Case Study

FALL 2018/SPRING 2019

Life Risk Management Exam

EXAM ILALRM

ILA LRM Case Study for Fall 2017/Spring 2018 Exam

Introduction and Recommendations

This case study presents information for two of the companies within Lyon Corporation's holding structure:

- Lyon Corporation of Canada (a holding company); and
- Simple Life (a life insurance company);

You are encouraged to read this case study before you read the recommended study materials, to become familiar with the information that is provided and to assist you in putting syllabus readings in context.

It is important that you become familiar with the information presented in the case study.

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.

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

1. Lyon Corporation of Canada

1.1. Overview

Lyon Corporation of Canada (Lyon Corporation) is a diversified public holding company with interests in the financial industries. The holding company is registered in Toronto and undertakes business in USA, Canada and United Kingdom.

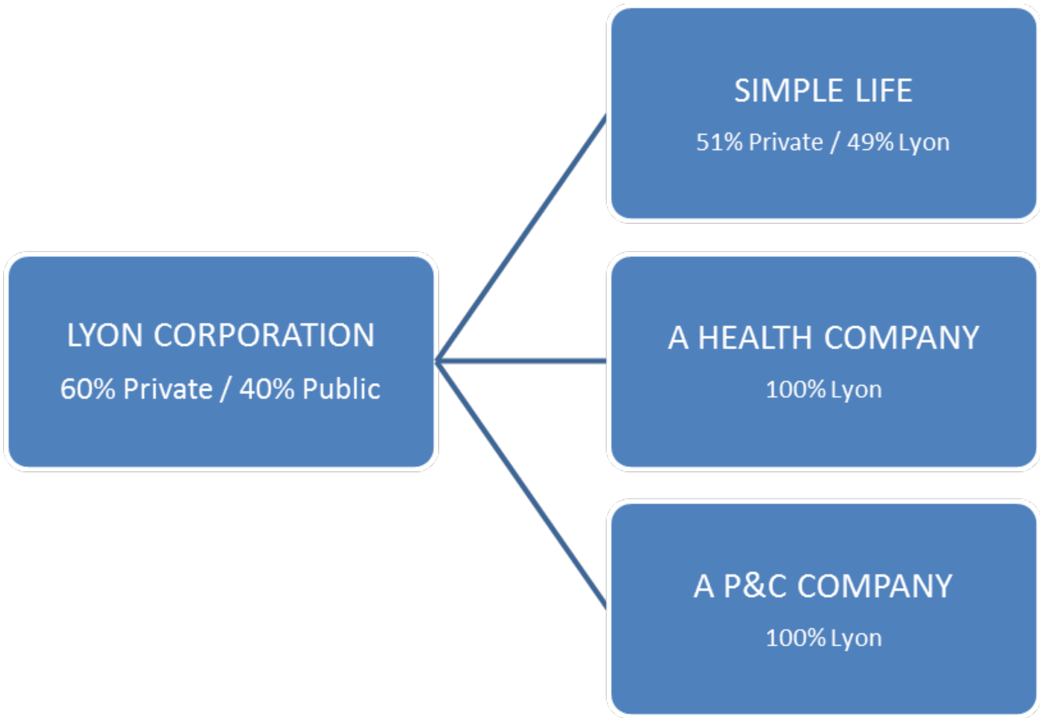
1.2. Mission Statement

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 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 investment decisions.

1.3. Structure

Lyon Corporation is a public company (LCC: NYE and TSX) with a significant shareholder, Lyon Family, which owns about 60% 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 is owned by its Chairman, President and CEO, R. Tomas Lyon III, who owns 51% of the voting shares, and Lyon Corporation, which owns 49% of the voting shares. Simple Life is a US life insurance company located in Boston, Massachusetts with 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 a Guaranteed Minimum Accumulation Benefit (GMAB). Simple Life issues its products only in the US.

Simple Life 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.

