FALL 2012

EXAM APM

Advanced Portfolio Management

CASE STUDY

APM morning

Advanced Portfolio Management

Case Study

Spring 2012

Wonka Life

It’s your life!

From the desk of

R. Tomas Lyon, IV

April 16, 2010

Re New CFO

Congratulations. You will have been through a rigorous screening process. I have every confidence that the search committee has picked the right person for this important position. I am sure you will do a fine job as Wonka Life's new Chief Financial Officer.

Anyway, you have a lot of work to do. Your predecessor, Mr. A. Hugh Dodo, left to pursue other opportunities at a critical time for Wonka Life. My executive assistant, Mr. Charley Pigeon, will help you get settled in your new position.

Ideally we would have all the issues that you will face as our new CFO laid out similar to a fancy case study. Well, the real world is not that neat. Charley has been instructed to pull together memos, e-mails and other documents to help you familiarize yourself with the company and the issues in the Finance and Investment Departments. You should be finding this memo at the top of the collection that he has created for you. If there's anything else you need, please don't hesitate to ask him.

This job will be a real test. I am counting on you to learn quickly and to make decisions that will take our company to the next level.

Very Sincerely

R. Tomas Lyon, IV
Chairman, President, CEO and COO
Wonka Life Insurance Company

Cc Charley Pigeon

Wonka Life Insurance Company

as of March 19, 2010

OFFICE OF THE CHAIRMAN
R. Tomas Lyon
Chairman, President, CEO, COO

Charley Pigeon
Executive Assistant

- **ADMINISTRATION**
  Odette Bird
  Senior VP, Administration
  - **Claims** – Claudette Dove, 2nd VP, Admin
  - **Shellbyville Office** – Danny Swan, 2nd VP, Admin
  - **Springfield Office** – Erika Swan, 2nd VP, Admin
- **CORPORATE SERVICES**
  Kate Finch
  Sr. VP, Chief Counsel
  - **Corporate Relations** – Fabian Crabb, Assistant VP
  - **Human Resources** – Nicholas Sable, 2nd VP, HR
  - **Information Technology** – Frances Seal, 2nd VP, IT
  - **Legal** – Mindy Wren, Associate Counsel
- **FINANCE**
  <open>
  VP, Chief Financial Officer
  - **Accounting** – Juan Bass, Chief Accounting Officer
  - **Actuarial** – Wanda Fox, Chief Actuary
  - **Investments** – Peter Fish, Chief Investment Officer
  - **Treasury** – Earl Tern, Corporate Treasurer
  - **Audit** – Mark Peacock, Chief Auditor
- **MARKETING**
  Danielle Wolfe
  VP, Chief Marketing Officer
  - **Annuity Products** – Sam Roach, Field Vice President
  - **Disability Products** – Victor Herring, Field Vice President
  - **Life Insurance Produucts** – Alex Trout, Field Vice President
  - **Variable Products** – Teresa Cricket, Field Vice President
- **PLANNING**
  Henri Jay
  Executive VP
  - **Capital Planning** – Bonnie Hawke, 2nd VP, Planning
  - **Enterprise Risk Management** – Bill Buck, 2nd VP, ERM
  - **Mergers & Acquisitions** – Gaston Deer, 2nd VP, Planning

Wonka Life Insurance Company

Mission, Vision, Values and Ethics

Mission

The mission of Wonka Life is to be a high quality financial services company. To that end, we offer a range of insurance and financial services and products to meet the needs of our customers. We aim to provide the highest quality service to our customers. We maintain high ratings, financial strength and competitively priced products.

We respect our employees. We offer challenging career opportunities and personal development for all staff members. Our goal is to enable everyone to contribute to their fullest potential. We promote open and cooperative relationships among employees and customers.

In all that we do, we exemplify the highest standards of business ethics and personal integrity, and recognize our corporate obligation to the social and economic well-being of our community.

Vision

The Company's vision is to seek a balance among our key operations: Individual Life and Annuity, Institutional Pensions and Group Benefits. Our Annuity operations will offer outstanding investment performance; in particular we seek to be an innovator in accumulation annuity market. We also would like to be competitive in Long-Term disability product line in Group Benefits.

Values

We are in business to serve customers. Our goal is to establish long-term relationships; to that end, we endeavor to provide high quality customer service. We truly care about each person in our company. To be successful, we will treat others with the respect we desire for ourselves.

Ethics

We conduct the Company's affairs in strict compliance with both the letter and the spirit of the law, and, at all times, we will treat policyholders, customers, suppliers, and all others with whom the Company does business fairly and honestly. We recognize that our reputation is our most important asset. We will not compromise our integrity. Honesty and fair dealing are hallmarks of our business operations.

Excerpts from Wonka Life Proxy Statement – Dated March 11, 2010

Board of Directors – Biographies

R. Tomas Lyon IV – Chairman, President, CEO, and COO. Age 69. Term Expires September 2010.

Karl Palomino – Former CFO, Wonka Life (retired September 2008). Age 62. Term began September 2008, term expires September 2012.

Jeanne Holstein-Palomino – Philanthropist, former administrative assistant, Wonka Life. Age 30. Term began September 2008, term expires September 2012.

Ivan X. Salmon – former Chief Legal Counsel, Wonka Life (retired September 2008). Age 58. Term began September 2008, term expires September 2012.

Hermine Dauphin – former accounting partner for Dollars 'R Us, former insurance regulator for Insurance Department of Illinois. Age 52. Term began September 2008, term expires September 2010.

Board of Directors Committees

	COMMITTEES				
Board Member	Audit	Compensation	Nomination	Investment	Risk Management
Lyon	M		C	M	
Palomino	C	M			M
Holstein-Palomino	M	C			M
Salmon		M	M	C	
Dauphin			M	M	C
Meetings Held	1	1	1	0	4

C = Chairperson
M = Member

Selected Excepts from Meetings held in 2009

Report of Committees

1. Audit Committee – Mr. Lyon reported that the committee met once. The committee had voted to reappoint Brown & Co as Independent Accountants for 2010. This recommendation was approved unanimously by the full Board.

   Mr. Lyon expressed appreciation for the Board's support of the long-standing, strong relationship with Brown & Co., since it allowed Wonka to spend less money and streamline the audit process.

   The committee also reviewed a report from Mr. Dodo outlining the status of Wonka's system of internal controls. Mr. Lyon suggested that Mr. Dodo's report focused too much on potential risks and too little on audit. Lyon noted that risk evaluation was the purview of the Risk Management committee. Further, Lyon, preferred that Mr. Dodo focus more effort on audit staff training in order to prevent the possibility of fraud in the processing of paychecks and travel reimbursements.

The committee also received Mark Peacock's audit reports for the current and prior quarters.

2. Compensation Committee – Ms. Holstein-Palomino reported that at its annual meeting the committee submitted recommendations for increased compensation and performance awards to Mr. Lyon, who approved them.

3. Nominating Committee – Mr. Lyon reported that the nominating committee voted to recommend a continuation of the current Board structure (5 members with at least one independent member). Mr. Lyon noted that Ms. Dauphin recommended expanding the Board with a larger portion of independent members; this recommendation was defeated 2 to 1. The Committee also recommended that Mr. Salmon begin a search of candidates to replace Ms. Dauphin, whose term expires next year. It is contemplated that Mr. Lyon will be re-nominated in 2010. The recommendations were approved by the full Board by a vote of 4 to 1.

4. Investment Committee – Mr. Salmon reported that the committee was considering a number of decisions (for example there were plans to release some external investment managers following a period of poor performance and replace them with managers with a better track record). However, due to numerous calendar conflicts, this committee did not meet during the year. Mr. Salmon is also concerned that the committee might regret certain decisions made earlier.

5. Risk Management Committee – Ms. Dauphin reported that the committee met on a regular quarterly basis during the year. Meetings focused on reports and interviews with key employees in finance, systems, and audit. As a result of their investigation, a number of risk management concerns were discovered and the committee unanimously recommended the creation of an Enterprise Risk Management Officer.

   During the debate of this recommendation with the full Board, Mr. Lyon expressed relief that this committee would not be needed in the future once the ERM Officer came on board. He also wanted to ensure that the position reported to someone with a lot of experience who knew the company well and could serve as a guide to the ERM Officer, helping him/her gather information from various areas within the company. The new ERM Officer should be able to prepare any reports needed by external audiences with respect to risk.

   Ms. Dauphin brought up the subject of what would happen to the concerns that the Risk Management Committee had brought to light if the Committee were disbanded. Mr. Lyon responded that they would be forwarded to the new ERM Officer. He decided that Henri Jay would be the right person for the new ERM Officer to report to. Once the new ERM Officer formulated recommendations from this input, he would deliver them to Mr. Jay, who would pass them on to the manager of the area or areas involved.

   The full Board voted 4 to 1 in favor of Mr. Lyon's recommendations.

Charley Pigeon

From: "Larry McCaw" McCawL@wlic.com
To: "All Employees" <mail list zlicEEs@wlic.com>
Sent: Monday, March 15, 2010 11:28 AM
Subject: Founder's Day Celebration

Wonka Life will celebrate Founder's Day this year on Friday, June 11, 2010. In honor of the 106th anniversary of our founding, employees are encouraged to wear jeans to work on that day. In addition, we will have the traditional Founder's Day picnic. Back again this year by popular demand, we will have a bear wrestling demonstration and carnival games.

While this is always a fun time, the Founder's Day Committee would like to take this opportunity to remind everyone of our company's long and colorful history. After all, there is a reason we celebrate Founder's Day.

Noah Wonka, pioneer, business mogul and town founder established the Wonka Friends Assessment Society in 1904. His belief was that even the common man had a right to insure his life for a fair price. Wonka served as the first president of the company which bore his name. Ironically, Noah Wonka lost the company in the Banking Panic of '05 when it was taken over by Lyon & Sons (now known as Lyon Enterprises).

R.T. Lyon served as the second President (1905-1915) until passing on those responsibilities to his son Richard (Rich) Lyon, Jr. Under Rich Lyon's leadership (1915-1929), the company grew to insure over 1,000 people and converted from an assessment society to a legal reserve mutual life insurance company. In October of 1929, Rich Lyon died under mysterious circumstances; his policy was the first paid out under the new legal structure and it nearly caused the company to fail.

Now known as the Wonka Life Insurance Society, the company then passed to R.M. (Trip) Lyon, III. Trip Lyon's tenure at the company (1929-1965) was mostly uneventful. In 1965, the Presidency of the company was handed to Trip Lyon's 24-year old son, R. Tomas Lyon, IV who continues to run the company today.

