EDUCATION COMMITTEE OF THE SOCIETY OF ACTUARIES

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CASE STUDY

The Education Committee provides study notes to persons preparing for the examinations of the Society of Actuaries. They are intended to acquaint candidates with some of the theoretical and practical considerations involved in the various subjects. While varying opinions are presented where appropriate, limits on the length of the material and other considerations sometimes prevent the inclusion of all possible opinions. These study notes do not, however, represent any official opinion, interpretations or endorsement of the Society of Actuaries or its Education Committee. The Society is grateful to the authors for their contributions in preparing the study notes.

Disclaimer

The companies and events depicted in this Case Study are fictitious. Any similarity to any event, corporation, organization, or person living or dead is merely coincidental. Some narrative material utilizes real locations and real news organizations to make the Case Study seem real. The Associated Press, Wall Street Journal, Standard & Poor's, A.M. Best and others used in this context have never actually commented on any of the fictitious companies. The case study should be read critically, with the understanding that it depicts hypothetical organizations with some good policies and some flaws; it is not a representation of best practices.

List of Excel Functions That May Be Useful on CFE Assessments

Below, find a list of Excel functions that may be useful when taking the CFE 101 and CFE 201 assessments. Questions for these assessments have been developed assuming that candidates are familiar with these Excel functions. Candidates may also use other functions. Many times, Excel offers multiple functions and tools that can be used to perform the same task.

In the descriptions below, an array is one-dimensional, while a range can be two-dimensional (multiple rows and columns). Logical values are either True or False. Some Excel functions require that the arrays be in the same direction (SUMPRODUCT), but most do not. Other function inputs are variables. Some variables have limitations (a value between 0 and 1); others do not.

This document will be available to candidates when taking the assessments, as part of the case study document. An Excel file, accessible on the course home page, provides examples of most of the functions below. The Excel file will not be available to candidates during the exam.

AVERAGE(range1, [range2], …) – returns the arithmetic mean of the cells in a range (ignores blank cells)

> **range1** is the first range, cell reference, or number for which you want in the average
> **range2, …** are additional ranges, cell references, or numbers for which you want to include in the average

BINOM.DIST(number_s, trials, probability_s, cumulative_logical_value) – returns the individual term binomial distribution probability when there are a fixed number of tests or trials, when the outcomes of any trial are only success or failure, when trials are independent, and when the probability of success is constant throughout the experiment

> **number_s** is the number of successes
> **trials** is the number of trials
> **probability_s** is the probability of success for each trial
> **cumulative_logical_value** is the logical values that determines the form of the function. If TRUE, the cumulative distribution function is returned, which is the probability that there are at most number_s successes; if FALSE, the probability mass function is returned, which is the probability that there are number_s successes

BINOM.INV(trials, probability_s, alpha) – returns the smallest value for which the cumulative binomial distribution is greater than the criterion value (or the number of successful trials for a cumulative binomial distribution based on a criterion value)

> **trials** is the number of trials
> **probability_s** is the probability of success for each trial

alpha is a criterion value from 0 to 1 that determines the number of successful trials

CORREL(array1, array2) – returns the correlation coefficient of two data sets

array1 is an array of cell values

array2 is a second array of cell values

COUNTIF(range1, criteria) – returns the number of cells in a given range that meet the criteria

range1 is a range of cells that could include values or formula results

criteria is the criteria to be met such as “>0” or “=15”

COVARIANCE.P(array1, array2) – returns the population covariance, the average of the products of deviations for each data point pair in two data sets (for a complete population, uses N in the denominator)

array1 is the first array of cell values

array2 is the second array of cell values

COVARIANCE.S(array1, array2) – returns the sample covariance, the average of the products of deviations for each data point pair in two data sets (for a sample, uses N-1 in the denominator)

array1 is the first array of cell values

array2 is the second array of cell values

LOGNORM.DIST (x, mean, standard_dev, cumulative_logical_value) – returns the lognormal distribution of x where ln(x) is normally distributed with the specified mean and standard deviation.

x is the value for which you want the distribution

mean is the arithmetic mean of the distribution (the mean of ln(x))

standard_dev is the standard deviation of the distribution (the standard deviation of ln(x))

cumulative_logical_value is the logical value that determines the form of the function. If TRUE, the cumulative distribution function is returned; if FALSE, the probability density function is returned

LOGNORM.INV(probability, mean, standard_dev) – returns the inverse of the lognormal cumulative distribution for the specified mean and standard deviation of ln(x)

probability is a probability corresponding to the lognormal distribution (a number between zero and one inclusive)

mean is the arithmetic mean of the distribution (the mean of *ln(x)*)

standard_dev is the standard deviation of the distribution (the standard deviation of *ln(x)*)

MMULT(range1, range2) – returns the matrix product of arrays into an range with the same number of rows as range1 and the same number of columns as range2

range1 and **range2** contain the arrays to be multiplied. The number of columns in range1 must be the same as the number of rows as range2, and both ranges must contain only numbers. As an example, if both ranges are 2x2, the top left cell in the output will equal the sumproduct of the array in the top row in the first range and the array in the left column of the second range. To produce the output, the range of the output table must be highlighted, then the formula entered, and then cntl/shift/enter hit

NORM.DIST(x, mean, standard_dev, cumulative_logical_value) – returns the normal distribution for the specified mean and standard deviation

x is the value for which you want the distribution
mean is the arithmetic mean of the distribution
standard_dev is the standard deviation of the distribution
cumulative_logical_value is the logical value that determines the form of the function. If TRUE, the cumulative distribution function is returned; if FALSE, the probability density function is returned

NORM.INV(probability, mean, standard_dev) – returns the inverse of the normal cumulative distribution for the specified mean and standard deviation

probability is a probability corresponding to the normal distribution (a number between zero and one inclusive)
mean is the arithmetic mean of the distribution
standard_dev is the standard deviation of the distribution

NORM.S.DIST(z, cumulative_logical_value) – returns the standard normal distribution (has a mean of zero and a standard deviation of one)

z is the value for which you want the distribution.
cumulative_logical_value is the logical value that determines the form of the function. If TRUE, the cumulative distribution function is returned; if FALSE, the probability mass function is returned

NORM.S.INV(probability) – returns the inverse of the standard normal cumulative distribution (has a mean of zero and a standard deviation of one)

probability is a probability corresponding to the normal distribution (a number between zero and one inclusive).

PERCENTILE(range, k) – returns the k^{th} percentile of the values in a range, interpolating if necessary.

range is the array or range of data from which the percentile should be found; the data does not need to be sorted

k is the percentile value in the range 0 to 1 inclusive. 0 returns the lowest value; 1 returns the highest value.

RANK(number, range, [order]) – returns the rank of a number in a list of numbers.

number is the number whose rank you want to find

range is the range that includes the list of numbers from which to find the rank of the number

order (optional) is ascending when the value is 1 and descending when the value is 0

SMALL(array, k) – returns the k^{th} smallest value in a data set.

array is an array or a range of numerical data for which you want to determine the k^{th} smallest value.

k is the position (from the smallest) in the array or range of data to return.

SQRT(number) – returns a positive square root

number is the number for which a square root is desired.

STDEV.P(range1, [range2], …) – calculates standard deviation based on the entire population given as arguments (ignores logical values and text; uses N in the denominator)

range1 is the first range, cell reference, or number corresponding to the population for which you want the standard deviation

range2, … are additional ranges, cell references, or numbers corresponding to the population for which you want to include in the standard deviation

STDEV.S(range1, [range2], …) – estimates standard deviation based on a sample (ignores logical values and text in the sample; uses N-1 in the denominator)

range1 – is the first range, cell reference, or number corresponding to the population for which you want the standard deviation

range2, … are additional ranges, cell references, or numbers corresponding to the population for which you want to include in the standard deviation

SUM(range1, [range2]) – adds all the numbers in a range of cells

range1 is the first range, cell reference, or number for which you want to include in the sum

range2, … are the additional ranges, cell references, or numbers for which you want to include in the sum

SUMPRODUCT(array1, [array2], [array3], …) – returns the sum of the products of corresponding arrays

arrays1, array2, array3,… are 2 to 255 arrays which the user wants to multiply and then add components. All arrays must have the same dimensions, vertical or horizontal

TRANSPOSE(array) – converts a vertical range of cells to a horizontal range, or vice versa

> **array** is a range of cells on a worksheet or an array of value that the user wants to transpose (for example, to use in the SUMPRODUCT function). When using the TRANSPOSE function in another function, the formula must be entered and then cntl/shift/enter hit. When using the TRANPOSE function to produce output, the range of the output table must be highlighted, then the formula entered, and then cntl/shift/enter hit

VLOOKUP(lookup value, table_range, column_ index_number, logical_value) – looks for a value in the leftmost column of a table and then returns a value in the same row from a column specified by the user

> **lookup_value** is the value to be found in the first column of the table. It can be a value, a reference, or a text string
>
> **table_range** is a table of text, numbers, or logical values in which data is retrieved. It can be a reference to a range or a range name
>
> **column_index_number** is the column number in table_range from which the matching value should be returned
>
> **logical_value** is a logical value to find the next lowest match in the first column (must be sorted in ascending order) when equal to TRUE or omitted; or an exact match when equal to FALSE

List of Other Excel Tools (Besides Functions) That May Be Useful on CFE Assessments

GOAL SEEK – used when a user knows the desired result from a formula but is not sure what input value the formula needs to get that result. The steps to use Goal Seek are as follows:

1. Select the cell that contains the output you want to change.
2. On the Data tab, select What-If Analysis.
3. Select Goal Seek.
4. In the "Set cell" box, enter the reference for the cell that contains the formula you want to resolve.
5. In the "To value" box, type the formula result you want.
6. In the "By changing cell" section, select the reference for the cell that contains the value that you want to change.
7. Click "OK". Goal Seek runs and produces a result.

Assumptions

The companies that are part of the Case Study are assumed to be operating in the following economic environment:

After a major financial crisis 15 years before the present time, interest rates dropped to historically low levels and remained at those levels for 12 – 13 years. Approximately 2 years ago, the inflation rate began increasing due to supply shortages in some sectors and excess consumer cash from stimulus payments. Interest rates began rising and global inflation levels rose about 8 percentage points from their prior lows. In the last 6 months inflation has lowered to more normal levels.

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1 RPPC Corporation

1.1 RPPC Corporation History

RPPC was established in 2007 with head offices in Luxembourg by four founding partners. The corporation's name is derived from the four founders' surnames - Ruiz, Petrov, Patel, and Chan. They had ambitious goals to grow the corporation to become a business dynasty respected throughout the world. From the beginning, and still to this day, the focus has been to meet the needs of a globally-mobile clientele. In its early years, the corporation expanded to hold a diverse group of businesses. More recently it has divested several holdings to focus on the financial sector.

The business roots began with the coffee shop, owned by the Ruiz family since 1997. In 2008, to increase access to capital in support of the company's expansion, RPPC decided to incorporate. Shortly thereafter, RPPC formed a bank group. In 2015 an airline was added and in 2017 an insurance company.

In 2018, RPPC decided to spin off the coffee company and the airline in order to concentrate on the financial businesses. The two companies, Frenz and Blue Jay Air, continue to operate as independent organizations. RPPC continues to own Big Ben Bank and Darwin Life Insurance Company.

1.2 RPPC Corporation Overview

1.2.1 Mission

Provide high quality and uniquely tailored financial services to families or businesses that are globally active.

1.2.2 Executive Team

CEO –Gilroy Clyde (since inception)
CFO –Lamar Smith (five years)
CRO –Julia Reich (recently appointed)
COO –Jane Mulroney (since incorporation; has served as default CRO)

1.2.3 Governance

RPPC has the following Executive Committees:

1. Operations Committee
2. Audit Committee
3. Finance Committee
4. Risk Committee
5. Governance Committee

1.2.4 Cost of Capital – RPPC and Peer Industries

	RPPC	Reliable Insurance	Too Big Bank
Expected Cost of Debt	8%	6%	3%
Expected Cost of Equity	14%	11%	12%
Debt-to-Value Ratio	40%	40%	60%

1.2.5 Tax Rate for Conglomerate

RPPC's current tax rate is 20%.

1.3 RPPC Risk Management and Strategies

1.3.1 Risk Management Vision Statement

We are exposed to a variety of risks that are inherent in carrying out our business activities. *Having an integrated and disciplined approach to risk management is key to the success of our business*.

Strengths and Value Drivers

- A Risk Appetite that shapes business strategies and is integrated into our decision-making processes. Risk management is considered a profit-generating activity. We believe preventing our organization from experiencing the loss inflicted on our competitors is as beneficial as creating new profit streams from new arenas.

Challenges

- Continued volatility in global economic conditions, causing heightened marketplace uncertainty. This is both a risk and opportunity.

1.3.3 Strategic Considerations

RPPC is considering investing in InsurTech either organically, through acquisition, or both. Big Ben and Darwin have strategic initiatives regarding cryptocurrency and implementing blockchain technology operationally. The executive team has discussed how the futures of InsurTech and blockchain technology are reminiscent of the internet and e-commerce and the inevitable impact those advances had on brick-and-mortar-based businesses. RPPC is aware that blockchain technology is being applied broadly in insurance and finance, as well as in supply chain management, cybersecurity, and investment transactions and settlements.

1.3.4 Product Review and Approval Policy

This policy outlines the procedures for the development, review, and approval of new products and services within the RPPC conglomerate. The policy balances the goal of delivering new products in a timely and efficient manner with the need to manage pricing and product development risk.

This policy requires the establishment of product pricing guidelines that describe profit targets for RPPC and performance metrics that must be calculated for all new products and services.

This policy involves the following stages:

Feasibility – For all new products and services, a report assessing the feasibility of the new product or service must be created. This report will provide high-level business rationale and risk assessment for the product or service and must be presented to the product pricing committee before any further development is undertaken.

Product Assessment – All aspects of the product design must be assessed including the marketing analysis and supporting research, the distribution plan, pricing estimates, sales projections, risk adjusted return on capital, and tax implications.

