHA and some are drastically different.

Similar to AHA, Eureka underwrites large group business coverage, but its procedures are very different. The ACA has brought the underwriting processes of the two companies closer together. As with AHA, Eureka uses credibility rating but has different points for determining whether a group is fully credible.

Eureka stores its data mainly at the group level and uses categories that allow it to do some detailed reporting to groups, pricing, monthly financial reporting and, of course, statutory reporting.

Management/Culture

Compared to AHA, the management of Eureka appears to be more conservative. However, since their company covers the entire state of New York, they have experience dealing in diverse markets (rural to cosmopolitan). As with AHA, the Eureka management team has a generous incentive plan but requirements for receiving incentive payments differ between the two companies. Finally, I would suggest that there are substantial cultural differences between the southern California AHA and the northeastern Eureka management teams.

Eureka does not have a CRO in place.

Eureka’s incentive compensation plan only covers senior management and the incentives cover the direct responsibilities of each executive (e.g., the chief marketing officer is responsible for growth and the CFO is responsible for profitability). Eureka states that the goal of the plan is to make sure senior executives focus on their responsibilities and do not get sidetracked. Also, this type of plan ensures that management in the rest of the company does not make decisions directly affecting a given executive’s area of the business.

Affordable Care Act & Other Regulatory Issues

Like AHA, the management of Eureka has implemented the ACA using only current staff. Eureka management determined that the pressure on margins as a result of the ACA minimum loss ratio requirements made it economically unfeasible to hire additional staff. It appears that the morale and performance of current staff has deteriorated over the past few years due to increased work responsibilities.

Statutory and Economic Capital

Statutory Capital

Eureka reports statutory results only at the level required by regulatory authorities and does not allocate capital back to the lines of business. Eureka invests in highly rated publicly traded bonds, private placements, and Commercial Mortgage-Backed Securities (CMBS) that are duration matched to its liabilities. The returns are adequate to support the pricing. However, the investments supporting its LTC liabilities are illiquid. An increase in LTC lapse rates would produce losses.

Economic Capital

Eureka has not yet developed an economic capital model.

4.14 Report on Columbia Health Insurance

To: Dr. Jerry Graham, CEO
B.G. Bucks, CFO

From: Denise Codd, Risk Analyst

CONFIDENTIAL

AHA has just started considering an acquisition of Columbia. The report which follows is based on publicly available information, as well as our own internal analysis of this potential target:

-Industry: Columbia operates primarily in the LTC market, along with having some small group health business. It offers its health products in most states in the U.S. Columbia does not sell any other insurance products, and the company does not have any insurance subsidiaries.

-Geography: Although Columbia is based in New York, it operates in almost all U.S. States. It focuses its efforts in smaller cities and towns where it perceives that there is less competition.

-Products: Columbia offers long term care insurance to individuals and small groups, as well as medical health insurance that reimburses patients for physician services and hospital emergency visits. Columbia does not offer prescription drugs.

-Distribution channels: Columbia negotiates contracts directly with external providers. It targets individual primary care doctors, who are sole practitioners, and home care agencies for its LTC product; as a result, it appears that Columbia is able to negotiate more profitable arrangements than might otherwise be available. However, Columbia is unable to take a similarly strategic approach with hospitals due to concentration in that industry. Instead, it must operate within the same general cost parameters as the rest of the health insurance industry.

-Internal administration processes and systems: Columbia has contracted out all aspects of this function. Policyholders submit claims to an external third-party administrator, and payments are processed by that company.

-Underwriting function: Most of Columbia's underwriters have been with the company since its inception and have developed close relationships with their small business clients. For cases with unusual features, Columbia relies on its reinsurer for advice.

-Governance: Managed by its founder, Columbia is a very conservative company. The founder treats his employees as if they are family members. Their compensation is well above industry average and is totally fixed; there is no variable compensation. Columbia does not have an internal ERM function. It relies on external consultants for all regulatory considerations, such as valuation reports, economic capital, and rate filings.

4.15 AHA Financial Statements

Multi-year financial statements are provided for each of the product lines and for AHA in total. Statements are provided on both a Statutory and an Economic basis. The Statutory and Economic balance sheets are independent of each other. The amount of assets assigned to a line of business is based on the required capital for each respective basis.

2018–2019 are actual results; 2020–2022 are projections.

LTC	2018	2019	2020	2021	2022
Statutory Income Statement (000s)					
Earned Premiums	540,517	605,379	678,024	759,387	850,514
Health benefits	178,371	202,802	228,833	258,192	289,175
General expenses	105,401	111,995	128,825	132,893	144,587
Total Expenses	**283,771**	**314,797**	**357,658**	**391,084**	**433,762**
Investment Income	**3,583**	**4,462**	**4,976**	**5,573**	**6,241**
Income Before Income Tax	**260,328**	**295,044**	**325,342**	**373,876**	**422,993**
Federal Income Tax	**91,115**	**103,266**	**113,870**	**130,856**	**148,048**
Net Income	**169,214**	**191,779**	**211,472**	**243,019**	**274,946**
Statutory Balance Sheet (000s)					
Total Assets	**224,585**	**252,443**	**282,736**	**316,664**	**354,664**
Liability for unpaid claims & claim adj expenses	58,106	66,592	74,583	83,533	93,557
Other Liabilities	31,350	34,507	38,647	43,285	48,479
Total Liabilities	**89,456**	**101,098**	**113,230**	**126,818**	**142,036**
Surplus	**135,129**	**151,345**	**169,506**	**189,847**	**212,628**
Total Liabilities and Surplus	**224,585**	**252,443**	**282,736**	**316,664**	**354,664**
Additional Balance Sheet Information					
Surplus Transfer from/(to) Corporate	(154,735)	(175,563)	(193,311)	(222,678)	(252,164)
Economic Capital Balance Sheet (000s)					
Market Value of Assets	**233,662**	**263,153**	**295,269**	**331,303**	**371,734**
Economic Reserve	95,628	108,478	121,949	137,090	154,109
Required Economic Capital	125,130	140,448	157,641	176,937	198,595
Excess Capital	12,905	14,226	15,679	17,276	19,030
Total Liabilities and Surplus	**233,662**	**263,153**	**295,269**	**331,303**	**371,734**
Additional Metrics					
Enrollment (000s)					
Members	327	333	340	347	354
Member Months	3,528	3,631	3,738	3,847	3,960
Utilization (per 1,000 members)					
Physician Visits	2,088	3,049	3,049	3,049	3,049
Hospital Days	188	265	262	262	262

INDIVIDUAL	2018	2019	2020	2021	2022
Statutory Income Statement (000s)					
Earned Premiums	1,109,901	1,209,793	1,391,261	1,572,125	1,666,453
Health benefits	954,515	985,981	1,126,922	1,265,561	1,333,162
General expenses	205,332	211,714	246,949	259,401	266,632
Total Expenses	**1,159,847**	**1,197,695**	**1,373,871**	**1,524,962**	**1,599,795**
Investment Income	**7,424**	**9,163**	**9,943**	**11,435**	**12,921**
Income Before Income Tax	**(42,522)**	**21,261**	**27,334**	**58,599**	**79,580**
Federal Income Tax	**(14,883)**	**7,441**	**9,567**	**20,510**	**27,853**
Net Income	**(27,639)**	**13,820**	**17,767**	**38,089**	**51,727**
Statutory Balance Sheet (000s)					
Total Assets	**461,164**	**504,484**	**580,156**	**655,576**	**694,911**
Liability for unpaid claims & claim adj expenses	119,314	133,077	153,039	172,934	183,310
Other Liabilities	64,374	68,958	79,302	89,611	94,988
Total Liabilities	**183,689**	**202,035**	**232,341**	**262,545**	**278,298**
Surplus	**277,475**	**302,448**	**347,815**	**393,031**	**416,613**
Total Liabilities and Surplus	**461,164**	**504,484**	**580,156**	**655,576**	**694,911**
Additional Balance Sheet Information					
Surplus Transfer from/(to) Corporate	55,137	11,153	27,600	7,127	(28,145)
Economic Capital Balance Sheet (000s)					
Market Value of Assets	**576,649**	**631,827**	**727,705**	**823,553**	**874,288**
Economic Reserve	234,938	259,211	299,022	338,946	360,395
Required Economic Capital	309,663	338,137	389,553	440,981	468,273
Excess Capital	32,048	34,479	39,129	43,626	45,619
Total Liabilities and Surplus	**576,649**	**631,827**	**727,705**	**823,553**	**874,288**
Additional Metrics					
Enrollment (000s)					
Members	269	277	305	320	326
Member Months	2,798	2,910	3,109	3,297	3,395
Utilization (per 1,000 members)					
Physician Visits	5,863	5,425	5,425	5,425	5,425
Hospital Days	528	472	467	467	467

SMALL GROUP	2018	2019	2020	2021	2022
Statutory Income Statement (000s)					
Earned Premiums	1,452,552	1,583,282	1,757,443	1,898,038	2,049,881
Health benefits	1,191,093	1,294,333	1,449,890	1,575,372	1,716,775
General expenses	268,722	277,074	311,946	313,176	327,981
Total Expenses	**1,459,815**	**1,571,407**	**1,761,836**	**1,888,548**	**2,044,756**
Investment Income	**9,894**	**11,992**	**13,013**	**14,445**	**15,600**
Income Before Income Tax	**2,631**	**23,867**	**8,619**	**23,935**	**20,725**
Federal Income Tax	**921**	**8,353**	**3,017**	**8,377**	**7,254**
Net Income	**1,710**	**15,513**	**5,603**	**15,558**	**13,471**
Statutory Balance Sheet (000s)					
Total Assets	**603,535**	**660,228**	**732,854**	**791,482**	**854,800**
Liability for unpaid claims & claim adj expenses	156,149	174,161	193,319	208,784	225,487
Other Liabilities	84,248	90,247	100,174	108,188	116,843
Total Liabilities	**240,397**	**264,408**	**293,493**	**316,972**	**342,330**
Surplus	**363,138**	**395,820**	**439,361**	**474,510**	**512,470**
Total Liabilities and Surplus	**603,535**	**660,228**	**732,854**	**791,482**	**854,800**
Additional Balance Sheet Information					
Surplus Transfer from/(to) Corporate	28,274	17,169	37,938	19,591	24,490
Economic Capital Balance Sheet (000s)					
Market Value of Assets	**787,253**	**862,542**	**958,815**	**1,037,025**	**1,121,613**
Economic Reserve	321,892	355,100	395,335	428,230	463,857
Required Economic Capital	416,156	454,402	505,265	546,635	591,391
Excess Capital	49,205	53,040	58,215	62,161	66,365
Total Liabilities and Surplus	**787,253**	**862,542**	**958,815**	**1,037,025**	**1,121,613**
Additional Metrics					
Enrollment (000s)					
Members	442	455	487	506	521
Member Months	4,770	4,958	5,159	5,416	5,631
Utilization (per 1,000 members)					
Physician Visits	5,159	4,774	4,774	4,774	4,774
Hospital Days	464	415	411	411	411

LARGE GROUP	2018	2019	2020	2021	2022
Statutory Income Statement (000s)					
Earned Premiums	2,530,940	2,733,415	2,924,754	3,129,487	3,348,551
Health benefits	2,125,989	2,323,403	2,522,600	2,738,301	2,946,725
General expenses	379,641	437,346	394,842	320,772	326,484
Total Expenses	**2,505,630**	**2,760,749**	**2,917,442**	**3,059,073**	**3,273,208**
Investment Income	**17,398**	**20,895**	**22,466**	**24,039**	**25,721**
Income Before Income Tax	**42,708**	**(6,439)**	**29,778**	**94,452**	**101,064**
Federal Income Tax	**14,948**	**(2,254)**	**10,422**	**33,058**	**35,372**
Net Income	**27,760**	**(4,185)**	**19,356**	**61,394**	**65,692**
Statutory Balance Sheet (000s)					
Total Assets	**1,051,605**	**1,139,834**	**1,219,622**	**1,304,996**	**1,396,346**
Liability for unpaid claims & claim adj expenses	272,076	300,676	321,723	344,244	368,341
Other Liabilities	146,794	155,805	166,711	178,381	190,867
Total Liabilities	**418,870**	**456,480**	**488,434**	**522,624**	**559,208**
Surplus	**632,735**	**683,354**	**731,188**	**782,372**	**837,138**
Total Liabilities and Surplus	**1,051,605**	**1,139,834**	**1,219,622**	**1,304,996**	**1,396,346**
Additional Balance Sheet Information					
Surplus Transfer from/(to) Corporate	19,109	54,804	28,479	(10,211)	(10,925)
Economic Capital Balance Sheet (000s)					
Market Value of Assets	**1,226,366**	**1,331,886**	**1,427,438**	**1,529,840**	**1,639,584**
Economic Reserve	535,735	585,664	628,614	674,708	724,174
Required Economic Capital	623,877	675,153	723,877	776,113	832,115
Excess Capital	66,754	71,069	74,947	79,020	83,295
Total Liabilities and Surplus	**1,226,366**	**1,331,886**	**1,427,438**	**1,529,840**	**1,639,584**
Additional Metrics					
Enrollment (000s)					
Members	891	936	964	993	1,022
Member Months	10,157	10,759	11,082	11,414	11,757
Utilization (per 1,000 members)					
Physician Visits	4,690	4,340	4,340	4,340	4,340
Hospital Days	422	378	373	373	373

CORPORATE	**2018**	**2019**	**2020**	**2021**	**2022**
Statutory Income Statement (000s)					
Earned Premiums	0	0	0	0	0
Health benefits	0	0	0	0	0
General expenses	4,525	4,353	4,483	4,199	4,329
Total Expenses	**4,525**	**4,353**	**4,483**	**4,199**	**4,329**
Investment Income	**953**	**2,042**	**3,818**	**5,766**	**9,850**
Income Before Income Tax	**(3,572)**	**(2,311)**	**(665)**	**1,568**	**5,521**
Federal Income Tax	**(1,250)**	**(809)**	**(233)**	**549**	**1,932**
Net Income	**(2,322)**	**(1,502)**	**(432)**	**1,019**	**3,589**
Statutory Balance Sheet (000s)					
Total Assets	**102,769**	**193,705**	**292,567**	**499,757**	**617,773**
Liability for unpaid claims & claim adj expenses	0	0	0	0	0
Other Liabilities	0	0	0	0	0
Total Liabilities	0	0	0	0	0
Surplus	102,769	193,705	292,567	499,757	617,773
Total Liabilities and Surplus	102,769	193,705	292,567	499,757	617,773
Additional Balance Sheet Information					
Surplus Transfer from/(to) Corporate	52,216	92,437	99,294	206,171	266,745
Dividend/Capital Transfer (to)/from Lyon	0	0	0	0	(152,317)
Economic Capital Balance Sheet (000s)					
Market Value of Assets	112,173	211,525	319,629	546,234	675,535
Economic Reserve	0	0	0	0	0
Required Economic Capital	101,330	191,380	289,641	495,759	614,067
Excess Capital	10,842	20,145	29,988	50,475	61,468
Total Liabilities and Surplus	**112,173**	**211,525**	**319,629**	**546,234**	**675,535**