Tomas Lyon has been an innovator and champion in the insurance industry. He eliminated the Home Service Life Insurance division in the late 1960's and was one of the first to offer Term Insurance in a big way with the innovative "Life Term" policy. A Property & Casualty subsidiary (Wonka Car & Dwelling) was opened in 1977 and subsequently closed in 1989. In the early 1980's the company was one of the pioneers of Guaranteed Investment Contracts (GICs). Lyon also led the company's charge into Variable annuities in 1990. Lyon shepherded the company to conversion from a mutual insurer to a public company with a successful IPO in February 2008, whereby ownership was widely diversified amongst numerous investors.

In a little over 100 years, Noah Wonka's experiment of offering the common man a little life insurance to pay for final expenses has evolved into the insurance and financial services giant we know today. Remember at Wonka Life…..It's your Life™!

Larry McCaw
Chair, Founder's Day Committee
Company Historian
Sr. Records Tech – Section AH
Ext #752

Wonka Life Insurance Company

MEMORANDUM

April 14, 2010

TO New CFO

FROM Peter Fish

RE Amarani Hedge Fund

John Badger and his team started Amarani hedge fund 3 years ago with $60 million of seeding capital from Wonka Life's Surplus account. During the first year (2007) the fund earned in excess of 25% return and during the first half of 2008 it showed 30% return. John was able to find many new investors during the period January, 2007, to May, 2008, and their average lock up period will end in three month. The fund lost 20% of its value during the credit crisis. Soon after the credit crisis John changed his investment strategy without changing the original lock up period, with the approval of the shareholders. He managed to post a modest gain of 5% and he is expecting to make a profit soon. His overall performance is average to better than average compared to that of other hedge fund managers. John hired Tim Borrowski, FSA, an actuary turned trader, in 2008.

John has changed his strategy with Tim on board. Now Jim bets on market down turns. Amarani hedge fund will post a large gain in a market down turn but if the market goes up it will only make a very small gain. John has agreed to lower his AUM fee from 2% to 1%, while increasing his incentive fee from 15% to 17%. These measures will reduce the run-on-the bank type withdrawal in three months time.

Amarani fund has the blessing of Bill Buck and I highly recommend a capital infusion to lower the leverage or else at least not winding it up if some investors pull out their funds.

Wonka Life Insurance Company

MEMORANDUM

February 16, 2006

TO Department Heads

FROM Peter Fish

RE Derivative Team

I'm very excited to announce that John Badger has agreed to join Wonka Life, reporting to me in the newly created role of Head Derivatives Trader and Director of Derivative Securities Administration. He will be charged with building a derivatives team at Wonka to deal with trading and administration.

We managed to scoop this derivatives hotshot from the Crimson Sardine Hedge Fund that recently wound down its operations. John is very keen on the opportunity to put his own leading-edge derivative pricing model to work developing innovative derivative strategies in the more collegial and autonomous environment offered here at Wonka.

Our investment team to date has lacked sophisticated derivatives skills. With John on board, not only will we be able to dynamically hedge our GICs and restore their profitability, but we will also be able to draw on his expertise when exploring ways to hedge various options that we might want to consider offering with our VA product. Even beyond this, in John's capable hands we'll be able to leverage the derivatives desk and generate excess earnings turning this into a profit center on its own!

John brought along with him Illya Kovalchuck, a quant who had assisted him in developing his strategies at Crimson Sardine. Illya has a PhD in Fluid Dynamics from Moscow State University. John tells us Illya coded all the new models that John used at Crimson Sardine. As of now, John and Illya will handle derivative trading and modeling. However, we plan to hire a couple of traders within a few months if we can get more budget dollars allocated to this initiative.

John has developed good contacts in the industry so he is used to being able to informally set up an agreement with a trading partner each time a new type of trade is transacted. No matter how many positions we may have with a certain counterparty, each new deal has its own quirks and he likes to start fresh, without being constrained by the past. John has several years of experience in this market, so Wonka will be the beneficiary of his established relationships.

We're going to let John be the front man for a while, since he's the one with the relationships, even though he is going to keep in constant contact with senior management so that he doesn't get us into any deals that are bigger than we really want.

I see a very profitable future ahead!

Wonka Life Insurance Company

MEMORANDUM

April 2, 2010

TO Charley Pigeon

FROM Isabel Cougar, Planning, ext 641

RE Financial Statements for the New CFO

Per your request for asset liability management report for the past few years, I've been able to get these year-end 2009 reports for each product line. I received input from Wanda Fox regarding the asset allocation to each block, and this is reflected within these statements.

Although I didn't have prior historical statements readily available to pass along, I believe Wanda has a copy of the Byrd Ratings report for us. This report should provide various asset and product line financial trends over the past few years, as I'm assuming this is what you're after in your request for historical info. Simply drop her an E-mail and request a copy.

Attachments:
2009 ALM report

Asset Liability Management Report for

December 31, 2009

This report details the ALM position for all of Wonka Life's products and focuses on the company's exposure to interest rate risk. The ALM guidelines specified in the company's ALM Policy Statement and Procedure Manual reflect the company's tolerance to interest rate risk.

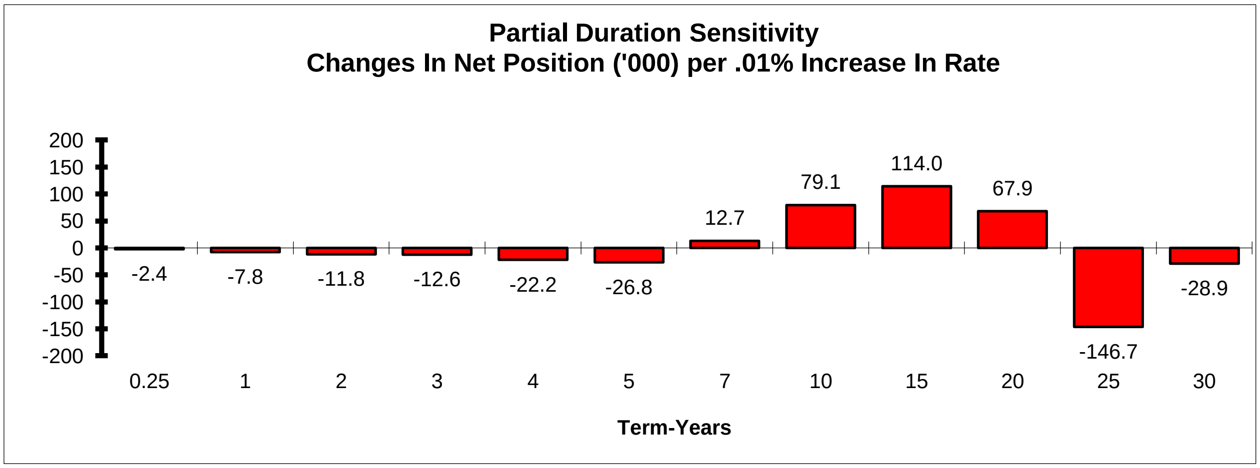
Guarantees related to Equity Linked GICs and Variable Annuities are not included in this report. As these products were in good shape when the previous report was prepared, it was deemed unnecessary to include them this time. They will be updated when the next report is prepared.

		Book Value ('000)	Present Value ('000)	Effective Duration	Dollar Duration ('000)
		TRADITIONAL LIFE PRODUCTS			
Assets		300,000	309,700	7.8	2,424,000
Liabilities		300,000	318,000	13.0	4,134,000
	Difference	0	-8,300	-5.2	-1,710,000
	Guideline	**< 2,000**			**< 300,000**
		NON-TRADITIONAL LIFE PRODUCTS			
Assets		400,000	416,600	9.3	3,859,000
Liabilities		400,000	406,000	4.0	1,624,000
	Difference	0	10,600	5.3	2,235,000
	Guideline	**< 2,000**			**<400,000**
		ACCUMULATION ANNUITIES			
Assets		1,500,000	1,545,600	4.7	7,257,000
Liabilities		1,500,000	1,575,000	4.7	7,403,000
	Difference	0	-29,400	0.0	-146,000
	Guideline	**< 2,000**			**<450,000**
		INSTITUTIONAL PENSION – PAYOUT			
Assets		700,000	746,100	6.5	4,870,000
Liabilities		700,000	759,500	7.3	5,544,000
	Difference	0	-13,400	-0.8	-674,000
	Guideline	**< 2,000**			**< 700,000**
		INSTITUTIONAL PENSION – GIC			
Assets		1,500,000	1,544,200	3.3	5,066,000
Liabilities		1,500,000	1,537,500	3.1	4,766,000
	Difference	0	6,700	0.2	300,000
	Guideline	**< 2,000**			**< 450,000**
		GROUP BENEFITS			
Assets		630,800	660,900	8.0	5,262,000
Liabilities		630,800	624,000	6.5	4,056,000
	Difference	0	36,900	1.5	1,206,000
	Guideline	**< 2,000**			**< 630,000**
		SURPLUS ACCOUNT			
Assets		625,000	807,912	9.1	7,350,400
Target					
	Difference	625,000	807,912		
	Guideline				
		TOTAL COMPANY			
Assets		5,655,800	6,031,012	6.0	36,088,400
Liabilities		5,030,800	5,220,000	5.3	27,527,000
	Difference	625,000	811,012		8,561,400
	Guideline				**< 5,219,000**

ACCUMULATION ANNUITIES

Effective Duration *(Price Sensitivity to Parallel Shifts in the Yield Curve)*
The effective duration of assets is longer than the duration of liabilities by less than 0.01. The difference between the dollar duration of assets and liabilities is (146,000,000). This is within the approved guideline of +/- 450,000,000.

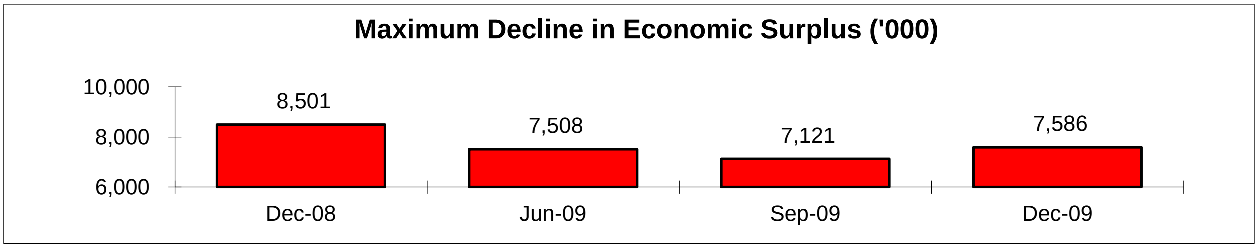
Partial Duration Sensitivity Analysis *(Price Sensitivity to Specific Rate Changes)*
For all points along the curve partial duration sensitivities are within the approved guideline of 300,000.