Risk Assessment – All risks of the product or service must be assessed. The assessment should also include a summary of the appropriate procedures and controls required to manage the new product or service once it is launched.

Sign-off and Approval – Sign-off and approval of the new product or service is required by the office of the CRO, the product pricing committee, and the operational head of the business unit.

Documentation – An official record must be kept of the feasibility study, product and risk assessments, and the approval and sign-off forms.

1.3.5 Risk Monitoring

There are three disciplines to the risk monitoring approach:

- Post-implementation review
- Risk-based capital assessment
- Stress testing

A post implementation review must be conducted to evaluate the project against expectations.

The assessment of risk-based capital within an Economic Capital framework is one of the key metrics in the measurement and communication of any risk undertaken. Economic capital is determined by the Risk Management Committee and is underpinned by the Redundant Capital philosophy. Capital is determined to withstand one 1-in-100 year event, after which the capital position is still sufficient to meet another 1-in-100 year event (essentially twice the 1-in-100 year event's loss). Economic capital is also compared with regulatory capital to ensure compliance.

Allied with the Economic Capital framework, stress testing involves quantifying and communicating the impact of specified scenarios on the financial results of a given business operation.

2 Blue Jay Air

2.1 Commercial Airline Industry Profile

2.1.1 Operations

The commercial airline industry provides air transportation for passengers and cargo. The United States (U.S.) has an extensive commercial air transportation network. Its passenger air transportation market is a thriving industry, taking individuals around the North American continent and around the globe. All U.S. passenger airline companies are privately owned.

Airports, on the other hand, are usually constructed and operated by local governments. Thus, most government air travel subsidies go to airport operations rather than to the passenger airline industry.

The federal government has jurisdiction over aircraft safety, pilot training, and accident investigations through the Federal Aviation Administration and the National Transportation Safety Board. However, there is currently no government regulation on ticket pricing.

Most airlines operate using a "hub and spoke" model such that passengers go through a centralized location, the hub, to transfer to their downline destination, i.e., the spoke city. This system gives the predominant airline in a hub a strong competitive position as it maximizes the number of passengers on each flight. The model offers a very efficient means of relating supply to demand.

Most commercial airlines operate on a scheduled basis, flying regular routes even if the planes are not full. Airlines that operate on a non-scheduled basis usually fly during off peak hours and have more flexibility in the choice of airport, flight times and load factors. Non-scheduled carriers typically offer charter passenger flights, cargo/freight transport, and other flying services such as crop dusting and rescue operations.

2.1.2 Risk/Success Factors

The airline industry faces the following significant risks:

(1) Economic and Geopolitical Volatility

As most airline companies now operate in a global market, exposures to the political relationships and tensions as well as economic relationship and business cycle changes are increasingly significant.

(2) Supply Chain Risk

The number of manufacturers of commercial aircraft is limited. Thus, timely aircraft deliveries at reasonable cost could become a major issue for airline companies.

Continually advancing technology may result in airplanes not being tested thoroughly before delivery by suppliers, leading to possible lower quality control.

(3) Oil Price Increases

Profit margins for airline companies could be negatively impacted by increases and volatility in oil prices.

(4) Accidents/Fatalities

When a plane crash event occurs, the airline industry could suffer severe reputational risks, especially if the event is not properly handled with respect to communication, investigations, and recoveries.

Key success factors for the airline industry include:

(1) Business Success Factors:
- Company's market position, including its route and hub network
- Business alliances and partnerships
- Service standard/quality and reputation
- Fleet profiles – quality, age, and capacity
- Company's operating management including human resource management/labor relations

(2) Financial Success Factors:
- Management philosophy, strategy, and financial risk policies
- Hedging and other risk mitigation policies
- Capital structure and liability management

2.1.3 Competitive Environment

The competitive environment for the U.S. airline industry intensified since the Airline Deregulation Act of 1978. New carriers rushed into the market with new routes post-deregulation, which resulted in declining fares as competition and number of customers increased. Some major carriers collapsed in the wake of competition. Code sharing agreements became widespread within the airline industry beginning in the 1990s.

During the early 2000s, the industry suffered setbacks due to economic downturns, fuel cost increases, and the 9/11/2001 attacks in the U.S. The financial crisis in 2008 resulted in air traffic in the U.S. declining by about 20%. The drop in customers prompted rapid consolidation and mergers of all of the nation's largest carriers. The combination of consolidation, mergers and code sharing alliances has dampened competition and caused an upward pressure on airline fares. Profitability returned to the airline industry after 2009. However, the Covid pandemic decreased air traffic considerably from 2020 – 2022.

2.2 Company Profile

Blue Jay Air was originally incorporated in the United States in the mid-1980s. It was a small local commercial passenger carrier, operating only in the Eastern region of the United States. Its target market was high-end business clientele located in major cities along the east coast of the United States. Since then, Blue Jay has gone through three mergers and two significant acquisitions. The company has transformed from a focused high-end regional company to an expanded price-competitive commercial carrier, covering the full geographical region of the United States as well as major cities in Canada.

Due to reduced margins, most companies have severely curbed operating costs by reducing staff levels or restraining salary increases. As a result, labor disputes and disruptions have become a major concern in the industry. The negative impact on the industry has been compounded by an ageing workforce and insufficient training for the new staff, especially for the pilots. Frequency of accident occurrences has trended upwards due to lack of qualified manpower and insufficient compensation levels.

Despite all the perils in the industry, Blue Jay Air was resilient in surfing the destructive waves through various reorganization and restructuring efforts. From 2015 through part of 2018, Blue Jay Air was owned by RPPC. In 2018, it was spun off and now operates as an independent organization again. Susan Feather, who has over 20 years of airline experience, is viewed as a "turnaround" CEO.

2.3 Strategies

Blue Jay Air's new strategic vision is to become the most customer-oriented airline company in the world, providing the best services to the marketplace. Comfort, punctuality, and safety are the three important virtues that the company has adopted. In order to successfully rebrand the company, the company has done an extensive study on its customer base and identified its customers. Susan believes that understanding and knowing the customers is an important step to improving profitability for the company in the long run.

Based on the customer base study, the company found that more than 55% of its customers travel for business reasons. This could stem from the fact that the company was originally a commercial passenger carrier catering to business travelers. In fact, the expansion to leisure travel over the last 15 years did not initially increase profit margins as the number of business travelers declined from over 80% to 55% due to reduced services. However, the rebranding and the change to the business model may be contributing to the improved profitability seen in recent years.

Blue Jay Air has reconsidered its market operations, exploring expansion to international operations due to increased demand for international travel. The company has been negotiating with international airport authorities in several European and Asian financial centers and major cities over the last two years to secure a boarding space. Some of these negotiations are close to fruition.

Labor relationship management is a key cost control element for Blue Jay Air as the labor force is not currently unionized. Blue Jay Air requires an effective management team that will foster a cultural change without damaging the relationship with the employees, to ensure that their needs are addressed, thus reducing the desire to unionize. The company has implemented profit sharing schemes, regular salary scale and benefits reviews, frequent employee networking events, employee suggestion boxes and an employee diversity and inclusion team to foster communication and pay equity between management and regular staff. These efforts have been working. Thus, the company would like to maintain its current employee relationship strategy. However, in order to stay competitive, the company has begun taking significant expense control measures in the areas of staff count, staff expenses, and information technology expenditures. The company has started to cut back on most training programs, other than the current pilot and safety training programs needed to foster its vision of being the "safest" airline in the industry. The company also imposes tougher standards to qualify for the "top-scaled commercial pilot" category in order to ensure Blue Jay pilots are of highest quality.

2.4 Risk Management

As a highly-leveraged capital-intensive company, Blue Jay Air has significant exposure to interest rate risk. Ability to raise debt and service the debt is crucial to the survival of the company. Therefore, a key risk management objective is to maintain the credit rating of the company within the investment grade categories of BBB- or higher.

Blue Jay Air has in place a risk management committee headed by a well-known risk manager, Ruth Green. Ruth was formerly the Chief Risk Officer (CRO) of a major Canadian bank. Ruth was a hedge fund manager before she became the CRO of the bank and has extensive background in implementing risk management strategies. Over the last two years, Ruth has put together a dynamically hedged portfolio that handles the commodity exposures that the company has been facing as well as partially hedging interest rate risks.

Since Blue Jay Air requires a constant supply of oil and gas to run its airline business, it is exposed to fluctuations in fuel prices. The company policy is to eliminate as far as possible any market price variability through hedging. The maximum acceptable unexpected earnings volatility from any related fuel pricing hedging activities has been set at $5 million.

Blue Jay Air has entered into a staggered series of forward commitments with different suppliers. This has substantially reduced oil and gas supply risks, unless there is a world-wide supply chain disruption.

In addition, Ruth has established a Treasury role under the risk management committee to centralize long-term and short-term fund-raising activities and deal with liquidity and credit risks. This role is headed by Elmer Saunders who was a former Treasurer of a New York-based investment bank. Elmer has a significant network with venture capitalists, pension fund managers, and private equity fund managers. Elmer has also worked in the investor relations area of a major U.S. commercial bank and thus has dealt with credit rating agencies such as Standard & Poor's, Moody's, A.M. Best, and Fitch. Over the last two years, he has implemented a liquidity model and a credit model to monitor the company's ongoing liquidity and credit needs.

Ruth has proposed that Blue Jay Air create a more formal Risk Appetite Statement. After reviewing policies already in effect at BJA, her staff produced the following starting draft:

Guiding Principles:

- Cost control is key to the success of BJA. All products and services must be justified through a stringent cost/benefit analysis.
- BJA strives to be the safest airline in the industry. All initiatives must be reviewed with this goal in mind.
- Maintaining an adequate, well-trained labor force is critical to meeting our objectives.
- BJA must be able to access the capital markets. Therefore, the company must maintain its credit rating at BBB- or higher.

Specific Risk Tolerances

- The maximum acceptable unexpected earnings volatility from any related fuel pricing hedging activities is $5 million.
- Maintain a liquidity ratio of at least 150% under the likely scenario and at least 100% under the stressed scenario, based on quarterly liquidity modeling.
- Maintain average age of aircraft at no more than 3.5 years.

2.5 Operations

2.5.1 Planes

The current fleet of planes is starting to age, with an average age of about five years. Parts needed to maintain these outdated models are becoming scarce and, thus, more expensive. BJA's current plan is to replace or update 15% of its current fleet every year in order to keep the maintenance costs at an acceptable level. These replacement costs are funded by long-term loans. However, since there are limited suppliers of commercial airplanes, there is exposure to price increases for the new planes. Delivery of the planes can also be subject to delays and tariffs.

The existing fleet is not suitable for international flights. In order to implement an international expansion strategy, the company will have to order or lease planes with updated features such as Wi-

Fi, expanded business classes, flat beds, bars, and additional safety features, to be delivered over the next few years. However, the costs of these new planes are significant, and increasing debt to finance these planes could jeopardize the credit rating of the company.

Even for the short haul planes, the current fleet requires updates such as Wi-Fi capability, individual TV screens and more fuel-efficient engines to provide additional comfort for business travelers. This will also require additional funding.

(See Exhibit E for more information.)

2.5.2 Business Lounges

Blue Jay Air will renovate all of its business lounges in major cities to enhance the competitiveness of its business travel. New business lounges will offer free Wi-Fi and amenities such as gourmet coffee and specialty teas, snacks, massage chairs with music selection and flat beds. The goal is to make business travelers as comfortable as possible while waiting for their flights.

Blue Jay Air is considering two possible upgrades for its lounges. The first is a renovation that will bring Blue Jay Air more in line with competitors, with an initial cost of $10 million that is expected to produce an after-tax return on invested capital of 12.5%, with annual after-tax profits expected to be realized equally in perpetuity. The second is the acquisition of Luxury Lounges, a public company that has particular expertise in creating the most comfortable lounges for travelers. The current market price of Luxury Lounges stands at $35 million, and the acquisition is expected to produce $4 million of after-tax profits a year.

2.5.3 Baggage and Baggage System

Blue Jay Air will incorporate a charge for each piece of checked luggage, consistent with its competitors' pricing. Free luggage check-in will no longer be available except for international flights, for which Blue Jay Air will reduce its free luggage check-in policy from two pieces to one piece with no change to the current weight limit. The current baggage tracking system seems to be adequate, and Blue Jay Air has no plan to upgrade its systems.

2.5.4 Financial Statements

Detailed financial statements are shown in Section 2.7, Exhibits A, B, and C, with notes to the financial statements in Exhibit D.

2.6 Strategic Considerations

2.6.1 Strategic Information: Fleet Upgrade Proposals

Research into buying the new international planes and the costs of upgrading the current fleet is shown in Section 2.7, Exhibit E.

2.6.2 Strategic Models used by Blue Jay Air

Black-Scholes Hedging Model
Ruth Green, as part of Blue Jay Air's risk management, has put together a dynamically hedged portfolio that handles the commodity exposures that the company has been facing as well as partially hedging the interest rate risks. She uses Black-Scholes models in this hedging work.

2.6.3 Strategic Initiative: Loyalty Program

Blue Jay Air would like to change its marketing strategy to target frequent business travelers. It is considering a business travel loyalty program that would eventually entail a progressive bonus point system as flight frequency increases. In addition, Blue Jay Air would like to expand its reward systems by partnering with other business partners and its affiliated companies. This will substantially increase the incentive for travel by business executives.

For example, Blue Jay Air is considering partnering with Big Ben Bank's bank credit and debit cards to introduce a combined loyalty credit card with an "enhanced air points" reward system. This partnership should further increase the value of the loyalty program.

To gain valuable information about the customers for the loyalty program, a modification to the existing application form is required. The current application form is five pages long with 30 different questions related to the customers' personal information and preferences. The current completion rate is much lower than the target rate due to the extensive information requested, and the information gathered is not sufficient to make credible assumptions about customer behaviors. Over the last three years since the current application was introduced, the application completion rate among younger customers has plummeted; 90% of customers completing the form are over the age of 50.