TOTAL	2018	2019	2020	2021	2022
Statutory Income Statement (000s)					
Earned Premiums	5,633,910	6,131,868	6,751,482	7,359,037	7,915,398
Health benefits	4,449,968	4,806,518	5,328,245	5,837,425	6,285,837
General expenses	963,620	1,042,482	1,087,044	1,030,441	1,070,014
Total Expenses	**5,413,588**	**5,849,000**	**6,415,289**	**6,867,866**	**7,355,851**
Investment Income	**39,251**	**48,555**	**54,216**	**61,257**	**70,335**
Income Before Income Tax	**259,573**	**331,423**	**390,409**	**552,429**	**629,882**
Federal Income Tax	**90,851**	**115,998**	**136,643**	**193,350**	**220,459**
Net Income	**168,723**	**215,425**	**253,766**	**359,079**	**409,424**
Statutory Balance Sheet (000s)					
Total Assets	**2,443,659**	**2,750,693**	**3,107,935**	**3,568,476**	**3,918,494**
Liability for unpaid claims & claim adj expenses	605,645	674,505	742,663	809,494	870,694
Other Liabilities	326,767	349,516	384,834	419,465	451,178
Total Liabilities	**932,412**	**1,024,022**	**1,127,498**	**1,228,959**	**1,321,872**
Surplus	**1,511,247**	**1,726,672**	**1,980,438**	**2,339,516**	**2,596,623**
RBC Ratio	641%	670%	696%	749%	770%
Total Liabilities and Surplus	**2,443,659**	**2,750,693**	**3,107,935**	**3,568,476**	**3,918,494**
Additional Balance Sheet Information					
Surplus Transfer from/(to) Corporate	0	0	0	0	0
Dividend/Capital Transfer (to)/from Lyon	0	0	0	0	(152,317)
Economic Capital Balance Sheet (000s)					
Market Value of Assets	**2,936,103**	**3,300,934**	**3,728,856**	**4,267,956**	**4,682,754**
Economic Reserve	1,188,193	1,308,454	1,444,921	1,578,973	1,702,536
Required Economic Capital	1,576,155	1,799,520	2,065,976	2,436,425	2,704,440
Excess Capital	171,754	192,959	217,959	252,558	275,778
Total Liabilities and Surplus	**2,936,103**	**3,300,934**	**3,728,856**	**4,267,956**	**4,682,754**
Additional Metrics					
Enrollment (000s)					
Members	1,928	2,001	2,095	2,165	2,224
Member Months	21,253	22,258	23,088	23,975	24,743
Utilization (per 1,000 members)					
Physician Visits	4,520	4,374	4,389	4,395	4,396
Hospital Days	407	381	377	378	378

2019 AHA Premiums, Enrollment, and Utilization	Comprehensive Hospital & Medical				
	Individual	Small Group	Large Group	Long Term Care	Total
Total Members at the end of:					
1. Prior Year	269,059	441,637	891,008	326,622	1,928,325
2. First Quarter, Current Year	269,981	434,586	904,609	319,641	1,928,818
3. Second Quarter, Current Year	274,740	441,236	914,417	324,701	1,955,094
4. Third Quarter, Current Year	274,903	445,861	918,183	330,277	1,969,225
5. Fourth Quarter, Current Year	277,130	454,886	935,558	333,155	2,000,729
6. Current Year Member Months	2,909,868	4,958,253	10,758,917	3,631,385	22,258,424
Total Members Ambulatory Encounters for Year:					
7. Physician	1,315,503	1,972,558	3,891,142	922,535	8,101,738
8. Non-Physician	78,404	113,619	219,460	10,609,147	11,020,631
9. Total	1,393,907	2,086,178	4,110,602	11,531,681	19,122,368
10. Hospital Patient Days Incurred	114,449	171,613	338,529	80,261	704,851
11. Number of Inpatient Admissions	27,108	44,344	88,853	8,325	168,630

		Individual	Small Group	Large Group	Long Term Care	Overall
Premiums, Written and Earned (in $000s)						
12.	Health Premiums, Written	$1,209,793	$1,583,282	$2,733,415	$605,379	$6,131,868
13.	Life Premiums, Direct	$0	$0	$0	$0	$0
14.	Property & Casualty Premiums, Written	$0	$0	$0	$0	$0
15.	Health Premiums, Earned	$1,209,793	$1,583,282	$2,733,415	$605,379	$6,131,868
16.	Life Premiums, Earned	$0	$0	$0	$0	$0
17.	Property & Casualty Premiums, Earned	$0	$0	$0	$0	$0
Claims, Paid and Incurred (in $000s)						
18.	Amount Paid for Provision of Health Care Services	$972,218	$1,276,321	$2,294,803	$194,316	$4,737,658
19.	Amount Incurred for Provision of Health Care Services	$985,981	$1,294,333	$2,323,403	$202,802	$4,806,518
Member Ambulatory Encounters for Year - Per 1,000		Individual	Small Group	Large Group	Long Term Care	Overall
7.	Physician	5,425	4,774	4,340	3,049	4,368
8.	Non-Physician	323	275	245	35,058	5,941
9.	Total	5,748	5,049	4,585	38,107	10,309
10.	Hospital Patient Days Incurred	472	415	378	265	380
11.	Number of Inpatient Admissions	112	107	99	28	91
Premiums, Written and Earned - PMPM						
12.	Health Premiums, Written	$415.76	$319.32	$254.06	$166.71	$275.49
13.	Life Premiums, Direct	$0.00	$0.00	$0.00	$0.00	$0.00
14.	Property & Casualty Premiums, Written	$0.00	$0.00	$0.00	$0.00	$0.00
15.	Health Premiums, Earned	$415.76	$319.32	$254.06	$166.71	$275.49
16.	Life Premiums, Earned	$0.00	$0.00	$0.00	$0.00	$0.00
17.	Property & Casualty Premiums, Earned	$0.00	$0.00	$0.00	$0.00	$0.00
Claims, Paid and Incurred -PMPM						
18.	Amount Paid for Provision of Health Care Services	$334.11	$257.41	$213.29	$53.51	$212.85
19.	Amount Incurred for Provision of Health Care Services	$338.84	$261.05	$215.95	$55.85	$215.94

2019 AHA Experience by State

(Excludes minimum loss ratio rebates and risk adjustment transfers)

	NV	OR	WA	CA	IL	IN	NJ	MI
GROUP MEDICAL								
Small Group								
Direct Premium (in $000s)	$354,819	$72,009	$32,029	$333,920	$32,029	$156,738	$210,801	$56,335
Direct Claims (in $000s)	$314,206	$60,893	$28,254	$225,303	$26,062	$141,027	$192,177	$40,676
Direct Loss Ratio	88.6%	84.6%	88.2%	67.5%	81.4%	90.0%	91.2%	72.2%
Member Months	1,010,248	171,533	67,443	515,409	107,146	596,682	805,720	303,628
Earned Premium - PMPM	$351.22	$419.79	$474.90	$647.87	$298.93	$262.68	$261.63	$185.54
Incurred Claims - PMPM	$311.02	$354.99	$418.93	$437.13	$243.24	$236.35	$238.52	$133.97
Large Group								
Direct Premium (in $000s)	$544,276	$99,621	$57,366	$876,439	$372,179	$63,242	$456,409	$121,448
Direct Claims (in $000s)	$456,442	$93,213	$36,383	$748,709	$291,966	$60,137	$402,017	$106,142
Direct Loss Ratio	83.9%	93.6%	63.4%	85.4%	78.4%	95.1%	88.1%	87.4%
Member Months	2,191,676	286,438	169,195	3,044,310	1,600,783	266,709	1,792,747	694,243
Earned Premium - PMPM	$248.34	$347.79	$339.05	$287.89	$232.50	$237.12	$254.59	$174.94
Incurred Claims - PMPM	$208.26	$325.42	$215.04	$245.94	$182.39	$225.48	$224.25	$152.89
Total Group Medical								
Direct Premium (in $000s)	$899,095	$171,629	$89,395	$1,210,359	$404,208	$219,980	$667,210	$177,783
Direct Claims (in $000s)	$770,647	$154,105	$64,637	$974,011	$318,028	$201,164	$594,194	$146,818
Direct Loss Ratio	85.7%	89.8%	72.3%	80.5%	78.7%	91.4%	89.1%	82.6%
Member Months	3,201,924	457,971	236,639	3,559,719	1,707,929	863,390	2,598,467	997,871
Earned Premium - PMPM	$280.80	$374.76	$377.77	$340.02	$236.67	$254.79	$256.77	$178.16
Incurred Claims - PMPM	$240.68	$336.50	$273.15	$273.62	$186.21	$232.99	$228.67	$147.13
INDIVIDUAL MEDICAL								
Direct Premium (in $000s)	$271,135	$54,983	$24,517	$255,123	$24,517	$119,639	$161,113	$43,030
Direct Claims (in $000s)	$249,247	$46,450	$21,471	$161,790	$19,838	$107,416	$146,427	$31,088
Direct Loss Ratio	91.9%	84.5%	87.6%	63.4%	80.9%	89.8%	90.9%	72.2%
Member Months	592,889	100,669	39,581	302,479	62,881	350,176	472,856	178,191
Earned Premium - PMPM	$457.31	$546.17	$619.42	$843.44	$389.90	$341.65	$340.72	$241.48
Incurred Claims - PMPM	$420.39	$461.41	$542.46	$534.88	$315.49	$306.75	$309.67	$174.46

2019 AHA Experience by State

(Excludes minimum loss ratio rebates and risk adjustment transfers)

	SC	TN	TX	OH	GA	KY	WI	Total
GROUP MEDICAL								
Small Group								
Direct Premium (in $000s)	$11,358	$33,165	$52,700	$92,226	$106,309	$29,076	$9,768	$1,583,282
Direct Claims (in $000s)	$7,551	$24,601	$42,868	$78,673	$75,750	$26,062	$10,230	$1,294,333
Direct Loss Ratio	66.5%	74.2%	81.3%	85.3%	71.3%	89.6%	104.7%	81.8%
Member Months	48,443	133,334	236,961	414,227	406,809	104,866	35,804	4,958,253
Earned Premium - PMPM	$234.46	$248.74	$222.40	$222.64	$261.32	$277.27	$272.81	$319.32
Incurred Claims - PMPM	$155.87	$184.50	$180.91	$189.93	$186.21	$248.53	$285.72	$261.05
Large Group								
Direct Premium (in $000s)	$26,864	$840	$10,634	$13,712	$46,732	$23,506	$20,148	$2,733,415
Direct Claims (in $000s)	$31,572	$301	$6,014	$13,230	$43,299	$15,335	$18,643	$2,323,403
Direct Loss Ratio	117.5%	35.8%	56.6%	96.5%	92.7%	65.2%	92.5%	85.0%
Member Months	124,816	5,306	50,337	81,088	228,552	124,358	98,358	10,758,917
Earned Premium - PMPM	$215.23	$158.21	$211.25	$169.10	$204.47	$189.02	$204.84	$254.06
Incurred Claims - PMPM	$252.95	$56.67	$119.47	$163.16	$189.45	$123.31	$189.54	$215.95
Total Group Medical								
Direct Premium (in $000s)	$38,222	$34,004	$63,334	$105,937	$153,042	$52,582	$29,916	$4,316,696
Direct Claims (in $000s)	$39,123	$24,901	$48,882	$91,903	$119,049	$41,397	$28,873	$3,617,735
Direct Loss Ratio	102.4%	73.2%	77.2%	86.8%	77.8%	78.7%	96.5%	83.8%
Member Months	173,259	138,640	287,297	495,316	635,361	229,224	134,161	15,717,170
Earned Premium - PMPM	$220.61	$245.27	$220.45	$213.88	$240.87	$229.39	$222.98	$274.65
Incurred Claims - PMPM	$225.80	$179.61	$170.14	$185.55	$187.37	$180.60	$215.21	$230.18
INDIVIDUAL MEDICAL								
Direct Premium (in $000s)	$8,728	$25,351	$40,195	$70,438	$81,224	$22,238	$7,561	$1,209,793
Direct Claims (in $000s)	$5,685	$18,810	$32,600	$59,877	$57,700	$19,838	$7,742	$985,981
Direct Loss Ratio	65.1%	74.2%	81.1%	85.0%	71.0%	89.2%	102.4%	81.5%
Member Months	28,429	78,250	139,066	243,098	238,744	61,542	21,017	2,909,868
Earned Premium - PMPM	$307.02	$323.98	$289.03	$289.75	$340.21	$361.34	$359.75	$415.76
Incurred Claims - PMPM	$199.98	$240.38	$234.42	$246.31	$241.68	$322.35	$368.36	$338.84

4.16 Eureka Financial Statements

Financial statements are provided for Eureka in total. 2018 – 2019 are actual results; 2020 is projected.

