

Workshop

2014 Joint Regional Seminar in Asia



General Reinsurance AG

Theodor-Heuss-Ring 11, 50668 Köln
Tel. +49 221 9738 0, Fax +49 221 9738 494
www.genre.com



Lavi Shoo

Lavi Shoo is general manager of Straightforward Life Insurance in Sampleland. It is widely held that Straightforward's rising sales volume is mainly attributable to Lavi's skills and energy. His launch of the "Cathy Carefree" product ten years ago that revolutionised the disability market is almost legendary. The traditional disability market became extinct soon after its introduction and all competitors quickly started copying the "Cathy Carefree" product. Lavi is particularly admired for his courage to refrain from significantly modifying the product that continues to sell like hot cakes.

However, one major rating agency has pointed out that Straightforward is now greatly exposed to risks from the "Cathy Carefree" portfolio. They were even impertinent enough to warn him that Straightforward would only be able to retain its current excellent rating on condition that a report be submitted about the risks inherent in this portfolio. Needless to say, Lavi is upset about their impudence but, knowing they cannot be trifled with, he decides to hire Fuss Y., an independent insurance consultant, to draft a risk report.



Fuss Y.

Fuss Y. was given complete freedom to collect any information he required. He has just finished the fact-finding stage of his assignment and is about to start writing the report. You can view his findings in the attachment to this document.

It is now your task to analyse the situation at Straightforward from a risk management point of view and to recommend actions (if any) for the future. In the process you may want to consider the following the questions:

- If you were Fuss Y., what areas of concern would you highlight?
- What would you recommend to rectify any of the adverse developments?
- How could a more future-proof product be designed?
- If you were board member of Straightforward Life, which actions would you take? Which implications would you expect for Straightforward Life? ... for the market? What would you do to protect Straightforward Life from possible negative developments?



Cathy Carefree

Tel: 0-900-CATHY-CAREFREE
Tel: 0-900-22849-22733733

Receive a lump
sum payable on
diagnosis of

- Cancer,
- Stroke or
- Heart Disease

Or receive an **annuity** up to age 65 if
a class III disability under the Social
Insurance Law is confirmed. Of the
three classes of disability defined
under the Social Insurance Law,
Class III is the most severe.

If you qualify for both the annuity
and the lump sum benefit at any
point in time during the term of the
policy, you can claim both. However,
the lump sum benefit may be paid
out only once during the term of the
policy.



Straightforward Life

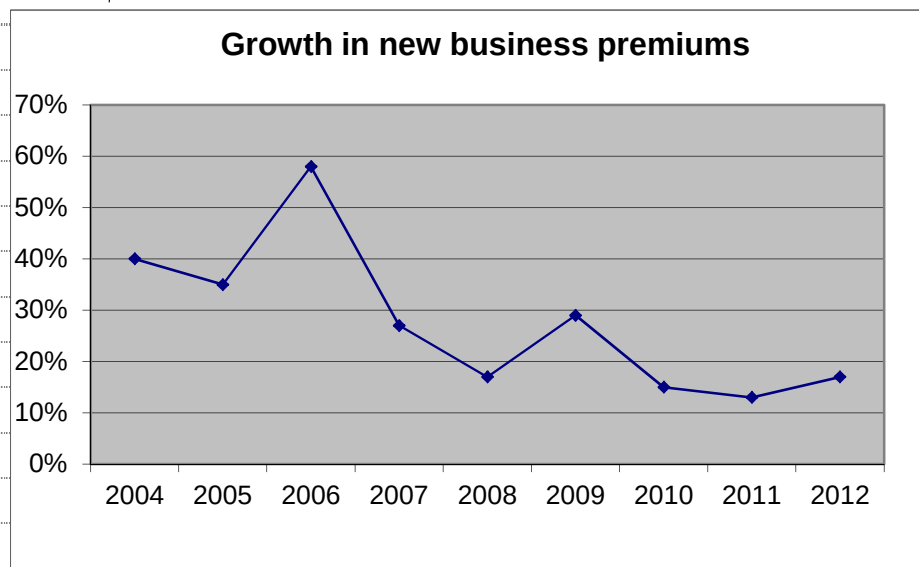
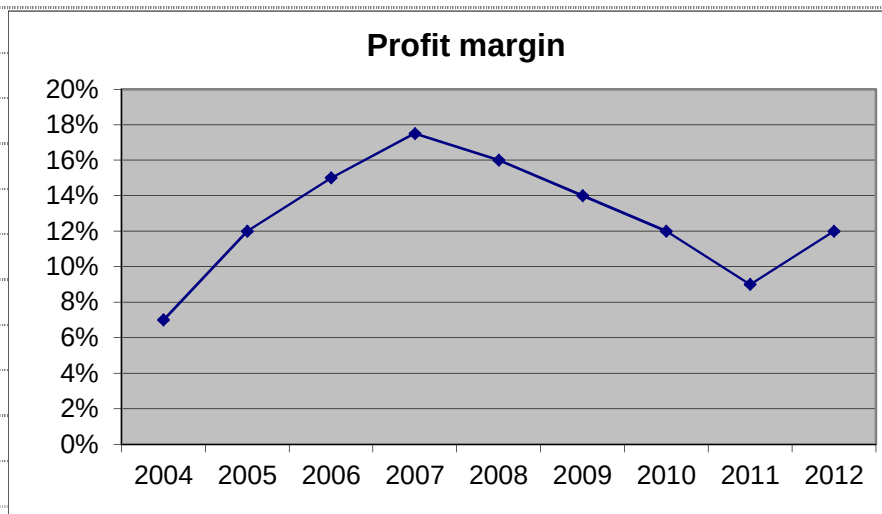
Fuss,