Loyalty Program Strategic Model
To properly account for the potential costs of the new loyalty program, a basic model for a representative customer has been created. The customer will earn a certain number of points for each paid flight. After accumulating enough points, the customer can choose to redeem for a free flight at any time. The free flight doesn't earn points. For each paid flight the loyalty program gets a percentage of the ticket price as a fee and will pay the cost of the redeemed flight when it occurs. The loyalty program will invest the cash it has in short-term government bonds.

Since business travelers are the targeted clientele, the model uses the following assumptions about a typical business traveler:

- Frequency of flying and points earned per flight are fixed
- Time to redemption after accumulation of sufficient number of points follows a lognormal distribution

The model also makes assumptions for these factors:

- Flight price
- % of the flight price that loyalty program receives as a fee
- Cost of a redemption
- Points needs for a redemption
- Expense of the loyalty program as a % of the fee charged
- Investment rate
- Initial fixed cost for each customer
- Discount rate for cash flow

All factors above are assumed to be fixed. Blue Jay Air also assumes all its existing customers will join the loyalty program.

The projection period for the model is 10 years. The model will calculate the value of future benefits to be paid, future revenue and surplus of the program.

The enhanced business loyalty program will be designed based upon finding a favorable combination of factors that will result in the model producing the desired surplus target. Details of the new program are expected to be released in the next six months.

2.7 Blue Jay Air Exhibits

EXHIBIT A

NON-CONSOLIDATED STATEMENT OF OPERATIONS

(US Dollars in millions)

Fiscal Year Ended	**Dec 31, 2024**	**Dec 31, 2023**	**Dec 31, 2022**
Operating revenues:			
Passenger	1,544	1,235	1,074
Other	298	238	207
Total revenues	**1,841**	**1,473**	**1,281**
Operating expenses:			
Aircraft fuel	576	461	401
Wages, salaries and benefits	361	289	251
Capacity purchase agreements	173	138	120
Airport and navigation fees	158	127	110
Depreciation, amortization & impairment	96	77	67
Aircraft maintenance	111	89	77
Sales & Distribution costs	73	59	51
Aircraft rent	49	39	34
Food, beverages and supplies	42	33	29
Communications and Information technology	33	26	23
Other	19	15	13
Total operating expenses	**1,691**	**1,352**	**1,176**
Net Operating income	**151**	**121**	**105**
Non-operating income (expenses)			
Foreign exchange gain(loss) [Note 3]	15	10	(29)
Interest income	5	5	5
Interest expense	(41)	(38)	(37)
Interest capitalized [Note 2]	2	1	(5)
Net financing expense relating to employee benefits [Note 2]	(2)	(2)	(15)
Loss on financial instruments recorded at fair value [Note 1]	(3)	(7)	(33)
Other [Note 2]	(1)	(2)	(19)
Total non-operating Income	**(25)**	**(33)**	**(133)**
Income (loss) before income taxes	**126**	**88**	**(28)**
Income taxes	**(9)**	**(13)**	**2**
Net income (loss) [Note 1]	**117**	**75**	**(26)**
Earnings per share (Basic)	**1.00**	**0.60**	**(0.22)**
Earnings per share (Diluted)	**0.95**	**0.59**	**(0.22)**

EXHIBIT B

NON-CONSOLIDATED STATEMENT OF FINANCIAL POSITION

(US Dollars in millions)

Fiscal Year Ended		**Dec 31, 2024**	**Dec 31, 2023**	**Dec 31, 2022**
ASSETS				
Current:				
Cash and Cash equivalents		180	101	30
Short-term investments		290	262	163
Total cash & Short-term investments		**470**	**363**	**193**
Restricted cash		15	15	15
Accounts receivable		265	225	192
Aircraft fuel inventory		141	113	98
Spare parts and supplies inventory		180	140	93
Prepaid expenses & other current assets		205	155	125
Total current assets	**[Note 1]**	**1,276**	**1,011**	**716**
Property and equipment	[Note 4]	545	509	474
Intangible assets		21	21	21
Deferred tax assets	[Note 7]	17	19	22
Goodwill	[Note 5]	31	31	31
Deposit and other assets		34	76	109
Total assets	**[Note 1]**	**1,924**	**1,667**	**1,373**
LIABILITIES				
Current:				
Account payable & accrued liabilities		150	107	70
Advance ticket sales		310	250	181
Current portion of long-term debt & finance leases		98	75	58
Total current liabilities		**558**	**432**	**309**
Long-term debt and finance leases	[Note 6]	721	757	673
Pension & other benefit liabilities		205	230	246
Maintenance provisions		60	55	60
Deferred tax liabilities	[Note 7]	132	68	20
Other long-term liabilities		49	48	43
Total liabilities	**[Note 1]**	**1,725**	**1,590**	**1,351**
EQUITY				
Shareholders’ equity				
Share capital		200	200	200
Contributed surplus		30	25	45
Deficit		(31)	(148)	(223)
Total shareholders’ equity		**199**	**77**	**22**
Total liabilities & equity		**1,924**	**1,667**	**1,373**

EXHIBIT C
NON-CONSOLIDATED STATEMENT OF CASH FLOW
(US Dollars in millions)

Fiscal Year Ended		**Dec 31, 2024**	**Dec 31, 2023**	**Dec 31, 2022**
Cash Flows from (used for)				
Operating				
Net income (loss)		**117**	**75**	**(26)**
Adjustments to reconcile to net cash from operations:				
Adjust for non-cash items:				
Deferred income tax	[Note 7]	66	50	(1)
Depreciation, amortization & impairment	[Note 4]	96	77	67
Fuel & other derivatives		(20)	(11)	14
Adjust for Changes in non-cash working capital items:				
Change in inventories		(68)	(62)	(32)
Change in account receivable		(40)	(33)	(59)
Change in Account Payable		43	37	(37)
Change in advance ticket sales		60	69	57
Change in pension & other benefit liabilities		(25)	(16)	24
Change in maintenance provisions		5	(5)	5
Other		(50)	(30)	(20)
Net cash flow from operating activities		**185**	**151**	**(9)**
Financing				
Proceeds from borrowings		150	100	125
Reduction of long-term debt obligations	[Note 6]	(63)	64	(104)
Reduction of finance lease obligations	[Note 6]	(35)	(10)	(74)
Contributed Surplus		5	(20)	35
Net cash flows used in financing activities		**57**	**134**	**(18)**
Investing				
Short-term investments		(28)	(99)	(8)
Additions to property, equipment & intangible assets		(136)	(114)	(36)
Proceeds from sale of assets		4	2	4
Foreign exchange gain(loss)	[Note 3]	(4)	(3)	7
Other		2	(1)	0
Net cash flows used in investing activities		**(162)**	**(215)**	**(33)**
Increase in cash & cash equivalents		**80**	**70**	**(60)**
Cash & cash equivalents, beginning of year		116	45	105
Cash & cash equivalents, end of year		195	116	45

EXHIBIT D

EXCERPTS OF NOTES TO THE NON-CONSOLIDATED FINANCIAL STATEMENTS

1. Accounting Basis

<u>Classification</u>

Blue Jay Air classifies its financial assets and financial liabilities in the following measurement categories:

i) those to be measured subsequently at fair value and
ii) those to be measured at amortized cost.

For assets and liabilities measured at fair value, gains and losses are recorded in profit or loss. Blue Jay Air reclassifies financial assets only when its business model for managing those assets changes. Financial liabilities are not reclassified.

Blue Jay Air has implemented the following classifications:

- Cash and cash equivalents, Short-term investments, and Restricted cash are classified as assets at fair value through profit and loss.

- Accounts receivable and other deposits are classified as assets at amortized cost and are measured using the effective interest rate method.

- Accounts payable, credit facilities, and long-term debt are classified as other financial liabilities and are measured at amortized cost using the effective interest rate method. Interest expense is recorded in the consolidated statement of operations, as applicable.

2. Revenues

Passenger revenues are recognized when the transportation is provided. Airline passenger advance sales are deferred and included in Current liabilities.

Blue Jay Air has formed alliances with other airlines encompassing loyalty program participation, interline agreements and code sharing and coordination of services including reservations, baggage handling and flight schedules. Revenues are allocated based upon formulas specified in the agreements and are recognized as transportation is provided. Passenger revenue also includes certain fees and surcharges and revenues from passenger-related services such as seat selection and excess baggage which are recognized when the transportation is provided.

Blue Jay Air disaggregates air transportation service revenue according to geographic market segments.

A reconciliation of the total amounts reported by geographic region for Passenger revenues on the consolidated statement of operations is as follows:

Passenger Revenue	**Dec 31, 2024**	**Dec 31, 2023**	**Dec 31, 2022**
United States	695	494	322
Canada	540	494	483
Atlantic	77	49	32
Pacific	154	124	54
Others	77	74	183
Total	1,544	1,235	1,074

3. Foreign Currency Translation

The functional currency of Blue Jay Air is the U.S. dollar. Monetary assets and liabilities denominated in foreign currencies are translated into U.S. dollars at rates of exchange in effect at the date of the consolidated statement of financial position. Non-monetary assets and liabilities and revenues and expenses arising from transactions denominated in foreign currencies, are translated at the historical exchange rate or the average exchange rate during the period, as applicable. Adjustments to the U.S. dollar equivalent of foreign denominated monetary assets and liabilities due to the impact of exchange rate changes are recognized in Foreign exchange gain (loss).

4. Property and equipment

Property and equipment are valued using the cost model. Blue Jay Air allocates the amount initially recognized in respect of an item of property and equipment to its significant components and depreciates separately each component.

Property and equipment are depreciated to estimated residual values based on the straight-line method over their estimated service lives:

- Aircraft frames and engines are depreciated over periods not exceeding 25 years, with residual values initially estimated at 10% of original cost and updated for changes in estimates over time.

- Spare engines and related parts are depreciated over the average remaining useful life of the fleet to which they relate with residual values initially estimated at 10%.

- Cabin interior equipment and modifications are depreciated over the lesser of eight years or the remaining useful life of the aircraft.

- Major maintenance costs are capitalized and amortized over the average expected life between major maintenance events.

- Buildings are depreciated on a straight-line basis over their useful lives not exceeding 50 years or the term of any related lease, whichever is less.

Residual values and assumed useful lives are reviewed at least annually, and depreciation rates are adjusted accordingly on a prospective basis. Gains and losses on disposals of property and equipment are determined by comparing the proceeds with the carrying amount of the asset and are included as part of non-operating gains and losses in the consolidated statement of operations.

5. Goodwill

Goodwill is tested at least annually for impairment. For the purpose of impairment testing, goodwill is tested for impairment using the fair value less cost to dispose model at the operating segment level.

In assessing the goodwill for impairment, Blue Jay Air compares the aggregate recoverable amount consisting of the sum of its quoted equity market capitalization and the fair value of its debt to the carrying value of its net assets excluding long term debt. An impairment charge is recognized to the extent that the carrying value exceeds the recoverable amount.

6. Long-term Debt and Financial Leases

The following table summarizes types of outstanding long-term debt of BJA.

Long Term Debt and Financial Leases:

	Maturity	**Weighted Average Interest Rate (%)**	**2024**	**2023**
Aircraft Financing				
Floating Rate	2025-2035	4.39	266	225
Fixed Rate	2025-2036	3.84	190	262
Senior Secured Notes	2030	4.75	190	187
Senior Unsecured Notes	2030	7.75	114	75
Long-term Debt		**4.85**	**761**	**749**
Finance Lease obligations	2026-2038	9.27	57	83
Total Debt and Finance Leases		**5.16**	**819**	**832**
Current portion			-98	-75
Long-term debt and issuance cost			**721**	**757**

Cash flows from financing activities

Information on the change in liabilities for which cash flows have been classified as financing activities in the statement of cash flows is presented below.

	Cash Flows				Non-Cash Changes			
	1-Jan-24	Borrowing	Repayment	Financing Fees	Foreign Exchange Adjustments	Amortization of Financing Fees	Other Non-Cash Adjustments	31-Dec-24
Long-term Debt	749	150	(63)		(75)	0	0	761
Lease Liabilities	83	0	(35)		9	0	0	57
Total Liabilities from financing activities	**832**	**150**	**(98)**		**(66)**	**0**	**0**	**819**

7. Income Tax

Income Tax Expense

Income tax recorded in the consolidated statement of operations is presented below.

	31-Dec-24	31-Dec-23	31-Dec-22
Current income tax	57	37	1
Deferred income tax	(66)	(50)	1
Income tax (expense) recovery	(9)	(13)	2

The income tax expense differs from the amount that would have resulted from applying the statutory income tax rate to income before income tax expense as follows:

	31-Dec-24	31-Dec-23	31-Dec-22
Income before income taxes	**126**	**88**	**(28)**
Statutory income tax rate based on combined federal and provincial rates	21.00%	21.00%	21.00%
Income tax expense based on statutory tax rates	**(26)**	**(18)**	**6**
Adjustment to tax basis:			
Non-taxable (non-deductible) portion of capital gains (losses)	(5)	10	4
Unrecognized deferred income tax assets on capital losses	15	(10)	(3)
Non-deductible expenses	(5)	(4)	(6)
Recognition of previously unrecognized deferred income tax assets	13	9	0
Other	0	1	1
Income tax (expense) recovery	**(9)**	**(13)**	**2**
Effective tax rate	**-7.04%**	**-14.41%**	**-6.86%**

Deferred Income Tax

Deferred income tax assets are recognized only to the extent that it is probable that future taxable income will be available to realize them. During 2024, Blue Jay Air determined that it was probable that substantially all of the deferred income tax assets, which include non-capital losses, would be realized.