TOTAL	**2018**	**2019**	**2020**
Statutory Income Statement (000s)			
Earned Premiums	1,449,283	1,460,556	1,472,408
Health benefits	1,209,507	1,198,706	1,217,317
General expenses	269,862	270,152	273,353
Total Expenses	**1,479,370**	**1,468,859**	**1,490,670**
Investment Income	**7,561**	**7,715**	**8,173**
Income Before Income Tax	**(22,525)**	**(588)**	**(10,090)**
Federal Income Tax	**(7,884)**	**(206)**	**(3,531)**
Net Income	**(14,641)**	**(382)**	**(6,558)**
Statutory Balance Sheet (000s)			
Total Assets	**367,736**	**371,410**	**366,831**
Liability for unpaid claims and claim adjustment expenses	155,798	160,661	161,965
Other Liabilities	84,058	83,252	83,927
Total Liabilities	**239,856**	**243,913**	**245,892**
Surplus	**127,880**	**127,498**	**120,939**
Total Liabilities and Surplus	**367,736**	**371,410**	**366,831**

2019 Eureka Transactions with Providers (in $000s)

Capitation Payments		Direct Medical Expense Payment
1	Medical groups	$0
2	Intermediaries	$0
3	All other providers	$0
4	**Total capitation payments**	**$0**
Other Payments		
5	Fee-for-service	$814,500
6	Contractual fee payments	$365,955
7	Bonus/withhold arrangements: fee-for-service	$456
8	Bonus/withhold arrangements: contractual fee payments	$456
9	Non-contingent salaries	$0
10	Aggregate cost arrangements	$0
11	All other payments	$17,340
12	**Total other payments**	**$1,198,707**
13	**Total (line 4 + line 12)**	**$1,198,707**

2019 Eureka Premiums, Enrollment, and Utilization

		Total
Total Members at the end of:		
1.	Prior Year	428,748
2.	First Quarter, Current Year	432,042
3.	Second Quarter, Current Year	439,656
4.	Third Quarter, Current Year	439,917
5.	Fourth Quarter, Current Year	443,481
6.	Current Year Member Months	5,256,033
Total Members Ambulatory Encounters for Year:		
7.	Physician	2,085,105
8.	Non-Physician	117,600
9.	Total	2,202,705
10.	Hospital Patient Days Incurred	65,607
11.	Number of Inpatient Admissions	17,220

Premiums, Written and Earned (in $000s)

12.	Health Premiums, Written	$1,460,556
13.	Life Premiums, Direct	$0
14.	Property & Casualty Premiums, Written	$0
15.	Health Premiums, Earned	$1,460,556
16.	Life Premiums, Earned	$0
17.	Property & Casualty Premiums, Earned	$0

Claims, Paid and Incurred (in $000s)

18.	Amount Paid for Provision of Health Care Services	$1,198,287
19.	Amount Incurred for Provision of Health Care Services	$1,198,706

Member Ambulatory Encounters for Year - Per 1,000

7.	Physician	4,340
8.	Non-Physician	245
9.	Total	4,585
10.	Hospital Patient Days Incurred	378
11.	Number of Inpatient Admissions	99

Premiums, Written and Earned - PMPM

12.	Health Premiums, Written	$277.88
13.	Life Premiums, Direct	$0.00
14.	Property & Casualty Premiums, Written	$0.00
15.	Health Premiums, Earned	$277.88
16.	Life Premiums, Earned	$0.00
17.	Property & Casualty Premiums, Earned	$0.00

Claims, Paid and Incurred - PMPM

18.	Amount Paid for Provision of Health Care Services	$227.98
19.	Amount Incurred for Provision of Health Care Services	$228.06

2019 Eureka Experience by State

Total Group Medical	**NY**
Direct Premium (in $000s)	$1,460,556
Direct Claims (in $000s)	$1,198,706
Direct Loss Ratio	82.1%
Member Months	5,256,033
Earned Premiums - PMPM	$277.88
Incurred Claims - PMPM	$228.06

4.17 Correspondence

The memos and emails that follow provide further information about AHA's activities. Some of the correspondence relates to a potential acquisition of a closed block of long-term care business, other correspondence relates to Eureka, and some relates to general business issues AHA is facing.

AHA Internal Memorandum – Confidential - Eureka Acquisition

Date: March 15, 2020

Subject: Eureka Acquisition

To: B. G. Bucks, CFO

From: Sue Mahi, MBA, Project Manager

I have been working with our consultant and broker on this project and I believe it is an important and exciting opportunity for our organization. Our consultant's actuaries and financial folks asked that I pass along several minor details that they have found while digging around in the publicly available data and financials. They say they need to look at these areas more closely during due diligence.

- They think the medical loss ratio is low.
- Broker fees and administrative costs are a bit high.
- Low surplus backed by illiquid assets.

None of these items are insurmountable, especially considering our financial strength and marketing expertise. As a result, I do not see any deal breakers here.

Again, I cannot stress enough the fact that this is an important and exciting opportunity.

Memoranda - Potential Sartori Acquisition

Date: April 30, 2020
Subject: LTC Acquisition – Sartori Insurance
To: B. G. Bucks, CFO AHA
From: Joe Cool, FSA, MAAA
Primo Consulting

I have done a preliminary investigation of your acquisition target, Sartori Insurance, and have the following observations:

- The company has a closed block of LTC business that is close to the same size as AHA's block of LTC.
- The LTC block is administered using a home-grown system and we need to make sure that it is compatible with the AHA system.
- Many of the products generate cash values.
- In addition to the purchase price, AHA will need to make sure that policy and claims reserves are adequate and that the assumptions underlying cash value calculations are reasonable.
- The current owner of the block has not filed for a rate increase since the inception of the product.

- Sartori products also include long-term disability income (LTD) and group life insurance. The company files its Annual Statement on the Life (blue) blank.
- Sartori LTD products are sold to employer groups only, with the employer paying 100% of the benefit cost.

Please let me know how you would like to proceed.

Date: May 15, 2020

Subject: Sartori Insurance

To: Joe Cool, Primo Consulting

From: B. G. Buck, AHA CFO

Joe,

Thank you for your April 30th summary on Sartori. Based on our internal strategy discussions, AHA is now more interested in Sartori's LTD block of business. Any consideration of the LTC block has been put on hold for now.

Please do two things for me:

1. Put together a brief summary of LTD products in general. Most of the staff here at AHA are not familiar with the product considerations.

2. See if Sartori is willing to consider an offer for just the LTD block and get together some preliminary numbers to help us come up with a price.

This has become a high priority for AHA, so we would like a response within the next couple of weeks. I appreciate your help with this project.

Date: June 1, 2020

Subject: Sartori Insurance

To: B. G. Bucks, CFO AHA

From: Joe Cool, FSA, MAAA
Primo Consulting

In response to your May 15th note, I am providing the following background information on LTD products. Note that this is generic, for LTD in general, nothing specific to Sartori's block.

Benefit Design

LTD plans provide a percentage of an employee's monthly income when "disabled." There is an elimination period of 13 - 26 weeks after disability commences before benefits begin to be paid. An employee normally qualifies for benefits only when "totally disabled", which includes the concept of being unable to perform the duties of his or her own occupation.

Development of Manual Rates

In group insurance, "manual rates" refer to a company's standard rates for the range of coverages offered for all types of groups the company anticipates insuring. These rates are intended to cover claim costs, expenses, margin, and profit.

In LTD each component of the claim costs should be analyzed separately. The main components are the (1) incidence of disablement, (2) termination of disability due to either recovery or death, (3) monthly benefit amount and maximum benefit duration, and (4) interest rates. "Recovery" is defined as the employee being able to return to work.

The first three components depend upon the plan provisions and the nature of the group being underwritten. Age, sex, elimination period, and industry/occupation are important variables that influence the incidence and termination rates. The incidence rate is also affected by the definition of disability in the plan document and the availability of partial or residual disability. The termination rates are also influenced by overall plan design (benefit amount, maximum benefit duration, and offsets) and other provisions such as vocational rehabilitation that encourage employees to return to work.

Manual rates are calculated using the actuarial present value of expected net annual benefit amounts for each disability as of the end of the elimination period. This amount, discounted to the beginning of the elimination period and multiplied by the expected incidence rate, gives the annual claim cost of providing the LTD benefit.

Underwriting Concerns

LTD can be riskier than medical coverage because, although the frequency is low, the average claim cost is $40,000--$50,000, and the variance in claim costs is large in relation to expected costs. Because of the significant risk in LTD coverage, careful underwriting by the field and home office staff is important. The product should be designed and priced to fulfill the goals of the company's marketing strategy: large versus small groups, specific industry or occupational groups, and pooled versus non-pooled (that is, experience-rated) business.

Insurers must carefully underwrite the risk and pay special attention to claim administration to assure that: (1) Only those eligible receive benefits, and (2) Benefits are paid only as long as the claimant remains disabled, as defined by the plan. With respect to risk selection and benefit design, the objective is always to minimize antiselection and malingering.

Date: June 30, 2020

Subject: Sartori Insurance Update

To: B. G. Bucks, CFO AHA

From: Sue Mahi, Project Manager

The purpose of this memo is to document the status of our Sartori acquisition.

As you directed back in May, AHA chose to acquire only the LTD block of business from Sartori. The purchase of the block closed on June 19, 2020. Our all-cash purchase price was $50 million.

We have just started reviewing the client files for this block, but the actuaries have already become aware of a potential issue. Sartori entered the LTD market about three years ago, and most of the business has been on the books for that period. At the time these products were priced, apparently Sartori had limited information available about LTD. Sartori chose to use the LTD experience of its own employees to price the block.

Adele Pike is having one of her analysts take a closer look at the implications.

AHA E-Mail - Underwriting Procedural Changes

Date: June 30, 2019

Subject: Underwriting Procedural Changes

To: B. G. Bucks, CFO

From: Rick Carp, U/W Manager

As we have discussed, the Underwriting staff is stretched pretty thin due to our involvement in new initiatives and the hold on hiring. As a result, we have proposed and you have approved procedural changes to keep things moving without increasing our risk.

- The actuarial department will give us trend assumptions and benefit relativities. We will not accept this data from other sources. We are seeing a lot of new benefit designs so the actuaries will be doing more for us than in the past. Please note, I have not spoken with them about this since I wanted your opinion and support first.
- We will use discretion on rating cases. In addition to the underwriting discretion that the Senior Pricing Actuary has always had for the largest cases, we will also delegate discretionary authority to several of our experienced underwriters for the next-largest tier of cases.
- During busy times, we will have marketing do field underwriting on some of our simpler cases. The marketing staff is very enthusiastic about this idea.

Thank you for your approval. I’m sure these changes will make our underwriting process more efficient.

AHA E-Mail – ACA Exchange Experience

Date: June 30, 2019

Subject: Exchange Experience – Enhanced Benefits Proposal

To: B. G. Bucks, CFO

From: Ron Haddock, Chief Marketing Officer

B.G.,

I'm sure you realize that our Exchange products have not been performing well, particularly in New Jersey. There are three other carriers in the NJ exchange market and the competition is making it almost impossible for us to write appropriate business there.

I understand that your concern has been with maintaining profitability – but to get the profits up, we need to bring in more business. The solution is to make our products more attractive to the customers.

What I propose is that in addition to the normal required benefits, we add medical management services to our Exchange plans. My department can develop a great marketing story to highlight this benefit – all the ways we can help participants get healthier through weight loss programs, diabetes management, and so on. We could start with NJ, as it's one of our most problematic markets.

I'm very excited that this will be the solution to our problems. Can I get your agreement to initiate the program as soon as possible?

Sincerely,
Ron

AHA E-Mail - New Claims Administration Update

Date: September 30, 2019

Subject: New Claims Administration System Update

To: B. G. Bucks, CFO; Adele Pike, FSA, Valuation Actuary;
Ron Haddock, Chief Marketing Officer

From: Bob Seoul, VP, Operations

Installation of the enhancements to our new claims system is going as well as can be expected. We have gotten a bit behind because some of the IT folks have been reassigned and our vendor found a software problem that will take a couple of weeks to fix.

I just wanted to remind all of you that the last time we performed maintenance on our system we were unable to pay claims for two weeks. As a result, I have approved overtime for the claims processors so that we can bring down our claims inventories as much as possible before we move to the new system. There will probably still be some delay in payments but we think we have minimized the impact.

Let me know if you have any questions.

AHA Memoranda – Economic Capital

Date: July 20, 2019

Subject: Economic Capital Modeling

To: Adele Pike, Valuation Actuary

From: B.G. Bucks, CFO

I'm starting to get pressure from Lyon Corporate to provide them with a more robust description of how we are developing our internal EC model. Ultimately, I think we will need to complete a major overhaul of our EC process.

I would like you to start with the group lines of business and see what we can do to improve the forecasting that is part of the EC. That should be a good first step.

Please have a report for me within the next month.

Date: August 15, 2019

Subject: Economic Capital Modeling for Small and Large Group

To: B.G. Bucks, CFO

From: Adele Pike, Valuation Actuary

We're still working on your project to refresh our required EC forecast, but I wanted to give you an update on our Small and Large Group benefit forecast assumptions leading to the required EC determination.

As you know, forecasting benefits has always been a challenge for us given the unpredictable medical benefits inflation rate. Thus, for simplicity, we've decided to keep our forecast of the expected benefits amount based on a deteriorating loss ratio that reflects our recent historical trend. Similarly, the underlying premium forecast is based on the recent historical growth rate, with some miscellaneous adjustments (e.g., reflects expected key group wins and losses to the extent known).

From this quantity, we can then calculate required capital (i.e., 99% confidence level) using the benefits statistical distribution from the past few years' worth of data.

Please let me know your thoughts on our approach.

AHA E-Mail - Data Breach

Date: October 24, 2019

Subject: Customer Data Integrity

To: Bob Seoul, VP Operations

From: B.G. Bucks, CFO

Bob,

I’m extremely concerned about the data breach that occurred this week in our individual health customer data base. You’re aware that there are both serious financial implications for AHA and sensitive public relations issues as a result.

Your team needs to get on top of this right away –

- What do we need to do at this point to address the immediate problems resulting from the breach?
- How do we mitigate the risk of this situation occurring again in the future?

I’d like to meet on Wednesday to discuss the first item and to see your plans for responding to the second.

4.18 AHA Salaried Cash Balance Pension Plan

The following pages contain financial and demographic information about the AHA Salaried Cash Balance Pension Plan, as well as information about the Statement of Funding Policies and Procedures for the Plan and the Statement of Investment Policies and Procedures for the Plan.

The AHA cash balance plan is treated as a defined benefit plan for funding and regulatory purposes, but has some similarity to a defined contribution plan in that a participant's benefit is an account balance. However, AHA still assumes investment risk because the value of the cash balance account is not tied to the return actually earned on the plan's assets.

The investment allocations and general operation of the Plan were copied from the SLIC defined benefit plan.

AHA, through its Board of Directors, has delegated responsibility for the day-to-day management of the Plan to the Vice-President, Human Resources and the Chief Financial Officer. The CFO's focus is on financial reporting and cash contribution requirements, the VP HR is largely responsible for all other activities.

Pension Plan - Benefit Provisions and Financial Information

The information on the following pages enumerates the current provisions of the Pension Plan and provides certain historical financial information.

