Report to ECC from the Board of Examiners

SEMESTER 1 2013

PART III

BOARD OF EXAMINERS' REPORT

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SUMMARY

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The Semester 1 2013 Part III examinations of the Actuaries Institute ("Institute") were held from the 23rd April to 7th May 2013.

Pass Rates

The number of candidates presenting for the Semester 1 2013 Part III Exams, the recommended passes and the resulting pass rates are shown in the table below, together with the corresponding numbers for the previous three exam periods:

Table A: Recommended Number of Passes by Part III Course

	2013 (1)			2012 (2)			2012 (1)			2011 (2)		
	Sat	**Pass**	**%**	**Sat**	**Pass**	**%**	**Sat**	**Pass**	**%**	**Sat**	**Pass**	**%**
C1 Investments	n/a	n/a	n/a[1]	43	18	42	56	17	30	67	21	31
2A Life Insurance	50	26	52	43	14	33	67	22	33	49	10	20
2B Life Insurance	43	11	26	43	17	40	52	13	25	41	6	15
3A General Insurance	96	31	32	96	29	30	103	29	28	78	18	23
3B General Insurance	62	22	35	69	26	38	71	27	38	65	20	31
5A Invest. Man. & Fin.	n/a	n/a	n/a	30	17	57	n/a	n/a	n/a	26	16	62
5B Invest. Man. & Fin.	37	21	57	n/a	n/a	n/a	22	13	59	n/a	n/a	n/a
6A GRIS	19	8	42	n/a	n/a	n/a	16	5	31	n/a	n/a	n/a
6B GRIS	n/a	n/a	n/a	14	3	21	n/a	n/a	n/a	8	5	63
7A ERM[2]	98	39	40	91	30	33	83	31	37	82	21	26
ST1 Health & Care	20	9	45	16	6	38	13	5	38	n/a	n/a	n/a
C10 CAP	74	39	53	71	40	56	82	47	57	87	48	55
Total	**499**	**206**	**41%**	**516**	**200**	**39%**	**565**	**209**	**37%**	**503**	**165**	**33%**

The Chief Examiners aim to produce consistent standard of passing candidates, rather than a consistent pass rate from year to year. This semester, the recommended overall pass rate of 41% is consistent with the previous semester. The number of candidates sitting the Part III exams in the latest period shows a 3% decrease over the previous semester.

The pass rate for 2A has increased from the previous semester while the 2B pass rate has decreased.

[1] With C1 Investments being discontinued in 2013 it is difficult to conclude overall numbers until C7A and ST1 results are released.
[2] All C7A ERM figures are in terms of non-fellows only.

Fellows

If ECC adopts the recommended passes, the number of members that will be made Fellows (subject to attendance at a Professionalism Course and paying any relevant exemptions) will be:

Table B: Recommended Number of Fellows

Category	2013 (1)	2012 (2)	2012 (1)	2011 (2)	2011 (1)	2010(2)
New Fellows	30	27	43	36	40	40

Prizes

Prizes are awarded only once in a calendar year following the semester two examinations. Chief Examiners have identified candidates that meet these criteria, with regards to their current exam for evaluation in semester two.

Online Forum Participation

The online forum participation mark, replacing the previous assignment assessment, continued this semester for all subjects except C10, C7A and ST1,. For the first time, the assessment for subject 5B (previously run by Access Macquarie), included an online forum participation mark.

Students are required to post 2 original posts and 4 replies. A participation mark was awarded based on the quality of these posts.

The following table provides a distribution of the participation marks received by students:

Participation	Subject						
Mark	2A	2B	3A	3B	5B	6A	Total
10	25	6	47	30	12	5	125
9	13	8	18	13	8	0	60
8	6	12	20	12	8	9	67
7	1	7	3	2	3	2	18
6	0	5	1	3	1	1	11
5	1	0	2	1	2	1	7
4	0	1	0	0	2	0	3
3	0	0	0	0	0	0	0
2	2	2	1	0	1	0	6
1	0	0	1	0	1	0	2
0	2	2	3	2	3	1	13
No. of Candidates	50	43	96	63	41	19	312
Average Mark	8.5	7.3	8.7	8.7	7.4	7.7	8.2

Observations:

- The overall average mark was 8.2/10 (similar to the 8/10 mark for the previous semester, Semester 2 2012).
- There was a good level of engagement in the 5B online forum, introduced for the first time for this subject.
- For GRIS there was a significant increase in the average participation mark from 6.7 for 6B last semester to 7.7 for 6A this semester, which brings it in line with the other subjects.
- A high 40% (32% for Semester 2 2012) proportion of students across all subjects were able to achieve the maximum mark of 10/10. This continues to be a very good outcome.
- For those candidates who passed the exam, they were generally helped by the high participation mark they received for the online discussion forum.
- These results indicate that there continues to be a high level of student engagement in the new online assessment.

Examination Administration

1. The Board

The Board of Examiners oversee the Part III examination process of the Actuaries Institute. The Board of Examiners consist of the Chair and the Chief Examiners for each subject, supported by Institute staff.

1.1. BoE Chair

Chair Gary Musgrave

1.2. Chief Examiners

Course 2A:	Life Insurance	David Service
Course 2B:	Life Insurance	Steve Miles
Course 3A:	General Insurance	James Pettifer
Course 3B:	General Insurance	John Tucci
Course 5B:	Investment Management & Finance	David Pitt/Tim King
Course 6B:	Global Retirement Income Systems	Stephen Woods
Course 10:	Commercial Actuarial Practice	Bruce Thomson

I would like to take this opportunity to thank all of the members of the Board of Examiners and their assistants for their efforts in preparing and marking the examination papers. The management of the examination process is an extremely important function of the Institute and it is currently being run by a small group of committed volunteers.

1.3. Meetings of the Board

The Board met on three occasions this semester as part of the exam process as follows:

Table 1: Meetings of the Board

Meeting	Purpose
9 January 2013	• Update on enrolment numbers and course offerings for this semester. • Identify Chief & Assistant Examiners and Course Leaders for each course for this semester. • Outline the responsibilities of Chief Examiners and this semester's schedule. • Review progress on the drafting of the exams to date
27 March 2013	• Discuss the status of this semester's examination papers, model solutions and sign-off process. • Discuss the marking spreadsheets and review the recruitment of markers.
12 June 2013	• Review the recommended pass lists and treatment of borderline candidates. • Review the recruitment of Chief Examiners and Assistant Chairs for next semester.

2. Administration and Exam Supervision

The Board of Examiners was ably assisted by a number of Institute staff, in particular Mr Philip Latham and Ms Rebecca Moore. Philip and Rebecca were responsible for administering the entire process and ensuring key deadlines were met, compiling and formatting the examination papers, distributing material to candidates and to exam centres, processing results and collecting historical information for the production of this report. They did a great job and the Board of Examiners team is indebted to them both.