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

1.5. A Health Company

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

1.6. A P&C Company

A P&C Company is an Omaha, Nebraska- based US writer with commercial and personal lines products that target niche market customers. It is wholly owned by Lyon Corporation.

1.7. Lyon Board of Directors

The Lyon Board consists of 12 members, 4 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 U.S. The other two board members are the Board Chairmen of A Health Company and A P&C Company.

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, and Chairman of the Executive Committee.

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

Albert 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 Henderson & Henderson law firm.

Donald 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 1996. He was an insurance broker and President of Risky Life Insurance Company.

Dr. Jerry Graham is the Chairman and CEO of A Health Company.

Robert James is the Chairman and CEO of A P&C Company.

1.7.1. 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.

1.7.2. 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.

1.7.3. 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.

1.7.4. 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.

1.7.5. 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.

1.7.6. 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.

1.7.7. 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			C	
Jeremy Orr	M		M		M
John Ritchie	M	M			M
George Bell		C		M	
Sarah Hanrahan		M	M		
Albert Montgomery		M		M	
Andrew Lyon			C		M
Donald Rae			M	M	

1.7.8. 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.

1.8. Credit Rating

Lyon Corporation has a rating of BBB+. The rating reflects the weakened capital position of Simple Life and recent acquisition failures at A Health Company offset by A P&C Company's improved financial results and niche presence.

1.9. Oversight of Lyon Companies

Lyon Corporation, Simple Life, A Health Company and A P&C Company are all managed professionally by an executive team (comprising the CEO, CFO and COO and 4 - 6 other executives). Each CEO reports directly to his respective board. Simple Life, A Health Company and A P&C Company each have an independent Board of Directors.

The remainder of this document presents information about Simple Life Insurance Company (SLIC) only.

2. Simple Life Insurance Company (SLIC)

The Simple Life Insurance Company (SLIC) is 51% owned by R. Tomas Lyon III and 49% 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 2009.

2.1. 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

2.2. Officers

R. Tomas Lyon III, Chairman of the Board, President, CEO

Henri Jay, EVP - Operations

Open, SVP & Chief Financial Officer

Mindy Wren, SVP & Chief Counsel

Odette Bird, SVP - Variable Annuity

George Lyon, SVP - Universal Life

William Xu, SVP - Term Life

Danielle Wolfe - VP - Chief Marketing Officer

2.3. Capitalization

The company operates without any long-term debt. The company strives to maintain a strong statutory risk based capital (RBC) ratio and to have an actual to required economic capital ratio of 125% or greater. Any surplus in excess of the greater of 400% of RBC or 125% 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.

2.4. Reinsurance

SLIC utilizes a coinsurance agreement with facultative support with Conservative Reinsurance for its Universal Life Insurance business.

2.5. 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 investment accounts are held in a separate (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. The corporate surplus (net equity) is allocated to the four portfolios.

2.6. Specified Risk Policies

2.6.1. 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 above 3.5 for each line of business.

2.6.2. Market Risk

Semi-annually within the term, UL and SPIA lines of business, the company measures the Macaulay duration of the assets and liabilities. If the asset and liability durations are further apart than 0.5, the asset portfolio is rebalanced such that its new Macaulay duration equals that of the liabilities.

The VA hedging program uses a dynamic approach updated for market factors monthly and for inforce changes quarterly. 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. Vega is self-insured due to system complexity and the expense of implied volatility hedges. 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.

2.6.3. 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 such a systemic crisis.

2.6.4. Operational Risk

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

2.7. Economic Capital Model

SLIC has implemented an 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 99.5% Value at Risk (VaR) measure. The model quantifies exposure to interest rate risk, equity price risk, credit risk, and mortality risk.

Interest rates are modeled stochastically using a single-factor model calibrated to monthly historical data for 10-year US Treasury yields from 1994. 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 the VA and its GMAB, 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 floors. 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.

The Company is currently considering a few methodologies to capture insurance risk, but has not implemented anything to date. A full-blown stochastic-on-stochastic analysis may be too much of a load on the existing computer infrastructure, so less onerous methodologies are being studied.