AHA Salaried Cash Balance Pension Plan

Eligibility	Immediate
Vesting	100% after 3 years of plan membership
Normal Retirement Age	65
Compensation	Base salary plus bonus
Cash Balance Account	Participants have an initial balance of zero upon entering the plan. Pay credits of 10% of compensation per year shall be applied to a participant's cash balance account as of the last day of the plan year. A participant's cash balance account (determined as of the beginning of the plan year) shall be credited as of the last day of each plan year with the 30-year Treasury rate in effect as of the end of the plan year, but no less than 4.50%.
Benefit upon Separation from Service	Cash balance account as of date of separation
Form of Benefit	Single life annuity, if single; otherwise, actuarially equivalent 50% joint and survivor annuity
Optional Forms of Benefit	Lump Sum

AHA Cash Balance Pension Plan

Historical Actuarial Valuation Results

Participant Summary - January 1

	2015	**2016**	**2017**	**2018**	**2019**
Active Participants					
(a) Count	1,814	1,821	1,830	1,837	1,845
(b) Average Age	40.66	40.86	41.04	41.21	41.36
(c) Average Service	6.06	6.21	6.35	6.48	6.60
(d) Average Future Working Lifetime	24	24	24	24	24
(e) Average Plan Earnings (prior year)	78,706	76,230	73,981	72,249	70,706
Deferred Vested Participants					
(a) Count	0	0	0	0	0
Pensioners (incl beneficiaries)					
(a) Count	280	289	298	313	324
(b) Average Age	62.29	62.20	62.38	62.54	62.89
(c) Average Annual Benefit	5,000	5,571	5,987	6,323	6,671

Plan Assets (numbers in $000's)

	2015	**2016**	**2017**	**2018**	**2019**
Change in Plan Assets during Prior Year:					
Market Value of Assets at January 1 of Prior Year	-	70,351	96,670	104,786	103,319
Employer Contributions during Prior Year	-	15,393	7,266	8,257	16,670
Benefit Payments during Prior Year	-	(7,220)	(8,191)	(7,812)	(8,652)
Expenses during Prior Year	-	(2,100)	(2,900)	(3,100)	(3,100)
Investment Return during Prior Year	-	20,246	11,941	1,188	15,508
Market Value of Assets at January 1 Current Year	70,351	96,670	104,786	103,319	123,745
Rate of Return during Prior Year	0%	25%	10%	1%	12%
Average Portfolio Mix During Prior Year					
(a) Domestic Large Cap Equities	0%	40%	43%	45%	44%
(b) Domestic Small Cap Equities	0%	20%	23%	22%	22%
(c) Domestic Fixed Income	0%	30%	25%	23%	24%
(d) International Equities	0%	4%	4%	4%	4%
(e) Real Estate	0%	4%	3%	4%	4%
(f) Cash	0%	2%	2%	2%	2%
(g) Total	0%	100%	100%	100%	100%
Asset Class Returns During Prior Year					
(a) Domestic Large Cap Equities	0%	34%	8%	-6%	10%
(b) Domestic Small Cap Equities	0%	44%	7%	-10%	15%
(c) Domestic Fixed Income	0%	2%	1%	1%	3%
(d) International Equities	0%	22%	-6%	0%	3%
(e) Real Estate	0%	2%	30%	2%	8%
(f) Cash	0%	0%	0%	0%	0%

** numbers may not add due to rounding*

AHA Cash Balance Pension Plan

Historical Actuarial Valuation Results

Select Funding Valuation Results - January 1 (numbers in $000's) *

	2015	2016	2017	2018	2019
1. Funding Target:					
(a) Active participants	62,705	70,057	76,186	82,143	87,719
(b) Deferred vested participants	-	-	-	-	-
(c) Pensioners	15,710	18,524	20,930	23,632	26,178
(d) Total	78,414	88,581	97,116	105,774	113,897
2. Actuarial Value of Assets	70,351	96,670	104,786	103,319	123,745
3. Shortfall/(Surplus): (1d)-(2)	8,063	(8,089)	(7,670)	2,455	(9,848)
4. Funding Standard Carryover Balance	-	-	-	-	-
5. Prefunding Balance	-	-	-	-	-
6. Target Normal Cost	14,036	15,356	15,928	16,264	17,200
7. Net Shortfall Amortization Installment	1,357	-	-	406	-
8. Minimum Required Contrib: (6) + (7) + if < 0, (3)	15,393	7,266	8,257	16,670	7,352
9. Funding Target Attainment Percentage	89.71%	109.13%	107.89%	97.67%	108.64%
10. Adjusted Funding Target Attainment Percentage	89.71%	109.13%	107.89%	97.67%	108.64%
11. Actuarial Basis					
(a) Effective Interest Rate	6.99%	6.82%	6.63%	6.46%	6.29%
(b) Salary Scale	4.00%	4.00%	4.00%	4.00%	4.00%
(c) Consumer Price Index	2.50%	2.50%	2.50%	2.50%	2.50%
(d) Mortality	RP-2000 sex-distinct non-annuitant tables projected with Scale AA 15 years past the valuation date and RP-2000 sex-distinct annuitant tables projected with Scale AA 7 years past the valuation date				
(e) Turnover	None				
(f) Retirement age	Age 65				
(g) Proportion Married and Age Difference	100% unmarried				
(h) Expenses	2,100	2,900	3,100	3,100	3,700
(i) Asset Valuation Method	Market Value of Assets				
(j) Actuarial Cost Method	Unit Credit				

** numbers may not add due to rounding*

AHA Cash Balance Pension Plan

Historical Actuarial Valuation Results

Select Accounting Valuation Results - January 1 (numbers in $000's) *

	2015	2016	2017	2018	2019
1. Reconciliation of funded status at valuation date:					
(a) Accrued Benefit Obligation (ABO)	(120,008)	(120,328)	(152,065)	(153,752)	(161,320)
(b) Projected Benefit Obligation (PBO)	(125,962)	(121,610)	(153,002)	(154,350)	(161,717)
(c) Fair Value of Assets	70,351	96,670	104,786	103,319	123,745
(d) Funded Status: (b) + (c)	(55,611)	(24,940)	(48,216)	(51,031)	(37,972)
(e) Unrecognized Prior Service Cost	-	-	-	-	-
(f) Unrecognized (Gain)/Loss	13,903	(16,637)	2,795	799	(8,013)
(g) Accum Other Comprehensive Exp/(Inc)	13,903	(16,637)	2,795	799	(8,013)
(h) (Accrued)/Prepaid Benefit Cost	(41,709)	(41,578)	(45,422)	(50,232)	(45,985)
2. Net Periodic Benefit Cost:					
(a) Service Cost	15,656	12,522	14,851	13,836	13,565
(b) Interest Cost	4,894	5,876	5,964	6,376	6,705
(c) Expected Return on Assets	(5,342)	(7,102)	(7,747)	(7,789)	(9,146)
(d) Amort. of Unrecognized Prior Service Cost	-	-	-	-	-
(e) Amortization of Unrecognized (Gain)/Loss	54	(185)	-	-	-
(f) Net Periodic Benefit Cost:	15,262	11,110	13,068	12,423	11,124
3. Supplemental Data					
(a) Employer Contributions	15,393	7,266	8,257	16,670	7,352
(b) Benefit Payments	7,220	8,191	7,812	8,652	7,885
4. Actuarial Basis					
(a) Discount Rate	4.00%	5.00%	4.00%	4.25%	4.25%
(b) Interest Crediting Rate	4.50%	4.50%	4.50%	4.50%	4.50%
(c) Return on Assets	7.50%	7.50%	7.50%	7.50%	7.50%
(d) Salary Scale	4.00%	4.00%	4.00%	4.00%	4.00%
(e) Consumer Price Index	2.50%	2.50%	2.50%	2.50%	2.50%
(f) Mortality	RP-2000 / Scale AA Generational	RP-2014 / Scale MP-2014 Generational	RP-2014 adjusted to 2006/ Scale MP-2015 Generational	RP-2014 adjusted to 2006/ Scale MP-2015 Generational	RP-2014 adjusted to 2006/ Scale MP-2015 Generational
(g) Turnover	None				
(h) Proportion Married and Age Difference	100% unmarried				
(i) Retirement Age	Age 65				
(j) Expenses	Included in return on assets assumption				
(k) Asset Valuation Method	Market value of assets				
(l) Actuarial Cost Method	Projected Unit Credit				

** numbers may not add due to rounding*

PARTICIPANT RECONCILIATION

		Active	Annuitant	Total
2015		**1,814**	**280**	**2,094**
	New Entrants	218		218
	Non-Vested Term	(108)		(108)
	Lump Sum Cashout	(84)		(84)
	Retirement	(16)	16	-
	Death	(3)	(7)	(10)
2016		**1,821**	**289**	**2,110**
	New Entrants	219		219
	Non-Vested Term	(63)		(63)
	Lump Sum Cashout	(131)		(131)
	Retirement	(14)	14	-
	Death	(2)	(5)	(7)
2017		**1,830**	**298**	**2,128**
	New Entrants	220		220
	Non-Vested Term	(73)		(73)
	Lump Sum Cashout	(116)		(116)
	Retirement	(20)	20	-
	Death	(4)	(5)	(9)
2018		**1,837**	**313**	**2,150**
	New Entrants	220		220
	Non-Vested Term	(67)		(67)
	Lump Sum Cashout	(125)		(125)
	Retirement	(17)	17	-
	Death	(3)	(6)	(9)
2019		**1,845**	**324**	**2,169**

AGE-SERVICE CHART

Age		Service					
		<5	5-9	10-14	15-19	20+	Total
<25	# Participants	-	-	-	-	-	-
	Avg Salary	-	-	-	-	-	-
	Avg Cash Balan	-	-	-	-	-	-
25-34	# Participants	-	296	117	4	-	417
	Avg Salary	-	61,541	85,985	87,388	-	68,647
	Avg Cash Balan	-	221	828	36,245	-	737
35-44	# Participants	735	132	128	68	10	1,073
	Avg Salary	36,926	88,909	98,736	113,125	117,594	56,275
	Avg Cash Balan	31	409	869	2,760	76,424	1,063
45-54	# Participants	-	90	57	19	30	196
	Avg Salary	-	100,374	119,092	117,220	152,784	115,472
	Avg Cash Balan	-	677	2,354	10,235	28,675	6,377
55-64	# Participants	-	68	32	18	22	140
	Avg Salary	-	103,766	122,835	99,555	134,465	112,408
	Avg Cash Balan	-	927	4,325	9,176	37,360	8,489
65+	# Participants	-	16	3	-	-	19
	Avg Salary	-	104,936	111,371	-	-	105,952
	Avg Cash Balan	-	3,983	41,832	-	-	9,959
Total	# Participants	735	602	337	109	62	1,845
	Avg Salary	36,926	79,271	100,153	110,654	140,608	70,131
	Avg Cash Balan	31	510	1,799	6,351	39,458	2,209

	Avg Age	41.36
	Avg Svc	6.60
	Avg Salary	70,131

INTEREST SENSITIVITY AND CASH FLOW

Rate	Active Liab	Pensioners Liab	Total Liab
4.50%	162,182	14,050	176,232
5.00%	151,026	13,311	164,337
5.50%	141,075	12,641	153,716
Duration (5.00%)	14	11	14
Convexity (5.00%)	319	206	310

Key Rate Durations

KRD	Active	Pensioner	Total
1	0.7	1.0	0.7
3	1.6	1.7	1.6
5	2.0	1.8	2.0
10	2.1	1.6	2.1
20	2.0	1.4	1.9
30	5.8	3.1	5.6
Total	14.1	10.7	13.9

Five Years ending Dec 31	Actives Cash Flow	Pensioners Cash Flow	Total Cash Flow
2023	41,870	5,543	47,413
2028	47,074	4,557	51,631
2033	46,766	3,747	50,513
2038	44,559	3,081	47,640
2043	41,518	2,533	44,051
2048	38,131	2,083	40,214
2053	34,614	1,712	36,326
2058	31,091	1,408	32,499
2063	24,299	989	25,288
2068	10,669	376	11,044
2073	3,826	119	3,946
2078	1,130	32	1,163
2083	266	7	274
2088	48	1	50
2093	6	0	7
2098	1	0	1

Statement of Funding Policies and Procedures - AHA Health

The Company has prepared a Statement of Funding Policies and Procedures ("Statement") to document the governance of the Plan. Extracts of the Statement are provided below.

Allocation of Responsibilities

The Company has delegated the management of Plan funding as follows:

The Company, acting through Management, will:

- Establish, review and amend, as required, the Statement of Funding Policies and Procedures;
- Select the Pension Consultant and the Actuary;
- Review funding reports prepared by the Actuary regarding the funding of the Plan; and
- Be responsible for the assumption or delegation of any responsibilities not specifically mentioned.

The Pension Consultant and Actuary will:

- Assist, as required, the Company in the preparation of the Statement of Funding Policies and Procedures;
- Present to the Company, as required by the Statement of Funding Policies and Procedures, reviews and reports regarding the funding of the Plan; and
- Comment to the Company on any changes in plan design, contribution flow or pension legislation that may affect the funding of the Plan.

Funding Policy Principles

The Company is the primary risk bearer under the Plan. As a result, the funding objective of the Company is the accumulation of assets which will secure the Plan's benefits in respect of service already rendered. The accumulation of assets should be reasonable, without significant volatility or further recourse to the Company's assets.

The Company believes management of the Plan on a going concern basis is the most suitable means to achieve these objectives.

Management of Risks

The Company has adopted the following policies to mitigate their risks:

- Going-concern valuations are to be prepared using best estimate assumptions adjusted to include margins for adverse deviation. The Company will consult with the Pension Consultant and Actuary regarding the adoption of margins for adverse deviation.
- Emerging experience will differ from the assumptions made for going-concern purposes. The Pension Consultant and Actuary will monitor emerging experience and recommend revisions to the going-concern assumptions as appropriate.
- Plan provisions are managed to mitigate, to the extent possible, demographic and economic

risks. Benefit improvements under the Plan will be made with due regard to the Plan's funded status.

- Investment activity will be carried out with due regard to the liability structure of the Fund, to the cash flow requirements of the Fund, and to the risks and rewards inherent in the defined benefit investments. The Statement of Investment Policies and Procedures documents the Company's policies regarding investment risk.

Funding Target

The funding target for the Plan is to have a funded ratio (assets divided by liabilities) of 100% on a going-concern basis.

Funding Risks

The Company bears the following funding risks:

- The Plan's demographic experience may differ from best-estimate assumptions.
- The Plan's economic experience may differ from best-estimate assumptions.
- The Plan's liabilities are debt-like in nature and have a long term to maturity. As a result of the current investment strategy and nature of the Plan's liabilities, there is the risk of an asset-liability mismatch.

Statement of Investment Policies and Procedures- Excerpts

The Company has also prepared a Statement of Investment Policies and Procedures (SIPP). Following are excerpts from the SIPP for the AHA Health Insurance Company's Pension Plan.

Investment Risk

- Investment risk is borne by the Company with respect to the guaranteed crediting rate.
- Going-concern surplus, subject to any legislative restrictions, can be applied against the Company's Normal Actuarial Cost.