The significant components of deferred income tax assets and liabilities were as follows:

	31-Dec-24	31-Dec-23	31-Dec-22
Deferred tax asset			
Non-capital losses	39	77	103
Post-employment obligations	100	87	75
Accounting provisions not currently deductible for tax	10	9	8
Investment tax credits and recoverable taxes	20	18	15
Other	5	5	4
Total	**175**	**195**	**205**
Deferred tax liabilities			
Property, equipment and technology-based intangibles	(289)	(241)	(201)
Other	(1)	(2)	(3)
Total	**(290)**	**(243)**	**(204)**
Net recognized deferred income tax assets (liabilities)	**(115)**	**(49)**	**1**
Balance sheet presentation			
Deferred income tax assets	17	19	22
Deferred income tax liabilities	(132)	(68)	(20)
Net recognized deferred income tax assets (liabilities)	**(115)**	**(49)**	**1**

EXHIBIT E
Fleet Upgrade Proposals

Exhibit E.1 Lease Proposal for International Plane Fleet

Lease term:	5 years
Initial Five-year Lease Expenditure:	$ 500M
Additional Annual Expenses beyond those included in Lease Expenditure:	$ 60M
Annual Expected Revenue from New Route (First 5 Years):	$ 270M

Exhibit E.2 Purchase Proposal for International Plane Fleet

Initial Purchase Price:	$1,750M
Annual Projected Maintenance Costs of New Fleet:	$ 2M
Additional Annual Expenses beyond those included in Purchase/Maintenance:	$ 60M
Annual Expected Revenue from New Route (First 5 Years):	$ 270M
Annual Depreciation for Fleet:	$ 100M

Exhibit E.3 Upgrade of Current Fleet Proposal

Initial Upgrade Expenditure:	$100M
Favorable Additional Revenue:	$18M first year, growing at 2% thereafter
Probability Favorable State:	60%
Unfavorable Additional Revenue:	$0M all years
Probability Unfavorable State:	40%

EXHIBIT F

Blue Jay Air Corporation's Balanced Scorecard Framework

	Objectives	Measurements	Targets	Initiative
Financial	Revenue Growth Frequent Business Travels Expense Reduction Asset Utilization	Total Revenues Business Class Load Factor Total Operating Expense Higher Tangible Assets	35% Annual Growth 95% 2% Annual Decrease Increase Service Capacity	Refurbish/Purchase
Customer	Frequent Business Travel Enhance Loyalty Program Rebranding / Image	% Business Traveler Number of Participants Business Traveler Ranking	85% 25% Annual Growth #1	
Internal	Booking System Enhancements Enhance Comfort and Service Turnaround	Utilization Internet, Mobile Increase Business Class Capacity On Time Departure	50% Annual Growth 80% of Fleet 85%	
Innovation and Learning	Labor Relationship Management Labor Efficiencies Safety	Employee Satisfaction Decrease Staff Expenses Industry Safety Index Rank	Top 10% of Industry 10% Decline over next 5 years #1	

3 Frenz Corporation

3.1 Coffee Shops Industry Profile

3.1.1 Operations

Companies in the coffee shop industry sell coffee drinks and other food and beverages for consumption on the premises or for takeout. Coffee shops are part of the specialty eatery industry, which also includes outlets specializing in products such as bagels, donuts, and ice cream. Some coffee chains operate worldwide, primarily through licensing agreements. The world's largest coffee consumers include the U.S., Brazil, Germany, and Japan.

3.1.2 Risk/Success Factors

Key drivers of demand for premium coffee and snack products include:

- Disposable income: consumption increases and decreases with disposable income
- Coffee prices: since coffee beans are the primary input in the value chain, the volatile prices of coffee beans determine market costs and profitability margins
- Attitudes toward health: a shift toward healthy eating could be a potential threat to the industry
- Demographics: as an example, millennials drink more espresso, iced, frozen, and branded coffee drinks than older consumers do

3.1.3 Competitive Environment

The profitability of individual companies depends on the ability to secure prime locations, drive store traffic, and deliver high-quality products. Large companies have advantages in purchasing, finance, and marketing. Small companies can compete effectively by offering specialized products, serving a local market, or providing superior customer service.

Coffee shops compete with businesses such as convenience stores, gas stations, quick-service and fast-food restaurants, gourmet food shops, and donut shops.

This industry is in a mature stage with a medium level concentration.

3.2 Frenz Company Profile

Frenz Corporation was originally a subsidiary of RPPC, but since 2018, has been an independent public company. Frenz is a global premier roaster, marketer, and retailer of specialty coffee in the European and American countries, incorporated in Belgium. It has operations in most major cities of Europe and the Americas, including all developed countries and some developing countries. In addition to company-operated stores, Frenz also sells a variety of coffee and tea products and licenses its trademarks through many other channels such as licensed stores, groceries, private clubs, hotels, cruise ships and national food service accounts.

Frenz is one of the most recognized and respected brands in the “premier” coffee houses as well as a household brand in the developed world. Two of its main objectives are to maintain its competitive standing and to continue its disciplined expansion of the store base, primarily focused on growth in developing countries.

Frenz is dominant in the high-end specialty coffee market, especially through its premier coffee house outlets which have over a 40% market share in Europe. However, its market shares in North America, Latin America, developing countries and household coffee constitute only about 18%, 11%, 5% and 16%, respectively. There is significant growth potential in those countries where the customer base is still expanding and there is a chance to increase market share without the pressure to take customers from competitors.

Frenz reports its financial results in accordance with the International Financial Reporting Standards (IFRS).

Mission Statement

Frenz’s mission statement is:
One person, one cup, one community, one world. We care about our family.

This mission statement focuses on the objective to be the most recognizable coffee brand in the world.

Board of Directors

Frenz’s Board consists of eight members. Three Board members are Chief Executive Officers or Board Chairmen in leading public companies in Belgium, two are Board members of RPPC, and the remaining Board members are executive officers of Frenz.

3.3 Risk Profile

Supply-Chain Risks

Commodity price risk is the primary supply-chain risk for Frenz. Price volatility of key ingredients, such as green coffee, tea leaves and dairy products, presents a substantial exposure to the stability of the product prices as well as profit margins. This is mitigated somewhat by the ability to keep coffee and tea for long periods of time, thus reducing storage costs.

In addition, oil prices have a direct impact on shipping costs. Frenz incurs substantial shipping costs in transporting the key ingredients to its worldwide retail outlets. Therefore, oil price increases can erode Frenz’s profit margins.

Supply and price can be affected by multiple factors in the producing countries, including weather and political and economic conditions. The price for coffee is also impacted by trading activities in the Arabica coffee futures market, including hedge funds and commodity index funds.

Furthermore, green coffee prices may be affected by actions of certain organizations and associations that have historically attempted to influence prices through agreements establishing export quotas, increased tariffs, embargoes, and customs restrictions or by restricting coffee supplies. Similar influences also exist for prices of tea leaves.

Relationships with the producers (coffee, tea, and dairy), outside trading companies, suppliers and exporters are also pertinent in assessing the risk of non-delivery on purchase commitments and the quality of ingredients delivered. Currently, Frenz has not negotiated any trade credit agreements with any of its suppliers.

The COVID 19 pandemic highlighted weaknesses in the supply chain beyond Frenz's typical focus (coffee, tea, dairy). In particular, Frenz experienced shortages and disruptions in the supply of durable goods.

The awareness of additional supply chain vulnerabilities led Frenz to begin to analyze and document its supply chain risks. Frenz extended the discussion beyond core products (coffee, tea, dairy) and beyond basic supply and price considerations. Frenz looked at the global supply of products and whether any products had a risk of an absolute shortage, and for each supplier, Frenz started asking whether it was at risk of going out of business (defaulting).

Frenz's initial review indicates that tea and non-paper durable goods (e.g., straws) have plenty of supply. Frenz has multiple sources, and durable goods can be stored for long periods.

In the case of coffee, Frenz works with a small number of major growers and distributors. Disruption (low crop yields, extreme weather events, political upheaval) could affect Frenz's ability to obtain large enough quantities of coffee to supply the stores. Frenz mitigates this risk to a degree by maintaining a three-month supply in storage.

In the case of dairy products, Frenz sources most dairy products locally through a series of coops and other distributors. However, storing dairy products for long periods poses challenges. In addition, localized effects could be significant and lead to small dairy shutdowns. That is, Frenz's stores in a small area may all struggle to source dairy products while dairy supply remains unaffected for the rest of Frenz's stores.

Frenz stores use a lot of paper cups, which are customized for Frenz. To keep costs down, Frenz centralized cup production and distribution with a single supplier. During the pandemic certain varieties of cups were unavailable, sometimes for a few weeks at a time. Frenz stores had to acquire cups locally, often at high prices. The cups were not quite the same sizes and shapes as the custom branded cups, resulting in slower drink preparation and longer wait times. When shortages occurred, profitability was moderately damaged at the affected stores.

Demand Risks

Competition can be fierce as the capital required to enter the industry is low. The company is facing competition not only from the specialty beverage shops such as Starbucks, Timothy's, and Second Cup, but also from quick-service restaurants such as McDonald's, donut shops such as Tim Hortons, dessert shops, high-end restaurants, and other specialty retailers. Thus, the need for the company to keep expanding and differentiating its product lines and to venture into unfamiliar territories is becoming inevitable.

Customer loyalty is pertinent in this business. As a result, the company will continue to expand its popular loyalty card program, which has been effective in preventing other companies from stealing away Frenz's customers.

Customer dissatisfaction, due to either poor service or inconsistent product quality, can drive customers to other providers.

Adverse economic conditions may cause declines in general consumer demands for these high-end products, driving the increase in costs and pressure for reduced quality of products, which in turn, may increase impacts from negative publicity.

Negative publicity regarding business practices or health effects of consuming products may lead to reduction in demand and profitability and an increase in litigation.

Operational Risks

Risks are associated with each of the expansion plans that Frenz is exploring. Implementation of these plans can be very challenging and risky as these plans are disruptions to the ongoing business.

Delays in store openings, exposure to increased construction costs associated with new store openings, and lack of availability of desirable real estate locations would also negativity impact the net revenues and profit margins.

The degree to which Frenz is able to negotiate appropriate terms and conditions as it enters into, maintains, and develops commercial and other agreements could have significant impact on company financing and operation.

Loss of key personnel, difficulties in recruiting and retaining qualified personnel, labor discord, political instability and natural disasters could cause significant business interruption which, in turn, adversely impacts the business and financial results.

Adverse public or medical opinions about health effects, food tampering, food contamination, and regional or global health pandemics could severely and adversely impact the company's business.

Due to Frenz’s heavy reliance on information technology, any material inadequacy, interruption, or security failure of the technology could harm the ability to effectively operate the business.

Litigation and Reputation Risks

Success depends substantially on the value of the brands, especially in the specialty business. Thus, the company has to maintain product quality and be able to consistently deliver a positive consumer experience.

Reputation may be harmed by actions taken by third parties that are outside of the company’s control. Third parties may include business partners, licensees, suppliers, vendors, and any business associates with whom the company engages.

Proper handling of customers’ complaints is very important in protecting the company’s reputation and preventing potential litigation.

Foreign Currency Risk

Because Frenz has operations in many different countries, currency exchange risk exists due to having differing currencies generated from the revenue and expense sides. Currency volatility could lead to volatility in earnings.

Interest Rate Risk

Frenz has significant debt issuances and also has investments in bond markets. Therefore, interest rate volatility has significantly impacted the investment margins of Frenz.

Capital Risk

In order to maintain the company’s growth rate, Frenz is now facing increasing capital risks.

3.4 Strategic Initiatives

Marketing Strategies

- Continue its dominant market position in the coffee houses by organic expansion of its company-operated coffee houses in the developed countries through building more of these company-operated coffee houses in financial districts and high socio-economic areas.
- Further nurture relationships with and loyalty from other distributors such as high-end hotels, private clubs, universities, cruise-lines and upscale grocery and retail outlets such as bookstores and department stores.

- Expand into more developing countries through acquisition of local coffee house chains, franchising, and organic growth into more cities and financial districts of the developing countries, especially the fast-growing Asian market.

Product and Operational Strategies

- Further enhance the company's ability to quickly develop and roll out new and innovative products, which helps defend against potential coffee substitutes and serves to further differentiate Frenz from its competitors.
- Explore vertical integration by owning and controlling its sources of key ingredients, such as coffee bean and tea plantations. This would provide enhanced quality control and allow for development of its own niche products.
- Explore the use of blockchain technology to help with supply chain traceability and lower costs by reducing the need for intermediaries.

Expansion Strategy

Some Board members are unhappy with the geographical market concentration, which they feel has reduced Frenz's net income. The Marketing Vice President, Jade Phan, is being empowered to implement the recent marketing strategic goals set by the Board. Jade's first priority is to expand into the fast-growing Asian market. She currently leads a team of twenty experienced marketing staff whose experience is predominantly targeting the higher socio-economic clientele in the developed countries in Europe and the United States.

This expansion strategy will require significant capital. The new Chief Risk Officer, Robert Kaplan, is uneasy with the expansion strategy as cash flow in Frenz will be greatly strained without additional debt financing. This, in turn, could increase Frenz's leverage ratio above the company's internal limit.

Jade is expanding certain of Frenz's product lines, such as the super-premium coffee market, bubble teas, specialty fruit drinks, and mixed coffee and tea drinks, which have given Frenz a reputation as a product innovator in the market. To this end, Frenz is exploring offering coffee made from exotic coffee beans and special tea leaves. There are very few areas that can produce such high-quality premium coffee beans. The best coffee beans are from Costa Rica, the *Finca Palmilera*, but they are very expensive.

3.5 Frenz Exhibits

EXHIBIT A

Overhead Allocation -- Email Correspondence

To: Kitty Dunn, Chief Accounting Officer, Frenz

From: Jeff Bemowski, Division Head of Non-Coffee Product Marketing

Subject: Overhead Allocation

Date: April 14, 2025

We are allocating overhead in a way that punishes our most successful store managers. Total overhead should be allocated equally to each Frenz store. Better yet, allocate Corporate overhead to each Frenz store based on smoothed, budget amounts. That way store managers know just how much Corporate overhead they have to cover at the start of each year.

The problem with the current method is that most non-coffee products cost more than a cup of coffee. When Frenz runs a commercial, we are advertising the whole brand. We want to get customers to come into our stores to have the whole Frenz experience. Customers come in regularly for coffee. Sometimes they buy another product, like a music CD, in addition to their coffee. That one CD shouldn't be charged more overhead than all those cups of coffee.