Scenario Testing

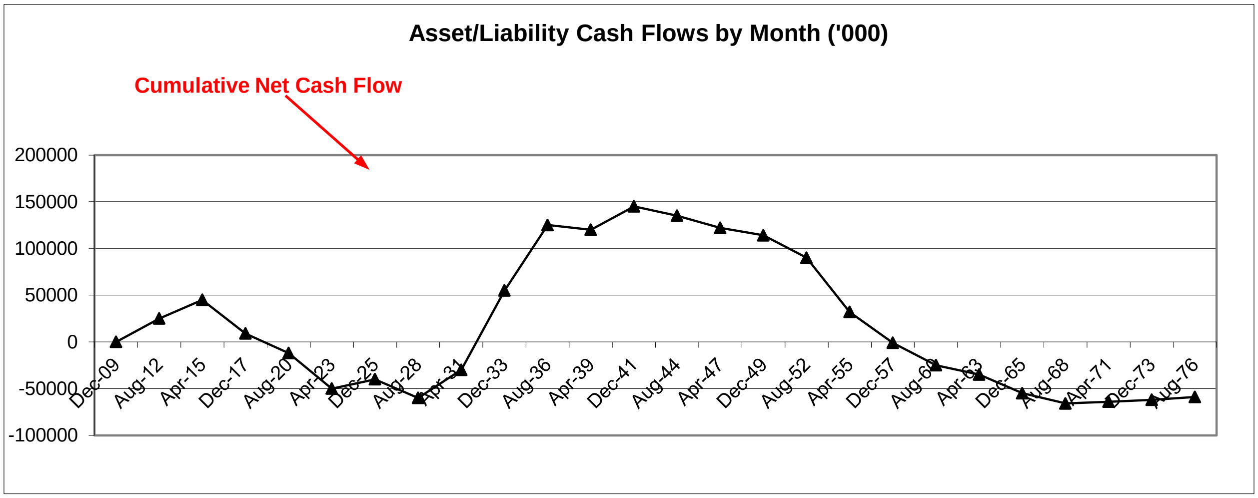
Worst Case Scenario

The worst case scenario that was tested was an increase followed by a decrease in interest rates. If this scenario were realized, it would result in a loss of $7.6 million in economic surplus.



Cash Flow Analysis

The accompanying graph does not represent actual cash outflows but rather interest rate reset dates for the assets and liabilities. No renewals or new sales are projected and asset maturities are not reinvested. Thus the usefulness of this analysis is limited to studying interest rate risk exposure. This would represent an extreme adverse scenario for measuring liquidity risk exposure.



Portfolio Rebalance
Rebalancing is performed on a monthly basis for Accumulation Annuities. At the end of December, except for cash reallocation there was no rebalancing required for Accumulation Annuities.

Asset Mix
The target mix calls for more bonds and private placements and less mortgages. The C1 capital requirement for the Accumulation Annuities portfolio excluding additional requirements for troubled assets is approximately $11.7 million at the end of December. In comparison, the C1 requirement based on the target asset mix would be $11.2 million.

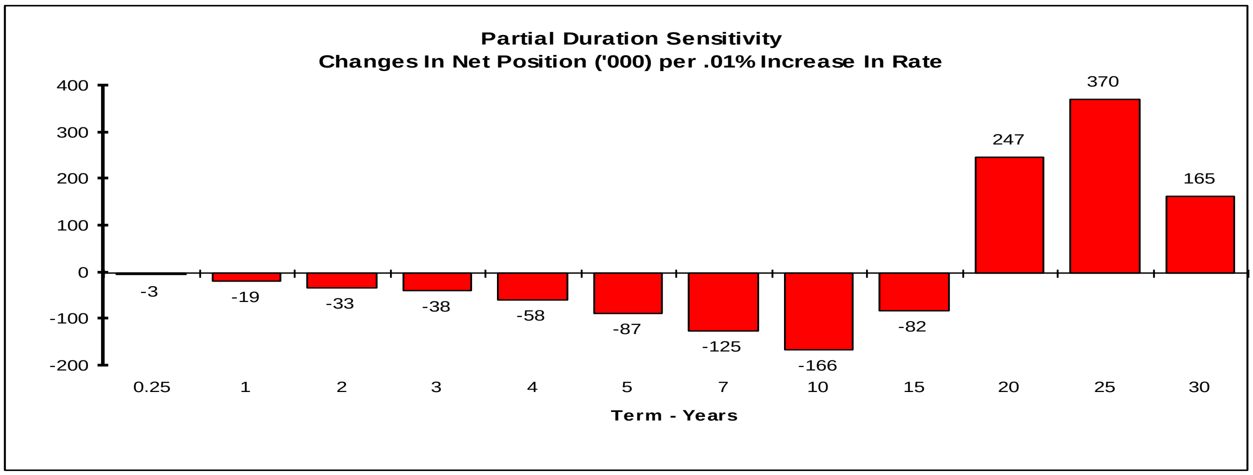
TRADITIONAL LIFE PRODUCTS

Effective Duration (Price Sensitivity to Parallel Shifts in the Yield Curve)

The **effective** duration of assets is shorter than the duration of liabilities by 5.2 years. This reflects the difficulty in finding assets that match the extremely long duration of the liabilities. The difference between the dollar duration of assets and liabilities is (1,710,000,000) which exceeds our approved guideline of +/- 300,000,000.

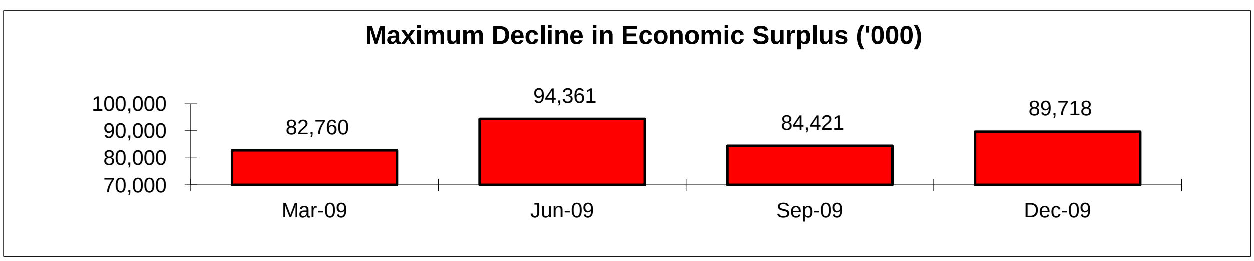
Partial Duration Sensitivity Analysis (Price Sensitivity to Specific Rate Changes)

We are exposed to rates falling at the20, 25 and 30 year terms and to rates increasing at earlier terms. Exposure is large yet exceeds guidelines of 300,000 for the 20 year term only.



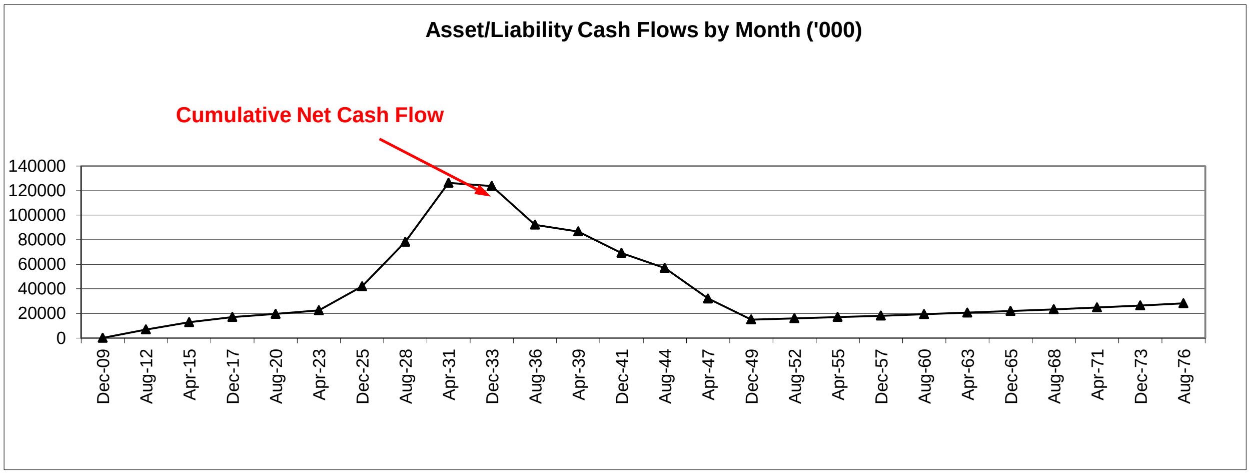
Scenario Testing

The maximum decline in economic surplus at the 95% confidence level was $89.7 million at the end of December. The scenario that gives rise to this exposure is a decrease in long term interest rates.



Cash Flow Analysis

The large positive spikes represent the maturity of the long zero coupon bonds that were purchased to extend the duration of the assets.



Portfolio Rebalance
At the end of December rebalancing was necessary as a result of the lengthening of the liabilities due to assumption changes.

Asset Mix
The target mix does not reflect policy loans, calls for more government bonds, and less private placements. The C1 capital requirement for the Traditional Life Products portfolio excluding additional requirements for troubled assets is approximately $0.5 million. In comparison, the C1 requirement based on the target asset mix would be $0.5 million. The asset mix does not reflect the assumed equity position.

NON-TRADITIONAL LIFE PRODUCTS

Projection of Cash Flows

Based on December 31 assets and liabilities, net cash flows are projected to be an average of $1.3 million per month going forward.

Margin Squeeze

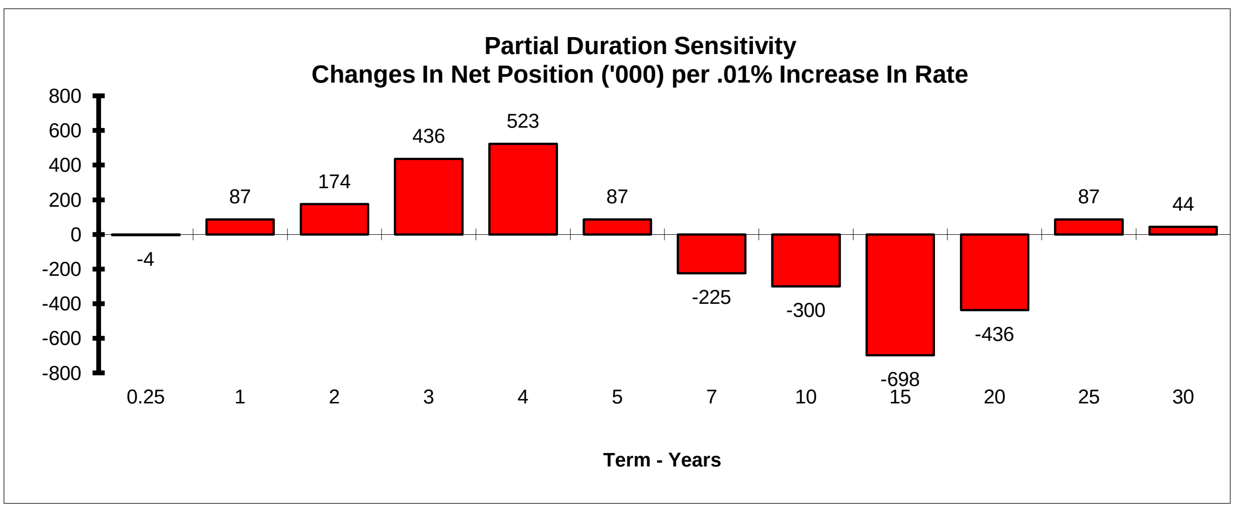
Interest sensitive cash flows have been modeled to vary for given changes in interest rates (i.e. the margin squeeze will be reflected in the price sensitivity statistics). The impact of the margin squeeze for a 1% decrease in interest rates is a $10.3 million loss in economic value.