Allocation of Responsibilities

The Company, acting through Management, will:

- Establish, review and amend, as required, the Statement of Investment Policies and Procedures;
- Select one or more fund managers ("Fund Managers"), the Pension Consultant and the Actuary;
- Select the Custodian to hold pension fund assets;
- Review the performance of the Fund and the Fund Managers at least annually; and
- Be responsible for the assumption or delegation of any responsibilities not specifically mentioned.

The Fund Managers will:
Manage the asset mix and select securities within each Investment Fund Option, subject to applicable legislation and the constraints set out in this Statement.

The Pension Consultant and Actuary will:

- Assist, as required, the Company in the preparation of the Statement of Investment Policies and Procedures; and
- Comment to the Company on any changes in plan design or contribution flow that may affect the investment of assets.

The Custodian will:

- Fulfil the regular duties required by law of the Custodian in accordance with the Plan;
- Participate in annual reviews of the Statement of Investment Policies and Procedures;
- Present to the Company, at least annually, reviews and reports of investment performance of the Fund Managers;
- Provide the Company with monthly updates on the performance of the Fund Managers;
- Provide the Company with information, on an ongoing basis, about changes at the Fund Managers that could affect investment performance;
- Present to the Company, at least annually, reviews and reports of all investment Fund assets and transactions for the period;
- Monitor actual investments as appropriate to ensure compliance with the Pension Benefits Act; and
- Rebalance the Plan portfolios as requested by the Company.

Investment Objectives

- to preserve the capital;
- to provide sufficient funds to meet account withdrawals as they become due; and
- to maintain sufficient assets over actuarial requirements to meet unforeseen liabilities.

Rate of Return Objectives

- to achieve an average annual rate of return, net of investment expenses, of at least the funding valuation rate of return (currently 6.29%) per year, measured over moving, four-year periods;
- to achieve top third performance, relative to the peer group of fund managers, measured over moving, four-year periods;
- to exceed the passive benchmark for the Pension Fund by 1.00% per annum, measured on a four-year moving average basis; and
- to achieve at least the increase in the Consumer Price Index plus 3%, on a four-year moving average basis.

Asset Allocation Guidelines

The following normal policy allocation, and associated range for strategic deviation at any time, has been adopted by the Company:

Percentages of Fund at Market Value	Normal	Minimum	Maximum
Domestic Equities	40%	30%	50%
International Equities	23%	15%	25%
Domestic Fixed Income (duration of 5)	35%	15%	45%
Cash	2%	0%	4%

Within the ranges noted above, the Fund Managers may actively vary the asset mix in an effort to achieve the investment objectives of the Company.

Passive Management Objectives

The rate of return expected to be achieved through passive management of the assets in the Plan Fund will be based on the normal allocation of assets. The passive return shall be set equal to the sum of:

- 45.0% of the S&P 500 Index return for the year;
- 20.0% of the MSCI EAFE Index return for the year; and
- 35.0% of the Barclays Capital Aggregate Bond Index return for the year.

Rebalancing

The Company will direct the re-balancing of the assets in the component pooled funds, when it deems rebalancing to be appropriate.

Appendix

The investment consultant for AHA's Cash Balance DB Plan has provided the following economic and plan data:

	Equity Indices		Barclay's Capital U.S. Bond Indices	
	S&P 500	**MSCI EAFE**	**Aggregate**	**Aggregate 10+ Year Maturity**
Expected Returns	8.07%	6.33%	4.89%	6.96%
Annualized Volatility	14.90%	16.63%	3.36%	8.47%
Duration	0	0	6.23	15.39
Skewness	-0.67	-0.67	-0.31	-0.04
Kurtosis	4.32	4.52	4.42	5.28

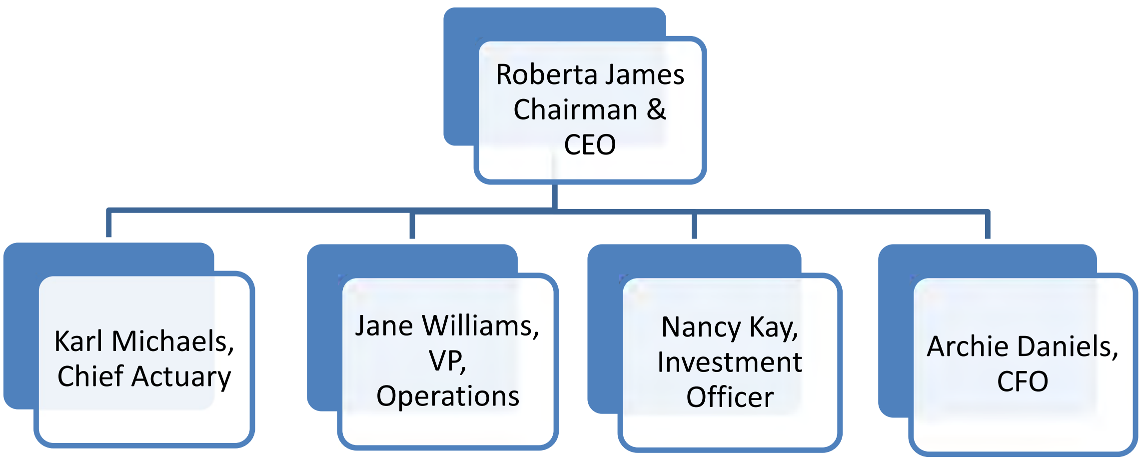
	Equity Indices		Barclay's Capital U.S. Bond Indices	
Correlations	**S&P 500**	**MSCI EAFE**	**Aggregate**	**Aggregate 10+ Year Maturity**
S&P 500	1			
MSCI EAFE	0.86	1.00		
Aggregate	-0.10	-0.01	1	
Aggregate 10+ Year Maturity	-0.08	-0.01	0.92	1

5 Pryde Property & Casualty

5.1 Overview

Pryde is an Omaha, Nebraska-based U.S. general insurer with commercial and personal lines of business. It is 100% owned by Lyon Corporation. Pryde was originally an independent stock insurance company. After suffering losses over several years, Pryde agreed to be acquired by Lyon, which infused additional capital into Pryde.

A simplified organization chart for Pryde follows:



5.2 Major Lines of Business

Pryde's major lines of business are as follow:

- PERSONAL
    - Personal Auto
    - Personal Property
- COMMERCIAL
    - Commercial Multiple Peril
    - Workers Compensation

Pryde is licensed in all 50 states and the District of Columbia. The split of premium between commercial and personal lines is about 70%/30%.

Pryde's business is geographically spread throughout the United States with its largest state (California) representing 17% of total premium volume. The next largest states include Texas, (6.0%); Georgia (5.5 %); Florida (5.4%); and Mississippi (5.3%), all of which are in the area of the U.S. most prone to hurricanes. The 46 other jurisdictions constitute 61.3% of the total business, with no single state having a share greater than 5%.

Personal Auto

Pryde offers standard personal auto policies to individuals in every U.S. state. Its policies provide basic coverages: property damage, bodily injury, personal injury protection, collision and comprehensive. Pryde has not enhanced its coverage in recent years with any of the special features now commonly offered by other companies, such as accident forgiveness, new car replacement, and good driver rebates.

Personal auto policies are sold primarily through Pryde's captive sales force, which is led by sales directors responsible for selecting the product, managing the agency delivery system and serving the business in their territories. Agents are paid commissions, based on their level of sales. In addition to these captive agents, Pryde also receives some business through independent brokers.

Personal Property

Pryde offers homeowners and renters insurance to individuals and families in every U.S. state. The company's best-selling product is an all-perils policy designed for single family homes in upscale markets. Renters insurance and lower benefit basic homeowner coverage constitute a minor portion of the total personal property policies that Pryde sells.

The homeowner policies are sold primarily through the same captive sales force that sells the auto policies, along with some sales from independent brokers. Agents are encouraged to market both auto and homeowner policies to customers, with substantial discounts for clients who purchase both from Pryde.

Commercial Multiple Peril

Pryde sells a wide range of commercial multi-peril insurance policies. The policies may cover various types of business risk (business continuation, fraud, business automobiles, keyman insurance), risks to mechanical equipment, physical damage to business facilities, and general liability. Pryde is willing to work with customers to offer unusual coverages, as requested, and to bundle coverages in whatever combinations the client requests. The lack of standardization in the policies has made it difficulty to analyze the experience of this product accurately.

Over the past two years, the marketing area has pushed for innovative underwriting approaches that better recognize each individual client's risk and for new product features that are quite attractive to Pryde's potential customers.

Workers Compensation

Pryde's Workers Compensation policies provide typical coverage of medical expenses and loss of salary due to work-related injuries. Pryde's stated target market is upscale, low-risk companies. However, the actual mix of business has gradually trended toward a higher percentage of industrial enterprises. Pryde uses a simplified pricing model that does not distinguish between the type of company in setting premium rates. Furthermore, Pryde has not conducted formal experience studies focusing on whether the experience of these two types of customers is materially different.

Pryde utilizes the same agency force to sell its commercial products, but also receives business from general agents and brokers.

2019 data for the four lines is as shown (in 1000's):

Line	2019 Written Premium Direct	2019 Written Premium Net	2019 % of NPW	2019 Loss & LAE Ratio	2019 Loss & LAE Reserves
Commercial MultiPeril	314,383	275,085	31.9%	96.0%	394,367
Workers Compensation	350,436	330,811	38.3%	102.5%	1,227,115
Personal Automobile	141,735	134,648	15.6%	86.0%	113,609
Personal Property	203,914	122,348	14.2%	96.1%	58,635
Totals	1,010,467	862,893	100.0%	96.9%	1,793,727

5.3 Exited Markets

Beginning in 2012, Pryde's previous management team decided to pursue a growth and acquisition strategy and decentralization of its personal lines operations. This experiment ended badly, due to rate inadequacy and adverse loss reserve development. As a result, Pryde's management is now taking a less aggressive approach to managing its operations.

Pryde also experimented with new production sources and customer segments with which management was unfamiliar. The new markets included customer groups who were much more price-conscious and claims-conscious than Pryde's traditional customers. Pryde subsequently exited these segments because of higher than expected growth in non-profitable products contributing to poor operating results. The financial losses from these experiments resulted in a lowered S&P rating and greater scrutiny from the parent company, Lyon.

5.4 Production

Business is produced primarily through exclusive career agents on a national basis, with some additional business coming through independent agents and general agents. Pryde's strategy is centered on serving a broad range of customers in both personal and commercial lines of business. Customer service is highly rated as evidenced in consistently high customer retention levels.

5.5 Enterprise Risk Management

Risk and Capital Analysis

Pryde has approximately $3.5 billion in assets and $1 billion in capital and surplus. Pryde retained Hawthorne Consulting in 2015 to guide the company in developing a "risk and capital" model to aid management in gauging the adequacy of overall capitalization of the company and allocating capital to lines of business. (A summary of the Hawthorne report is provided in section 5.18.)

Hawthorne recommended using a risk adjusted return on required capital (RAROC) approach and used VaR and TVaR to assess capital needs. Overall, Hawthorne's work showed that Pryde's current capital and surplus (at that time) exceeded the amount needed to support its businesses on a risk-adjusted basis. Based on that result, Pryde senior management has felt comfortable that capital continues to be more than adequate for the business.

ERM Process

Pryde maintains an informal approach to risk management. The CFO has been charged with assuring that all material risks are considered when the company's financials are developed. He is authorized to request analyses from the product business units as he deems appropriate.

Certain product lines do stress testing and scenario analysis to evaluate capital needs, but Pryde does not have a coordinated approach and allows each business unit to develop its own process and assumptions.

Based on recent communications from Lyon Corporation related to the creation of a Corporate ERM Department, Pryde senior management is aware that more scrutiny of its risk management process is to be expected. In preparation, the CFO has proposed that risk analysis task forces be designated for each of the following risks:

- Reserve risk
- Catastrophe risk
- Investment risk
- Operational risk
- Regulatory risk
- Pricing risk

Memorandum

To: Archie Daniels, CFO

From: Karl Michaels, Chief Actuary

Subject: Key Risk Indicators

Date: October 30, 2019

I realize you have already gotten task forces underway to look at the primary risks facing Pryde. However, I'm a bit concerned that the process we have put in place may result in separate recommendations and not a coordinated response. In an attempt to put some structure around our risk process, I asked my staff to propose several Key Risk Indicators that will let us focus on company risk results as a whole.

Following are some of the suggestions for your consideration:

1. Measure RORAC annually against our hurdle rate of 9%.

2. Measure the ratio of Excess Capital (on an economic basis) to Available Capital. The objective would be to maintain a 10% cushion.

3. Maintain BCAR score > 25 at the 99.6 percentile (required to maintain A.M. Best Strongest BCAR assessment)
   Maintain RBC ratio > 400%

4. Earnings at Risk: Probability of having negative net income on an economic basis in a given year should be < 5%.

I'm interested in your thoughts on this approach and any comments on the specific suggestions.

Emerging Risk Situation

The following several items of correspondence relate to an emerging risk at Pryde.

Memorandum

To: Pryde Executive Team

From: Archie Daniels, CFO

Date: November 5, 2019

Subject: California Wildfire Coverage

Summary:

This memo is designed to increase your understanding of Pryde's exposure to California wildfires. Our findings will likely have new business implications for the Underwriting Department. Further, our risk management process has not yet focused on the appropriate approach to the California wildfires. We must take this opportunity to understand the situation.

Within the next three weeks, I want each area to review the impact of wildfires on its operations and share their findings. I want you each to identify the key actions needed to improve our risk management of wildfire risk.

Background:

A wildfire is defined to be a fire in an area of combustible vegetation that occurs in rural areas. Under California's weather conditions, wildfires have occurred from late spring to late autumn.

Media reports suggest that climate change, i.e., global warming, in California is beginning to have tremendous impact on drought and wildfires. A 2011 study projected that the frequency and levels of both maximum and minimum temperatures would increase significantly as a result of global warming. This reasoning seems to be consistent with the fact that the largest wildfires of all time have occurred in the past two years.

Pryde's current exposure related to California Wildfire:

Over the past three years, we have seen an increasing trend in the overall claim amounts due to wildfire. As you are all aware, the largest concentration of Pryde's business is in California (17% of premium). California Wildfire has become a risk that we cannot ignore.

Currently Pryde offers all-risk insurance to commercial and industrial customers including property damage and business interruption cover. Wildfires are not excluded from coverage.

Our personal lines products include a comprehensive cover that insures property damage and loss of use up to a sublimit. Lastly, the comprehensive auto insurance policies also provide no exclusions of coverage against wildfires.

In addition to Pryde's insurance business exposure, let me remind you that one of our key IT operating centers is located in California. Fortunately, we have hired an experienced local manager to oversee that operation; as a result, no fatality losses or operating interruptions occurred during the recent fires. Pryde has also recently signed a cloud service agreement with a California based service provider.