You may want to look at the attached material for your report.

As you can see, the product has created great opportunities and there are no major concerns. But do go ahead and check for yourself. We have high expense loadings and the business is non-profit participating. We have been a bit squeezed on the investment side lately. The spread between actual returns and the technical interest rate has dropped below 0.5%.

Hope that improves soon.

Lavi



Memo



From Paul Seven
Unit UCSLH
Date 24 Sep 2013



Extract from Cathy Carefree pricing note, dated 19 Nov 2002

Incidence rates for cancer, stroke and heart disease compiled by Longeviana. Domestic rates have not yet been reported by the Ministry of Health. Sampleland Fatal Disease Registry to be introduced soon, however.

Incidence rates for disability taken from the 2002 Social Insurance Yearbook, Vol. II.

Loading of 35% to be applied to all incidence rates to account for the risks of error, change and fluctuation.

Active lives mortality – 1998 standard industry life table used.

Disabled lives mortality – little information available. Social Insurance data not useful, as data only covers survival starting about three years after disability onset. According to some data from Longeviana and the CMO's estimate, 200% of 1998 standard industry life table seems reasonable.



From:
Bit Pit, IT
15 Sep 2013

To: "Fuss Y."
<fussy@straightforward.com>

cc:

Subject:

Fuss,

You have asked for an analysis by profession for the Cathy Carefree portfolio. I have to say, such a request is very unusual for us. Our focus is the implementation of new products and the improvement of applications for the sales and the admin people. I have checked this with my managers but it seems we really cannot provide the data you are requesting. The profession is not part of the data model that was set up for the Cathay Carefree portfolio ten years ago. I suggest you ask customer care if they can provide some data for a random sample.

Bit

Neighberia embarks on health improvement program

Twin-sisters Sally R. and Nelly R., 35, are both in excellent health and neither has ever been in the hospital. However, Sally may outlive her sister Nelly by about 10 years simply because she lives

5 miles across the border in Neighberia, while Nelly still lives in Sampleland. You may be wondering: How can this be? The reason is a massive screening program gradually being introduced in Neighberia.

This program is designed to detect many potentially fatal diseases such as cancer, cardiovascular diseases,

stroke or Alzheimer's at an early stage. Every Neighberian citizen will undergo a compulsory screening every two years from now on. It is believed that early detection considerably improves survival chances if one of the targeted diseases is detected and that this may add 10 years on average to the Neighberians' life expectancy. Both the Samplish Cancer League and the Alzheimer's Association of Sampleland have started lobbying for similar programs here ■



Sally and Nelly R.