Regards,
Jeff

To: Jeff Bemowski, Division Head of Non-Coffee Product Marketing

From: Kitty Dunn, Chief Accounting Officer, Frenz

Subject: Overhead Allocation

Date: April 13, 2025

Our policy for allocating corporate overhead is straightforward and hasn't changed in several years. Overhead costs such as corporate advertising, executive salaries, Frenz store operating expenses, and the rent on our home office building, are accumulated. Then that accumulated corporate overhead is spread over all sales on a uniform basis. Each product gets an allocation of corporate overhead based on its standard price. That keeps it the same from market to market, where prices might be different, and it negates the impact of sales and discounts on items. That seems like a fair system to me.

We have been successful in keeping our overall corporate overhead under control. Every summer, we review the overhead allocation ratio, and it has gone down every year. I think this is the mark of a successful allocation method.

What is your proposal for how to change it?

Kitty Dunn

To: Kitty Dunn, Chief Accounting Officer, Frenz

From: Jeff Bemowski, Division Head of Non-Coffee Product Marketing

Subject: Overhead Allocation

Date: April 12, 2025

We need to change the way corporate overhead is allocated. The non-coffee products, such as music CDs, greeting cards, coffee mugs, etc., are at a disadvantage. As you know, bonuses for the store managers are dependent on the profits of their stores. However, my bonus is based on the profits from just the non-coffee products. I've been pushing our store managers to sell these non-coffee products, but the allocation method for corporate overhead penalizes these products and disguises the true profitability of this part of the operation.

Regards,
Jeff

EXHIBIT B
Frenz Financial Statements
INCOME STATEMENT

Euros in thousands	*Projected* 2027	*Projected* 2026	*Projected* 2025	*Actual* 2024	*Actual* 2023	*Actual* 2022
Sales	626,696	568,306	515,482	461,802	412,632	378,654
Cost of Sales	55,381	49,368	43,992	48,631	60,165	31,145
Store Operating Expenses	291,754	272,908	255,279	233,150	209,474	193,254
Depreciation	31,770	28,061	24,601	21,379	18,443	15,662
General and Administrative Expenses	64,902	61,398	58,229	55,008	52,058	50,019
Impairment of Goodwill	0	0	0	0	10,447	0
Total Operating Expenses	443,807	411,735	382,100	358,169	350,587	290,081
Operating Income	182,889	156,571	133,381	103,634	62,045	88,573
Interest Expense	8,664	8,144	7,623	8,317	5,921	4,919
Income Tax Expense	43,556	37,107	31,440	23,829	14,031	20,914
Net Income	130,668	111,321	94,319	71,488	42,092	62,741

BALANCE SHEET

Euros in thousands	*Projected* Dec. 31, 2027	*Projected* Dec. 31, 2026	*Projected* Dec. 31, 2025	*Actual* Dec. 31, 2024	*Actual* Dec. 31, 2023	*Actual* Dec. 31, 2022
Current Assets:						
Cash	32,567	27,132	22,279	15,335	10,563	23,040
Accounts Receivable	5,033	5,188	5,349	5,173	5,067	5,170
Inventory	14,660	12,999	11,518	10,198	8,739	6,934
Total Current Assets	52,260	45,319	39,146	30,706	24,369	35,144
Long-term Assets:						
Long Term Investments	282,367	250,214	220,308	192,330	166,605	142,960
Goodwill	67,897	56,617	46,387	37,109	28,796	31,816
TOTAL ASSETS	402,524	352,151	305,841	260,145	219,771	209,920
Current Liabilities:						
Accounts Payable	10,066	10,377	10,698	10,346	10,133	10,340
Current Borrowing	8,200	8,500	8,800	9,100	9,400	9,700
Total Current Liabilities	18,266	18,877	19,498	19,446	19,533	20,040
Long-term Debt	143,280	134,400	125,520	116,640	107,760	98,880
Total Liabilities	161,546	153,277	145,018	136,086	127,293	118,920
Equity						
Paid-in Capital	25,000	25,000	25,000	25,000	25,000	25,000
Retained Earnings, accumulated	215,979	173,874	135,824	99,059	67,478	66,000
Total Equity	240,979	198,874	160,824	124,059	92,478	91,000
TOTAL LIABILITIES AND EQUITY	402,524	352,151	305,841	260,145	219,771	209,920

STATEMENT OF CASH FLOWS

	Projected	Projected	Projected	Actual	Actual	Actual
Euros in thousands	**2027**	**2026**	**2025**	**2024**	**2023**	**2022**
Operating Activities:						
Net Income	130,668	111,321	94,319	71,488	42,092	62,741
Adjustments						
Depreciation	31,770	28,061	24,601	21,379	18,443	15,662
Accounts Receivable	156	160	(176)	(106)	103	(170)
Inventory	(1,661)	(1,481)	(1,320)	(1,459)	(1,805)	(934)
Accounts Payable	(311)	(321)	352	213	(207)	340
Impairment of Goodwill	0	0	0	0	10,447	0
Net Cash Provided by Operating Activities	160,622	137,740	117,776	91,515	69,074	77,639
Investing Activities:						
Purchases of investments	(75,203)	(68,197)	(61,858)	(55,416)	(49,516)	(45,438)
Sales of investments	0	0	0	0	0	0
Net Cash Used by Investing Activities	(75,203)	(68,197)	(61,858)	(55,416)	(49,516)	(45,438)
Financing Activities:						
Change in Current Borrowing	(300)	(300)	(300)	(300)	(300)	(300)
Proceeds from Issuance of Long-Term Debt	13,200	13,200	13,200	13,200	13,200	13,200
Repayments of Long-Term Debt	(4,320)	(4,320)	(4,320)	(4,320)	(4,320)	(4,320)
Cash Dividends	(88,563)	(73,271)	(57,554)	(39,907)	(40,615)	(62,741)
Net Increase in Cash from Financing Activities	(79,983)	(64,691)	(48,974)	(31,327)	(32,035)	(54,161)
Net increase in Cash and Cash Equivalents	5,435	4,853	6,944	4,772	(12,476)	(21,960)
Cash and Cash Equivalents:						
Beginning of Period	27,132	22,279	15,335	10,563	23,040	45,000
End of Period	32,567	27,132	22,279	15,335	10,563	23,040

4 Big Ben Bank

4.1 Industry Profile

A commercial bank performs several financial functions for consumers and businesses, such as accepting deposits, offering checking accounts, making loans, and offering basic financial products like certificates of deposit (CDs) and savings accounts. Commercial banks make money by providing loans and earning interest income on those loans. The types of loans a commercial bank can issue include mortgages, auto loans, business loans, and personal loans.

Customer deposits, such as checking accounts, savings accounts, and CDs, provide banks with the capital to make loans. Customers who deposit money into these accounts effectively lend money to the bank and are paid interest. However, the interest rate paid by the bank on the money “borrowed” is usually less than the rate charged on money loaned. This interest spread is a source of profit for commercial banks.

Private banking consists of personalized financial services and products offered to high-net-worth individuals. It includes a wide range of wealth management services including investing and portfolio management, tax services, insurance, trusts, and estate planning. Banks charge fees for managing clients’ assets and the other wealth management services provided.

Risks to the industry include the following:

<u>Strategic/Business Risks</u>

- Significant competition in the rapidly evolving global financial services industry, resulting in downward pressure on asset management fees
- Reputational risk

<u>Profitability and Liquidity Risks</u>

- 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 the bank 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
- Contagion risk that a problem in one financial institution will spread to other otherwise healthy institutions

<u>Operational Risk</u>

- Inadequate or failed internal processes and systems
- Compliance
- Regulatory capital risk due to increasing stringency of banking regulations

- Fraud or conduct risk due to detrimental practices

- Technology
    - Misalignment between business and IT strategies
    - Risk that technology becomes obsolete or uncompetitive, limiting resiliency
    - IT program execution risk
- 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

Factors that can lead to success include:

- Strong positive relationships with clients
- Significant Assets Under Management (AUM)
- Superior investment results, leading to high net investment spread
- Effective risk management function so that risk exposures are within acceptable limits.

4.2 Big Ben Bank Company Profile

4.2.1 Background

Big Ben is a mid-sized full-service bank domiciled in London, United Kingdom. It was formed in 2009 under the directorship of Sanjay Patel. 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 Patel's banking group was finding best-in-class funds for its high-net-worth clients. Patel's fund management business was formed in 2000 and its success was primarily built within European financial centers.

Big Ben acquired a small commercial bank in 2012 in an attempt to diversify its services beyond fund management. In 2020, an impairment of goodwill was triggered based on a revised profit outlook from this acquisition.

RPPC decided to acquire an insurance group (Darwin Life Insurance Company) in 2017, with the hope of creating synergies between the bank and the insurer.

4.2.2 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. Service is individually tailored for Big Ben's high-net-worth clients who have their own dedicated advisors. Big Ben also markets its offerings through its Commercial Banking division.

Commercial Banking

The Commercial Banking division's clients are individuals (retail banking) and small businesses. Products offered are checking account services; business, personal and mortgage loans; credit and debit cards; 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.

4.3 Risk Profile

Risk Management Process

Big Ben prides itself on a strong risk culture and has had an active risk management function. Big Ben actively complies with the RPPC Risk Management Framework.

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

i) A model to capture the correlation between mortgage prepayment rate and interest rates using statistical best fit techniques
ii) Black-Scholes option pricing model based on the underlying asset price, the strike price, and assumptions on asset price distributions in the hedging program
iii) Short-cut bond price model based on assumptions about yield movements to provide quick estimates

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

Big Ben conforms with the documentation standards of RPPC's model risk management framework.

Stress Testing

Big Ben has an internal stress testing model to measure the amount that could be lost in a crisis situation. The modeled scenario is similar to the 2008/2009 financial crisis. The model calculates losses over a one-year period and is run annually. Results are shared with senior managers in all departments. A key output from the model is the percentage of mortgage loan defaults in the scenario.

Model backtesting of after-tax profits is performed on a baseline scenario. The model has been deemed to have passed the backtesting because recent tests have shown that after-tax profits are not systematically under- or overestimated.

Capital Management

Currently, Big Ben uses regulatory capital at the corporate level and division level as the capital management metric. The Asset Management and Investment Banking divisions also use economic capital (EC) as a second metric. EC measures the risk of unexpected losses in income or value of portfolios up to a given confidence level (99.95%) over a one-year time horizon. It assumes that expected losses are a cost of doing business and are already reflected in loan loss provisions and product pricing.

Capital allocation for each division is decided in the annual budget meeting. The hurdle rate is set at 15% for all divisions.

Investment Limits and Triggers

Criteria	**Instructions**	**Limit per issuer**
Fixed Income	Permitted	2% of portfolio MV
Real Estates	Permitted	1% of portfolio MV
Equities	Permitted	2% of portfolio MV
Derivatives*	Permitted	1.5% of portfolio MV

FI Category	**Limit (% of portfolio Market Value)**
Treasury / Agency	100%
Sovereign Treasury	100%
Corporate / Credit < BBB-	10%
Corporate / Credit >= BBB-	50%

*Derivative Financial Instruments written:

- Forward Contract
- Interest Swap
- Currency Swap
- Put/Call Option

4.4 Strategic Initiatives

New Product – Cryptocurrency
A cryptocurrency is a digital currency used as a medium of exchange. Cryptocurrencies use cryptography to secure transactions, control the money supply and verify the transfer of funds.

Big Ben is considering offering two new cryptocurrency related products:

Cryptocurrency Savings Account

- Personal banking customers will have the option to open a secondary savings account that holds cryptocurrencies.
- Customers can purchase, sell or transfer cryptocurrencies within their accounts online or using the mobile app.
- Customers will pay monthly fees to maintain the accounts and a transaction fee when purchasing or selling cryptocurrencies.
- Big Ben will guarantee the storage of the cryptocurrencies.

Cryptocurrency Exchange Traded Fund (ETF)

- The ETF will allow investors to diversify within the cryptocurrency industry by using a mix of the largest cryptocurrencies.
- This ETF will be one of the first spot ETFs in the marketplace. (Spot ETFs reflect actual prices of the cryptocurrencies and avoid customer confusion that can occur with the futures based ETFs currently in the market.)
- The ETF will need to own actual holdings of cryptocurrencies and will trade in the relevant cryptocurrencies. Portfolio management will require Big Ben to build and/or utilize on-chain portfolio management strategies. Big Ben is considering whether to use a consistent mix of cryptocurrencies or, alternatively to add an optimization or momentum mechanism that could provide stronger performance and be difficult for competitors to copy.
- Due to the operating expenses of this strategy, the asset management fee is 2%, which is higher than the fee for most of Big Ben's other ETFs.

RPPC believes the ETF product may reach significant volume very quickly and is discussing with Big Ben additional ERM and operational risk governance. RPPC is concerned about the complexity of the product and whether the potential risks are understood and fit within RPPC's risk appetite statement.