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, each risk is calculated for each line of business. Each risk is then summed for the company. The risks are then aggregated 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.

2.8. Stress Testing

Stochastic 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%.

	Stress A	**Stress B**	**Stress C**
Government Rates			
0.25	+2.00%	-3.00%	-4.00%
0.5	+1.50%	-3.00%	-4.00%
1	+1.00%	-2.00%	-4.00%
5	+0.75%	-1.50%	-2.00%
10	+0.75%	-1.00%	0%
20	+0.50%	-0.75%	0%
30	+0.50%	-0.75%	0%
Corporate Spreads			
AAA	0%	+1.00%	+0.50%
AA	0%	+1.50%	+0.75%
A	0%	+2.00%	+1.00%
BBB	0%	+4.00%	+2.00%
BB	0%	+6.00%	+3.00%
Equity			
Prices	-10%	-30%	+30%
Implied Volatility (10 yr)	+10%	+30%	+10%

2.9. Risk Management Committee

The committee meets on a regular quarterly basis during the year. 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.

2.10. Product Distribution:

The Company distributes its product 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.

2.11. Product Descriptions

2.11.1. Level Premium Term Insurance

The term life insurance product is payable on death up to maturity of the contract. It has guaranteed level premiums and no cash value. Three term periods are available: 10, 20 and 30 year. The product is non-convertible.

Key terms are as follows:

- Face Amount offered from $25,000 to $25,000,000
- Level Premium based upon 150% of expected mortality, an annual lapse rate of 5% and a discount rate of 4%
- Underwriting: simplified issue to all lives with a health questionnaire embedded in the application
- Standard Non-forfeiture Law testing has deemed no necessary cash surrender values

- First year commission equals 100% of premium
- Expected mortality is assumed to be 100% of 2001 US Non-Smoking Ultimate Table

Sales have been extraordinary, in part due to competitive pricing, 100% first year compensation, and a strong advertising campaign. The company's nearest competitor has premiums more than 20% higher and pays sales commission of 35% of premium for the first three years.

The Company is considering reinsurance due to the high volume and high face amounts requested from its clients, but the reinsurance rates from both Conservative Re and from Aggressive Re both make product profitability unacceptable.

Recent mortality experience has been poor but the company has taken steps to reduce anti-selection by terminating the contracts of a few aggressive agents who had been selling policies to people entering hospital for major surgery. Product lapse rates to date have been consistently under 2%.

Since the product is selling well and the Company sees limited downside risk in this plain-vanilla product, the product pricing review will be postponed until 2015.

2.11.2. Variable Annuity

Current Product: Variable Annuity with GMAB

The Variable Annuity with a ROP GMDB has a GMAB rider with a ten-year maturity. It offers a collection of eight proprietary mutual fund choices (seven domestic and one foreign) and a fixed fund invested in the general account. The GMAB rider benefit is to increase the account value to an amount equal to the initial deposit amount at rider maturity, if the account value at the end of 10 years is less than the initial deposit. No deposits are permitted after issue.

Key terms are as follows:

- 2.40% annual fee charged against account balance
    - 1.40% M&E, 1.00% for rider over its coverage period
- 5% of premium one-time first year commission to salesperson
- Surrender charge = (10 - Y)% of account value, where Y = completed years from issue
- Death Benefit = Greater of initial deposit and the account balance (i.e., ROP GMDB)
- At the GMAB rider maturity on the tenth anniversary, the rider benefit is an increase to the account value, if needed, to make the account value at least equal to the initial deposit
- Partial withdrawals are not allowed
- An annual policy lapse rate of 5% is assumed if the account value is greater than the initial deposit less four times the surrender charge; otherwise, no lapses assumed

- Expected mortality is assumed to follow the 2000 Domestic Annuity Table

Sales are significantly lower compared to prior years, probably attributable to other competitors offering a wider range of funds and rider options. To avoid the lengthy and expensive market research and product development cycles, the Company has decided to be a “fast-follower” and copy successful designs it sees in the market place.