Effective Duration (Price Sensitivity to Parallel Shifts in the Yield Curve)

The e**ffective** duration of assets is longer than the duration of liabilities by 5.3 years. The difference between the dollar duration of assets and liabilities is 2,235,000,000. This significantly exceeds the guideline of +/-400,000,000.

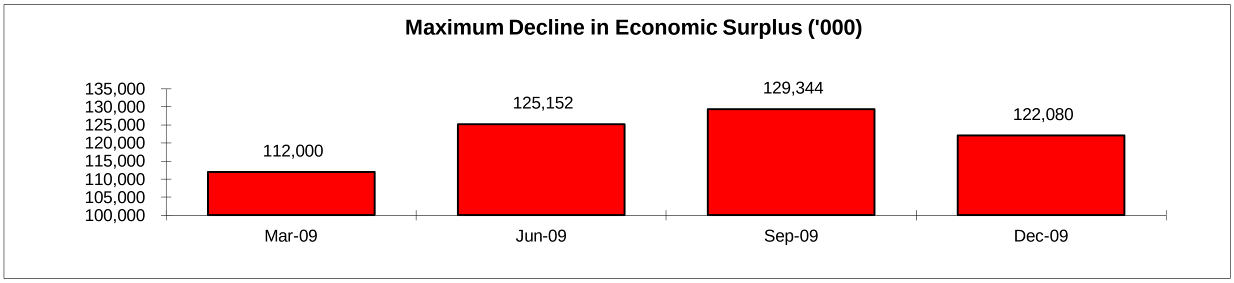
Partial Duration Sensitivity Analysis (Price Sensitivity to Specific Rate Changes)

Significant exposure exists to an increase in interest rates between the 7 and 20 year rates, a result of the duration mismatch between the assets and liabilities. The company is exposed to a decrease in interest rates for early durations. The guideline of 400,000 is exceeded in both directions for 4 points on the rate curve.



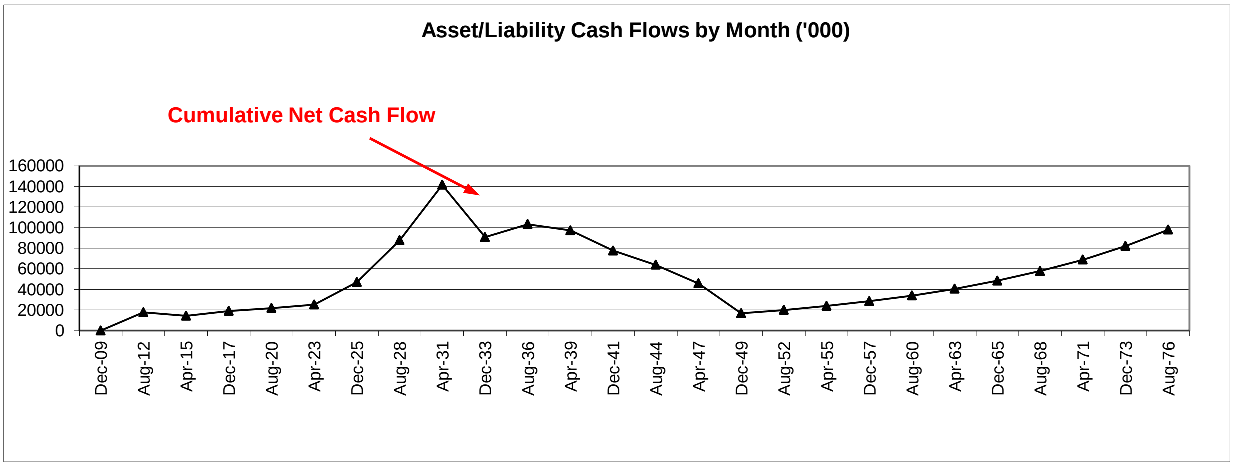
Scenario Testing

The maximum decline in economic surplus at the 95% confidence level decreased from $129.3 million to $122.1 million at the end of December. The scenario that gives rise to this exposure is a gradual decrease in long-term interest rates.



Cash Flow Analysis

Note that cash flows for both the fixed life and variable UL products are shown together.



Portfolio Rebalancing

At the end of December the need for rebalancing was identified to deal with the growing duration mismatch between assets and liabilities. Implementation was postponed due to a lack of resources to analyze and explain the mismatch.

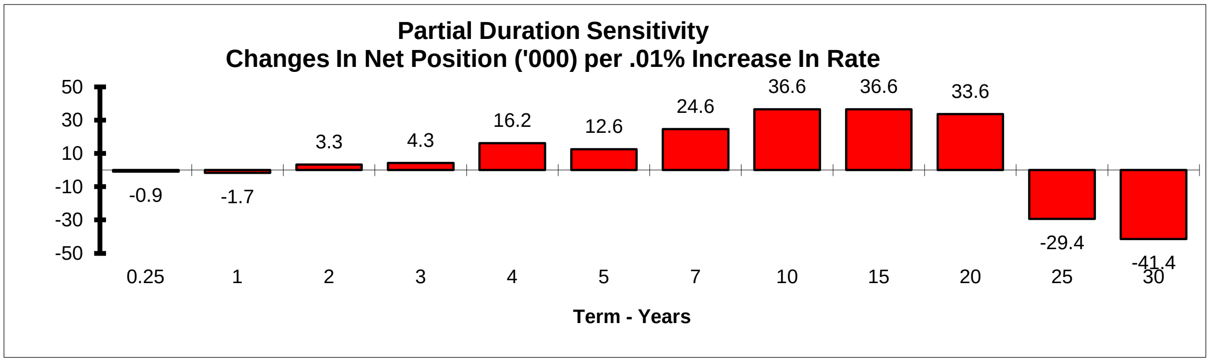
INSTITUTIONAL PENSION - PAYOUT

Effective Duration (Price Sensitivity to Parallel Shifts in the Yield Curve)

The e**ffective** duration of assets is shorter than the duration of liabilities by 0.80 years. The difference between the dollar duration of assets and liabilities is (675,000,000) and is within the approved guideline of +/-700,000,000.

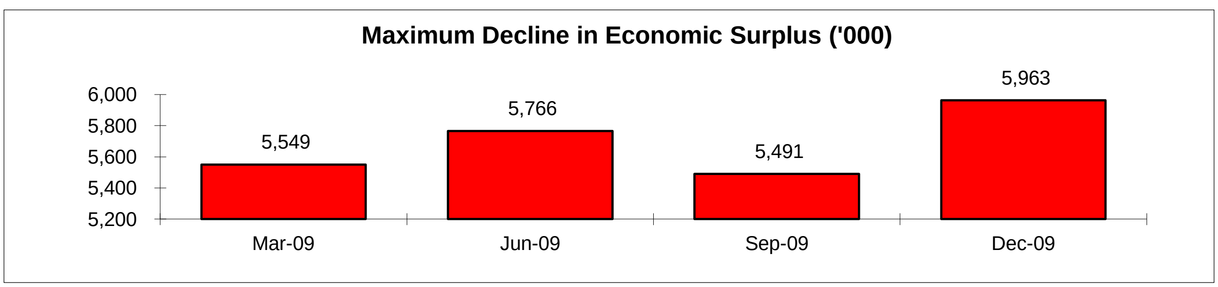
Partial Duration Sensitivity Analysis (Price Sensitivity to Specific Rate Changes)

Due to the efficiency of the immunization strategy, no significant interest rate exposure exists on that line of business.

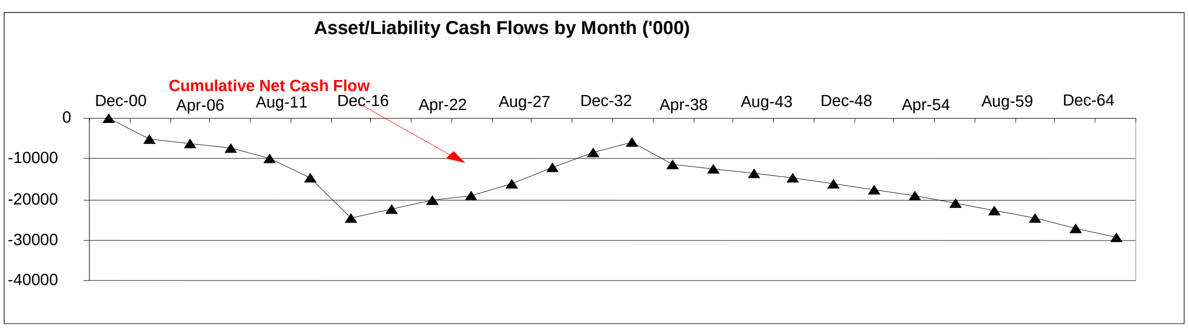


Scenario Testing

The maximum decline in economic surplus at the 95% confidence level stands at $5.96 million, and is the result of a gradually increasing interest rate for the first 20 years followed by a sharp increase.



Cash Flow Analysis



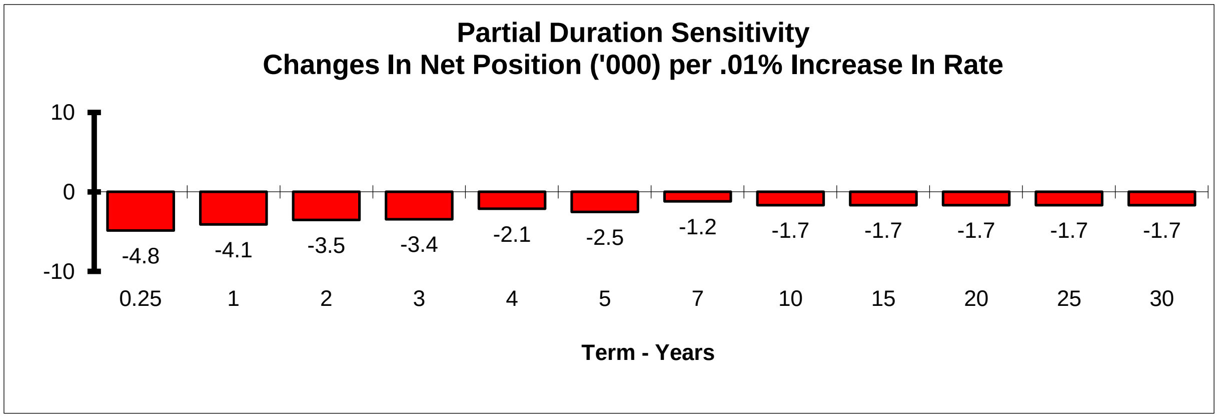
INSTITUTIONAL PENSION - GIC

Effective Duration (Price Sensitivity to Parallel Shifts in the Yield Curve)

The e**ffective** duration of assets is longer than the duration of liabilities by 0.20 years. The difference between the dollar duration of assets and liabilities is 300,000,000. This is within the approved guideline of +/-450,000,000.