Star 4 Aug 2011

Daisy's Daily News *** 21 May 2008

Central Government announces major public sector privatization initiative

In a move unprecedented in Samplish history, the Central Government yesterday announced far-reaching privatization plans for the public sector. Most hospitals, the Samplish Post, Samplish Railways and all motorways are to be sold to private investors within the next three years at the latest, Prime Minister Sir Iron reported.

Experts predict that

the move will result in massive job losses at the affected public enterprises.



All hospitals to be privatized?



Phone Call

Mr/Ms: Mary-Ann, claims management

of: 12 Sep 2013

Phone: _____

☐ Telephoned

☐ Please Phone

☐ Came By To See You

☐ Will Call Again

☐ Wants To See You

☐ Returned Your Call

Taken By: _____

Message:

They say they carefully check whether the benefit trigger requirements for lump-sum claims are met. For new annuity claims they just rely on the social insurance claims admission certificate.

She added, however, that she had heard they checked the current status of annuity claims in payment quite thoroughly in 2009. Mary-Ann was not with the company then and is not aware of the results.

She also seemed a bit perplexed by the finding that in many cases where only lump-sum benefits had originally been claimed (Critical Illnesses), claims were filed for annuity benefits (disability) soon after the first claims assessment and the associated check-ups.

Memo



From Justy Scales
Unit Legal
Date 21 Mar 2008



...Another proposed improvement in the Cathy Carefree standard provisions relates to the so-called “virtual onset” of class III disability. Social Insurance payments only start on the date on which a valid claim has been established. This has been criticized as unfair in the media because the claims criteria are often met months earlier. ...

From the marketing perspective it would be good if claims were paid retrospectively for a maximum of six months if sufficient medical evidence is provided showing that the claims criteria were met prior to the claims admission by Social Insurance. We would have no objections if this improvement in the standard provisions were extended to in-force business to avoid any inequality arising among the policyholders...



To: "Adrian Quant"
<aquant@straightforward.com>

cc:

Subject:

From:
Lavi Shoo
22 Mar 2008

Adrian,

When talking to your own shoes you actuarial guys only think of the best way to harm the company. I've had enough of that! We need this improvement in the standard provisions now, we need it without extra charges, and we will have it! Anything else would spoil our long success story in this product line. You don't know anything about sales, but trust me, the revisions will lead to a large increase in sales. The extra production will mean extra profit, got that? The extra profit will easily offset any small expenses the revisions may cause, so don't you worry...

Lavi



To: "Fuss Y."
<fussy@straightforward.com>

cc:

Subject:

From:
Mary, Market Research
20 Sep 2013

Market rates for a lump sum of 100,000 and a monthly annuity of 1,000:
A comparison of Straightforward with major competitors

	Straightforw. No distinction by smoker status	Competitor 1 Smoker rates	Competitor 2 Non-smoker rates
Professional class A	500.00	600.00	300.00
Professional class B	500.00	725.00	375.00
Professional class C	500.00	800.00	500.00
Professional class D	500.00	1200.00	750.00



To: "Adrian Quant"
<aquant@straightforward.com>

cc:

Subject:

From:
Rich Gold, Asset Management
19 Mar 2008

Adrian,

Congratulations on the successful completion of your actuarial exams! I can appreciate that you are now eager to apply the knowledge gained from your actuarial studies to practice in the field. I knew the Cathy Carefree product involves long-term rate guarantees, but I didn't realize they were actually whole of life guarantees. Anyway, the guarantees are no great concern to me. We are fully matched on the investment side. Well, there may be a slight re-investment risk since no investment vehicles are available with durations of more than 20 years. Still, no problem, we should be able to manage that. It might help if you could send me a new cash-flow scenario for this product. The latest one I have dates from 2002. Nothing urgent though...