4.5 Big Ben Bank Financial Exhibits

Exhibit A
Statement of Income

in millions of pounds sterling	**Proj 2025**	**2024**	**2023**	**2022**
Interest income	842	657	449	481
Interest expense	372	288	147	170
Net interest income	**470**	**369**	**301**	**312**
Provision for credit losses	0	33	14	48
Net interest income after provision for credit losses	**470**	**336**	**288**	**263**
Commissions and fee income	288	266	296	255
Net gains (losses) on financial assets/liabilities at fair value through profit or loss	0	81	82	67
Net gains (losses) on financial assets available for sale	0	(6)	6	17
Net income (loss) from equity method investments	0	4	3	3
Other income (loss)	0	21	(2)	(4)
Total noninterest income	**288**	**366**	**385**	**338**
Compensation and benefits	295	290	282	283
General and administrative expenses	265	263	292	277
Impairment of goodwill and other intangible assets	0	2	0	0
Restructuring activities	0	(3)	7	13
Total noninterest expenses	**560**	**551**	**581**	**573**
Income (loss) before income taxes	**198**	**151**	**92**	**28**
Income tax expense	**50**	**(2)**	**24**	**11**
Net income (loss)	**149**	**153**	**68**	**17**

Balance Sheet

in millions of pounds sterling	Projected Dec 31, 2025	Dec 31, 2024	Dec 31, 2023	Dec 31, 2022
Assets:				
Cash and central bank balances	5,000	4,835	5,190	4,492
Interbank balances (w/o central banks)	200	194	198	247
Central bank funds sold and securities purchased under resale agreements	230	310	226	231
Securities borrowed	0	(0)	2	0
Financial assets at fair value through profit or loss		0	0	0
Trading assets	2,800	2,510	2,767	2,917
Positive market values from derivative financial instruments	9,000	8,100	8,101	9,283
Financial assets designated at fair value through profit or loss	2,500	2,428	2,408	2,069
Total financial assets at fair value through profit or loss	14,300	13,037	13,277	14,269
Financial assets available for sale	500	856	783	1,509
Equity method investments	30	30	29	24
Loans	13,000	13,073	12,738	11,540
Securities held to maturity	0	0	0	0
Property and equipment	150	165	150	150
Goodwill and other intangible assets	184	192	184	182
Other assets	3,000	3,197	2,805	2,984
Assets for current tax	40	43	33	27
Deferred tax assets	170	197	168	164
Total assets	**36,804**	**36,129**	**35,784**	**35,818**
Liabilities and equity:				
Deposits	17,000	16,796	16,318	15,352
Central bank funds purchased and securities sold under repurchase agreements	50	15	20	63
Securities loaned	0	0	1	46
Financial liabilities at fair value through profit or loss		0	0	0
Trading liabilities	1,500	1,368	1,479	1,198
Negative market values from derivative financial instruments	8,000	7,631	7,760	8,859
Financial liabilities designated at fair value through profit or loss	1,600	1,477	1,580	1,259
Investment contract liabilities	15	13	15	14
Total financial liabilities at fair value through profit or loss	11,115	10,488	10,834	11,330
Other short-term borrowings	100	138	109	96
Other liabilities	2,650	3,073	2,643	3,087
Provisions	70	66	71	66
Liabilities for current tax	16	10	16	16
Deferred tax liabilities	14	18	14	15
Long-term debt	3,700	3,555	3,905	4,031
Trust preferred securities	25	14	14	36
Total liabilities	**34,740**	**34,175**	**33,945**	**34,137**
Total shareholders' equity	**1,794**	**1,675**	**1,568**	**1,481**
Additional equity components	224	232	224	157
Noncontrolling interests	46	48	46	43
Total equity	**2,064**	**1,955**	**1,839**	**1,681**
Total liabilities and equity	**36,804**	**36,129**	**35,784**	**35,818**

5 Darwin Life Insurance Company

5.1 Industry Profile

The life insurance and annuity industry mainly provides three types of financial products to its clients:

- Insurance policies that protect against mortality and morbidity, for example, term and disability insurance.
- Wealth accumulation products that help clients achieve their financial goals, for example, whole life, fixed universal life, indexed universal life, and deferred annuities.
- Income generating products that provide retirement income for clients, for example, payout annuities and Guaranteed Living Benefits (GLWB) on deferred annuities.

Current trends in the life insurance industry include:

- As the large baby boomer generation retires, they have a need for products that provide lifetime income. The shift from life protection and pre-retirement accumulation to post-retirement income and asset management will accelerate.
- This shift provides opportunities for insurance companies across their value chain (product, distribution, and service) to differentiate themselves from other financial services companies through protection and guarantees. For instance, annuities have transformed from tax-deferred mutual fund investments to guaranteed retirement income vehicles.
- To remain competitive in different interest rate environments, many insurers are allocating more to higher yielding assets. Over the industry's investment portfolios, private asset and structured asset allocations have grown four-fold over the last three years. These assets have generated yields on new investments 100 to 250 bps higher than similarly rated traditional fixed income assets.
- The ability to achieve greater yields has driven strong opportunistic growth in spread dominant products such as multi-year guaranteed annuities (MYGAs) and indexed products on deferred fixed annuities chassis. MYGAs guarantee the credited rate on the annuity for a specified term, generally three to five years. Fixed indexed annuities (FIAs) have a credited rate based on a defined indexed strategy for a specified term, generally one year but could go as long as six years. The indexed strategy, generally based on some portion of equity component, can be appealing in strong equity markets, especially with the product's account value protection. 85% of FIAs have living benefit riders.

  Greater yields have also fueled significant growth in Pension Risk Transfer (PRT) business. On PRT, the insurer charges a premium to take on the obligations of an organization's defined pension benefits. These benefits are then largely supported by group payout annuities.

Risk Factors

There are four primary groups of risks associated with the insurance business:

1. Insurance Risk – an insurance company undertakes mortality, longevity, morbidity, lapse, and policyholder behavior risk on insurance policies.
2. Investment and Market Risk – like many financial institutions, insurance companies are exposed to interest rate, credit, market, and foreign exchange risks. Also, since the liability is usually sensitive to interest rates, the asset portfolio needs to have similar interest rate sensitivity to avoid a mismatch that can cause losses.
3. Liquidity Risk – like all financial services companies, insurers may be unable to meet near-term obligations as they come due.
4. Operational Risk – like all businesses, insurers rely on various systems and processes to run their business. There are risks associated with their operations.

Competitive Environment

The insurance industry is highly competitive. Within the industry, there are a large number of companies offering similar products. Differentiation comes from product features, pricing, service, and reputation. Regarding wealth management products, insurers also have to compete with banks and mutual fund companies, who could be advantaged or disadvantaged under different regulatory frameworks.

Success Factors

Successful companies will have

- well-positioned defensible market positions and pricing power;
- advanced technology and systems to enhance service and processes;
- lower costs, operational efficiencies, experienced management;
- high-quality financial reporting and corporate governance, strong asset-liability management, investment and risk management;
- a focused and balanced growth strategy, the ability to innovate product solutions and distribution strategies, and the ability to build customer relationships.

5.2 Company Profile

Darwin Life is a mid-size life insurer headquartered in Albuquerque, New Mexico with an increasing presence in the domestic U.S. market. Life sales are distributed primarily through an agency system, and annuity sales are distributed primarily through financial institutional channels (e.g., banks and broker-dealers). Darwin has experienced an era of success since embarking on a new strategic direction ten years ago, under the leadership of CEO Gabriela Martinez. The success is tangibly measured by growth in earnings, revenue, and distribution capacity. Recent growth has been fueled by core competencies - distribution relationships and product/service development.

Prior to the strategic change, Darwin lacked focus, with little to no differentiation, high costs and stagnant sales. Prior management's view was that the customer was the agent rather than the policy holders. There was no focus on profitability or growth. Operations lacked discipline, with frequent exceptions to administrative and underwriting standards. Products included traditional whole life, level term, and current assumption Universal Life (UL). Although Darwin also offered fixed and variable annuities, the company did not have a strong focus on marketing these asset accumulation products nor on developing distribution capacity within the financial institutional markets.

Ten years ago, new management shifted strategy to be focused on wealth management and a customer focus targeting middle to upper income individuals, professionals and small business owners with estate planning, tax-deferred accumulation, traditional income preservation and retirement income protection needs.

This strategic focus and management's solid execution caught the eye of RPPC. RPPC thought Darwin was an attractive property that could benefit from additional access to capital. Darwin's focus on wealth management was a great strategic fit with RPPC's financial division – products, distribution, and development.

5.3 Business Operations

Core product segments are universal life, high cash value traditional life, term life, and individual variable annuities. Non-core segments include group life and individual pay-out annuities. Darwin enhanced its universal life products to better suit the consumers' insurance, estate, and business planning needs.

Darwin has pursued an aggressive organic growth strategy focusing on individual life and individual variable annuities through expanding and enhancing distribution channels. Today Darwin distributes life products primarily through career agents. The career agency channel utilizes a variable cost structure with compensation incentives that promote persistency. In 2018 Darwin expanded annuity distribution into financial institutions. Darwin's distribution strategy has been to add major new outlets, penetrate existing outlets, and expand the agency distribution by 2 - 3 regional offices per year. Both the agent and institutional distribution expansions required a significant investment.

Over the past decade Darwin has become an innovator in service - providing wealth management solutions to individuals - including expertise in design and distribution of tax-sheltered or tax-minimizing strategies such as estate planning and small business owner succession planning. Darwin has invested in technology and staff to service both the customer and distribution channels (such as new administrative and reporting platforms), implemented an imaging and automated workflow system, and established a team so that a live person will answer the phone within four rings 95% of the time. This attention on customer and distribution sets the company apart from its peer group and supports an aggressive organic growth strategy.

Three years ago, Darwin launched a fast issue life platform that has allowed it to be the insurer of choice for the middle market segment. Darwin has been able to keep the issue rate at 95% or higher. Today, Darwin issues half of its life business through this platform. This platform combines the underlying accelerated underwriting technology with a simplified questionnaire, making it very easy for the agents and their clients. The platform uses machine learning to assess the mortality risk of the client with the use of this data and the most advanced electronic data on health and other underwriting factors. Darwin also added a triage process that includes AI to detect fraud or misrepresentation.

Darwin offers a broad array of competitive products with customization for specific distribution channels. Darwin has not pursued a first-to-market strategy but has developed competency to be a fast follower and replicate new product designs in the market. The company has invested heavily in front end distributing, issuing, and processing of new business. It has built strong relationships with the agency and institutional distribution channels. Part of the reason for Darwin's strong relationship with the agency channel is its ability to bring competitive products to market quickly.

Darwin has had high costs partly due to misaligned resources. Most technology resources are devoted to new products and new business with a priority placed on customer service and growth in distribution channels. Dedicated resources to manage in force business have been insufficient. Legacy products and systems drained resources.

Due to Darwin's focus on bringing products to market quickly, it often has not had time to fully build systems to issue policies and handle the back-end administration prior to product launch. Time constraints and lack of expertise in some cutting-edge product areas resulted in less-than-effective back-end operations, including risk mitigation and management, operational monitoring, and reporting.

Greater speed is needed to respond to business problems including risk monitoring and escalation. Operational areas are silo-based, resulting in less effective collaboration and cross-functional continuous improvement processes. Darwin is moving towards a disciplined operational focus in underwriting, investments, and diversified competitive products.

5.4 Financial Performance

Darwin has outperformed the industry over the past 10 years in terms of growth in life sales, annuity sales, equity, assets, and distribution capacity. Relative to the industry and similarly rated companies, Darwin unfavorably has higher leverage, higher expenses, lower interest coverage, and lower liquidity. It favorably has a higher return on capital. Relative to its peer group, Darwin has had a lower operating income margin and a lower net income margin, a lower investment yield, a higher expense ratio, and a higher growth in life insurance in force.

Darwin has solid ratings from every major rating agency – A.M. Best, Standard and Poor's, Moody's, Fitch, and Kelly Ratings.

Darwin expects higher mortality with its fast issue platform but has seen actual to expected ratios at 105 to 110%. Persistency on the policies issued on the new platform has also been lower than the industry average. The CRO has commissioned a predictive analytics study on this issue.

Darwin’s historical financial statements and projections for future years are shown in section 5.8, Exhibits A - D.

5.5 Investment Policy and Strategy

The investment department manages the general account investments. The company’s general account is invested primarily in fixed-income assets. Within the general account, there are separate investment portfolios for each of the main product lines. The corporate surplus (net equity) is allocated proportionally. Variable annuity investment accounts are held in a separate (segregated) account and are managed by a third-party investment advisor.

5.6 Risk Management

Darwin formalized its risk management function with the creation of an ERM Committee in 2018 followed by a new CRO position and establishment of a Risk Management department in 2019. The Committee meets quarterly. Its purpose is to build sustainable competitive advantages by fully integrating risk management into daily business activities and strategic planning. One of the CRO’s priorities is to build corporate resiliency that would operate efficiently in normal times and in crisis times.

Darwin’s risk appetite statement is:

I. Capital	The probability of a 15% loss of Statutory equity in one year is less than 0.5%.
II. Earnings	The probability of negative GAAP earnings in one year is less than 5%.
III. Ratings	Maintain an AA financial strength rating. Maintain capital 10% above minimum AA capital requirements. Maintain an A rating on senior unsecured debt.

Risk tolerances are based on the estimated impact of quantified risks on statutory capital, since the core mission is policyholder protection. Market risk, credit risk, underwriting risk, operational risk, strategic and liquidity risks are quantified using a variety of metrics to capture multiple perspectives.

5.6.1 Credit Risk

Darwin invests predominately in investment grade quality bonds (S&P BBB- or above). Fixed income securities in the general account have exposure limits at individual obligor (issuer) and sector levels. The investment department monitors compliance with the exposure limits.

For each portfolio, the company prefers to maintain a weighted average credit quality score below 3.5 for each line of business.

This is derived 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.), ignoring subcategory ratings.

5.6.2 Interest Rate and Market Risk

Semi-annually within each block of business, Darwin 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 such that its new effective duration equals that of the liabilities.

This year, Darwin has begun outsourcing the hedging of its VA risks. The agreement with the hedging firm requires the hedge effectiveness to be greater than 90%.

5.6.3 Liquidity Risk

The liquidity policy requires Darwin to hold sufficient liquid assets to meet demands for cash in a liquidity crisis. One scenario considers a reputational liquidity crisis 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. Another scenario considers a crisis in which the entire market is not able to sell assets at a reasonable value.

5.6.4 Operational Risk

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

5.7 Strategic Initiatives

Gabriela Martinez, CEO, has been considering potential strategies to present at an upcoming Board meeting. She knew there were opportunities to win market share from competitors. She knew the Board was looking for bold ideas that would ensure the company could grow for years to come.

5.7.1 Operational Excellence Program

Darwin's in force operational issues have become service issues to customers and several key distribution relationships. Gabriela felt this would be an opportune time to transform Darwin's service and Information Technology (IT) operations to enhance service and reduce costs. She would like to pursue outsourcing the build and maintenance of the product administration platform to the experts. Another idea is to build online capabilities that would streamline services to both Distribution and customers and drop turnaround times significantly. One of Darwin's competitors has reported that their transactional service takes 5 to 10 seconds and their claim processing takes no more than three days to complete.