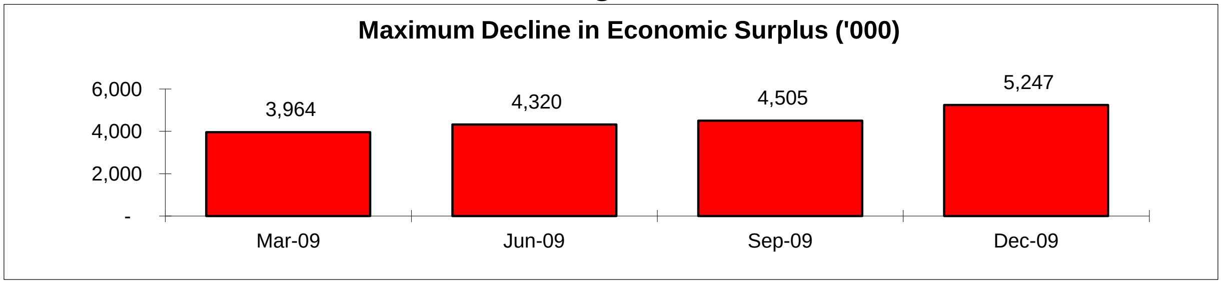
Partial Duration Sensitivity Analysis (Price Sensitivity to Specific Rate Changes)

Due to the efficiency of the immunization strategy and the short duration of the liabilities, no significant interest rate exposure exists on that line of business.

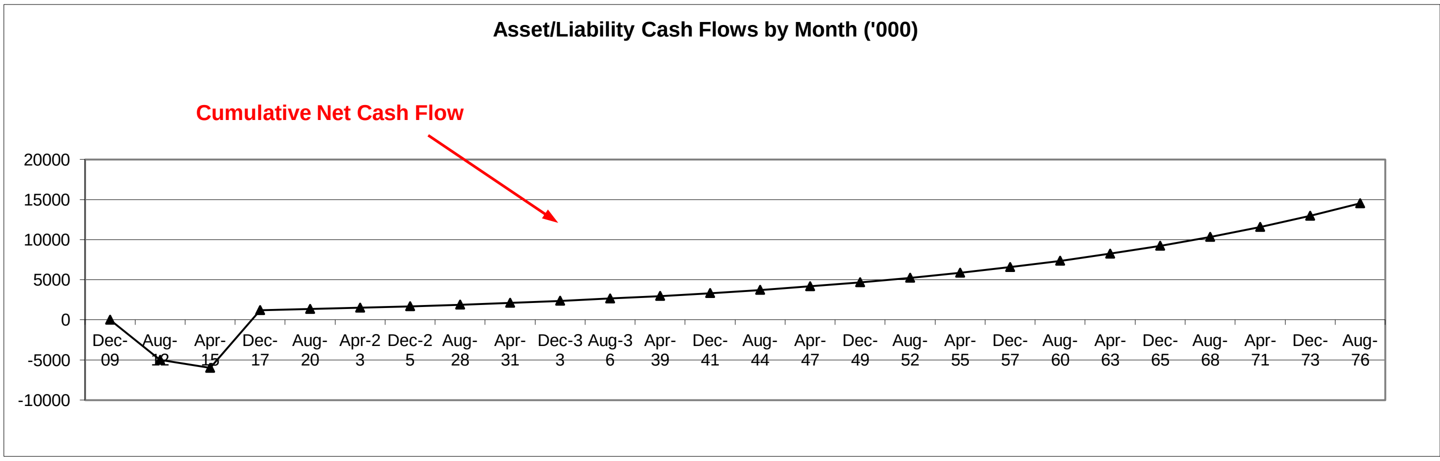


Scenario Testing

The maximum decline in economic surplus at the 95% confidence level stands at $5.2 million, and is the result of an immediate, large increase in interest rates.



Cash Flow Analysis



Currency Exposure

The Euro-denominated liabilities are valued at $100 million using exchange rates in effect as of December 31. This is approximately 20% higher than the value at last year-end. This liability exposure has not been hedged given the relatively small size of the exposure and the previously stable Euro/U.S. dollar exchange rate relationship over its short history.

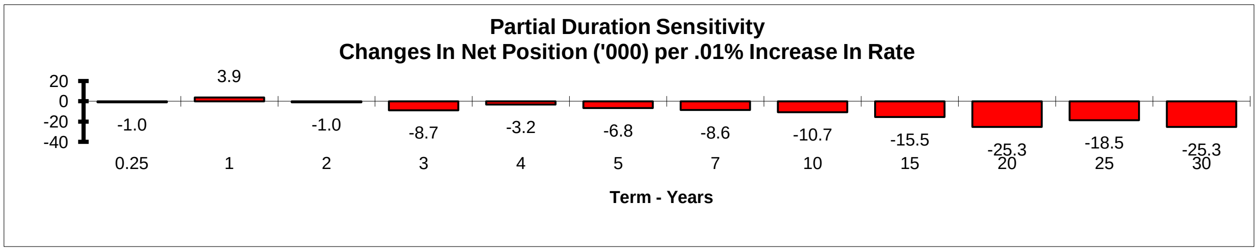
GROUP BENEFITS

Effective Duration (Price Sensitivity to Parallel Shifts in the Yield Curve)

The e**ffective** duration of assets exceeds the duration of liabilities by 1.51 year. The difference between the dollar duration of assets and liabilities is 1,206,000,000. This significantly exceeds the guideline of +/-630,000,000.

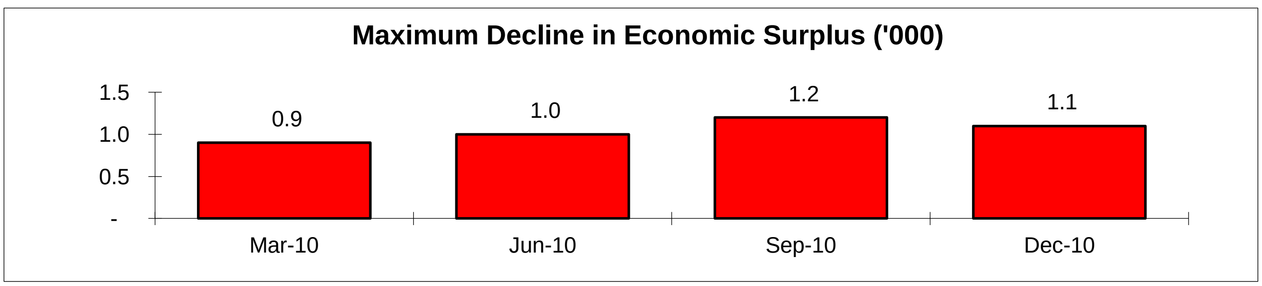
Partial Duration Sensitivity Analysis (Price Sensitivity to Specific Rate Changes)

The exposure tends to be at the longer durations, where an increase in interest rates will create a loss. All measures are within the 630,000 guideline.

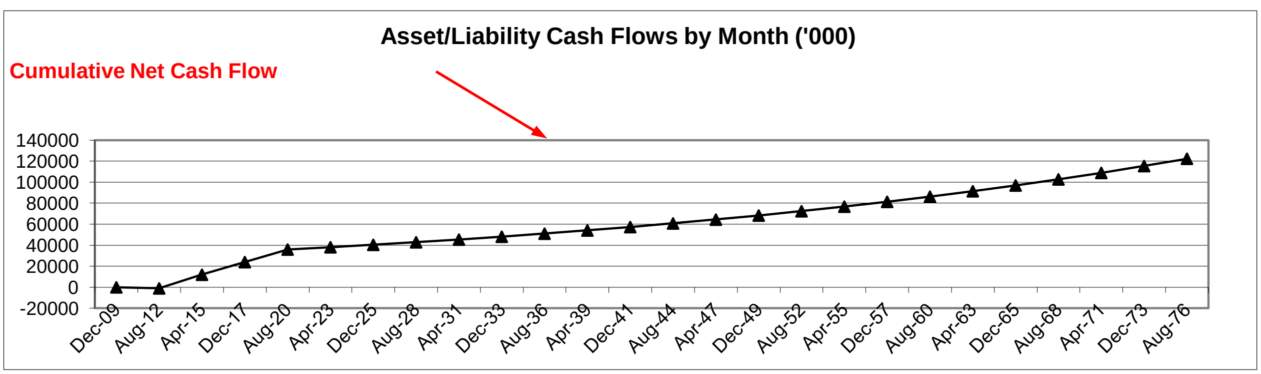


Scenario Testing

The maximum decline in economic surplus at the 95% confidence level stands at $1.1 million, and is the result of a slow decrease in interest rates.



Cash Flow Analysis



Byrd Ratings & Analysis

1 Byrd Drive, Capital City ph 123/555-6500 www.ByrdR&A.com

February 10, 2010

A. Hugh Dodo, CFO
Wonka Life Insurance Co
411 Main Street
Zoo Falls 54321

Dear Hugh

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

I apologize that we did not meet with your company's management last year. However, let me assure you that Byrd's professional financial services analysts performed a through review of Wonka Life utilizing publicly available information.

Attached is Byrd's rating rationale from last year. Please look through this document and make note of any changes you feel are necessary. In addition, we will need your 2009 financial information to be provided in the same format as in past years. I would like to receive that in advance of our meeting.

I note that the Byrd Financial Wherewithal Rating™ (commonly known as the "Byrd Rating") for Wonka Life is currently **A-** with a negative implication. It is rare for a company's rating to carry a negative implication for two years. We would like to resolve the issues surrounding the negative implication during this review cycle of Wonka Life.

I have also attached the Byrd Liquidity Standards. In light of the current economic conditions, our economic modeling group is considering some revisions to the scenarios. Since liquidity is likely to be a future discussion topic, I thought I might as well start with our current standards.