The Part III Sydney and Melbourne standard examinations delivered by the Institute were once again run by an external consultancy – Language and Testing Consultancy (LTC).

The Part III examinations delivered by Access Macquarie were arranged with the Macquarie University Applied Finance Centre and the Centre for Adult Education in Melbourne as venues.

The Part III CAP and Life Insurance examinations were run by an external consultancy – Cliftons, a computer training venue.

Other examinations were administered by Fellows or other approved supervisors.

3. Course Leaders

Since October 2004, Course Leaders have been appointed by the Institute to undertake a variety of tasks relating to modules 1-3 of the Part III education program. Course Leaders draft examination questions, conduct tutorials, monitor forums and assess the online participation mark. The following is a list of the Course Leaders for this semester:

Table 2: Course Leaders

Course	Roles
2A	Anthony Asher, Bridget Browne, Steve Miles, Bruce Thomson, David Service, Iris Lun, Jasdeep Singh, Anthony Brien, Mark Barda, Robert Milohanic, Alana Paterson, Andy Siu. (writers on project team), Bruce Thomson (tutorials, forums and participation).
2B	Anthony Asher, Bridget Browne, Steve Miles, Bruce Thomson, David Service, Iris Lun, Jasdeep Singh, Anthony Brien, Mark Barda, Robert Milohanic, Alana Paterson, Andy Siu. (writers on project team), Anthony Brien (tutorials, forums and participation).
3A	James Fitzpatrick (exam), Andrew Huszczo/Ben Qin (tutorials) and Felix Tang (forums and participation).
3B	Jim Qin (exam), Jeffrey Thorpe (tutorials) and Daniel Fung (forums and participation).
5B	David Pitt and Tim Kyng (exam, tutorials and forums and participation)
6A	David McNeice (exam, tutorials, forums and participation).
7A	This course is run completely external to the Institute.
ST1	This course is run completely external to the Institute.
CAP	David Service

4. The Examination Process

The new assessment structure, implemented for Life insurance exams in Semester 2 2012, was once again delivered in Semester 1 2013. The following assessment structure was used:

- A multiple choice component. (weighted at 30%), and;
- A longer answer component (weighted at 60%)

All other Part III examinations, excluding C7A ERM and ST1 Health and Care, commenced this semester with the usual exam process with an initial meeting of the Board of Examiners. Once the Chief Examiners were appointed in all internally run subjects they met with Course Leaders (where applicable) to discuss the draft exam questions.

4.1. Multiple Choice Component Question setting

The multiple choice questions in Life Insurance were developed and reviewed by the project team and delivered to students using a customised version of the Australian and

New Zealand Institute of Insurance and Finance's (ANZIIF) exam system. The multiple choice component was run on a closed book basis. The following process was followed:

- 6 additional multiple choice questions and sample answers were written for each course and made available to students in the LMS during the semester
- All new questions were reviewed by an independent member of the project team
- All new questions were tested by an expert (member of the Practice Committee)
- Review by Chief Examiners of the overall course coverage and pre-selection of questions.
- Testing with new Fellows
    - 7 2A testers and 4 2B testers completed the multiple choice component in the actual ANZIIF online exam system
- Final selection of questions by the Chief Examiners and project team
    - 29 questions for 79 marks in 2A; 29 questions for 80 marks in 2B
- Sign-off of all questions for semester 1 2013 by Chief Examiners and one other writer from the project team.

4.2. Longer Answer Component Question setting

The longer answer questions in Life Insurance were developed and reviewed by the project team. The longer answer questions were run on an open book basis. The following process was followed:

- Last semester's longer answer questions were made available to students in the LMS as a self assessed task
- Review and edit by Chief and Assistant Examiners.
- Testing with new Fellows
    - 1 tester for the longer answer question in each course
- Sign-off of all questions for semester 1 2013 by Chief Examiners and one other writer from the project team.

4.3. CAP and Paper Based Exam Question setting

All other Part III examinations, excluding Course 7A and ST1 Health & Care, to setting exam papers is the same. This semester's Part III examinations were run on an open book basis. The general framework used to set examination papers is described as follows:

- The Course Leader (or equivalent) drafts the examination questions in consultation with the Chief Examiners.
- Draft exams and solutions are reviewed for coverage and fairness.
- A recently qualified Fellow scrutineer 'sits' the paper under exam conditions to assess the length of the paper.
- For the CAP Course a new Fellow scrutineer is appointed to check calculations in the case study exam questions.
- Exams are redrafted after feedback from the scrutineer.
- Exams, solutions and marking guides are finalised by the Chief Examiners and their

Assistants.

- The Chief Examiner and an Assistant Examiner sign off the final examination papers and solutions.

4.4. Exam marking

The general framework used to mark examination papers, grade candidates and determine passes, except for Course 7A and ST1 Health & Care, is described as follows:

Subject	**Minor Assessment**	**Weighting**
2A, 2B, 3A, 3B, 5B, 6A	Online forum participation	10%
C10	Post course report assignment	20%
Subject	**Major Assessment**	**Weighting**
2A, 2B	Multiple Choice Component	30%
2A, 2B	Longer Answer Component	60%
3A, 3B, 5B, 6A	Hand-Written Exam	90%
C10	Case Study Exam	80%

- Except for CAP, two markers marked each question, with CAP only those candidates with a mark above 40% or below 60% were marked a second time. Inconsistencies in marks for a candidate were discussed by the markers and resolved (in most cases), before the results were forwarded to the Chief Examiner.
- Marks were scaled to allow for the fact that some questions were more difficult than others, in the CAP course the exam is only one question so no scaling was applied.
- Each candidate was awarded a grade (A, B, C, D or E)for each question, where A was regarded as a strong pass and B an ordinary pass.
- Candidates' overall performance was determined using several metrics including total raw mark, total scaled mark, weighted average grade, weighted average rank and number of pass grades per question. The key determinant however was total scaled mark.
- Candidates were ranked based on these metrics, particularly total scaled mark.
- Candidates' online forum participation, multiple choice marks and assignment marks were added to the exam metrics.
- For the multiple choice component, ANZIIF provided a report which included a total mark per candidate.
- Candidates were divided into clear passes, clear failures and a middle group that required further consideration.

- The Chief Examiner reviewed the middle group individually. The pass/fail decision was made after assessing the candidate's whole exam paper, his/her performance in the judgment questions, how badly he/she performed in the questions he/she failed and whether they were 'key' areas of the course and his/her performance in the assignments.