Rich

Sir Iron determined not to step down

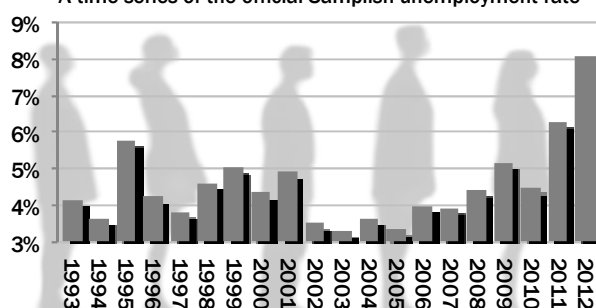
Even after three consecutive weekends of mass demonstrations against

serted that the government is using various tricks to distort the true

extent of the unemployment problem. Sir Iron called on the opposition to support his efforts to further develop the banking and IT sectors. Those two sectors combined provide close to a third of all full-time jobs today, compared with just over 10% ten years ago. Sir Iron said these sectors are a job machine which would soon ...

continued on page 23

A time series of the official Samplish unemployment rate



Opposition politicians claim the true rate is much higher

the staggering unemployment rate, Sir Iron is displaying fierce determination not to step down as Prime Minister. He has accused the opposition of badmouthing the Samplish economy. Leading opposition politicians had as-



Demonstrations in the capital yesterday

Star ☆

23 Sep 2012

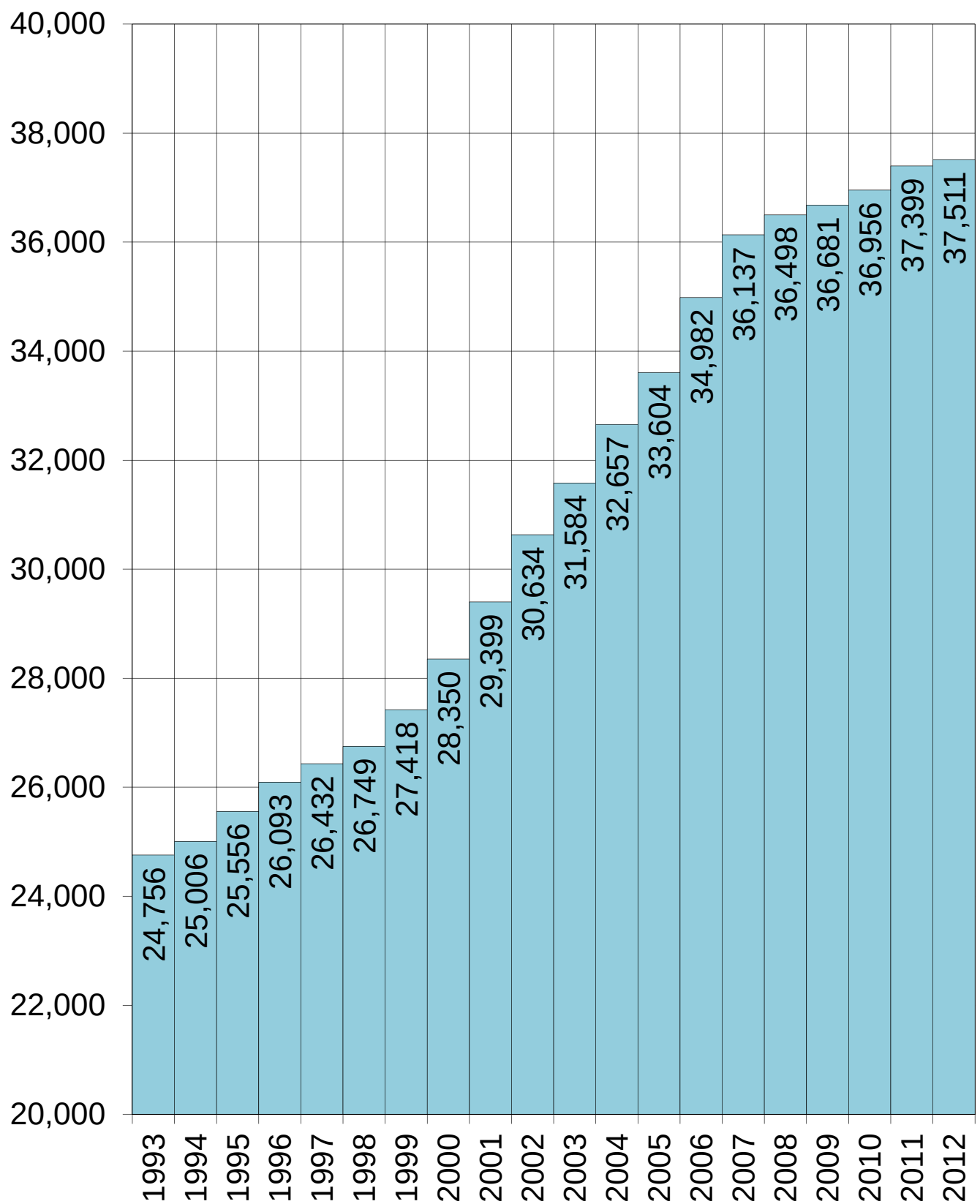
First heart attack at age 25?