Pryde's current approach to managing California Wildfire risk:

This peril has drawn attention in the property underwriting department and two different models have been obtained from outside consultants, adapted for Pryde's business needs, and are currently being utilized. No specific model has been developed for auto business, based on our discussions with the auto underwriting head.

Pryde has a standard policy of business continuity planning. In the unlikely event of natural catastrophes, the goal is to address the safety of staff and equipment and to keep the disturbance of Pryde's business operations to a minimum.

Given the increasing impact of wildfire risk, we need an initiative to review the current approach to managing this risk and to present the findings to senior leadership for development of next steps. After each of you have evaluated the issues within your departments, I will expect reports by November 26 and will schedule a meeting for the first week of December.

E-Mail

To: Archie Daniels, CFO

From: Henrietta Thomas, VP of Property Underwriting

Date: November 6, 2019

After receiving your executive memorandum yesterday, I felt I needed to send a quick follow-up, without waiting for the formal report that is due on the 26th.

We have learned that many insurers have changed their underwriting policies and have stopped renewing personal property policies in California due to the wildfire events. It is my belief that Pryde needs to take the same step to maintain the long-term sustainability of the portfolio from an economic point of view.

I am, of course, also concerned about the reputation of the company, so we will need to be careful about how we communicate our actions.

I hope that these suggestions can be put on the agenda for discussion at your meeting.

Memorandum

To: Jane Williams, VP, Operations, Pryde

From: Karl Michaels, Chief Actuary, Pryde

Date: February 20, 2020

As you're aware, the risk of wildfires in California has been increasing over the past several years. The actuaries have responded by incorporating rate increases into our homeowners' insurance rates.

These rate increases are keyed off of the county that is input when an application is input into the HO application system. This was a quick fix approach to incorporate wildfire risk in rates as quickly as possible. Our career sales agents have learned that if they leave the county input field blank, the applications go through without error, but the rate increases related to wildfire risk are not incorporated into the rate quote.

Here's the problem that we're now seeing: Since our competitors have incorporated similar wildfire rate increases, leaving the county input field blank makes Pryde's homeowners' rates in some wildfire-prone areas of California more competitive. This has increased Pryde's exposure to wildfire dramatically over the past 12 months.

It is not clear that the wildfire risk will be covered under our excess of loss treaties, as some reinsurers have started arguing that wildfire is an excluded risk.

Could we set up a meeting next week to discuss how to address this situation?

5.6 Competitive Analysis

Pryde is undertaking a strategic analysis to assist in the development of a risk appetite statement in alignment with the target competitive positioning of its four lines of business (LOBs).

The strategic analysis will deliver the following items:

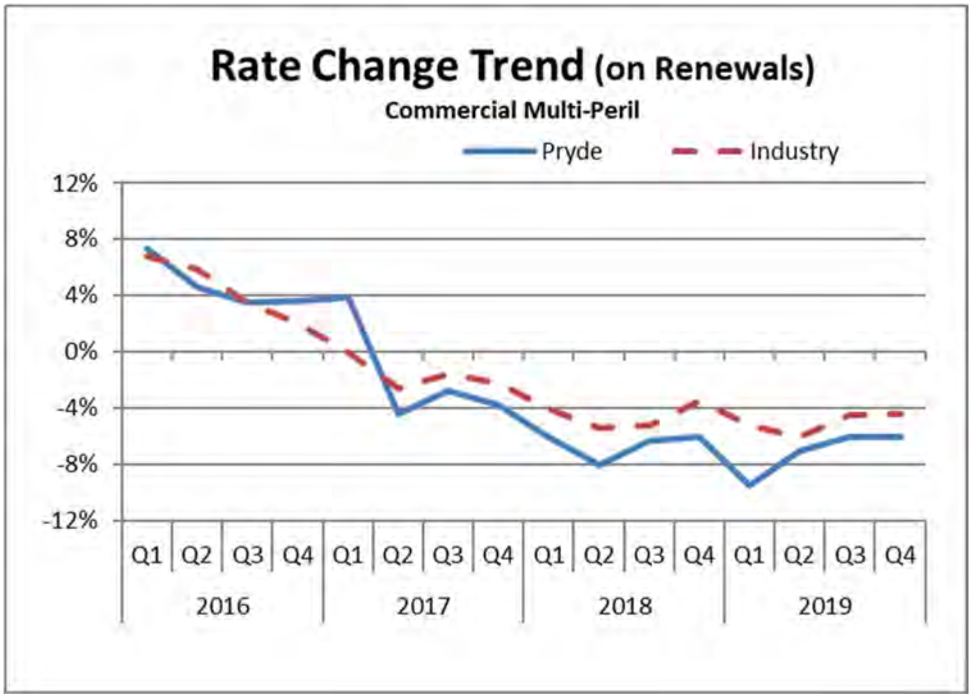
1. An analysis of Strengths-Weaknesses-Opportunities-Threats (SWOT).
2. A Pryde competitive position scorecard, including each LOB's rank relative to the competition in terms of various metrics such as premiums, liabilities, LAE ratios, and return on equity (ROE); customer satisfaction survey results; and financial strength ratings from various rating agencies.
3. Suggested changes to consider for each LOB to improve or strengthen its market position, including the costs and benefits along with the advantages and disadvantages of making such changes.

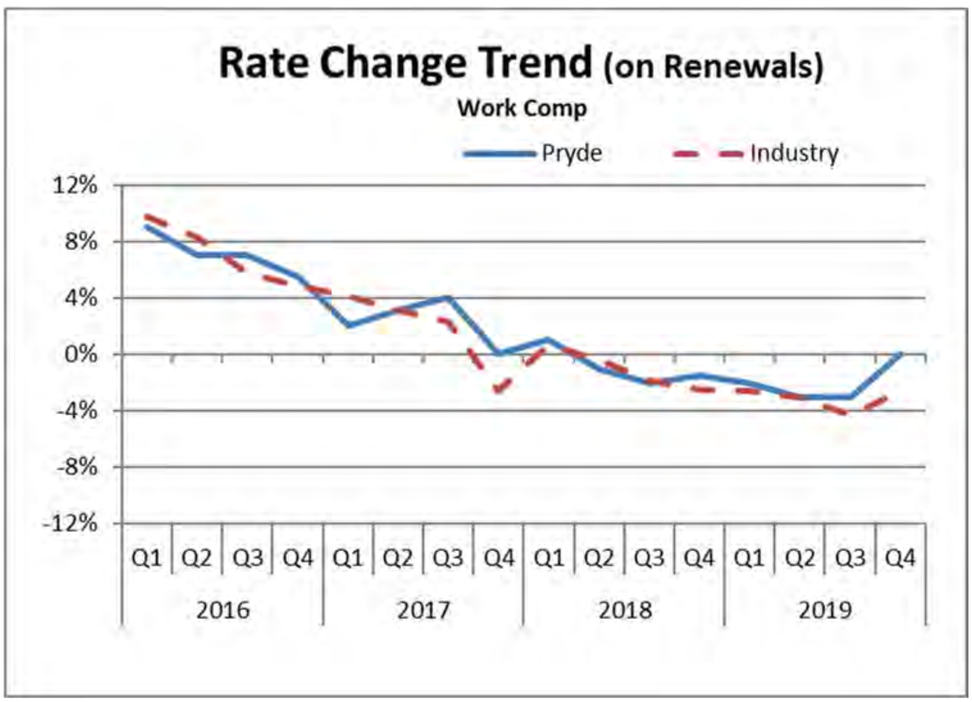
Based on its preliminary analysis, Pryde has identified certain aspects of the company that make it similar to a small company but other aspects that are consistent with a large company. Management believes this dual nature, rather than creating a lack of focus, allows Pryde to be more flexible in addressing challenges facing it.

Pryde's participation in four distinct LOBs has enabled it to efficiently provide centralized services such as information technology and human resources and to cross-train employees in the different aspects of each insurance market. The multiple lines have resulted in greater stability of earnings when some LOBs may have lower-than-expected earnings.

The analysis did raise some concerns, that either a lack of expertise or a lack of quality data may be the reason for adverse loss reserve development in recent years.

As part of the initial analysis, Pryde compiled the following rate trend data, showing the change in average premium rates, current quarter compared to same quarter in prior year, for its commercial lines:


Rate Change Trend (on Renewals)
Commercial Multi-Peril
Pryde
Industry
12%
8%
4%
0%
-4%
-8%
-12%
Q1 Q2 Q3 Q4 Q1 Q2 Q3 Q4 Q1 Q2 Q3 Q4 Q1 Q2 Q3 Q4
2016
2017
2018
2019


Rate Change Trend (on Renewals)
Work Comp
Pryde
Industry
12%
8%
4%
0%
-4%
-8%
-12%
Q1 Q2 Q3 Q4 Q1 Q2 Q3 Q4 Q1 Q2 Q3 Q4 Q1 Q2 Q3 Q4
2016
2017
2018
2019

5.7 Potential Acquisitions

As a result of a comprehensive strategic review, Pryde is considering acquiring either a block of business or an entire company. Pryde is aware of Lyon's principles for approval of any acquisition:

1. The acquisition should be strategic.
2. The acquisition should provide clearly identifiable benefits.
3. The risks involved in the integration must be clearly identified, along with appropriate risk management responses to be taken.

Pryde senior management has indicated that the following will be important as Pryde looks at target companies or blocks of business:

- Pryde should consider to what extent there is compatibility in terms of operations, technology, and culture.
- Pryde is willing to consider acquisitions outside the United States. It is recognized that this will involve additional complications, so there must be a good strategic basis for such a target.

In particular, the Personal Auto and Personal Property business areas have requested that Pryde senior management look into the possibility of international expansion of those product lines, as discussed in the following correspondence.

Date:	March 8, 2020
Subject:	Global Market Expansion
To:	Karl Michaels, Chief Actuary Archie Daniels, CFO
From:	Evan Rogers, VP, Personal Auto Department Liang Yuan, VP, Personal Property Department

We found the recent presentation on Pryde's strategic review to be extremely interesting and timely. Our two departments had already started discussions on how to respond to the competitive pressures we are facing in the personal auto and personal property product lines.

It is our opinion that an expansion into global markets is imperative if we wish to retain our position as a viable P&C insurer. Several of our competitors have entered the international markets over the past decade and, as a result, have seen increased growth and profitability.

We recognize, of course, that global expansion will result in many challenges for Pryde, as the company has never managed international business. Our suggestion is to put in place a task force, charged with evaluating how to consolidate the branches between global and domestic business.

As a starting point, we have developed an initial list of issues to be considered:

- The mode of reporting
- ERM at local level (that is, within each country) vs ERM at corporate level
- Financial reporting between international and global business (for example, if Pryde were to expand into China, Pryde would be required to report financial statements to the Chinese government, on their required basis).

We would like your agreement to proceed with staffing a global expansion evaluation task force.

To: Karl Michaels, Chief Actuary

From: Roberta James, Chairman and CEO

Date: March 15, 2020

Re: Strategic Positioning: Expansion/Investment Opportunities

As a follow-up to last week's strategic management meeting, please see the following information on three potential targets that we have identified as attractive acquisition opportunities. We believe that these can be attained at a reasonable price and are in line with our strategic planning growth initiative.

- ⇨ Company 1 is the personal auto line of business for a quickly growing European multi-line company. The company is divesting from the auto business despite recent success in order to provide capital and focus resources on growth in other lines of business that are more integral to their strategic plan. (This is a very hot prospect garnering interest from other potential acquirers.)
- ⇨ Company 2 is an internationally based P&C company. They write both Personal Auto and Homeowners lines of business, with the majority of their business in Personal Auto. They are a well-established auto insurer, with a predictable growth rate but lately they have seen deteriorating loss ratios.
- ⇨ Company 3 is a relatively new but promising US based auto insurer. Though the self-driving car insurance market is still small compared to traditional auto, they have been around for a couple of years and have captured about 75% of the self-driving cars in the industry. They have seen rapid growth in revenue with sustained profits as self-driving cars become more common.

We have put together the following chart to summarize the details of each opportunity:

	Company 1	Company 2	Company 3
Growth Rate	8%	3%	50%
Duration in Market	10 Years	40 Years	2 years
% of Industry Written Premium	15% (of traditional auto industry)	20% (of traditional auto industry)	75% (of self-driving car industry)
Target Loss & LAE Ratio	70%	70%	70%
Actual CY Loss & LAE Ratio	Traditionally 65% but 70% & 75% over the last 2 years	78%	68%

We can plan an introductory call with representatives of each of these companies to discuss the current valuation and administration systems being used in each of these companies.

5.8 Employee Benefits

Pryde provides basic life, health and disability benefits to its employees while they are employed by the company. These benefits do not continue after employees leave the company.

Pryde does not sponsor any pension or savings plans for its employees.

5.9 Financial Statements

Multi-year financial statements are provided for each of the product lines and for Pryde in total. Statements are provided on both a Statutory and an Economic basis. The Statutory and Economic balance sheets are independent of each other. The amount of assets assigned to a line of business is based on the required capital for each respective basis.

2018–2019 are actual results; 2020–2022 are projections.