5. The Online Forum and Assignment Process (Subject 1 and Modules 2-3)

5.1. Online Forum Participation

The online forum participation mark was introduced for subjects: Life Insurance, General Insurance and Global Retirement Income Systems in Semester 1 2012, replacing the previous assignment assessment. The participation mark was introduced for Investment Management and Finance in Semester 1 2013. The online forum participation mark contributed 10% of the total assessment.

Following feedback from students and Course Leaders, the marking guidelines were changed in semester 2 2012 from students having to post three original posts and reply to three posts from other students to students having to post two original posts and reply to four from other students. A participation mark was awarded based on the quality of these posts, using the following marking guidelines:

Marks	Description
2	Candidate meets the minimum standard of 2 original posts and 4 responses to other students' posts
	PLUS
3	Posts are **usually** well communicated
2	Posts are **sometimes** well communicated
0	Posts are **never** well communicated
	PLUS
3	Posts **usually** discuss the issues and recommend a solution or practical difficulties, in the context of the current discussion (where relevant)
2	Posts **sometimes** discuss the issues and recommend a solution or practical difficulties, in the context of the current discussion (where relevant)
0	Posts **never** discuss the issues and recommend a solution or practical difficulties, in the context of the current discussion (where relevant)
	PLUS
2	Candidate makes additional posts which assist other candidates
*Maximum of 10 marks If the candidate does not meet the minimum requirement of 2 original posts and 4 responses to other students' post they will be limited to a maximum of 5 marks.	

6. Module 4 CAP - The Case Study Process

The CAP course was developed and originally delivered for the Institute by the ANU but is now run directly by the Institute. The CAP team included David Service, Bruce Edwards, Julie Cook, Colin Priest, Elayne Grace, Kirsten Armstrong, Bruce Thomson, Adam Butt and Aaron Bruhn. The team also developed the assessment materials for the course and did the marking.

The assessment method changed in Semester 2 2010 due to the restructure of the CAP course. There are still two assessment tasks, but they are now:

1. A post-course report assignment on one of the three non-traditional topics, distributed after the residential course. This semester one third of the students were randomly allocated to each non-traditional topic. It is worth 20% of the final mark.

2. An 8-hour case study report chosen by each student from among the 5 traditional topic areas, to be prepared under exam conditions but with use of a computer. This is worth 80% of the final mark.

The pass mark is 50%. Candidates who had passed part of the previous course were allowed to submit only the other equivalent part this semester.

It is not mandatory for failing candidates to re-attend the residential course.

The development and delivery of the course was overseen by a Faculty, consisting of Bridget Browne, (Chair), David Service (Course Leader), Bruce Thomson (Chief Examiner), Matthew Ralph (Assistant Examiner) and case study question writers.

7. Examination Dates

This semester's Part III examinations were held on the following dates:

Table 3: Examination Dates

Course	Subject	Exam Date
2A	Life Insurance	2 May 2013
2B	Life Insurance	3 May 2013
3A	General Insurance	29 April 2013
3B	General Insurance	30 April 2013
5B	Investment Management & Finance	29 April 2013
6A	Global Retirement Income Systems	30 April 2013
7A	Enterprise Risk Management	23 April 2013
ST1	Health & Care	26 April 2013
CAP	Commercial Actuarial Practice	7 May 2013

8. Post Course Assignment Date

This semester's Part III Post Course assignment was due on 9th April 2013.

9. Examination Centres

Candidates sat the exams in 6 centres in Australia and 10 centres overseas.

Table 5: Candidates by Exam Centre

Location	Number of Candidates
Australia	416
Brisbane	7
Canberra	5
Perth	4
Melbourne	71
Sydney	328
Adelaide	1
Overseas	83
Abu Dhabi	1
Ireland	1
China	4
Germany	1
Hong Kong	17
Malaysia	3
New Zealand	21
Singapore	20
United Kingdom	13
USA	1
Vietnam	1
Total	499

10. Exam Candidature

10.1. Candidate Mix

The mix of courses sat by candidates is broadly similar to that in previous years. C1 Investments was discontinued this semester and the new Part III structure was introduced allowing candidates to choose a variety of different options to obtain Module One. This change has slightly affected the candidate mix for this semester.

The candidate mix increased by 2% for Life Insurance, 1% for Global Retirement Income Systems, 2% for Enterprise Risk Management, 1% for both Health and Care and the Commercial Actuarial Practice Course.

Table 6: Candidate Mix by Part III Course

Subject	2013 (1)	2012 (2)	2012 (1)	2011(2)	2011(1)
Investments	n/a	8%	10%	13%	16%
Life Insurance	19%	17%	21%	18%	20%
General Insurance	32%	32%	31%	28%	26%
Investment Management & Finance	7%	6%	4%	5%	3%
Global Retirement Income Systems	4%	3%	3%	2%	4%
Enterprise Risk Management	20%	18%	15%	16	16%
Health and Care	4%	3	2%	n/a	n/a
Commercial Actuarial Practice	15%	14%	15%	17%	16%
Total	**100%**	**100%**	**100%**	**100%**	**100%**

Examination Papers and Assignments

1. Examination Structure

The structure of the examinations was a single three-hour exam paper for 3A, 3B, 5B and 6A.

The final examination was weighted at 90%.

The following components were included in the Life Insurance examination for the new assessment structure:

Multiple Choice Component	1 hour
Lunch	1 hour
Longer Answer Component (two questions)	3 hours

The multiple choice component of the exam was worth 30% and the longer answer component was worth 60% of the final assessment.

For Modules 2-3, each course was assessed individually. That is, a candidate can choose to sit (and subsequently pass or fail) only Course A (relating to Module 2) or Course B (relating to Module 3) of the subject. This differs from 2004 and earlier exams where candidates sat for the entire course (both A and B parts). For the 2004 exams, candidates were awarded a transitional pass for a paper if they passed either Paper 1 (Course A) or Paper 2 (Course B).

For Module 4, Commercial Actuarial Practice, candidates sat an eight-hour case study exam paper on five traditional areas of actuarial practice, answering 1 out of 5 questions and worth 80% of the final assessment.

2. Online Forum Participation/Assignment / Case Study Structure

The non-exam assessment structure for Modules 2 & 3 comprised of an online forum participation mark weighted at 10% of the final assessment.

Module 4 (Course 10 – Commercial Actuarial Practice) included a post course assignment on one of the 3 non-traditional topics (Banking, Health, Environment), distributed after the residential course for completion within 2 weeks. This semester one third of the students were randomly allocated to each topic which was worth 20% of the final assessment.