The latest research presented yesterday by leading Samplish heart disease expert Ben Tricle has alarmed the public. The study found that virtually every adult has suffered a heart attack. The first one occurs as early as age 25 on average. However, most early heart attacks are silent events that are hardly noticed. Mr. Tricle stressed that even if the silent events seem totally harmless they meet the current generally accepted medical definition of a heart attack. (io)



A heart attack

Development of average gross income in Sampleland



Memo



From Dave Through
Unit Head of Underwriting
Date 22 Sep 2013

Fuss,

I cannot respond to all of your questions due to my heavy work overload, but please find attached some findings from underwriting.

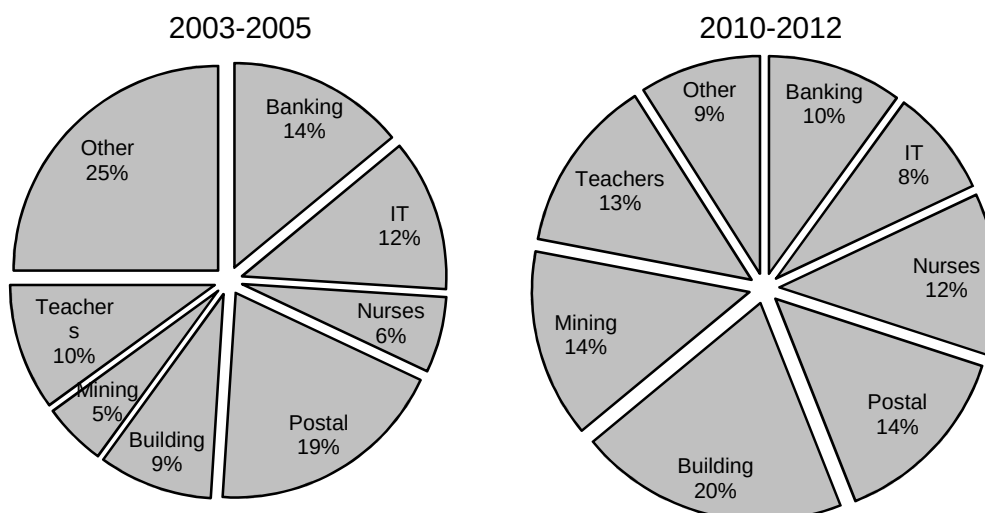
First of all, you asked about the proportion of smokers in our Cathy Carefree portfolio. As you may have noticed, we do not have special smoker rates. We therefore do not solicit information on smoker status on the application form.

From what brokers tell me I have to assume that our acceptance rate in this product line is unique across the industry. In fact more than 70% of our Cathy business is broker business today, up from only 30% 5 years ago. I think this is just clear evidence of our extensive efforts to streamline our underwriting process in 2010:

- Insurance cover up to age 65 for all applicants
- Full medical underwriting only for lump sums > 200,000 and monthly annuity amounts > 3,000
- Shifting maximum underwriting authority to the point of sale
- Medical questions only relate to the last 3 years before the application stage (rather than 10 years)

We do apply ratings to substandard cases that do not necessarily have to be rejected. For that purpose we occasionally refer to underwriting manuals for Critical Illness and Disability from a couple of reinsurers, but we fortunately do not have to rely on external expertise. The final ratings are based solely on the individual assessments of our very experienced underwriters.