Sincerely

Otto Gold
Director
Financial Services Rating Bureau
Ph 123/555-6534
OGold@ByrdR&A.com

Cc Paula Silver, Byrd Ratings & Analysis

When it comes to ratings, clearly you need Byrd

Byrd Ratings & Analysis

Insurance Enterprise Liquidity Standards

under review

Rating Standards

Rating Level		Stress Liquidity	Base Liquidity
A+	(Superior)	0.71+	2.01+
A	(Robust)	0.31-0.70	1.81-2.00
A-	(Stable)	0.21-0.30	1.71-1.80
B+	(Fair)	0.11-0.20	1.01-1.70
B	(Troubled)	0-0.10	0-1.00

Liquidity standards represent the ratio between liquid assets and projected demand liabilities under a specific scenario. Stress Liquidity is measured over a 6 month timeframe in a chaotic market. Base Liquidity represents a going concern analysis with a one year time-frame and standard cash flow testing assumptions.

Achieving the liquidity standard does not automatically imply qualification for a particular rating level.

Rating levels corresponding to liquidity standards are general guidelines to be used in conjunction with the full Byrd rating process.

WONKA LIFE INSURANCE CO

411 Main St
Zoo Falls 54321
Ph 123/555-0000 Fax 123/555-0006

Byrd Financial Wherewithal Rating™

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

Rating Rationale

Rating Rationale: The rating for Wonka Life reflects the company's strong capital position, fine operating performance and the long-term stability of its management. However, profitability has not been strong and Wonka will face new challenges as a public company. Future sales remain a question mark.

Rating History

Date	Byrd Rating
12/12/1974	A+
10/5/1983	A
9/21/2008	A-

Business Review

Wonka Life Insurance Company began operations in 1904. For most of its history, it has been controlled by the Lyon family. R. Tomas Lyon is its fourth generation leader. Earlier in 2008, Wonka completed a demutualization and issued public stock.

Wonka made its name selling innovative term life insurance at very aggressive rates. That continues to be a hallmark of the company today. The majority of the company's earnings come from the term life line of business.

The company's ventures outside of the term life insurance line have not been as profitable. Wonka's Long-Term Disability line has yet to show consistent results. Variable annuities have been marginally successful and have helped the company reach a more affluent class of customers.

Wonka's started its Guaranteed Investment Contracts (GIC) business in the early 1980's and has generally managed it well. Investment operations have not performed as well and there is some concern if the low interest rate environment persists. However, the company has seen increasing income in this line over the past few years.

The GIC business is viewed as a nice complement to Wonka's other businesses. The customers and the distribution system used to reach them are much different than those for the other lines of business.

With the demutualization earlier in 2008, Wonka has set some very aggressive growth targets. The company appears to have the capital to fund this growth internally; however the plan to actually achieve sales at these levels remains unclear.

Earnings

Wonka's earnings have benefited over the years from investment income on its very strong capital position. We expect this source of earnings to decline in the future as the company attempts to grow its business in a very competitive market. The current low interest rate environment will also continue to put pressure on earnings.

Prior to its demutualization in 2008, the company did not break out results by business segment. The numbers attributable to those business segments for years prior to 2008 below are approximate.

Profitability Analysis
(in millions of dollars)

Net Op Gain	2008	2007	2006	2005
Corporate	8.7	6.2	5.4	6.1
Term, Whole Life	2.1	3.4	1.1	4.2
Universal Life	1.3	2.6	1.7	1.5
Deferred Ann.	2.1	1.9	6.5	3.7
Payout Ann.	3.1	4.5	6.2	1.2
GIC	6.2	5.9	2.4	3.0
Disability	3.2	(4.4)	(1.2)	0.3
Other A&H	(1.9)	3.2	0.6	(1.1)
Total	24.8	23.3	22.7	18.9

Capitalization

Wonka's capital and surplus at the end of 2008 totaled nearly $600 million). While the company continues to maintain a very strong capital position, the level of capital and surplus is not really comparable to prior years due to the demutualization in 2008.

We note that the company continues to operate without any long-term debt. While there is capital to fund available growth opportunities, Wonka has stated that their desired long term capital structure would be 30% debt. However, at this time there are no immediate plans to reach this target structure in the near future.

Sources of Capital Growth
(in millions of dollars)

Year	Net Gain	Cap Gains	Change AVR	Other Changes	Change in Cap & Surp
2005	18.9	1.2	(0.5)	--	19.6
2006	22.7	8.7	(0.3)	(25.0)	6.1
2007	23.3	(6.6)	(0.3)	15.0	31.4
2008	24.8	3.1	0.8	235.0	263.7

Capital Trends
(in millions of dollars)

Year	Capital &Surplus	Stkhldr Divds	Policy Divds	AVR	IMR
2005	297.1	n/a	0.0	0.7	0.9
2006	303.2	n/a	0.0	0.4	0.9
2007	334.6	n/a	0.0	0.1	0.8
2008	598.3	14.2	0.0	0.9	1.2

Investments and Liquidity

Default experience in the fixed income portfolio has been very good and can be viewed as much better than industry averages over the past five years.

Wonka's liquidity position has been dropping over the past few years as they have increased their allocation of investments to longer-term non-investment grade bonds and real estate in order to boost yields.

Liquidity Tests
(ratios except for Cash Flow)

Year	Operating Cash Flow	Stress Liquidity	Base Liquidity	Non-Invest Grade Bonds to Capital
2005	63.5M	0.62	2.10	0.1
2006	11.2M	0.33	1.90	0.2
2007	11.0M	0.35	1.85	0.6
2008	11.8M	0.27	1.73	0.9

Investment Yields
(as a %)

Year	Net Yield	Bonds	Mort-gages	Cash & Sh Trm	Inv Exp Ratio
2005	6.90	6.88	7.66	5.02	8.88
2006	6.92	6.70	7.59	5.22	10.24
2007	6.78	6.66	7.60	4.87	7.25
2008	6.54	6.41	7.34	4.64	11.05

Investment Data
(in millions of dollars)

2008 distribution of bonds by maturity

	------------------ Years				---------------	yrs avg
	0-1	1-5	5-10	10-20	20+	mature
(% allocation)						
gov	....	0.9	0.3	.....	......	4
gov agncy	....	0.1	1.7	0.5	0.8	13
pub util	....	0.7	1.9	.....	......	6
industrial	2.3	35.0	43.7	10.9	0.3	7
cap loans	....	0.2	0.3	0.3	......	9
Total	2.3	36.9	47.9	11.7	1.1	7

	2008	2007	2006	2005
Bonds (Bil)	5.2	4.8	4.9	4.2
(% allocation)				
gov	1.2	4.7	5.6	7.4
gov agncy	3.2	1.7	1.9	2.1
pub util	2.6	6.2	8.4	6.8
industrial	92.1	86.3	82.2	81.4
cap loans	0.9	1.0	1.8	2.2
private	16.3	18.4	24.4	22.6
public	83.7	81.6	75.6	77.4

	2008	2007	2006	2005
Bond Quality (%)				
Class 1	67.9	70.6	73.1	79.6
Class 2	21.3	22.3	24.9	18.6
Class 3	7.1	4.3	2.0	1.8
Class 4	2.3	1.7	......	......
Class 5	......	......	......	......
Class 6	1.4	1.1	......	......

	2008	2007	2006	2005
Mortgage and RE (Bil)				
Mortgages	0.3	0.4	0.4	0.3
Real Estate	0.2	0.1	0.3	0.4

	2008	2007	2006	2005
Other Assets (Mil)	25.1	18.9	21.4	22.4
Cash & Short Term	10.7	7.7	9.1	8.9
Equity & Derivatives	6.7	4.7	6.0	6.4
All Other	7.8	6.5	6.4	7.1

History

Incorporated -- August 8, 1904

Originally formed as the Wonka Friends Assessment Society in 1904. Purchased by the forerunner to Lyon Enterprises in 1905. Changed to a legal reserve Mutual life insurance company in 1929. In 2008 converted to a stock insurance company through an IPO and took on the current name.

Officers

Chairman of the Board, President, CEO and COO R. Tomas Lyon, IV; Executive VP-Planning, Henri Jay; Sr VP & Chief Counsel, Kate Finch; Sr VP-Administration, Odette Bird; VP-CFO, A. Hugh Dodo; VP-CMO, Danielle Wolfe

Directors

Hermine Dauphin, Jeanne Z. Holstein, R. Tomas Lyon IV, Karl Palomino, Ivan X. Salmon

Reinsurance

Wonka Life utilizes a YRT reinsurance agreement with facultative support with Rose Reinsurance for their Term Life Insurance business. In addition, Wonka has coinsurance coverage through Rose Reinsurance on their disability business.

Regulatory

An examination of the financial condition was made as of December 31, 2007 by the state insurance department. An annual, independent, audit of the company is conducted by the accounting firm of Brown & Company.

Territory: Wonka Life is licensed in all states except New York.

Wonka Life Insurance Company
400 Main Street – Zoo Falls   54321

April 6, 2010

Mr. Otto Gold
Director
Financial Services Rating Bureau
Byrd Ratings & Analysis
1 Byrd Drive, Capital City

Dear Otto:

It was good to see you and Paula again last week. We certainly had a thorough discussion! I was a little surprised, though, at how much importance you seemed to place this year on processes and procedures. Our presentation was focused almost exclusively numbers because I have always felt that numbers drive results.

I am taking this opportunity to address a few of the topics you raised at the meeting for which either we did not have a sufficiently organized response, or you did not seem to understand or appreciate the response that we offered.

<u>Asset/Liability Management</u>

I am very proud of the work we have done in this area. We have had our processes in place for some time now.

For interest sensitive liabilities we monitor Macaulay duration, which is a well-established measurement at Wonka. Within each of these blocks of business, we periodically measure the duration of the assets and liabilities. If these measures begin to drift apart, we rebalance our asset portfolio such that its new duration approaches that of the liabilities. The liability duration is measured as part of our semi-annual cash flow testing exercises. This immunization approach has worked in the past.

As mentioned during your visit, John Badger manages our hedging for the VA GMDB. He is our Head Derivatives Trader and reports directly to Peter Fish. John came from the Crimson Sardine Hedge Fund a year ago, and has helped us to avoid losses on our GMDB guarantees. He uses an ad hoc approach based on In-The-Moneyness (ITM) and CTE measures from a stochastic analysis of the guarantee. His extensive experience working in the hedge fund business has made his ad hoc approach not only effective from a loss perspective, but also cost-effective.

Wonka has long term goals of moving to a more systematic approach, especially with our new VA Plus product, which has guaranteed living benefits, as well as death benefits. This long term plan involves utilizing liability portfolio characteristics, such as delta, gamma, vega and rho. However, John Badger does not have a timeline for this methodology change at this time.

<u>Internal Control</u>

We have a very strong audit department, reporting to our CFO. These people have years of experience in detecting possible fraudulent claims and other such problems. In fact, we have one staff member who was a pioneer in systems auditing. He works very closely with our IT department and makes sure he knows what is going on throughout our systems. Each quarter, Mark Peacock prepares a report for the Audit Committee of the Board. This report shows all exceptions to control limits that occurred in the past quarter. It also lists any audits performed on company processes that occurred during the past quarter.