3. Examination Standards

The standard for 3A, 3B, 5B and 6A was a mix of questions covering three categories:

- applying bookwork to familiar and unfamiliar circumstances. This category is aimed at testing the candidates' knowledge and understanding (KU)
- problem solving requiring simple judgement (SJ)
- problem solving requiring complex judgement (CJ).

As part of the new assessment structure, the project team for Life Insurance adopted the *Miller's Pyramid* approach, which is about professional performance. It is divided into four different levels of performance: *Knows*, *Knows How*, *Shows How*, and *Does*. A good system for assessing professional performance should cover all levels of the pyramid. The higher levels of the pyramid are particularly important, as the higher levels subsume the lower levels.

The questions aimed to cover the whole syllabus.

The standards to be achieved by candidates sitting each course, the principles on which papers are to be set and the marking procedures, are set out in the Guidelines to Examiners.

Copies of the examination papers have not been included within this report in the interests of space. They are available from the Institute if required. Detailed comments on the quality of candidates' answers to the exam questions are contained in each Chief Examiner's report.

4. Security of Examination Papers

With the use of modern technology the security of Examination papers has significantly improved. All scripts are scanned into an internal installation of the Institute's Learning Management System and made available to markers and examiners. Overseas supervisors were required to photocopy papers before sending them by courier to the Institute office and secure couriers were used to transport papers. The only challenge this presents is the time it takes to scan all the scripts following the examinations.

5. Comments on Candidates' Minor Assessment Performance

As the Chief Examiners were unable to review candidates' online forum participation/assignments, no comments on their non-exam performance can be provided.

Results

1. Pass Standards

The standards for determining whether a candidate should be granted the status of Fellow of the Institute of Actuaries of Australia are based on whether an individual demonstrates core capabilities required for an actuary practicing professionally in their specialty area(s).

Candidates are required to demonstrate:

- a strong knowledge of the nature, operations, legislation and current issues of the selected practice area(s)
- a detailed knowledge and understanding of the application of actuarial concepts and skills to the chosen practice area(s)
- an ability to apply judgement to solve problems in the chosen practice area(s) that may be characterised by complexity, varying degrees of clarity of definition and novel or unseen circumstances.

A candidate is not expected to demonstrate these capabilities at the level of an experienced and skilled practitioner. It is unreasonable to expect candidates to demonstrate the degree of understanding of an actuary of some year's experience. Rather, the benchmark is whether the candidate is proficient to commence practicing professionally in their specialty area(s). Provided the candidate shows a grasp of the main principles, a pass should be awarded. Conversely, a candidate who demonstrates dangerous misconceptions or misapplication of concepts or ideas is viewed more seriously than a candidate who shows a simple lack of knowledge.

The Chief Examiners in the Part III Courses place greater emphasis on the questions that require the candidate to demonstrate the ability to apply bookwork to specific situations and show judgement to solve problems. When grading borderline candidates, their ability to do well in such questions has a greater bearing on whether they pass or fail. The Chief Examiners however, are very conscious of the fact that it is unreasonable to expect candidates to demonstrate the degree of understanding of an actuary with years of experience. In addition, actuaries are expected to be able to demonstrate their skills to those outside the profession. Candidates are expected to be able to communicate clearly and may be penalised if their answers are not clearly expressed.

For Course 7A and ST1 Health and Care, passes are approved by the Board of Examiners of the Institute and Faculty of Actuaries in the UK.

2. Pass Rates by Centre

The pass rates by exam centre, excluding course 7A and ST1, were as follows:

Table 7: Comparison of Pass Rates by Centre

	2013 (1)	2012 (2)	2012 (1)	2011 (2)	2011 (1)	2010 (2)
Sydney	41%	38%	33%	37%	37%	43%
Melbourne	38%	51%	48%	38%	43%	43%
Other Australian	41%	48%	27%	20%	61%	28%
Overseas	47%	39%	30%	23%	36%	35%
Other Australian & Overseas combined	46%	42%	29%	22%	42%	33%
Total	**41%**	**40%**	**37%**	**34%**	**39%**	**41%**

I have examined the pass rates by specialist subject and examination centre. This analysis revealed a number of interesting features, including:

- The overall pass rate for the Melbourne centre is the lowest of all the subjects this semester.
- The pass rate in Melbourne decreased by 13% this semester.
- Of the six semesters above, the pass rate for international (overseas) students was the highest this semester.

3. Pass Marks

Table 8: Raw Pass Marks by Part III Subject

	Subject	2013 (1)	2012 (2)	2012 (1)	2011 (2)	2011 (1)	2010 (2)
2A	Life Insurance	113.1	113.2	104.5	93.0	89.0	117.0
2B	Life Insurance	111.1	116	105.0	105.0	109.0	84.0
3A	General Insurance	117.7	111.4	109	105.0	109.8	98.0
3B	General Insurance	114.5	105	115.0	100.1	101.7	113.0
5A	Investment Management and Finance	n/a	107.1	N/A	111.9	n/a	105.0
5B	Investment Management and Finance	95.0	n/a	112.1	n/a	99.6	n/a
6A	Global Retirement Income Systems	116.8	n/a	104.4	n/a	106.5	n/a
6B	Global Retirement Income Systems	n/a	106.9	N/A	106.6	n/a	105.2

BoE Members for Semester 2 2013

1. Board of Examiners The recommended constitution for the Board of Examiners for next semester (semester 2 2013) is as follows:

1.1. Chair

Gary Musgrave

1.2. Chief Examiners

Course 2A: Life Insurance	Bridget Browne
Course 2B: Life Insurance	Steve Miles
Course 3A: General Insurance	James Pettifer
Course 3B: General Insurance	John Tucci
Course 5A: Investment Management & Finance	David Pitt and Tim Kyng
Course 6B: GRIS	Stephen Woods
Course 10: Commercial Actuarial Practice	Bruce Thomson

1.3. Assistant Examiners

Course 2A: Life Insurance	Andy Siu, Alana Paterson
Course 2B: Life Insurance	Mark Barda, TBC
Course 3A: General Insurance	Yvonne Wong, Nadeem Korim
Course 3B: General Insurance	Cindy Lau, David Xu
Course 6B: GRIS	Jim Repanis
Course 10: Commercial Actuarial Practice	Matthew Ralph

2. Examination Dates

The dates for the examinations in Semester 2 2013 are as follows:

Table 9: Examination Dates

Module	Subject	Exam Date
1 (7A – ST9)	Enterprise Risk Management	1 October 2013
1 (STI)	Health & Care (IFoA)	3 October 2013
1 (F101)	Health Principles(ASSA)	4 November 2013
2 (2A)	Life Insurance	14 October 2013
2 (3A)	General Insurance	17 October 2013
2 (5A)	Investment Management & Finance	21 October 2013
3 (2B)	Life Insurance	16 October 2013
3 (3B)	General Insurance	18 October 2013
3 (6B)	Global Retirement Income Systems	22 October 2013
4 (10)	Commercial Actuarial Practice	23 October 2013

3. Exam Solutions

Excluding the multiple choice questions and answers, the Board of Examiners have agreed to release this semester's examination questions along with the examination specimen solutions and marking guides. It is recommended that the 2013 Semester 1 examination papers and exam solutions and marking guides be released on 20 June or as close to this time as possible.