Over the prior year, National Bank has begun selling a product to compete with GMAB written by the insurance industry. The product is a rider on an S&P 500 mutual fund that guarantees return of principle for a 2% annual fee applied to the fund value. The rider has no specific death benefit, but has no surrender charges and allows a reset on each anniversary of the deposit. National Bank has numerous branches throughout the country and seems to have a strong marketing department.

Proposed Product Improvements:

First, the marketing team believes that adding a wider range of investment fund options would attract new customers and help to retain existing clients. Therefore, the company plans to add new fund families over the next six months. The new fund options will be available on existing and new VA GMAB contracts as well as on new VA contracts with the new guaranteed benefit riders described below.

Second, Marketing also believes additional guaranteed benefit riders similar to those that competitors have added over the past several years would boost sales. Therefore, the company is considering an enhanced product called VA Plus, adding availability of partial withdrawals, an enhanced Guaranteed Minimum Death Benefit (GMDB) rider, and a Guaranteed Minimum Income Benefit (GMIB) rider. These riders are under development and are expected to be available in nine months.

For GMDB, the death benefit is defined as of the prior anniversary and is the greater of a voluntary annual reset of the fund level and the initial premium accumulated at 5% per annum. The company expects this feature to be affordable since this benefit only pays out upon the rare combination of the insured dying and the market performing below historical average.

For the GMIB, upon contractholder election, the company will use the maximum of account value and a 5% accumulation of initial deposit assumption to buy annuity payments at its current purchase price assumptions.

For both the GMDB and GMIB riders, two alternate withdrawal bases were discussed:

1. Under "dollar-for-dollar," the benefit is reduced by the amount of the partial withdrawal. For example, adjusted DB = original DB – PW, where DB = death benefit and PW = partial withdrawal.

2. Under "proportional," the benefit is reduced in proportion to the account value. For example, adjusted DB = original DB * (AV – PW)/AV, where AV is the account value at the time of withdrawal.

Under VA Plus, partial withdrawals will be allowed and handled on a dollar-for-dollar basis.

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.

2.11.3. Universal Life

The universal life product is an adjustable premium product with a level face amount for the life of the contract. The policy will terminate if the account value reaches zero.

Key terms are as follows:

- Face Amount offered from $25,000 to $25,000,000
- Death Benefit = greater of Face Amount and 110% of Account Value
- Target Premium = $25 per thousand payable for 20 years
- Policies only issued to non-smoking males age 40 to 50
- Underwriting is full medical for all contracts
- First year commission equals 50% of the lesser of the target premium and premium paid
- Renewal commissions are 1% of the cumulative premium paid
- Surrender charges for lapses in the first ten years equal to 10% of the lesser of target premium and paid premium in the first two years, grading down to zero in policy year 10
- Partial surrenders are allowed once a year, up to the amount of 25% of cash value
- Cost of Insurance (deducted from account balance annually in advance) = 120% of expected mortality, which is currently 80% of the 2002 US Basic ANB Mortality Table, and is applied to the net amount of risk
- The Cost of Insurance charges are adjustable at the company's discretion, but only based upon changes in expected mortality. The Cost of Insurance rates shall be changed only on a class basis and with the approval of the regulator, and are subject to prescribed contractual maximum rates.
- A policy maintenance fee of $60 is charged annually, in advance
- Credited rate on the accumulation fund = greater of the underlying portfolio earned rate less a 2% spread and the five year treasury bond yield plus 0.25%, but never less than a

fixed 3%. The credited rate is determined on each policy anniversary and is applicable for the following policy year.

- The company has full discretion in the investment of the policy accumulation funds
- The investment plan used for pricing was a rolling fund of five-year AA corporate paper yielding 6%
- Voluntary policy surrender rate is assumed to be 3.00% per year

Launch sales 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.

The administrative system needs additional programming to handle some product features that are now available to the client. 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 only 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 cutting their annual policy maintenance charge by $30.