PERSONAL AUTO	2018	2019	2020	2021	2022
Statutory Income Statement (000s)					
Underwriting Income					
Premiums earned	189,348	151,479	136,667	140,768	144,991
Losses and loss adjustment expenses incurred	142,011	130,272	99,767	102,760	105,843
Expenses	**46,285**	**36,840**	**29,818**	**30,712**	**31,634**
Net Underwriting Gain (loss)	**1,052**	**(15,633)**	**7,082**	**7,295**	**7,514**
Investment Income	**12,770**	**10,633**	**8,862**	**8,718**	**8,980**
Income Before Income Tax	**13,822**	**(5,000)**	**15,945**	**16,013**	**16,494**
Federal Income Tax	**3,456**	**(1,250)**	**3,986**	**4,003**	**4,123**
Net Income	**10,367**	**(3,750)**	**11,959**	**12,010**	**12,370**
Statutory Balance Sheet (000s)					
Total Assets	**437,332**	**360,822**	**354,952**	**365,600**	**376,568**
Losses and loss adjustment expenses	127,810	113,609	99,767	102,760	105,843
Unearned Premium	84,155	67,324	69,344	71,424	73,567
Other Liabilities	47,800	37,836	39,526	40,712	41,933
Total Liabilities	**259,765**	**218,769**	**208,637**	**214,896**	**221,343**
Surplus	**177,567**	**142,053**	**146,315**	**150,704**	**155,226**
Total Liabilities and Surplus	**437,332**	**360,822**	**354,952**	**365,600**	**376,568**
Additional Balance Sheet Information					
Surplus Transfer from/(to) Corporate	(54,758)	(31,764)	(7,697)	(7,620)	(7,849)
Economic Capital Balance Sheet (000s)					
Market Value of Assets	**435,438**	**359,563**	**355,548**	**367,149**	**379,127**
Economic Reserve	243,400	205,862	197,162	203,936	210,940
Required Economic Capital	175,081	140,349	144,852	149,499	154,294
Excess Capital	16,958	13,353	13,534	13,714	13,893
Total Liabilities and Surplus	**435,438**	**359,563**	**355,548**	**367,149**	**379,127**

PERSONAL PROPERTY	2018	2019	2020	2021	2022
Statutory Income Statement (000s)					
Underwriting Income					
Premiums earned	172,052	137,642	124,183	127,909	131,746
Losses and loss adjustment expenses incurred	122,157	132,205	84,445	86,978	89,587
Expenses	**37,469**	**29,975**	**27,094**	**27,907**	**28,744**
Net Underwriting Gain (loss)	**12,426**	**(24,538)**	**12,645**	**13,024**	**13,415**
Investment Income	**9,518**	**8,728**	**7,405**	**6,731**	**6,932**
Income Before Income Tax	**21,944**	**(15,811)**	**20,049**	**19,755**	**20,347**
Federal Income Tax	**5,486**	**(3,953)**	**5,012**	**4,939**	**5,087**
Net Income	**16,458**	**(11,858)**	**15,037**	**14,816**	**15,260**
Statutory Balance Sheet (000s)					
Total Assets	**358,968**	**301,466**	**274,023**	**282,244**	**290,711**
Losses and loss adjustment expenses	54,971	58,635	42,222	43,489	44,794
Unearned Premium	76,468	61,174	63,009	64,900	66,847
Other Liabilities	43,434	34,380	35,915	36,993	38,103
Total Liabilities	**174,872**	**154,189**	**141,147**	**145,381**	**149,743**
Surplus	**184,096**	**147,277**	**132,876**	**136,863**	**140,968**
Total Liabilities and Surplus	**358,968**	**301,466**	**274,023**	**282,244**	**290,711**
Additional Balance Sheet Information					
Surplus Transfer from/(to) Corporate	(10,397)	(24,961)	(29,437)	(10,830)	(11,155)
Economic Capital Balance Sheet (000s)					
Market Value of Assets	**394,416**	**329,929**	**300,259**	**309,917**	**319,884**
Economic Reserve	167,702	148,484	136,489	141,165	145,999
Required Economic Capital	205,451	164,655	148,821	153,560	158,449
Excess Capital	21,263	16,790	14,949	15,192	15,436
Total Liabilities and Surplus	**394,416**	**329,929**	**300,259**	**309,917**	**319,884**

COMMERCIAL MULTIPLE PERIL	2018	2019	2020	2021	2022
Statutory Income Statement (000s)					
Underwriting Income					
Premiums earned	263,307	270,950	278,524	285,487	292,624
Losses and loss adjustment expenses incurred	186,948	260,112	181,041	185,567	190,206
Expenses	**59,244**	**60,964**	**59,883**	**61,380**	**62,914**
Net Underwriting Gain (loss)	**17,115**	**(50,126)**	**37,601**	**38,541**	**39,504**
Investment Income	**20,013**	**20,213**	**22,184**	**21,752**	**22,296**
Income Before Income Tax	**37,128**	**(29,912)**	**59,785**	**60,293**	**61,801**
Federal Income Tax	**9,282**	**(7,478)**	**14,946**	**15,073**	**15,450**
Net Income	**27,846**	**(22,434)**	**44,839**	**45,220**	**46,350**
Statutory Balance Sheet (000s)					
Total Assets	**831,376**	**903,189**	**885,620**	**907,761**	**930,455**
Losses and loss adjustment expenses	336,506	394,367	362,081	371,133	380,411
Unearned Premium	133,407	137,543	140,981	144,506	148,118
Other Liabilities	75,775	77,299	80,359	82,368	84,427
Total Liabilities	**545,688**	**609,209**	**583,422**	**598,007**	**612,957**
Surplus	**285,688**	**293,980**	**302,198**	**309,753**	**317,497**
Total Liabilities and Surplus	**831,376**	**903,189**	**885,620**	**907,761**	**930,455**
Additional Balance Sheet Information					
Surplus Transfer from/(to) Corporate	(20,872)	30,727	(36,621)	(37,665)	(38,607)
Economic Capital Balance Sheet (000s)					
Market Value of Assets	**883,967**	**957,459**	**945,904**	**972,098**	**999,011**
Economic Reserve	517,858	580,576	558,334	574,685	591,504
Required Economic Capital	327,398	337,490	347,528	356,836	366,392
Excess Capital	38,711	39,393	40,041	40,578	41,116
Total Liabilities and Surplus	**883,967**	**957,459**	**945,904**	**972,098**	**999,011**

WORKERS COMPENSATION	2018	2019	2020	2021	2022
Statutory Income Statement (000s)					
Underwriting Income					
Premiums earned	316,339	325,064	334,946	343,320	351,903
Losses and loss adjustment expenses incurred	238,836	333,190	239,487	245,474	251,611
Expenses	**68,781**	**70,794**	**72,631**	**74,447**	**76,308**
Net Underwriting Gain (loss)	**8,722**	**(78,920)**	**22,828**	**23,399**	**23,984**
Investment Income	**41,303**	**44,494**	**44,669**	**45,786**	**46,931**
Income Before Income Tax	**50,026**	**(34,426)**	**67,498**	**69,185**	**70,915**
Federal Income Tax	**12,506**	**(8,607)**	**16,874**	**17,296**	**17,729**
Net Income	**37,519**	**(25,820)**	**50,623**	**51,889**	**53,186**
Statutory Balance Sheet (000s)					
Total Assets	**1,660,424**	**1,830,046**	**1,818,655**	**1,864,122**	**1,910,725**
Losses and loss adjustment expenses	1,074,761	1,227,115	1,197,433	1,227,369	1,258,053
Unearned Premium	159,658	165,406	169,541	173,779	178,124
Other Liabilities	90,686	92,958	96,638	99,054	101,531
Total Liabilities	**1,325,105**	**1,485,478**	**1,463,612**	**1,500,202**	**1,537,708**
Surplus	**335,319**	**344,567**	**355,043**	**363,919**	**373,017**
Total Liabilities and Surplus	**1,660,424**	**1,830,046**	**1,818,655**	**1,864,122**	**1,910,725**
Additional Balance Sheet Information					
Surplus Transfer from/(to) Corporate	(29,997)	35,068	(40,148)	(43,013)	(44,088)
Economic Capital Balance Sheet (000s)					
Market Value of Assets	**1,623,364**	**1,793,000**	**1,788,996**	**1,839,903**	**1,892,238**
Economic Reserve	1,270,776	1,430,516	1,415,313	1,456,697	1,499,265
Required Economic Capital	317,212	326,650	337,291	346,451	355,858
Excess Capital	35,376	35,835	36,392	36,756	37,115
Total Liabilities and Surplus	**1,623,364**	**1,793,000**	**1,788,996**	**1,839,903**	**1,892,238**

CORPORATE	2018	2019	2020	2021	2022
Statutory Income Statement (000s)					
Underwriting Income					
Premiums earned	0	0	0	0	0
Losses and loss adjustment expenses incurred	0	0	0	0	0
Expenses	**505**	**413**	**357**	**366**	**376**
Net Underwriting Gain (loss)	**(505)**	**(413)**	**(357)**	**(366)**	**(376)**
Investment Income	**2,984**	**5,783**	**3,791**	**6,420**	**6,346**
Income Before Income Tax	**2,479**	**5,370**	**3,435**	**6,054**	**5,970**
Federal Income Tax	**620**	**1,342**	**859**	**1,513**	**1,492**
Net Income	**1,859**	**4,027**	**2,576**	**4,540**	**4,477**
Statutory Balance Sheet (000s)					
Total Assets	**237,838**	**154,365**	**261,382**	**258,355**	**264,164**
Losses and loss adjustment expenses	0	0	0	0	0
Unearned Premium	0	0	0	0	0
Other Liabilities	0	0	0	0	0
Total Liabilities	**0**	**0**	**0**	**0**	**0**
Surplus	**237,838**	**154,365**	**261,382**	**258,355**	**264,164**
Total Liabilities and Surplus	**237,838**	**154,365**	**261,382**	**258,355**	**264,164**
Additional Balance Sheet Information					
Transfer from/(to) Lines	116,025	(9,070)	113,903	99,128	101,698
Dividend/Capital Transfer (to)/from Lyon	0	(78,429)	(9,462)	(106,695)	(100,366)
Economic Capital Balance Sheet (000s)					
Market Value of Assets	**133,546**	**86,753**	**147,027**	**145,454**	**148,856**
Economic Reserve	0	0	0	0	0
Required Economic Capital	15,697	10,497	18,297	18,602	19,548
Excess Capital	117,849	76,256	128,731	126,852	129,308
Total Liabilities and Surplus	**133,546**	**86,753**	**147,027**	**145,454**	**148,856**

TOTAL	2018	2019	2020	2021	2022
Statutory Income Statement (000s)					
Underwriting Income					
Premiums earned	941,046	885,134	874,321	897,483	921,264
Losses and loss adjustment expenses incurred	689,952	855,778	604,739	620,779	637,247
Expenses	**212,284**	**198,985**	**189,783**	**194,812**	**199,976**
Net Underwriting Gain (loss)	**38,810**	**(169,630)**	**79,799**	**81,893**	**84,041**
Investment Income	**86,588**	**89,850**	**86,912**	**89,407**	**91,485**
Income Before Income Tax	**125,399**	**(79,780)**	**166,711**	**171,300**	**175,526**
Federal Income Tax	**31,350**	**(19,945)**	**41,678**	**42,825**	**43,881**
Net Income	**94,049**	**(59,835)**	**125,034**	**128,475**	**131,644**
Statutory Balance Sheet (000s)					
Total Assets	**3,525,938**	**3,549,889**	**3,594,632**	**3,678,081**	**3,772,623**
Losses and loss adjustment expenses	1,594,048	1,793,727	1,701,504	1,744,751	1,789,101
Unearned Premium	453,687	431,446	442,875	454,609	466,655
Other Liabilities	257,694	242,473	252,439	259,127	265,994
Total Liabilities	**2,305,430**	**2,467,646**	**2,396,817**	**2,458,487**	**2,521,750**
Surplus	**1,220,507**	**1,082,243**	**1,197,815**	**1,219,594**	**1,250,872**
RBC Ratio	427%	404%	439%	436%	436%
Total Liabilities and Surplus	**3,525,938**	**3,549,889**	**3,594,632**	**3,678,081**	**3,772,623**
Additional Balance Sheet Information					
Surplus Transfer from/(to) Corporate	0	0	0	0	0
Dividend/Capital Transfer (to)/from Lyon	0	(78,429)	(9,462)	(106,695)	(100,366)
Economic Capital Balance Sheet (000s)					
Market Value of Assets	**3,470,731**	**3,526,705**	**3,537,734**	**3,634,522**	**3,739,117**
Economic Reserve	2,199,736	2,365,438	2,307,298	2,376,483	2,447,708
Required Economic Capital	1,040,839	979,640	996,789	1,024,947	1,054,541
Excess Capital	230,156	181,627	233,646	233,092	236,868
Total Liabilities and Surplus	**3,470,731**	**3,526,705**	**3,537,734**	**3,634,522**	**3,739,117**

5.10 Underwriting Results

Year	Net UW Income ($000)	Loss & LAE	Expense Ratios Net Comm	Other Exp.	Total Exp.	Comb Ratio
2015	81,601	68.2	10.6	9.6	20.2	88.5
2016	68,050	69.9	10.5	10.2	20.7	90.6
2017	52,653	71.6	10.4	10.9	21.3	92.9
2018	38,810	73.3	10.2	13.2	23.4	96.8
2019	-169,630	96.9	10.2	12.9	23.1	120.1
5-Yr Avg		76.0	10.4	11.4	21.7	97.8

Pryde has been challenged by adverse loss reserve development in recent years. In 2019, the company experienced a natural catastrophe loss.

	Original Loss Reserves	Developed Through 2019	Developed to Orig (%)
2014	1,301,526	1,518,881	16.7%
2015	1,425,693	1,562,559	9.6%
2016	1,561,466	1,712,928	9.7%
2017	1,684,697	1,844,743	9.5%
2018	1,764,471	1,923,273	9.0%
2019	1,987,002	1,987,002	

After reviewing experience for the most recent years, Pryde determined that reserves needed to be strengthened in 2019 and that the company may need to strengthen reserves further in future years.

The following email correspondence relates to Pryde's proposed participation in a Personal Auto experience study.

Date:	January 4, 2020
Subject:	Personal Auto Claim Study
To:	Roberta James, CEO
From:	Karl Michaels, Chief Actuary

As you are aware, Pryde's poor Personal Auto financial results in 2018 were due to a substantial reserve insufficiency, resulting in large financial losses for the third time in 10 years. The year-end audit found claim experience to be significantly worse than pricing assumptions and also noted that the poor results were made worse by various issues with respect to Pryde's administration of the Personal Auto business. Unsurprisingly, our poor financial results are causing considerable concern.

The reserve insufficiency is especially surprising considering that the same actuaries who calculate the reserves were directly involved in pricing the book of business. These pricing actuaries built the reserve calculations using the same stochastic models that they used for economic capital calculation purposes. Since the Underwriters changed some of their risk selection and rating methodology for this impacted block, they assisted the actuaries in adjusting assumptions to incorporate these enhancements.

My actuarial staff has made me aware of an upcoming industrywide claim study that will begin soon. They are recommending that we participate in it. The main goals of any claim study, whether in-house or industry-wide, would be to improve our reserve credibility as well as our product pricing. Additional benefits from the industry study would include access to information from other companies regarding their systems capabilities, underwriting standards, and claims handling practices.

I think this study will show that our claims process is economically efficient, as our flexible process allows claims staff to use their own judgment for claim requests that are under $100,000. As you know, our claims department is well regarded in industry, especially given their extensive experience.

Having information on the other study participants, even though companies will not be identified as to which ones are associated with particular practices or results, will give us a sense for where we stand with respect to our competition on these issues.

The study is seeking data on claims incurred between 1998 and 2013. As measured by year-end 2019 claim liabilities, I believe Pryde will be one of the smaller companies providing data.