Gary Musgrave
Chair, Board of Examiners – 20 June 2013

EXAMINER REPORTS

Course 2A Life Insurance
Chief Examiner's Report Semester 1 2013

1. Summary

1.1. Course Overview

The aim of the 2A Life Insurance Course is to provide the knowledge, skills and judgement necessary for an actuary to tackle a range of management related problems in life insurance relating to pricing, the general environment and risk management practices of life offices and associated funds management companies.

1.2. Assessment

The assessment was for the style intended for all Part III subjects (except CAP) in future. This is the second semester this style has been used for 2A.

The assessment model is broken down into three parts

Forum Participation 10%

Multiple Choice Exaqm 30%

Long Answer Questions 60%

The multiple choice exam contained 29 questions. It was closed book and candidates had 1 hour.

The Long Answer Question Exam contained 2 questions. It was open book and candidates had 3 hours. The exam was conducted on computers and candidates were required to submit their answers in the form of Word documents and, if required, to also submit any spreadsheet(s) used in forming their answer.

1.3. Pass Rates

57 candidates enrolled for the Semester 1, 2013 2A Course. Of these, 7 withdrew and none did not present at the exam, leaving 50 sitting the exam.

It is proposed that 26 candidates be awarded a pass, which implies a pass rate of 52%. Table 1 shows the historical pass rates for this subject:

Table 1 – Course Experience

Year	Semester	Sat	Passed	Pass Rate
2013	Semester 1	50	26	52%
2012	Semester 2	43	14	33%
2012	Semester 1	67	22	33%
2011	Semester 2	54	10	20%
2011	Semester 1	60	18	30%
2010	Semester 2	55	17	31%
2010	Semester 1	39	11	28%
2009	Semester 2	52	31	60%
2009	Semester 1	58	23	40%

The 52% pass rate for this exam is significantly higher than the 33% pass rate for the previous exam (Semester 2 2012). Despite this improvement it remains the case that the current 2A Course is not achieving the objective of producing teaching and learning which allows students to demonstrate a relevant understanding of the technical issues of life insurance. This is surely a serious problem.

1.4. Candidate Numbers

The Candidate numbers can be summarised as follows:

Table 2 – Candidate Numbers

	Number of candidates
Originally enrolled	57
Withdrawn prior to exam	7
Absent from exam	0
Presented at exam	50
Passed	26
Failed	24

The analysis by examination centre is as follows:

Table 3 – Analysis by Examination Centre

Centre	Presented	Passed	Pass Rate
Sydney	36	17	47%
Melbourne	8	5	63%
Subtotal Australia	**44**	**22**	**50%**
Auckland	2	2	100%
Hong Kong	1	1	100%
Singapore	3	1	33%
Subtotal International	**6**	**4**	**67%**
Total	**50**	**26**	**52%**

The numbers in centres other than Sydney are too low to draw any reliable conclusions. It is, however, clear that the Sydney pass rate remains somewhat lower than the others.

1.5. Chief Examiner's Observations on Process (not included in public version)

Both Assistant Examiners initially delivered their marks as alphabetic grades. These are clearly inadequate to add together and combine with other components of the overall assessment. The instructions to Assistant Examiners should make it clear that numeric marks are required.

2. Examination Administration

2.1. Examiners

The examiners for this semester were:

Chief Examiner	David Service
Assistant Examiners	Alana Paterson Andy Siu

2.2. Course Leader

The Course Leaders for this semester were:

Exam	Steve Miles
Forum and Participation Mark	Bruce Thomson
Tutorials	Bruce Thomson

2.3. Overall Performance

The pass rate this semester was materially higher than Semester 2, 2012. It still remains the case, however, that the candidates' demonstration of Life Insurance knowledge is less than desirable. The limitations of the current course and the resulting teaching and learning are all too obvious. When all candidates perform poorly in a question, or part thereof, the problem lies either with the question or with the course. The marking approach has specifically recognised this situation and focussed on the learning reasonably expected from the current course and the limited teaching provided.

2.4. Exam Question by Question Analysis

Question 1	**Total Marks: 30**			
	Marks Required	**% of Total Marks**	**Number of Candidates**	**Percentage of Candidates**
Strong Pass (A)	22.5	75	2	4
Pass (B)	18.0	60	13	26
Slightly Below Standard (C)	12.0	40	28	56
Weak (D)	7.5	25	6	12
Showed Little Knowledge (E)	3.0	10	0	0
Did Not Attempt (X)	0	0	1	2
Maximum Mark	23			
Average Mark	15.7			
Standard Deviation	3.6			
Coefficient of Variation	0.23			

The question required students to give recommendations for asset allocation for a range of product classes (Part A) and discuss the risks arising from variations in asset values given their asset allocations (Part B). The scenario was that the new owner of the company was now focused on making a profit from asset allocation not just minimising risk. Candidates were given data on past investment performance for a range of asset classes, and data on the amount of regulatory capital required for each product class and the actual capital held for each product class.

Part A produced satisfactory results measures against the 2A syllabus and the course despite a number of material issues which were common across most candidates.

The question provided data on past investment performance and the company's capital position. For the vast majority of students there was no evidence that they had even opened the spreadsheet on investment performance. Very few students took any account of the scenario that required profit maximization rather than risk minimization. Again very few students took account of the excess capital held for some product classes.

Those comments aside, students were generally able to make sensible suggestions for asset allocation even though most arguments lacked any quantitative support.

Part B on risk arising from asset value fluctuations was poorly done. Most students provided a list of textbook risks which had little relevance to the actual question.

The results of this question strongly suggest that the 2A course does not adequately prepare candidates to provide asset allocation advice to a life insurance company.

Question 2	**Total Marks: 30**			
	Marks Required	**% of Total Marks**	**Number of Candidates**	**Percentage of Candidates**
Strong Pass (A)	22.5	75	3	6
Pass (B)	18.0	60	7	14
Slightly Below Standard (C)	12.0	40	34	68
Weak (D)	7.5	25	5	10
Showed Little Knowledge (E)	3.0	10	0	0
Did Not Attempt (X)	0	0	1	2
Maximum Mark	25			
Average Mark	15.4			
Standard Deviation	3.4			
Coefficient of Variation	0.22			

The question concerned the issues arising from a life company introducing a funeral product which had level premiums to age 90 targeted at "celebrities". Students were required to discuss the product design issues and make recommendations for their resolution (Part A). The issues included the surrender and paid up values. The second part of the question required students to calculate the surrender values for specimen ages and durations in accordance with LPS360 (Part B).