Gabriela knows there are challenges to digitalization. Darwin has been approached for venture capital funding by a fast-growing peer-to-peer insurance platform provider, FasLite. FasLite is in the rental and home insurance business, not life, but it is also an expert in AI and blockchain technology. Gabriela thinks that Darwin might be able to leverage FasLite's expertise to facilitate transactions internally across functions, thus allowing for better and faster service.

5.7.2 Acquisitions and New Markets

Gabriella feels that acquisitions would be a good way to accelerate growth. She has heard that several companies in the industry could be facing capital issues. Darwin's strong capital position could solve those capital needs. She is aware of a distribution-led company, Snappy Life Insurance, with whom synergies might be possible on the distribution and operational service side.

This could accomplish three goals for Darwin:

(a) It could boost Darwin's operating income, with business growing quickly at lower operating costs
(b) It could diversify mortality risks since Snappy's middle market client demographic is different than Darwin's high net worth clients
(c) It could accelerate Darwin's new technology adoption, especially with respect to accelerated underwriting.

When considering new markets, Gabriela noted that a number of companies have had fantastic premium and asset growth over the past three years, driven by retail MYGAs, indexed products, and PRT business. To become a prominent insurer, Gabriela feels that Darwin needs to participate in these markets.

Strategically, she feels that it is time to diversify from VA products and increase Darwin's reach with its distribution partners. Banks in particular have been almost solely focused on MYGAs for their annuity sales. There is also a potential opportunity to collaborate with Darwin's affiliate, Big Ben, on MYGAs and leverage synergies in marketing and distribution. With a broader portfolio, Darwin could also pivot to the different products depending on the economic environment and market trends.

Gabriela has also learned that key to the success of the top companies in MYGAs, indexed annuities, and PRT is the restructuring of their investment portfolio to focus more on investment grade private assets and structured assets. Many of these companies use a third-party asset manager. Many also reinsure these businesses to a more capital efficient offshore jurisdiction, either to a captive affiliate or a third-party reinsurer.

Gabriela has been warned that indexed annuities require very complex hedging, especially with innovative index strategies. Darwin had recently outsourced the VA hedging to an expert hedging firm and can do so for indexed annuities. Still, Darwin could be exposed to greater liquidity risks with potential collateral calls in tail scenarios that could coincide with the ABS risks.

Gabriela would like to create a functional team to drive the strategy and execution on acquisitions and new markets. Keeping in mind both cost reduction and staff buy-in, she thought that the team could be composed of existing experts throughout the company. This would also allow an objective analysis of the feasibility and value of the initiatives she has brought up.

5.7.3 Divestitures

At the last Risk Committee meeting, it was noted that over the past five years numerous insurers had stopped selling VAs, or they had sold or reinsured all or parts of those blocks of business to reduce their exposures to market-based risks and guarantee risks. It was suggested Darwin should explore doing the same.

Darwin's parent, RPPC, has also been pushing in this direction, given last year's surprising hit in VA income. Future VA growth forecasts are also lower given the repricing needed to cover the increased hedging costs to maintain greater than 90% hedge effectiveness. RPPC's CFO, Lamar Smith, felt that the VA market risks and potential hit from the VA hedging breakage had not been communicated clearly.

However, Gabriela was reluctant to divest Darwin's VA business as Darwin's entrance and growth in these markets were among Darwin's top accomplishments under her leadership.

5.7.4 IPO Potential

Gabriela has been in discussion with Darwin's parent, RPPC, on the potential for an IPO. Gabriela, with the Board's support, is pushing for aggressive growth and transformation goals for Darwin. Capital for these initiatives will be needed.

5.7.5 Capital Management

Darwin does not currently calculate economic capital. Darwin has been working with the consulting firm Consultants R Us (CRS) on capital measurement and management strategies. Under current consideration is a "risk and capital" model that would aid management in gauging the adequacy of overall capitalization of the company and in allocating resultant capital to target lines of business or niche business segments. Darwin wishes to gauge the risk adjusted return on capital (RAROC) by segment to aid in its business planning. Darwin's goal is to improve its ability to better manage capital and return.

Underlying this goal, CRS advises on three underlying themes:

- Capital Productivity
- Capital Protection
- Capital Adequacy

CRS's thought leadership focuses on the notion that there is a trade-off between having enough capital to minimize insurance company failures and maintaining the minimum amount of capital, so that any excess capital can be deployed. As such, CRS recommends using a risk adjusted return on required capital (RAROC) approach. This approach considers both how much Darwin 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. CRS argues that RAROC completely addresses the trade-off between capital productivity and capital adequacy.

To set a target requirement for capital that should be held by Darwin requires a clear vision of the purposes for which capital is held. CRS indicates that capital is typically calculated using a top-down approach.

Effectively defined capital requirements serve several purposes, including, but not limited to:

- Providing funds so Darwin is able to honor its obligations during adverse contingent events.
- Motivating Darwin to avoid undesirable levels of risk
- Promoting a risk management culture to the extent that capital requirements are a function of actual economic risk

Economic capital will be what Darwin requires for ongoing operations and what it must hold to gain the necessary confidence of the marketplace, its policyholders, its investors, and its regulatory supervisors. At the same time, the operations of Darwin, 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.

5.8 Darwin Life Exhibits

EXHIBIT A

Financial Data: Management Accounting Income Statements (in 000s)

Note: Years 2022-2024 are actual results and years 2025-2027 are forecasts.

Total	2022	2023	2024	2025	2026	2027
REVENUES						
Premium - First Year	784,780	911,720	1,077,880	1,021,050	1,082,167	1,146,752
Premium - Renewal	222,890	255,630	293,230	329,160	365,520	401,560
Total Premiums	**1,007,670**	**1,167,350**	**1,371,110**	**1,350,210**	**1,447,687**	**1,548,312**
Net Investment Income	597,270	585,615	585,210	571,599	572,155	576,486
Other income	67,898	86,212	121,739	149,822	166,384	184,703
Total Revenues	**1,672,838**	**1,839,177**	**2,078,059**	**2,071,630**	**2,186,227**	**2,309,501**
BENEFITS AND EXPENSES						
Claims	105,487	131,515	147,806	180,885	205,813	234,726
Surrender and other benefits	605,599	667,839	752,140	829,143	889,903	967,653
Incr in reserves & S/A Transfers	584,662	684,171	788,049	660,286	681,280	691,999
Total Benefits	**1,295,748**	**1,483,525**	**1,687,995**	**1,670,314**	**1,776,995**	**1,894,378**
Field Compensation	96,501	113,708	136,860	146,200	160,245	175,319
Change in DAC	-52,566	-62,853	-75,641	-87,410	-96,397	-105,371
Total Acquisition Costs	**43,935**	**50,855**	**61,219**	**58,790**	**63,849**	**69,948**
Total Administrative Expenses	**75,425**	**81,775**	**89,626**	**95,385**	**101,423**	**106,985**
Total Benefits and Expenses	**1,415,108**	**1,616,155**	**1,838,840**	**1,824,489**	**1,942,266**	**2,071,310**
EBIT	**257,730**	**223,022**	**239,219**	**247,141**	**243,960**	**238,191**
Interest	**18,000**	**18,000**	**18,000**	**18,000**	**18,000**	**7,375**
Tax	**50,343**	**43,055**	**46,456**	**48,120**	**44,932**	**47,420**
Net Income	**189,387**	**161,967**	**174,763**	**181,022**	**181,029**	**183,396**

Income Statements For Selected Products:

Variable Annuities	2022	2023	2024	2025	2026	2027
REVENUES						
Premium - First Year	561,000	669,800	812,600	731,340	767,907	806,302
Premium - Renewal	0	0	0	0	0	0
Total Premiums	**561,000**	**669,800**	**812,600**	**731,340**	**767,907**	**806,302**
Net Investment Income	73,700	75,285	76,760	66,169	66,385	66,246
Other income	51,648	68,252	101,189	127,132	142,134	157,263
Total Revenues	**686,348**	**813,337**	**990,549**	**924,640**	**976,427**	**1,029,811**
BENEFITS AND EXPENSES						
Claims	21,187	30,425	40,076	58,595	66,643	74,656
Surrender and other benefits	118,539	169,029	223,370	331,163	375,143	419,413
Incr in reserves & S/A Transfers	470,452	525,221	602,279	415,086	398,470	379,559
Total Benefits	**610,178**	**724,675**	**865,725**	**804,844**	**840,255**	**873,628**
Field Compensation	43,051	51,088	64,160	63,500	68,145	72,919
Change in DAC	-16,866	-20,483	-24,871	-28,820	-32,967	-37,321
Total Acquisition Costs	**26,185**	**30,605**	**39,289**	**34,680**	**35,179**	**35,598**
Total Administrative Expenses	**20,445**	**21,955**	**25,736**	**27,785**	**29,883**	**32,035**
Total Benefits and Expenses	**656,808**	**777,235**	**930,750**	**867,309**	**905,316**	**941,260**
EBIT	**29,540**	**36,102**	**59,799**	**57,331**	**71,110**	**88,551**
Interest	**0**	**0**	**0**	**0**	**0**	**0**
Tax	**6,203**	**7,581**	**12,558**	**12,040**	**14,933**	**18,596**
Net Income	**23,337**	**28,521**	**47,241**	**45,292**	**56,177**	**69,955**

Note: Management accounting results do not include net changes in fair value of VA guarantees and the related hedges

Universal Life	2022	2023	2024	2025	2026	2027
REVENUES						
Premium - First Year	58,780	72,420	89,480	106,810	125,360	145,650
Premium - Renewal	47,590	64,730	82,030	96,460	111,020	125,060
Total Premiums	**106,370**	**137,150**	**171,510**	**203,270**	**236,380**	**270,710**
Net Investment Income	110,770	106,530	105,850	109,730	114,170	121,040
Other income	5,850	6,760	8,450	9,490	9,750	11,440
Total Revenues	**222,990**	**250,440**	**285,810**	**322,490**	**360,300**	**403,190**
BENEFITS AND EXPENSES						
Claims	27,300	35,290	33,930	38,090	42,770	47,970
Surrender and other benefits	32,760	32,110	36,270	41,080	45,760	51,740
Increase in reserves	92,310	120,250	152,270	182,600	214,410	246,440
Total Benefits	**152,370**	**187,650**	**222,470**	**261,770**	**302,940**	**346,150**
Field Compensation	21,450	25,220	32,200	38,500	45,100	52,400
Change in DAC	-13,000	-16,770	-24,670	-31,790	-36,830	-41,350
Total Acquisition Costs	**8,450**	**8,450**	**7,530**	**6,710**	**8,270**	**11,050**
Total Administrative Expenses	**13,780**	**14,820**	**15,990**	**16,900**	**17,940**	**18,850**
Total Benefits and Expenses	**174,600**	**210,920**	**245,990**	**285,380**	**329,150**	**376,050**
EBIT	**48,390**	**39,520**	**39,820**	**37,110**	**31,150**	**27,140**
Interest	**0**	**0**	**0**	**0**	**0**	**0**
Tax	**10,162**	**8,299**	**8,362**	**7,793**	**6,542**	**5,699**
Net Income	**38,228**	**31,221**	**31,458**	**29,317**	**24,609**	**21,441**

Term	2022	2023	2024	2025	2026	2027
REVENUES						
Premium - First Year	14,300	17,500	19,400	21,400	22,700	24,100
Premium - Renewal	44,700	52,800	63,000	73,700	84,200	93,900
Total Premiums	**59,000**	**70,300**	**82,400**	**95,100**	**106,900**	**118,000**
Net Investment Income	20,400	20,500	22,000	24,100	26,800	30,100
Other income	0	0	0	0	0	0
Total Revenues	**79,400**	**90,800**	**104,400**	**119,200**	**133,700**	**148,100**
BENEFITS AND EXPENSES						
Claims	22,900	28,600	35,900	44,200	53,000	65,200
Surrender and other benefits	400	500	500	500	500	500
Increase in reserves	10,800	11,100	12,000	13,200	14,600	15,100
Total Benefits	**34,100**	**40,200**	**48,400**	**57,900**	**68,100**	**80,800**
Field Compensation	8,200	10,800	11,700	12,600	12,900	13,100
Change in DAC	-11,200	-12,300	-12,600	-12,600	-12,000	-11,500
Total Acquisition Costs	**-3,000**	**-1,500**	**-900**	**0**	**900**	**1,600**
Total Administrative Expenses	**21,200**	**23,100**	**24,800**	**26,500**	**28,000**	**29,500**
Total Benefits and Expenses	**52,300**	**61,800**	**72,300**	**84,400**	**97,000**	**111,900**
EBIT	**27,100**	**29,000**	**32,100**	**34,800**	**36,700**	**36,200**
Interest	**0**	**0**	**0**	**0**	**0**	**0**
Tax	**5,691**	**6,090**	**6,741**	**7,308**	**7,707**	**7,602**
Net Income	**21,409**	**22,910**	**25,359**	**27,492**	**28,993**	**28,598**

EXHIBIT B
Financial Data: Statutory Balance Sheets (in 000s) and Debt

Note: Years 2022-2024 are actual results and years 2025-20276 are forecasts.