One of the criteria for participating in the study is that the company has used reasonably consistent processes over the study period. Other than several years when our claims were impacted by economic recessions, we have had reasonable experience. Pryde made a major systems upgrade in 2006 that greatly improved our speed for paying of claims but otherwise we have made only minor changes in our processes related to claims handling and payments since 1998.

Please let me know whether you approve of having Pryde participate in this Personal Auto claim study.

Karl Michaels
VP and Chief Actuary

5.11 Investment Income

Pryde has generally produced favorable investment yield from a predominantly fixed income portfolio that has outperformed industry composite averages. Invested assets are comprised primarily of a bond portfolio diversified among corporate, tax-exempts, and U.S. Government Obligations. The company's stated investment strategy is simple: preserve capital while maintaining the predictability of return on investment without incurring undue risk. Hence, the strategy focuses on fixed income rate investments held for long term investment. Affiliated investments relate to Pryde Services, a wholly-owned entity that provides services for Pryde Property & Casualty.

Asset Class	Assets (000s)
Long-term Bonds	1,806,006
Preferred Stock	164,183
Common Stock	197,019
Cash & short-term	213,437
Other non-affiliated inv asset	607,475
Investment in affiliates	295,528
Total invested assets	3,283,647

Asset Class	% of Total Bonds	Mkt Val to Stmt Val(%)	Avg. Maturity (Yrs)	Class 1 - 2 (%)	Class 3 - 6 (%)	Struc. Secur. (%)	Struc. Secur. (% of PHS)
Governments	22.3	1.8	4.7	100.0	...	...	...
States, terr & poss	28.8	1.0	7.1	100.0	...	71.1	37.2
Corporates	48.9	1.6	5.7	98.5	1.5	6.5	5.8
Total all bonds	100.0	1.5	5.9	99.2	0.8	23.6	43.0

5.12 Catastrophe Exposure

The group's primary catastrophe exposure stems from hurricanes and earthquakes. However, the risk of wildfires in California has also been increasing over the past several years.

The hurricane and earthquake exposures are mitigated through excess of loss reinsurance, as well as catastrophe protection that has enabled the group to improve its net catastrophe leverage to a very manageable level. As a result, the group's estimated net probable maximum losses (PML) stemming from a combined 1-in-250-year hurricane and a 1-in-250-year earthquake depicted in a PML analysis represents approximately 5% of statutory capital and surplus, which is significantly less than the 10% limit set by the Chief Actuary years ago.

5.13 Reinsurance

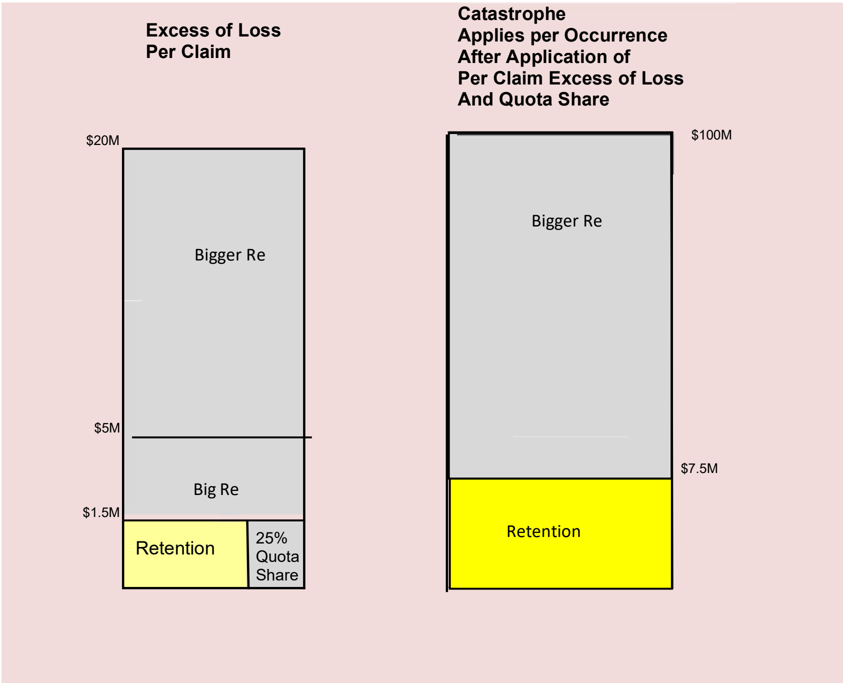
Pryde reinsures with high-quality reinsurers.

Property Risks

The following are the components of Pryde's reinsurance program for property risks:

- For the first $1.5 million of loss per claim, Pryde cedes 25% via a quota share treaty with Share Re.
- Pryde has a multi-line working layer excess-of-loss reinsurance treaty with Big Re, under which Pryde cedes up to $3.5 million of losses in excess of $1.5 million per claim, subject to a $7.5 million per occurrence aggregate limit.
- Pryde has additional coverage with Bigger Re, under which Pryde cedes up to $15 million of losses in excess of $5 million per claim.
- Pryde has a further property catastrophe cover with Bigger Re for aggregate losses net of reinsurance recoveries under its other treaties, in excess of $7.5 million per occurrence up to $100 million.

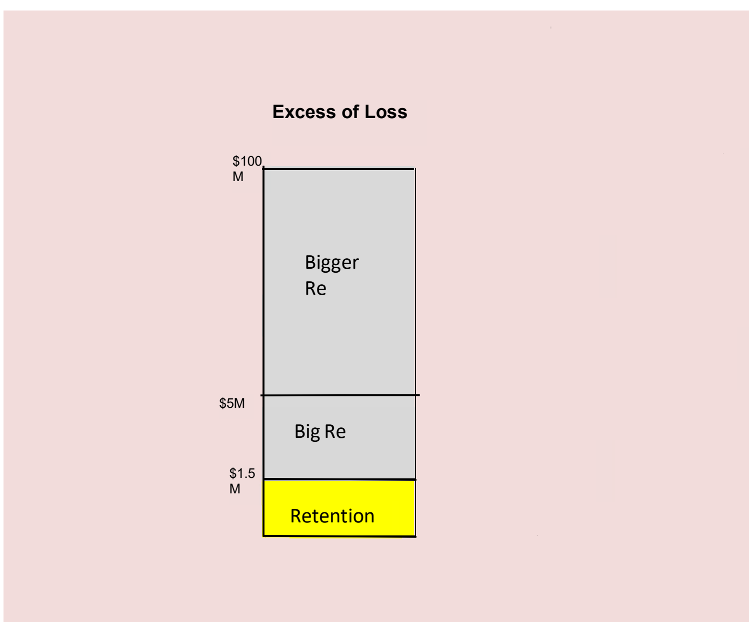
The diagram below depicts the coverage pictorially.



Big Re has informed Pryde that it wishes to reduce its per occurrence aggregate limit.

Casualty Risks

The multi-line working layer excess-of-loss treaty with Big Re includes coverage for up to $3.5 million of losses in excess of $1.5 million, subject to a $3.5 million per occurrence limit. An additional excess-of-loss treaty with Bigger Re covers losses in excess of $5.0 million, up to $100 million.



5.14 Statutory Capital

Statutory capital is allocated to the LOBs in the following manner:

Each reporting period the Financial Reporting Department calculates the required statutory capital for each of the four lines of business (LOB): Personal Auto, Personal Property, Commercial Multi-Peril, and Commercial Workers Compensation. Pryde currently targets holding capital at 350% of Company Action Level RBC, an A+ capital level. At the end of each reporting period, each LOB holds exactly its required capital which is achieved by the LOB transferring any excess statutory capital to the Corporate LOB or by receiving a statutory capital contribution from Corporate. Thus, Corporate invests statutory capital in the LOB and each period either receives returns or makes further investments in the LOB.

5.15 Available Capital

The proper assessment of an insurer's true financial strength requires appraisal of its total balance sheet on an integrated basis under a system that depends upon realistic values (economic values) and consistent treatment of both assets and liabilities, and that does not generate a hidden surplus or deficit. To convert the statutory capital figures to economic capital levels, adjustments are necessary. Statutory accounting principles deviate from economic valuations in several ways, including, but not limited to, the following:

- Acquisition Costs are not deferred
- Bonds in good standing are valued at amortized value--not market value
- Loss and loss adjustment expense reserves do not reflect the time value of money
- Carried statutory reserves are not required to reflect inherent reserve margins

5.16 Rating Agency Review

The most recent Standard & Poor's rating for Pryde, determined in 2018, was an A-, reflecting the company's adequate capitalization and its nationally recognized position in its core business. Pryde's strong reputation and dedicated product and service capabilities have enabled it to sustain strong market penetration.

Partially offsetting these positive factors are the company's significant adverse reserve development on prior accident years, its dependence on reinsurance, and recent inconsistent operating results. S&P remains concerned over the potential for additional adverse loss reserve development and its impact on near-term operating performance and overall capitalization.

Pryde's overall capitalization as measured by S&P's capital model is adequate for its A- rating.

5.17 Economic Capital Model

As noted previously, Pryde had retained Hawthorne Consulting in 2015 to guide the company in developing a "risk and capital" model. Pryde wished to measure the risk adjusted return on capital (RAROC) by segment to aid in its business planning for 2016 and beyond. In support of these goals, Hawthorne advised on three underlying themes:

- Capital Productivity
- Capital Protection
- Capital Adequacy

Hawthorne's approach recognized that there is a trade-off between having enough capital to minimize insurance company failures and having the minimum amount of required capital so that excess capital can be deployed.

Economic capital should be what Pryde requires for ongoing operations and what it must hold in order to gain the necessary confidence of the marketplace, its policyholders, its investors, and its regulatory supervisors. The operations of Pryde, on the other hand, after the net effect of all the inherent risks, must yield a rate of return deemed reasonable by the providers of the insurer's capital.

Building on the work completed with Hawthorne, Pryde instituted a Dynamic Financial Analysis (DFA) process, as an attempt to measure enterprise risk and analyze its financial condition. Based on direction from the Lyon Corporate ERM Department, Pryde has further expanded its risk analysis and developed an internal Economic Capital Model. The model targets a total economic capital level that is calibrated to a Kelly AA financial strength. Pryde defines the model economic capital required as being the capital necessary to protect Pryde's policyholders in order to meet all of their claims on a VaR basis with a confidence level of 99.0 percent over a one-year time horizon. The required economic capital in the financial statements for each line of business is the standalone required amount calculated for that business.

The Statutory and Economic Balance Sheets are independent of each other. The amount of assets assigned to a LOB is based on the required capital, either on an economic basis or a statutory basis. That is, the assets backing the liabilities on an economic basis may not be the same as the assets allocated on a statutory basis.

Surplus in excess of 400% of RBC (which is 114% of the 350% target) is distributed to Lyon Corporation through a dividend annually at the end of the first quarter based on the year-end balance sheet. Surplus positions less than 300% of RBC (which is 86% of the 350% target) result in a capital contribution from Lyon Corporation or the issuance of surplus notes.

5.18 Appendix

Consultant's Report: Executive Summary and Recommendations 9/30/2015

Pryde has asked Hawthorne to consult and help in developing a "risk and capital" model that would aid management in gauging the adequacy of overall capitalization of the company and in allocating capital to target line of business or niche business segments to aid in its business planning for 2016 and beyond.

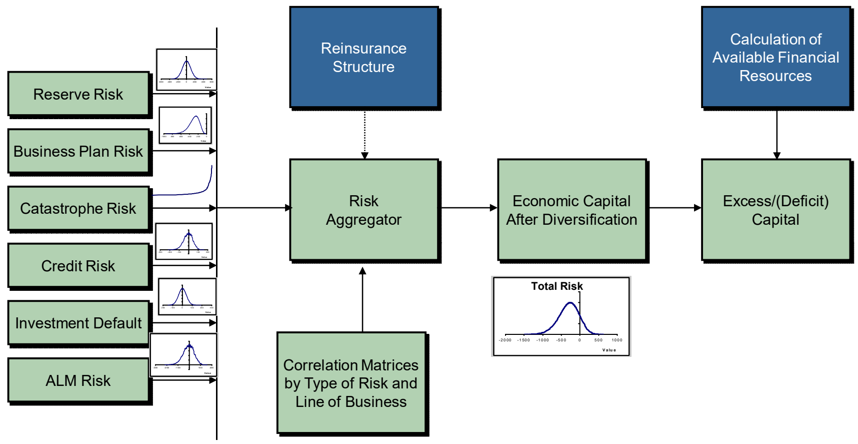
In considering the trade-off between having enough capital to minimize insurance company failures and having the minimum amount of capital so capital can be deployed, Hawthorne recommends a risk adjusted return on required capital (RAROC) approach in measuring returns. This approach considers both how much Pryde is earning on the capital that is committed to the business and how much capital is needed to ensure that policyholders are paid in the event of a stress scenario.

Economic capital is the capital required to buffer the policyholder from default up to a target solvency or rating standard (e.g. A.M. Best's). We estimated capital requirements for Pryde based on a 99.4% VaR risk metric (i.e., capital needed to assure that there is only a 0.6% chance all of the capital will be depleted). This is consistent with an A+ rating.

We used the following two risk metrics in gauging Pryde's Capital Needs:

- Value at Risk (VaR)
- Tail Value at Risk (TVaR)

Economic capital assessment was based on a multi-step process beginning with a bottom-up analysis of individual risks.



The first column below reflects how much stand-alone capital is needed per the 99.4% VaR for each risk separately. This totaled a sum of $1,132.6M of economic capital. In consideration of correlation and diversification effects, this sum is reduced by 15.0% resulting in a total needed capital of approximately **$962.4 Million.**

	2014		
RISK TYPE	**STANDALONE ECONOMIC CAPITAL REQUIREMENTS**	**DIVERSIFIED CAPITAL AS A PERCENT OF STANDALONE**	**DIVERSIFIED ECONOMIC CAPITAL REQUIREMENTS**
RESERVE	438.3	93.4%	409.4
BUSINESS PLAN	330.2	96.1%	317.3
CATASTROPHE	41.8	68.2%	28.5
CREDIT	138.3	93.7%	129.6
INVESTMENT	141.3	31.2%	44.1
ALM	42.7	78.6%	33.6
TOTAL	1,132.6	85.0%	962.4

Observations

Pryde's diversified economic capital requirement of $962.4 Million, compared to the available economic capital of $1,068.2 Million, places Pryde in a favorable capital position relative to the risk metrics utilized. Although one should note that the free surplus arises from diversification.

Further analysis should be performed on the relative performance of Pryde's four primary lines of business, to determine their marginal contributions to economic profit. We recommend the development of a RAROC analysis to determine where Pryde can most effectively focus its resources.

Note –Our analysis considers business plan risk as the uncertainty of deviating from the business plan targets/baselines.