Part A was generally well done. Students recognized the key points related to the design of the product. However, very few students recognized that a surrender value was required by LPS360.

Part B was done very poorly. In the first cut of marking no student passed the part. The requirement for a surrender value calculated under LPS 360 was only recognized by a handful of students and even those could not calculate it correctly. Given the uniform very poor performance it was concluded that either the question was not clear or that the course had not prepared students adequately. When all students fail the problem does not normally lie with the students. The result was a change to the initial marking guide to focus on students' ability to apply appropriate theoretical methodology to the calculation of surrender values and to calculate correct results on that approach. This still provided a relevant test of students' competence in this area of the 2A syllabus.

Course 2B Life Insurance
Chief Examiner's Report Semester 1 2013

1. Summary

1.1. Course Overview

The aim of the 2B Life Insurance Course is to provide the knowledge, skills and judgment necessary for an actuary to tackle a range of management related problems in life insurance relating to valuation techniques, capital management profit analysis, valuation of a company, reporting of results and professionalism.

Substantial revisions of the course were introduced following legislation changes which introduced new capital management rules for life insurance companies.

1.2. Assessment

This was the second semester where the assessment for both 2A & 2B was conducted under the new assessment model intended for all Part III subjects (except CAP) in future.

The assessment model is broken down into three parts:

Forum Participation	10%
Multiple Choice Exam	30%
Long Answer Question Exam	60%

The multiple choice exam contained 29 questions. It was closed book and candidates had 1 hour.

The Long Answer Question Exam contained 2 questions. It was open book and candidates had 3 hours. The exam was conducted on computers and candidates were required to submit their answers in the form of Word documents. Candidates were also able to submit spreadsheets but were advised that only their word document would be marked.

1.3. Pass Rates

45 candidates enrolled for the Semester 1 2013, 2B Course and 43 sat the exam.

It is proposed that 11 candidates be awarded a pass, which implies a pass rate of 26%. Table 1 shows the historical pass rates for this subject:

Table 1 – Course Experience

Semester	Sat	Passed	Pass Rate
2013, Semester 1	**43**	**11**	**26%**
2012 Semester 2	43	17	40%
2012Semester 1	52	13	25%
2011 Semester 2	41	6	15%
2011 Semester 1	41	16	39%
2010 Semester 2	39	16	41%
2010 Semester 1	63	28	44%
2009 Semester 2	62	24	39%
2009 Semester 1	52	17	33%
2008 Semester 2	50	21	42%
2008 Semester 1	36	14	39%

The 26% pass rate for this exam is lower than the 40% pass rate for the previous exam (Semester 2 2012) and much lower than the historical average. Candidates seemed to have good course knowledge but not the ability to use that knowledge in a way that is relevant to the question.

The course was updated for new capital requirement standards but most of the examination was based on course material which did not change. The long answer did have a question which dealt with par business which, as in past years, was not well handled.

The low pass rate is disappointing. Last year a review showed that candidates who had not passed 2A had low chances of passing but there was a lack of time to do that investigation last year. For next semester I recommend that the 2A status of candidates be captured at the time of enrolment so that the future students can be advised of the pass rates. An analysis of students by number of attempts was provided. Of the 7 students with four or more attempts 5 had passed 2A but only one of the five passed.

	Presented	Passed	Pass Rate
First Attempt	18	3	17%
Second Attempt	9	4	44%
Third Attempt	9	2	22%
Fourth or more	7	2	29%
TOTAL	**43**	**11**	**26%**

1.4. Candidate Numbers

The Candidate numbers can be summarised as follows:

Table 2 – Candidate Numbers

	Number of candidates
Originally enrolled	45
Withdrawn prior to exam	2
Absent from exam	0
Presented at exam	43
Passed	13
Did not Pass	30

The analysis by examination centre is as follows:

Table 3 – Analysis by Examination Centre

Centre	Presented	Passed	Pass Rate
Sydney	29	5	17%
Melbourne	4	1	25%
Subtotal Australia	**33**	**6**	**18%**
New Zealand	4	2	50%
Hong Kong	1	1	100%
Singapore	5	2	40%
Subtotal International	**10**	**4**	**40%**
Total	**43**	**11**	**26%**

The Australian pass rate of 18% is lower than the 43% pass rate for the previous exam (Semester 2 2012).

The International candidates performed well with a pass rate of 40% (4 out of 10 passed) compared with 25% (2 out of 8) last semester.

2. Examination Administration

2.1. Examiners

The examiners for this semester were:

Chief Examiner	Steve Miles
Assistant examiners	Mark Barda, Robert Milohanic

2.2. Course Leader

The Course Leaders for this semester were:

MCQ Exam	New Exam Framework Team
Long Answer Exam	Mark Barda and Steve Miles
Forum and Participation Mark	Anthony Brien
Tutorials	Anthony Brien

For Semester 2 it is planned to recruit a course leader to write 2 long exam questions and an additional 10 MCQ. A separate course leader will conduct the tutorials and monitor the participation forum. Separating the roles provides a more manageable workload and should make it easier to recruit members to the roles.

2.3. Overall Performance

Overall the exam was similar to last year with the passing candidates having a similar performance.

The MCQ result was weaker than last year even similar after exclusion of the 6 problem questions. Only candidate 121236 was disadvantaged by the exclusion. This candidate would have gained an extra 2 marks if the full 29 questions had been included but this still would not be sufficient for a pass.

Candidates continue to fall short of the pass standard by failing to answer all parts of the question and failing to maximise the participation mark.

2.4. Exam Question by Question Analysis

The statistical analysis of questions is given below:

Item	Participation	MCQ	Q1	Q2
Maximum Mark	20.0	44.1	52.0	46.0
Average Mark	14.7	30.3	24.2	28.9
Standard Deviation	4.9	7.1	11.4	11.1
Coefficient of Variation (SD/Av)	0.3	0.2	0.5	0.4
Pass Mark	14.0	**33.0**	**31.0**	**36.0**
% Pass	77%	35%	33%	37%
% Weak			9%	9%
Rank				
1		9.0	2.0	7.0
11		32.0	15.0	1.0
21		36.0	20.0	7.0
31		38.0	22.0	23.0
41		22.0	42.0	40.0

As expected participation results were good but consideration should be given to increasing the minimum number of posts.