Compliance is handled within the product/pricing area. As part of their research into developing a product, the pricing actuaries are expected to ensure that their products comply with current regulations. Additionally, Wanda Fox, our chief actuary, keeps up to date on any regulatory trends on the horizon, such as Fair Value. If any of these new concepts were implemented for regulatory or accounting purposes, Wanda would direct her staff accordingly for future pricing and financial reporting.

As I explained at the meeting, we have an ERM officer now, Bill Buck. He has set up a Risk Management committee to gather information on what is happening around the company. When he and his committee detect any risks that they feel should be of concern, Bill creates a documentation memo about it for his boss, Henri Jay. If Henri feels that Bill's recommendation has merit, he will forward it to the manager of the department involved.

We have a great Board of Directors, a group of people who are used to each other and who communicate with each other regularly, both professionally and socially. Because of this closeness, the Board rarely has disagreements and our meetings go smoothly. I am very proud of the job the Board has done, and I'm proud to be a part of it.

The CFO reports to us at each Board meeting about what is going on within the company. As I mentioned before, numbers drive results, so I believe it is critically important that the Board hear from and interact with our CFO on a regular basis. Over the years, we have developed detailed financial metrics that the CFO uses to lead those Board discussions

As I mentioned, I was surprised with your questions concerning processes and procedures. I noted your concerns that Senior Management does not take an active role in enforcing the company's policies and procedures and that there is no documentation of a plan in place to achieve the company's strategic goals. Mark Peacock's exceptional audit team reviews all business processes on a regular basis. I am planning on having Mark start sharing his Board report with the senior management team to help make senior leaders more aware of their role in ensuring the company complies with documented procedures in the future.

I hope this gives you an organized view of the internal controls and demonstrates to you that things go smoothly at Wonka.

<u>Management of Specified Risks</u>

Credit Risk – Although we don't have quantitative targets, we are comfortable with our current credit profile, and Peter Fish and his Investments team are very good about not straying too far away from this credit allocation. When I followed-up with them after our meeting, they reminded me that they also watch concentration to both corporate entities and industry sectors. Wanda Fox, our chief actuary, is also cognizant of the concentration of counterparty risk with reinsurers, which was included in the material we presented to you.

ALM and Market Risk Control – I already covered our ALM process above, but in addition, I would just like to mention how well Wanda Fox and Peter Fish work together in sharing information to make this work. The ALM activities are formally in Wanda's area but she is very dependent, of course, on Peter's cooperation to get everything to come together. At the end of each year, we close that year's block of new investments and liabilities and Wanda prepares a report showing how the durations have been matched. She also takes a look at the prior years' blocks and lets Peter know if any of them have strayed too far with respect to the difference between total assets and total liabilities. If they have diverged too much, she lets Peter know and she makes sure that he transfers the appropriate assets to get the balances evened up. Also, before he left, Hugh Dodo wrote his proposal for liquidity risk management. He was very comprehensive and detail-oriented when it came to analyzing new things. All the top financial management has a copy of that proposal to use in case of any liquidity problems.

Operational Risk – As I explained in our meeting, here again we really benefit from our strong team and the fact that they have been working together for so long. Our new ERM officer is taking care of working with the various departments to gather up everyone's ideas about risk and sort them out into a report. He will be able to share this throughout Wonka's management and, of course, we will be happy to share it with Byrd Ratings. As I mentioned above, we have a strong audit team, including one person with a special focus on IT security issues.

Economic Capital

I found our discussion on different types of financial reporting systems to be very enlightening, as well as challenging! The message I took away was that the outside world's expectations are growing that we will build our own Economic Capital model tailored to our own particular risks, rather than relying on statutory and regulatory formula-based capital requirements to determine whether the company is financially strong enough.

As I mentioned at the meeting, Wanda Fox has been providing updates from time to time on the changes going on in Europe and Canada, and new concepts that are gaining acceptance, such as Fair Value and Economic Capital. You will be happy to know that earlier today I sent her a memo instructing her to get started on planning the implementation of Economic Capital at Wonka.

I hope this additional information helps you get more comfortable with the processes here at Wonka. Please let me know if I can be of any further help.

Sincerely,

R. Tomas Lyon, IV
Chairman, President, CEO and COO

MEMORANDUM

April 13, 2010

TO New CFO

FROM Henri Jay

RE Liquidity Risk

I am forwarding to you a memo I just received from Bill Buck, Second Vice President—ERM. I think that Bill's concerns are valid and that liquidity is an important issue for the new CFO to address. We should review approaches presented in the CIA Educational Note on Liquidity Risk Management.

Bill and I are happy to provide ideas and do footwork to support related projects, but when it comes to getting the right people to hear just the right words at just the right time, well, we are smart enough to look for just the right people to do it.

Hugh Dodo had attempted to get this ball rolling once before, but all that remains of that attempt is a rough draft of Hugh's initial ideas, which Tomas distributed to various executives, but has never discussed with anyone, including Hugh.

Among Hugh's ideas was a proposed liquidity management framework. Below is the summary of the framework:

Responsibility	The Investment Division has the ultimate responsibility to manage the liquidity risk.
Management	The liquidity requirement is to pay all benefits and expenses in a timely manner. Investment cash flows will be the primary source of liquidity. The expected liability cash flows will be estimated and portfolio rebalanced annually to ensure that the asset cash flow will match the expected liability cash flow.
Monitoring	Calculate the Liquidity Ratio as of the current annual valuation date. The ratio measures Wonka Life's exposure to liquidity risk as of the most recent year end. **Liquidity Ratio** = Cash & Short Term Assets / Demand Liabilities
Scenarios	The ratio will be calculated under two Scenarios: **Normal Scenario:** This scenario reflects the normal business but with management's best estimate as to sales or cash flows. **Panic Scenario:** This scenario is intended to cover a "run on the bank." Situation. Withdrawals should be set at a level that reflects anticipated policyholder reaction to a complete loss of confidence in the financial institution.

He was also considering the historical-based (CTE/Extreme Value) approach to use to measure liquidity risk.

Would you be willing to provide some bullet points for a memo to the Board, describing liquidity risk and recommending methods of managing it? Perhaps if we make sure we are focusing our communication on the key items, and we work together to figure out the who and when, we can get things moving in a positive direction.

Welcome aboard!

Wonka Life Insurance Company

MEMORANDUM

March 26, 2010

TO Henri Jay

FROM Bill Buck

RE Liquidity Risk

Henri, during my survey of Wonka's key risks, I have become particularly concerned about liquidity risk. I have a feeling I am not the only one. I think that our liquidity condition is one of the issues Byrd has with Wonka, that has resulted in the "negative implication" on our A- rating with them. The Liquidity Test numbers from the 2008 rating report certainly show a decreasing trend.

I need to account for liquidity in the ERM model I am building. As I consider the balance sheet as of December 31, 2009, I would like to make sure I have a good grasp of Wonka's liquidity ratios. Are they currently calculated? If so, how are they defined?

I realize that the balance sheet looks just fine and that most people would say that there are enough assets to cover all liabilities. But what if current market conditions were to worsen and trigger a run-on-the-bank scenario?

Wonka Life Insurance Company

MEMORANDUM

March 26, 2010

TO Henry Jay

FROM Wanda Fox

RE Liquidity Risk

For each our of our product lines we calculated the normal scenario withdrawal probabilities as well as the panic scenario withdrawal probabilities. The calculation was based on Monte Carlo simulation augmented with some heuristic methods. The following table provides these probabilities for each of our product lines.

Liabilities	Book Value (,000s)	Normal Scenario Withdrawal Probability	Panic Scenario Withdrawal Probability
Traditional Life Products	300,000	15%	90%
Non-Traditional Life Products	400,000	10%	60%
Accumulation Annuities	1,500,000	15%	90%
Institutional Pension - Payout	700,000	0%	0%
Institutional Pension - GIC	1,500,000	8%	48%
Group Benefits	630,800	0%	0%

The panic scenario is little worse than the situation during the 2008 credit crisis. The probability calculation model takes many macro economic variables as inputs.

For your convenience I have summarized the assets in the following table.

Assets	Book Value (,000s)
Cash	355,000
Short Term Assets (Bonds)	400,000
Long Term Assets (Bonds)	2,000,000
Commercial Mortgages	1,500,000
Real Estate	775,800

Wonka Life Insurance Company

MEMORANDUM

April 15, 2010

TO New CFO

FROM Wanda Fox

RE Risk Adjusted Pricing

The Actuarial Pricing team has just completed the development of a new Term Insurance Portfolio. This represents the first time that Wonka has priced using risk adjusted measures (one of the components of the new strategic risk management process.)

As a result of the new risk adjusted measures, prices needed to increase for the longer duration Term plans. While this was justified based on the results of the pricing analysis, I am concerned that Term Insurance is now on an unlevel playing field vis-à-vis our other products since none of Wonka's other products are priced using risk adjusted measures.

I would like to set up some time to discuss this further with you. I look forward to your thoughts on this issue.

----- Original Message -----

From: "Sam Otterman" @wlic.com
To: "Fox, Wanda" FoxW@wlic.com
Sent: July 10, 2010 3:17PM
Subject: Re: Interest rate scenarios for ALM

Wanda,

Thanks for your note. I really thought our meeting yesterday was very productive. The current interest rates that we are using are the US treasury rates given below:

Current yield curve: Treasury yields by maturity

Date	1 mo	2 mo	3 mo	1 yr	2yr	3yr	5yr	7yr	10 yr	20 yr	30 yr
07-08-10	0.17	0.15	0.19	0.3	0.63	1.01	1.80	2.48	3.04	3.81	4.00

The following three tables provide the rates used for three stress scenarios:

Stress Scenario #1: Treasury yields by maturity (actual rates on 01-30-08)

1 mo	2 mo	3 mo	1 yr	2yr	3yr	5yr	7yr	10 yr	20 yr	30 yr
1.93	2.21	2.29	2.30	2.30	2.44	2.96	3.32	3.78	4.45	4.44

Stress Scenario #2: Treasury yields by maturity (actual rates on 04-11-08)

1 mo	2 mo	3 mo	1 yr	2yr	3yr	5yr	7yr	10 yr	20 yr	30 yr
0.90	1.19	1.40	1.52	1.76	1.94	2.57	2.97	3.49	4.28	4.30

Stress Scenario #3: Treasury yields by maturity (actual rates on 01-30-09)

1 mo	2 mo	3 mo	1 yr	2yr	3yr	5yr	7yr	10 yr	20 yr	30 yr
0.15	0.24	0.36	0.51	0.94	1.32	1.85	2.27	2.87	3.86	3.58

All the intermediate rates were calculated using smoothing splines with variable roughness penalty.
I've chosen the 11 rates that you provided as key-rates. I've done preliminary analysis of the key rate durations for each portfolio.