One of our students examined a random sample of 500 application forms to produce the distribution by profession in new business that you requested.





To: "C. King, Customer Care" <cking@straightforward.com>

cc:

Subject:

From:
Lavi Shoo
13 Mar 2011

C.,

Congrats! Great achievement! More of the same!

Lavi

> Mail from "C. King, Customer Care" <cking@straightforward.com> send
> to "Lavi Shoo" <lshoo@straightforward.com> at 3/13/2011 - 11:16 AM
>
>
> Lavi,
>
> Our portfolio campaign is turning out to be very successful. We have
> identified about 20% of the policies in force where policyholders
> might currently be eligible for a benefit increase without new
> underwriting due to the built-in increase options. A fantastic 25%
> of those policyholders responded to our letter and opted for a
> benefit increase. By the way, Lavi, I checked a little further and
> discovered that our policyholders have been actively using the
> increase options for years. IT could not provide complete data but,
> based on some sample files that we keep at CC, I would estimate that
> 1 out of 2 policyholders have exercised one of the guaranteed
> increase options and perhaps 20% have even exercised two or more. In
> most cases increases seem to have occurred after the death of a
> parent, after divorce or after the birth of a child. The average sum
> insured for policies that may have used at least one of the options
> should be around 100,000 (average monthly annuity: 3,000), which is
> roughly 30% more than for other policies. I think our customers
> really value the product and our CC services. No wonder the lapse
> rate has dropped below 2% p.a.
>
> C.
>
>

Memo



From Paul Seven
Unit UCSLH
Date 26 Sep 2013



Preliminary actuarial report

It was very difficult to obtain all the data needed. Some of the results are therefore based on estimates. "A/E" stands for actual versus expected, which is the actual observed number of cases divided by the number of cases that were anticipated on the basis of the full assumptions, including the loading from the original 2002 pricing note. "CI" stands for Critical Illness (lump-sum benefit).

Claims incidence by age group		
age group	A/E	no. claims
20-25	61%	127
26-30	45%	415
31-35	88%	780
36-40	115%	1,231
41-45	128%	1,549
46-50	122%	693
51-60	97%	15
total	99%	4,810

Claims incidence by policy year, by type of claim				
policy year	A/E		no. claims	
	CI	Disability	CI	Disability
1	26%	95%	79	161
2	44%	94%	63	129
3	53%	98%	95	193
4	65%	99%	87	177
5+	97%	120%	1.262	2.562
total	77%	114%	1.587	3.223

Average monthly annuity disability claims 2.929
Average lump sum benefit CI claims 87.876

Year	A/E	no. terminations
2003	70%	4
2004	85%	11
2005	102%	9
2006	79%	16
2007	89%	20
2008	92%	18
2009	127%	55
2010	75%	28
2011	85%	33
2012	81%	40
total	90%	235

Disability claims incidence by annuity amount		
amount	A/E	no. claims
0-1000	137%	471
1001-2000	110%	700
2001-3000	65%	451
3001-4000	156%	650
4001-	136%	950
total	115%	3.223

Distribution of claims by profession				
	2002-2004	2005-2008	2009-2011	Total
Banking	22	51	27	100
IT	27	42	20	89
Nurses	32	200	416	649
Postal	97	359	486	942
Building	80	388	801	1.268
Mining	51	256	561	868
Teachers	32	246	271	549
Other	114	145	88	347
Total	456	1.686	2.670	4.810

Claim terminations by age group		
age group	A/E	no. terminations
20-25	121%	2
26-30	102%	7
31-35	154%	31
36-40	93%	48
41-45	78%	81
46-50	84%	63
51-60	128%	3
total	90%	235

Claim incidence by calender year		
Year	A/E	no. claims
2003	21%	88
2004	55%	153
2005	73%	214
2006	84%	249
2007	92%	341
2008	88%	411
2009	141%	683
2010	121%	827
2011	104%	880
2012	130%	963
total	99%	4,810