The MCQ performance has been discussed above but this area of the exam is proving to be more difficult than anticipated and has a lower spread of marks. Nevertheless it is valuable in being able to assess a wide range of topics.

Long Answer Question 1

This question tested the candidates' knowledge of the valuation rules for participating business. The business was an 8 year endowment insurance paid by 5 annual premiums. The only assets available for investment were 3 year government bonds. The bonus paid was a level percentage of the annual premium even though the source of bonus was from interest surplus (this is poor policy design).

Part a) required the calculation of the policy liability using the VSA rules. Part b) introduced a sudden fall in interest rates and then required the candidates

Part a)

A significant proportion of the students had great difficulty answering this part. 13 students received from my marking 3 or less marks out of the maximum 12. This is despite a very good explanatory paper with a worked example written by Gary Musgrove titled "Demystifying the Calculation of Participating Policy Liabilities" being included in the 2010 Tutorial information.

The calculation of expense experience was relatively well done and was a fairly easy 2 marks. However, for the mortality experience, only a few students identified that this involved the calculation of a release of the policy liability in addition to the cash payment.

Very few students identified that the interest on retained earnings needed to be calculated as this is required to be excluded from the VSA calculation and hence the resultant policy liability. This is not well covered in the course.

The VSA was fairly well defined as per LPS 340 however using the formula in this particular example was not well done. Interest on retained earnings was regularly not deducted and there appeared some confusion over the dividend as this was in many cases deducted twice, once in the VSA and once in the subsequent Policy Liability calculation. Some considered the dividend represented a dividend on interim bonus paid but the question had not identified any interim bonus.

The Policy Liability before COB was fairly well calculated from the VSA although some students incorrectly believed the VSA was the policy liability.

The calculation of earnings/profit posed particular difficulty to many students with some large earnings amounts not being questioned.

Part b)

Overall performance in part b) was similar to part a) but it was noted that some students with relatively poor part a) answers were able to provide a very good part b) answer. Nevertheless, the fundamental requirement that the cost of bonus should be linked to the source of bonus was not appreciated by the overwhelming majority of students.

In b i) most students were able to identify many of the key issues faced by the life company and secure a reasonable mark out of 10. But many of the points were basic statements that could have been expanded for more marks.

Issues that were missed included identifying that new business was no longer viable, that the bonus was financed by the interest profit and considering the impact of the mismatching of assets and liabilities.

Many students failed to understand that the portfolio was rebalanced before the fall in yield, providing 3.5% on existing assets and that only new investment would be limited to 2% yields.

In b ii) the bonus recommendation was not well done. Some students did not give an actual bonus recommendation as requested by the question. Unreasonable recommendations i.e. no bonus or no reductions received lower marks. The reasons for the recommendation were not always clearly set out but some students were able to give very considered recommendations and received high marks.

In this section if an issue was raised that was not previously mentioned in part b i) then marks were given to the student as if the answer was included in part b i).

Long Answer Question 2

This question covered liability calculations for non-participating business and also consideration of the impact of the new capital rules.

The question covered an accident block of business which had deteriorating overall experience due to the business sold by a particular agency.

Part a) asked the recalculation of the liability on the new experience assumptions. Part b) asked for recommendations on how to deal with the situation in a). Part c) asked for a reply to a question from the CRO about the adequacy of the capital margin assumption whilst part d) asked how to deal with a proposed deferred increase in reinsurance rates including comment on the required capital amount.

Part a)

Overall this part was answered well. Common mistakes include:

- Omission of reinsurance in the calculation
- Application of reinsurance ratio to PV expenses and PV commission
- Failure to include reinsurance rate (55%) to PV premiums.

Part b)

This part was answered well by many candidates. Most candidates were able to identify and correctly point out that two valuation bases for RWA and other agents should be used with different assumptions for accidental death and lapses and the impact it will have on policy liability.

Some candidates noted that instead of valuation basis differentiated by agents, the valuation basis will have different accidental death assumptions for older and younger age groups. Marks were awarded for this point.

Many candidates made comments on more relaxed valuation basis for new business in the future after changing policy terms to exclude motorcyclists. This is irrelevant hence no mark was awarded.

Part c)

Overall performance was lower for part c). Only a few candidates made comments on management actions available.

Most candidates pointed out that the existing margin might not be adequate. Marks were also awarded for those who correctly pointed that the issue lies with the underlying BE assumptions, not necessarily the risk margin

There were many valid points made by candidates which are not in the specimen solution. Marks were awarded for:

- Pointing out that margins should be increased because pricing error alone in the past 4 years swallowed the entire margin set aside
- Small size of the portfolio and low level of credibility of the experience investigation meant that risk margin should be increased.
- Once the underlying BE assumption is revised, the existing margin might be appropriate hence no increase is needed.

Part d)

This part of the question was poorly answered. 1 mark was awarded to those candidates who answered no impact on 2012 report profit but the revision in reinsurance rate will be reflected in 2013 profit.

A number of candidates did not make the comments relevant to their calculations in a) or made comments of a general rather than specific nature

Course 3A General Insurance
Chief Examiner's Report Semester 1 2013

1. Summary

1.1. Course Overview

The aim of the 3A General Insurance Course is to provide the knowledge, skills and judgment necessary for an actuary to tackle a range of management related problems in general insurance relating to the general insurance industry, estimation techniques for claim cost projection, estimation of insurance liabilities, and management information for underwriting of general insurance.

1.2. Pass Rates

107 Candidates enrolled for the Semester 1, 2013 3A General Insurance exam. Of these, 11 withdrew leaving 96 sitting the exam. The assessment comprised on-line participation worth 10% and an exam worth the remaining 90%.

It is proposed that 31 Candidates be awarded a pass, which implies a pass rate of 32%. This compares with the following historical pass rates for this subject:

Table 1 – Course Experience

Semester	Sat	Passed	Pass Rate
2012 Semester 2	96	29	30%
2012 Semester 1	103	29	28%
2011 Semester 2	78	18	23%
2011 Semester 1	76	24	33%
2010 Semester 2	66	24	36%
2010 Semester 1	76	28	37%
2009 Semester 2	57	17	30%
2009 Semester 1	65	24	37%
2008 Semester 2	51	21	41%
2008 Semester 1	69	36	52%
2007 Semester 2	82	16	20%

The 32% pass rate for this exam is slightly higher than the 30% pass rate for the previous exam (Semester 2 2012) although towards the low end of the historic pass rates, which has been between 30% and 40%.