Individual Life and Annuity

Traditional Life includes all non-interest-sensitive individual life products and is predominantly comprised of non-par term and whole life. Guaranteed interest on whole life policies ranges from 3% to 6%. Policyholders can take out policy loans against any cash surrender value. A maximum loan rate of 7% exists on older policies. The duration of the traditional life liability cash flows tends to be fairly long. It has been difficult to find assets with suitable characteristics to effectively match these liabilities. The liabilities in the traditional life segment are supported by $300 million of assets.

Non-Traditional Life consists entirely of universal life. Universal life policyholders can direct their investments into a number of interest bearing or equity-linked accounts. Interest bearing accounts generally credit a portfolio average rate and have a minimum credited interest guarantee of 4% across the board. Generally, there is a 3-year surrender charge period. Because Wonka incurs significant costs associated with the acquisition of this business, even though the present value of future fund profits exceeds the present value of all future benefits and expenses, it will not have the hard assets to invest at issue in order to match the interest rate exposure of the liabilities. This situation creates significant reinvestment rate risk. To further complicate matters, the embedded options present in universal life mean that the liability cash flows will not be fixed and will vary with interest rates. The liabilities in the non-traditional life segment are supported by $400 million of assets.

Accumulation Annuity contains all individual flexible and single premium deferred annuities. Assets total $1.5 billion. Most funds are available for withdrawal at a book value basis. Surrender charges decline to 0% over a 5-7 year period. Minimum guarantees are generally in the 3-4% range but there is a $500 million block of annuities that have a 5% minimum guarantee. This latter block was sold with a 6% cliff surrender charge and will be reaching the end of the surrender charge period in the next year (i.e. the surrender charge will go from 6% to 0%). There is also a $250 million block of MVA (market value adjusted) annuities included in this segment. The Accumulation Annuity portfolio has been the subject of much modeling scrutiny over the years to better understand the product profitability and risk profile. Actuaries at Wonka have internally flagged each asset purchase in the portfolio to a particular product in order to support a more detailed level of analysis.

Equity Linked GICs offer the return of principal after five years, plus 75% of the percentage increase of the S&P 500 total return index over that five year period (if positive). As at December 31st:

- assets total $55 million (held in separate accounts)
- remaining term to maturity of GICs is 4.5 years
- current percentage increase of the S&P 500 total return index since issue is 6%
- volatility of the S&P 500 index equals 18%
- S&P 500 total return index is expected to grow at 15% / year

Variable Annuities include a guaranteed minimum death benefit, which, upon death of the policyholder, will pay the maximum of the current account value and the deposits accumulated at 5%. Upon surrender, the market value less surrender charges is paid. The benefit is reduced dollar-for-dollar on partial surrenders. For example, assume a policy holder elects to take a $10 partial surrender of the $100 Account Value when the GMDB is $110 after the surrender charge wears off. As a result of the partial withdrawal, the Account Value would be reduced by $10 to $90 and the GMDB would also be reduced by $10 to $100. Therefore, the dollar amount of the GMDB exposure in excess of the Account Value remains constant, but increases as a percentage of the Account Value.

Separate Accounts for Variable Annuity and Variable Universal Life assets are invested in various externally managed mutual funds. Policyholders may transfer between the funds offered, make new deposits, and withdraw money, subject to a surrender charge.

Institutional Pensions

Payout Annuity contains pension buyout annuities in both immediate and deferred status, supplementary contracts arising from life and annuity contracts, and structured settlement annuities. This segment was established to hold intermediate to long-term income payment streams that may or may not include life contingencies. Structured settlement annuities contain standard and substandard life contingent annuities, non-life contingent streams and some COLA (cost-of-living adjustment) escalators. Assets total $700 million.

Guaranteed Investment Contract (GIC) includes both single deposit and window GIC's. This segment holds $1.5 billion of assets. $200 million of the portfolio consists of funding agreements that are putable with 60 days notice. $100 million of the portfolio consists of floating rate funding agreements, payable in Euro's, which mature over the next 5 years. The remaining liabilities are benefit-sensitive contracts with institutional pension plans, which mature over the next 5 years.

Separate Account Institutional GIC offers single deposit and window GICs to larger institutional clients. For accounts larger than $150 million, the company will offer to set up a separate portfolio for one client, with its own asset allocation targets. Administrative fees are reduced for the commingled accounts, which are available to clients with at least $25 million. While the institutional client owns the market value of its share in the separate account, the individual participants receive interest credited to the book value of their individual accounts. Wonka annually resets the crediting rates, so that the market value gains and losses in the commingled account are shared with participants. The general formula used to set the credited rate is as follows:

Credited rate

= *Market yield of separate account*

\- *Administration fees*

\+ *(MV separate account – BV individual accounts) / ($ Duration of separate account)*

In addition, Wonka guarantees that the market value of each separate account will never be less than 80% of the book value of the individual accounts associated with it. Wonka does not offer synthetic GICs.

Group Benefits

Group Long-Term Disability pays up to 70% of an employee's salary prior to the disability claim. Premiums are paid through payroll deduction. Premium rates are guaranteed for 2 years. Claims incurred stay with Wonka even if the employer changes its insurance carrier for new business. The current product provides "own occupation" benefits generally for two years from the date of incurral, after which payments continue only if the claimant is unable to work at all. Wonka offers rehabilitative services and counseling where it may be effective, usually through the first four years of a claim. Claim runoff is such that reserves at claim duration 10 are expected to be about 10% of the reserve at date of incurral. There is no cash surrender benefit to either individual claimants or group policyholders. The claim liabilities and unearned premium in respect of the group LTD segment are backed by $500 million of assets.

Other A&H includes short-term group medical, dental, and term life products. These products are sold through the same group benefits general agents who distribute the company's LTD product. The company competes on strong underwriting and customer service. The products are repriced at least annually to meet profitability targets. While investment margins are material, they are seen as independent of underwriting margins. Earned premium to surplus leverage is low, at about 4/1. The claim reserves and unearned premium in respect of the other A&H segment are backed by $130.8 million of assets.

Surplus Account contains the surplus capital. The Surplus Account is managed to maximize total rate of return growth over time subject to a series of constraints related to liquidity, bond ratings and operating income versus surplus income concerns. Company guidelines require an asset mix of 10-70% in equities, 0-50% in real estate, and 5-90% in bonds. The target asset mix is 50% equities, 35% real estate, and 15% public and private bonds.

March 19, 2010
Wanda Fox, Chair Product Committee

Wonka Life Insurance Company

MEMORANDUM

April 6, 2010

TO George Burn

FROM Wanda Fox

RE Economic Capital

Please put together a memo that outlines the implementation of economic capital at Wonka. Tomas and I believe it is time to move towards a realistic economic capital framework as opposed to the formula-based target capital policy, which is to hold a target capital of at least 300 per cent of regulatory capital.
According to the slides from the industry conference earlier this week, below are the elements that should be considered in the implementation. I rely on your judgment to determine what is right for Wonka.

1. *Definition of Economic Capital* – Economic Capital is defined as sufficient surplus to maintain solvency at a given level of risk tolerance, over a one-year time horizon.

2. *Risks Covered* – The major risk categories are market risk, credit risk and operational risk. We may need to perform an assessment to determine which risk is material to Wonka. We do not need to set aside capital for operational risk as we have had no operational losses in the past five years.

3. *Methodology* – We should determine the capital for each risk using a stress-test method, and then aggregate the capitals using a variance-covariance technique. Alternatively, you could consider calculating the surplus stochastically, using a full set of real-world economic scenarios. But this is not what I would prefer.

4. *Risk Modeling* – We can model all the financial and non-financial risks using a log-normal distribution. Its long-tailed characteristic is suitable for determining the size of adverse outcomes.

5. *Capital requirement* – I suspect that the capital requirement will be higher since we will consider more risks than what is required under the regulatory capital framework. We may want to use derivatives to reduce exposure to equity and currency risks.

6. *Implications* – We also need to understand the capital implications as well as the impact on investment policy of financial risks. It may be worth looking into the risk mitigation techniques that can potentially reduce the capital requirements.

It is important that we do this right in the first time. Please give some thoughts, both from the theoretical and practical perspectives.

Wonka Life Insurance Company

MEMORANDUM

November 13, 2010

TO New CFO

FROM Peter Fish

RE Employees' Pension Plan

Below is an outline of the financial position of our Employees' Pension Plan and its target asset allocation as well as a summary of its risk profile. I am concerned whether the plan's asset allocation policy and some of its investments are appropriate and believe we should be more engaged in setting and reviewing the investment strategies of the Plan.

The next meeting of the Investment Committee is in a few weeks and we should have a discussion on how to achieve our required rate of return objective for the Plan. But we should not forget about our risk tolerance and our risk mitigation options.

Funded Status (12/31/10) – Market Values ($ Million)			
Assets	$321.4	Assets/Liabilities	94.5%
Liabilities	$340.2	Service Cost for 2011	10.1
Target Asset Allocation (12/31/10)			
Domestic Public Equity	30.0%	Domestic Fixed Income	10.0%
Domestic Private Equity	10.0%	Foreign Fixed Income	10.0%
Foreign Equity	15.0%	Hedge Funds	10.0%
Real Estate	15.0%	Cash	0.0%
Risk Profile			
Expected annual return on assets	8.0%	Fixed income duration	5.1
Standard deviation of annual return	12.5%	Liability duration	17.1
Expected liability growth (interest only)	5.5%	Interest rate hedge ratio	5.6%
Standard deviation of liability growth	13.2%	Standard deviation of funded position vs. liability	13.5%

Would you be willing to provide some bullet points for a memo to the Board, describing our odds of achieving our required rate of return objective and possible changes that could improve these odds? In addition, we need some recommendations on asset management strategies that could be employed to better manage the Plan's overall risk exposures.

Here is an extract from the Statement of Investment Policies (SIP) of the Plan:

"*The objective of the DB Plan is to maximize return in order to manage the funded ratio and reduce the cash contribution over the long-term at an appropriate level of risk giving consideration to the need to secure the benefits and the company's ability to absorb fluctuations in cash contributions*."

Note the following important facts related to our Plan:

- The Plan assets and liabilities are not contained within Wonka's balance sheet.
- Pensions of all former employees are paid from the pension fund (the Plan is self-administered).
- The pensions of former employees who retired before January 1, 2001, are adjusted annually to reflect any increase in Consumer Price Index subject to a maximum increase of 5% per year.
- For former employees who retired after December 31, 2000, (and all future retirees) these annual cost-of-living adjustments (COLAs) are discretionary and our Board has been reluctant to grant them in recent years because of the weak funded status of the Plan.
- Every time the Board regretted these decisions and hoped that the financial position would improve sufficiently during the following year to allow for at least a fractional COLA.
- Mortality table used to value the Plan liabilities does not incorporate any mortality improvements and the Board is becoming concerned about the longevity risk.
- No derivatives are used by pension fund managers and there is no hedging of any kind as the managers believe that using derivatives is dangerous.