Conservative Re has agreed to reinsure the mortality risk on a 50% coinsurance basis at the same price as the Company's COI charges with unlimited capacity. Conservative Re is the Company's preferred reinsurance partner as they put no capacity limits on any of their treaties with all of their clients. Conservative Re also provides excellent off-site educational sessions in exotic locations that help meet the Company's employees continuing educational requirements. SLIC considers Conservative Re to be an important strategic partner.

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.

Due to the current low level of interest rates, the Company has revised the investment plan to be a mix of ten-year BBB corporate debt, high yielding sovereign paper of mixed maturity periods, and some exclusive opportunities in the private equity area.

2.11.4. 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 4%
- Straight Life Annuity (no certain period)
- Issued to all ages 65 and over
- No death benefit
- Expected mortality equals 100% of the 2000 US Annuity Table with Projection Scale X
- Commission equals 5% of premium

Recent sales have been slow but have been strengthening recently as interest rates have fallen. 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 experience has been approximately equal to expected but mortality improvement seems to be higher than expected.

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 expected mortality improvement, higher yielding exotic investments have been utilized recently to help meet the desired 150 basis point profit margin. These new investments include such assets as real estate, domestic private equity and emerging markets common equity

2.12. Balance Sheets

The following are the company's balance sheets ($ million) as of Dec 31, 2013:

Statutory Balance Sheet	SPIA	Term	UL	VA	Total
Cash and Investments (Book Value)	1,810	930	1,840	150	4,730
Deferred Tax Asset	-	-	-	-	-
Separate Account Assets	-	-	-	620	620
Total Assets	**1,810**	**930**	**1,840**	**770**	**5,350**
Best Estimate Liability	*1,640*	*470*	*1,400*	*-20*	*3,490*
Implicit Margin	*-700*	*210*	*270*	*30*	*440*
Statutory Reserve	1,560	680	1,670	10	3,930
Deferred Tax Liability	-	-	-	-	-
Separate Account Liabilities	-	-	-	620	620
Total Liabilities	**1,560**	**680**	**1,670**	**630**	**4,540**
Surplus	250	250	170	140	810
Total Liabilities and Surplus	**1,810**	**930**	**1,840**	**770**	**5,350**
Risk Based Capital	**60**	**60**	**40**	**30**	**170**
Diversification Benefit	-	-	-	-	-20
Actual to Required Capital	417%	417%	425%	467%	476%

Economic Balance Sheet	SPIA	Term	UL	VA	Total
Cash and Investments (Market Value)	1,810	940	1,830	150	4,730
Deferred Tax Asset	50	-	-	-	50
Separate Account Assets	-	-	-	620	620
Total Assets	**1,860**	**940**	**1,830**	**770**	**5,400**
Best Estimate Liability	*1,640*	*470*	*1,400*	*-20*	*3,490*
Explicit Margin	*70*	*70*	*90*	*-*	*230*
Economic Reserve	1,710	540	1,490	-20	3,720
Deferred Tax Liability	-	50	60	10	120
Separate Account Liabilities	-	-	-	620	620
Total Liabilities	**1,710**	**590**	**1,550**	**610**	**4,460**
Equity	150	350	280	160	940
Total Liabilities and Surplus	**1,860**	**940**	**1,830**	**770**	**5,400**
Economic Capital Requirement	**180**	**230**	**100**	**260**	**640**
Diversification Benefit	-	-	-	-	-140
Actual to Required Capital	83%	152%	280%	62%	147%

2.13. Income Statement

The following is the company's income statement ($ millions) for the year ended December 31, 2013:

Statutory Income Statement	SPIA	Term	UL	VA	Total
Direct Premium	167.0	125.0	150.0	50.0	492.0
Ceded Premium	-	-	(12.5)	-	(12.5)
Net Investment Income	89.4	49.8	89.1	7.4	235.7
Net Revenues	**256.4**	**174.8**	**226.6**	**57.4**	**715.2**
Death Benefits (Net of Reinsurance)	-	35.0	25.0	1.0	60.0
Annuity Benefits	98.0	-	-	-	98.0
Surrender Benefits	-	-	33.0	4.0	38.0
Increase in Reserves	123.8	125.0	97.0	5.0	350.8
Commissions	8.4	20.0	20.0	2.5	50.9
General Expenses	1.7	7.5	12.0	6.3	27.5
Taxes, Licenses and Fees	0.8	1.9	3.0	0.3	6.0
Net Transfers to/(from) Separate Account	-	-	-	25.6	25.6
Net Benefits, Expenses and Deductions	**232.7**	**189.4**	**190.0**	**44.7**	**656.8**
Net Gain from Operations	**23.7**	**(14.6)**	**36.6**	**12.7**	**58.4**
Federal Income Tax	7.6	(4.7)	11.7	4.1	18.7
Net Realized Capital Gains (Losses)	(0.2)	(0.6)	(0.3)	(0.1)	(1.2)
Net Income	**15.9**	**(10.5)**	**24.6**	**8.5**	**38.5**

2.14. Portfolio Summary

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

LOB	**U.S. Treasuries**	**U.S. Agencies**	**U.S. Mortgage Backed Securities**	**U.S. Corporate Investment Grade**	**Short-Term**	**Other**	**Total**
SPIA	486	492	261	318	72	181	1,810
Term	37	28	9	866	0	0	940
UL	448	462	320	292	125	183	1,830
VA	0	0	0	135	15	0	150
Total	971	982	590	1,611	212	364	4,730

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

	Avg Duration	Avg Book Yield	Avg Quality*
Immediate Annuity	8.4	5.34%	2.5
Term	7.0	5.45%	2.7
Universal Life	6.5	5.14%	2.3
Variable Annuity	4.5	5.55%	3.1

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

2.15. 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, 3/31/1994 to 3/31/2014

	Barclays Capital U.S. Bond Indices							Equity Indices	
	Treasuries	**Agencies**	**Mortgage Backed Securities**	**Corporate Investment Grade**	**Corporate High Yield**	**Aggregate**	**Long Treasuries**	**S&P 500**	**MSCI EAFE**
Compound Annual Return	6.43%	6.24%	6.47%	7.15%	8.11%	6.63%	8.84%	8.55%	5.92%
Annualized Volatility	4.61%	3.68%	2.84%	5.59%	9.00%	3.73%	9.81%	15.05%	16.88%
Skewness	-0.22	-0.15	-0.06	-0.71	-1.17	-0.28	0.17	-0.69	-0.59
Kurtosis	4.00	4.22	4.89	7.56	12.54	3.93	4.96	4.22	4.29
Correlations									
Treasuries	1.00								
Agencies	0.95	1.00							
Mortgage Backed Securities	0.84	0.89	1.00						
Corporate Investment Grade	0.67	0.76	0.70	1.00					
Corporate High Yield	-0.10	0.05	0.10	0.54	1.00				
Aggregate	0.92	0.96	0.91	0.87	0.22	1.00			
Long Treasuries	0.94	0.86	0.75	0.64	-0.09	0.86	1.00		
S&P 500	-0.15	-0.05	0.02	0.27	0.62	0.06	-0.15	1.00	
MSCI EAFE	-0.18	-0.08	-0.03	0.29	0.62	0.04	-0.17	0.79	1.00
Bond Index Data as of 3/31/2014									
Duration	5.61	3.66	3.32	6.84	4.19	5.01	15.90		
Convexity	0.70	0.01	-2.02	0.91	0.00	-0.16	3.54		
Yield to Maturity	1.19%	1.26%	2.74%	3.41%	7.73%	2.23%	3.11%		
OAS to Treasuries	0.00%	0.36%	0.52%	1.76%	5.76%	0.64%	0.00%		

Source: Barclays Capital, Bloomberg

2.16. 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 felt that the price was affordable.

SLIC also practices each year 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.