Total	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**
Cash, Invested and Other Assets	10,222,300	10,412,141	10,659,883	10,985,931	11,374,536	11,695,659
Separate Account Assets	1,878,100	2,481,889	3,679,588	4,168,251	4,660,146	5,156,156
Total Assets	**12,100,400**	**12,894,030**	**14,339,471**	**15,154,182**	**16,034,682**	**16,851,815**
Statutory Reserves	11,173,348	11,970,354	13,408,243	14,204,334	15,059,036	15,977,574
Debt	225,000	225,000	225,000	225,000	225,000	75,000
Total Liabilities	**11,398,348**	**12,195,354**	**13,633,243**	**14,429,334**	**15,284,036**	**16,052,574**
Statutory Equity	**702,052**	**698,676**	**706,228**	**724,848**	**750,646**	**799,240**

RBC Ratio	338%	333%	324%	312%	306%	287%
Debt Ratio	35%	34%	34%	33%	33%	11%

Balance Sheets For Selected Products:

Variable Annuity	2022	2023	2024	2025	2026	2027
Cash, Invested and Other Assets	365,100	403,041	447,683	512,831	578,636	657,959
Separate Account Assets	1,878,100	2,481,889	3,679,588	4,168,251	4,660,146	5,156,156
Total Assets	**2,243,200**	**2,884,930**	**4,127,271**	**4,681,082**	**5,238,782**	**5,814,115**
Statutory Reserves	2,028,348	2,671,754	3,906,343	4,442,834	4,977,036	5,506,774
Total Liabilities	**2,028,348**	**2,671,754**	**3,906,343**	**4,442,834**	**4,977,036**	**5,506,774**
Statutory Equity	**214,852**	**213,176**	**220,928**	**238,248**	**261,746**	**307,340**

Universal Life	2022	2023	2024	2025	2026	2027
Cash, Invested and Other Assets	1,929,200	2,001,900	2,102,300	2,237,100	2,406,800	2,617,100
Total Assets	**1,929,200**	**2,001,900**	**2,102,300**	**2,237,100**	**2,406,800**	**2,617,100**
Statutory Reserves	1,820,000	1,897,500	2,002,200	2,140,700	2,314,200	2,528,600
Total Liabilities	**1,820,000**	**1,897,500**	**2,002,200**	**2,140,700**	**2,314,200**	**2,528,600**
Statutory Equity	**109,200**	**104,400**	**100,100**	**96,400**	**92,600**	**88,500**

Term	2022	2023	2024	2025	2026	2027
Cash, Invested and Other Assets	442,000	478,800	530,000	598,600	687,600	798,700
Total Assets	**442,000**	**478,800**	**530,000**	**598,600**	**687,600**	**798,700**
Statutory Reserves	425,000	460,400	509,600	575,500	661,100	768,000
Total Liabilities	**425,000**	**460,400**	**509,600**	**575,500**	**661,100**	**768,000**
Statutory Equity	**17,000**	**18,400**	**20,400**	**23,100**	**26,500**	**30,700**

Asset Durations (as of Dec 31, 2024)

	Cash	Bonds	Mortgages
Duration	0	12	6
Market to Book Ratio	1	0.92	0.96

Debt Issuance

Issue	Issue Date	Maturity Date	Rate	Face Amount
Senior notes issue	1 Mar 2012	1 Mar 2027	8.50%	150,000
Senior notes issue	15 Jun 2020	15 Jun 2040	7.00%	75,000

EXHIBIT C
Sensitivity Tests

Note: Years 2025-2029 are forecasts.

Term Sensitivities (in 000s)

Baseline	2025	2026	2027	2028	2029
Sales	21,400	22,700	24,100	25,600	27,200
Management Earnings	27,492	28,993	28,598	30,028	31,529

Lapse Rates Up 5%

Sales	21,400	22,700	24,100	25,600	27,200
Management Earnings	26,461	26,956	25,586	26,066	26,633

Lapse Rates Down 5%

Sales	21,400	22,700	24,100	25,600	27,200
Management Earnings	28,523	31,133	31,914	34,590	37,409

Sales Up 15%

Sales	24,610	26,105	27,715	29,440	31,280
Management Earnings	28,006	29,974	30,045	31,942	33,913

Sales Down 15%

Sales	18,190	19,295	20,485	21,760	23,120
Management Earnings	26,978	28,012	27,151	28,114	29,145

Variable Annuity Sensitivities (in 000s)

Baseline

	2025	2026	2027	2028	2029
Sales	731,340	767,907	806,302	846,617	888,948
Management Earnings	45,292	56,177	69,955	76,778	83,664
Statutory Capital	238,248	261,746	307,340	369,483	441,783

Market Immediate Shock Up 15%

Sales	731,340	767,907	806,302	846,617	888,948
Management Earnings	59,319	70,311	83,574	90,295	97,126
Statutory Capital	267,533	314,883	384,446	470,580	567,343

Market Immediate Shock Down 15%

Sales	731,340	767,907	806,302	846,617	888,948
Management Earnings	31,784	42,229	56,229	63,126	70,043
Statutory Capital	227,247	227,286	248,700	286,401	333,802

Sales Up 15%

Sales	841,041	883,093	927,248	973,610	1,022,291
Management Earnings	36,890	49,722	66,307	75,686	85,184
Statutory Capital	226,307	228,423	254,345	299,055	356,002

Sales Down 15%

Sales	621,639	652,721	685,357	719,625	755,606
Management Earnings	53,694	62,726	73,850	78,323	82,857
Statutory Capital	250,188	294,754	359,503	438,437	525,406

EXHIBIT D

Financial Data: Inforce Statistics

Note: Years 2022-2024 are actual results and years 2025-2027 are forecasts.

Total	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**
Death Benefit Inforce (in 000's)	134,475,263	144,112,552	155,095,540	164,244,353	178,307,507	192,919,670
Policy Contract Count	300,068	335,601	379,452	418,883	443,749	469,020

Information For Selected Products:

Variable Annuity

Death Benefit Inforce (in 000's)	5,869,063	6,472,852	7,700,740	8,244,353	8,807,507	9,391,670
Policy Contract Count	25,041	31,863	44,142	48,950	53,447	57,286

Universal Life

Death Benefit Inforce (in 000's)	51,830,200	54,421,700	57,142,800	60,000,000	64,800,000	69,984,000
Policy Contract Count	32,829	35,576	38,700	42,236	45,483	48,927

Term

Death Benefit Inforce (in 000's)	48,075,000	51,921,000	56,074,000	60,000,000	66,000,000	72,600,000
Policy Contract Count	150,263	165,289	181,818	200,000	210,000	220,500

EXHIBIT E

Insurance Industry Financial Information

	Beta	**Volatility**	**Reinvestment Rate**	**Forward Price-to-Earnings Ratio (1)**	**Price-to-Book Ratio**	**Return on Equity**	**Dividend Yield**
ABC Life	1.08	15%	20%	8.5	1.3	9%	5.5%
XYZ Life	1.12	18%	30%	10.3	1.1	8%	3.7%
Yolo Life	1.25	25%	50%	15.0	1.9	12%	2.5%
Industry Average	**1.15**	**19%**	**33%**	**11.3**	**1.4**	**10%**	**3.9%**

(1) Earnings equals Net Income

6 Snappy Life Insurance Company

6.1 Company Profile

Snappy Life Insurance Company is not affiliated with or owned by RPPC. It is a company that might be considered an acquisition target or a competitor for one or more of the RPPC companies.

Snappy Life is a small life insurer domiciled in Wilmington, Delaware. It has been in existence since 2018. Snappy was founded by Frank Veltro, a former general sales agent who learned the business at Epoch Life, a large insurance company. Veltro felt stymied by the conservative underwriting and slow processing of applications at Epoch.

Veltro recruited several like-minded agents and amassed enough funding to capitalize Snappy Life at the required regulatory level. Veltro serves as CEO and President of Snappy. His executive team comes primarily from the original founders of the company, all of whom have a sales or marketing background. In addition, a Chief Information Officer (CIO) was hired from a tech start-up company in California in 2021.

The company is owned by its founders and is not publicly traded. It offered securities through a private placement offering in early 2023 after finalizing its 2022 earnings statements, but no shares ended up being sold.

6.1.1 Products and Services

Snappy has had a limited product line, consisting of level term and whole life insurance sold exclusively through internet sales since its existence. The whole life insurance line of business is currently closed to new sales due to large capital requirements and the difficulty of selling a complex life insurance product such as whole life insurance without face-to-face sales. Snappy is now focused solely on sales of level term life.

The level term life insurance is a straight-forward product that aims to provide financial protection for a set period. If the primary earner is covered under a level term life policy, the family is protected from an unexpected untimely death. The purpose of this kind of product can be easily explained through the internet, which can be comfortably accessed by the younger generation of prospects

The company's motto is "Make the sale, every time!" While the company founders had originally worked as agents selling face-to-face, they have now embraced the new technologies and the way it allows them to leverage the time of their associates.

Sales have been robust, enabling the firm to grow steadily since inception of the company.

Snappy uses an internal key performance indicator (KPI), "profitability percentage," which is calculated as: (Present value of gross premiums less present value of benefits and present value of expenses) divided by gross premiums. The CFO, Corrie Caille, has set the requirement that all products maintain 19% profitability percentage or the product will no longer be sold.

6.1.2 Competitive Advantages

Snappy's processes are extremely automated, allowing it to offer products at low cost. In the three years since the CIO has been on board, the company's systems have been modernized by the tech staff. Underwriting for new sales is based on a simplified medical questionnaire and an accelerated underwriting program. Artificial intelligence software evaluates all applications for acceptable risks and produces a final "Reject" or "Approve" decision. However, based on the company motto, the software is programmed with a bias toward accepting most risks as long as the precision rate remains over 50%.

6.2 Risk Profile

Pricing

Snappy's priority is to maintain competitive pricing compared to other providers of simplified insurance products. The marketing department has considerable influence with the actuarial and pricing group. Frank Veltro is very much involved with approving final pricing as new product series are rolled out.

The actuarial department produces basic experience studies and profitability analyses. The marketing department produces studies of competitor rates quarterly.

Risk Framework

Snappy does not have a separate corporate risk department, and it does not do any formal risk reporting. Veltro expects his direct reports to inform him of any issues in their departments.

Veltro believes that risk creates opportunities that Snappy can exploit. When risks are identified in a product, his standard response is that "we can sell our way out of this problem". If sales remain strong, he believes that profits will follow.

The company culture instilled by Veltro is to move forward aggressively. The result is that corporate managers are reluctant to point out obstacles.

Capital

Snappy reports earnings on a statutory basis, as required to the state regulators. It measures Risk-Based Capital as required and does not do any further economic capital modeling. The company has maintained its RBC ratio at approximately 250% over the past five years.

As part of the annual planning process, projected earnings and capital figures are developed for the next two years.

6.3 Strategic Issues

Snappy has benefitted from its strong sales and has been fortunate to write business that is profitable overall. However, Caille, the CFO, has recently identified challenges facing the company:

- The life insurance tech industry is experiencing a slowdown in overall sales. Some competitors do not have enough sales to remain profitable and are expected to be out of business soon. Snappy has experienced a similar slowdown to some extent in the prior quarter. Caille formed a task force to find ways to increase level term life insurance sales and Snappy's earnings.

- One of the task force's recommendations is that Snappy should become an intermediary between insurers and potential policyholders, by selling other life insurers' level term life policies as well as its own. This method could increase Snappy's own level term life insurance sales and earn referral fees paid by others if another company's product is sold. To be competitive in such a platform, Snappy will be pricing level term life insurance at certain issue ages such as 20 – 40 very competitively. It is expected this will be successful due to Snappy's competitive accelerated underwriting program.

- Snappy's relatively small capital base is limiting future growth. If sales reach the targets set by Veltro, the RBC ratio is likely to drop significantly. Cailie is talking with Darwin Life Insurance Company on a potential reinsurance transaction.

- New competitors are entering the marketplace, with a business model similar to Snappy's. If Snappy continues to compete solely on price, it is likely to start seeing reduced profitability.

  Veltro, however, believes that one of Snappy's strongest advantages is its greater ability to source business. He is celebrating a new agreement with National Marketing Organization (NMO) where NMO will use Snappy's technology and processes to issue Snappy's life insurance policies on smaller case sizes from its vast distribution partnerships. This is anticipated to accelerate Snappy's growth by twofold in as many years. NMO has its own chief underwriter who has been successful in pushing for favorable underwriting decisions for NMO's clients, generally securing a class better than underwriting rules would dictate.

- Models for customer data and servicing are state-of-the-art, but the tech area does not have expertise in producing robust financial projections. Snappy does not have the appropriate workforce in place to move the company forward.

- Data breaches have affected several insurance companies over the past two years, particularly those that are heavily dependent on internet sales. The CFO is not sure whether Snappy is sufficiently protected from cyber-risk.

6.4 Financial Exhibits

6.4.1 Financial Statements for Snappy for the past four years are shown below.

Summary of Operations (in 000s)

	2024	2023	2022	2021
Premiums	11,141	6,267	8,356	4,700
Net investment income	1,765	1,165	769	507
Total Revenues	**12,906**	**7,432**	**9,125**	**5,207**
Death Benefits	1,847	1,478	1,182	946
Surrender Benefits	567	510	459	413
Increase in Reserves	4,561	3,013	2,158	1,539
Total Benefits	**6,975**	**5,001**	**3,799**	**2,898**
Sales Expenses	623	555	263	263
General Insurance Expenses	1,110	1,063	681	681
Insurance Taxes, Licenses, and Fees	417	334	267	214
Total Expenses	**2,150**	**1,952**	**1,211**	**1,158**
Net Gain from Operations before FIT	**3,781**	**479**	**4,115**	**1,151**
Federal Income Tax	**945**	**120**	**1,029**	**288**
Net Income	**2,836**	**359**	**3,086**	**863**

Recent earnings were run through the Beneish model and produced an M-score of -1.57.

Balance Sheet (in 000s)

	2024	2023	2022	2021
Assets				
Bonds	29,187	24,213	20,894	18,489
Cash	1,410	1,692	1,949	2,180
Furniture and Equipment	126	130	117	105
Total Assets	**30,723**	**26,036**	**22,960**	**20,774**
Liabilities				
Statutory Reserves	**28,447**	**23,886**	**20,873**	**18,715**
Surplus	**2,276**	**2,150**	**2,087**	**2,059**

6.4.2 Table 1 contains relevant metrics for Snappy Life's term life insurance business for 2025 regarding costs and sales that can be directly attributed to a specific product.

Table 1: Term Life (TL) – 2025 Sales – Projected Values

	2025	2026	2027	2028	2029
Premiums	3,736,000	3,303,000	2,872,000	2,298,000	2,011,000
Death Benefits	624,000	765,000	1,006,000	1,147,000	1,640,000
Commissions	2,238,000	126,000	114,000	100,000	87,000
Acquisition Expenses	1,234,000	-	-	-	-
Maintenance Expenses	336,000	192,000	144,000	124,000	103,000
2024 Employee Count	150				
2024 Sales – policy count	2,435				
2024 Sales – face amount	245,132,500				