1.3. Candidate Numbers

The Candidate numbers can be summarised as follows:

Table 2 – Candidate Numbers

	Number of candidates
Originally enrolled	107
Withdrawn prior to exam	11
Absent from exam	0
Presented at exam	96
Passed	31
Failed	66

The analysis by examination centre is as follows:

Table 3 – Analysis by Examination Centre

Centre	Presented	Passed	Pass Rate
Sydney	67	21	31%
Melbourne	12	2	17%
Brisbane	3	0	0%
Perth	2	2	100%
Australia	**84**	**25**	**30%**
Auckland	3	3	100%
Abu Dhabi	1	0	0%
Kuala Lumpur	1	1	100%
Hong Kong	1	0	0%
Wellington	2	0	0%
Shanghai	1	1	100%
Singapore	3	1	33%
International	**12**	**6**	**50%**
Total	**96**	**31**	**32%**

The Australian pass rate is at 30% and is in line with the 30% Australian pass rate for the previous semester. The international pass rate is at 50% and is much higher than the 33% International pass rate for the previous semester.

1.4. Chief Examiner's Observations

The overall exam development and review process proceeded smoothly this semester. The examiner provided good drafts in a timely manner. Review was provided by the Chief Examiner and one Assistant Examiner.

The marking process was less smooth than in previous semesters with one set of markers providing marks a week after the deadline which had large inconsistencies between the 2

sets of marks. Not only did this impact the timelines for the examiners but it also resulted in significant additional work as the examiners needed to remark a large number of the papers.

2. Examination Administration

2.1. Examiners

The examiners for this semester were:

Chief Examiner:	James Pettifer
Assistant Examiner:	Yvonne Wong
Assistant Examiner:	Nadeem Korim

2.2. Course Leader (Exam Writer)

The Course Leader (exam writing) for this semester was James Fitzpatrick. Thanks again to James who provided an excellent draft paper in a timely manner, and responded well to feedback, which assisted with the smoothness of the overall exam process.

2.3. Course Leader (Online Participation)

The Course Leader (online participation) for this semester was Felix Tang. Thanks to Felix for his support, especially given the significant number of 3A candidates this semester.

2.4. Overall Performance

In setting the paper, the intention was to have a consistent level of difficulty with previous papers. Following the exam, it became apparent that the exam had provided less discrimination between good and poorer students. This was attributed to some easy marks on a number of the questions. The final standard of papers was similar to the average of previous semesters. Pass rates over the previous eight semesters varied between 23% and 37% with an average of 31.2%. The pass rate for this semester is therefore similar to the historic pass rates. We do note that the number of students sitting 3A continues to be extremely high at over 90 students for the third semester in a row. The large increase in student numbers is putting pressure on the timeframes for both the markers and examiners.

It is also noted that the pass rate for the participation component was very high (92%), even compared to the relatively high pass rates awarded for the assignment in previous semesters. As the participation component is unadjusted, this would have had the effect of a few more candidates becoming borderline (twelve of thirteen borderline candidates received at least eight out of ten for the participation component with six of these receiving ten out of ten). As it appears that the participation component was marked relatively generously, it is not unexpected that the quality of the exams of the borderline candidates (only 2 out of 13 passing) was not of the standard that was considered to be acceptable

2.5. Exam Question by Question Analysis

Question 1 **Total Marks: 42** **(15 KU 21 SJ 6 CJ)**

	Raw Marks Required	% of Total Marks	Number of Candidates	Proportion of Candidates
Strong Pass	34.0	81.0%	5	5%
Pass	30.0	71.4%	16	17%
Below Standard	22.0	52.4%	48	50%
Weak	12.0	28.6%	23	24%
Showed Little Knowledge	1.0	2.4%	4	4%
Did Not Attempt	0.0	0.0%	0	0%
		% KU	% SJ	% CJ
Maximum Mark	37.5	100%	83%	100%
Average Mark	24.5	62%	58%	48%
Standard Deviation	6.4			
Co-efficient of Variation	0.26			

Candidates performed poorly in this question, with a pass rate of 22%.

This question concerned a reserving analysis of a motor portfolio with the claim manager believing that there has not been any cost increases and with the valuation actuary indicating otherwise. Students were asked to estimate ultimate average costs, provide feedback on the results and identify further diagnostics tests that could be undertaken. Students were also asked to interpret financial results, explaining differences in the tail of products and the insurance cycle.

Part a) Overall, candidates answered this question well. Some candidates would have been more easily awarded marks for explaining the reasons behind their selections. Candidates also missed out on obvious marks for neglecting to show their calculations. Overall the average mark was 3.2 out of 4.

Part b) This part of the question was slightly more difficult, because although an increase in the net average claims cost did occur, it is not clear whether it was a step change after 2011H1, or is a general trend. Marks were awarded where candidates backed their findings by referring to their analysis in part (a). The average for this question was 1.8 out of 4.

Part c) This question was well attempted. Most candidates were able to think of at least two reasons that might cause an increase in the average claims cost on a motor portfolio and an analysis to demonstrate it. Further work could also include discussions with underwriting and the claims departments, and marks were awarded where candidates explained what they were trying to identify (for example changes in mix or policy terms and conditions, or changes in the claims handling processes or case estimate setting procedures). Overall, the average mark was 1.3 out of 2.

Part d) In general, this question was not well answered by students. A table was presented and it was clearly stated in the question "after considering the financial results above…".

Hence students were expected to refer to observations from the table, and not to think of a variety of possible answers not related to the financial results presented. Further, many students missed the point around growth in the portfolio driving the differences in incurred costs and claim payments. Overall, the average mark was 0.7 out of 2.

Part e) Students presented a wide variety of acceptable answers to this question. However, many students neglected to provide reasons for the additional management information to be provided and missed out on obvious marks. Overall, the average mark was 1.6 out of 3.

Part f) This was a standard bookwork question for which the majority of candidates received full marks. Overall, the average mark was 1.8 out of 2.

Part g) This question had a significant bookwork component yet some thought was required about why the cycle is more significant in long tail classes. Many candidates tried to pass off the question with a sweeping statement about long-tail classes exhibiting greater uncertainty before actual costs are known. This alone did not demonstrate an understanding or thought about its relationship with the insurance cycle. Quite a few students also failed to link the insurance cycle to the availability of capital in the market.

Overall, the average mark was 1.8 out of 4.

Question 2 **Total Marks: 38** **(10 KU 14 SJ 14 CJ)**

	Raw Marks Required	% of Total Marks	Number of Candidates	Proportion of Candidates
Strong Pass	24.0	63.2%	6	6%
Pass	19.0	50.0%	41	43%
Below Standard	15.0	39.5%	28	29%
Weak	10.0	26.3%	17	18%
Showed Little Knowledge	1.0	2.6%	4	4%
Did Not Attempt	0.0	0.0%	0	0%
		% KU	% SJ	% CJ
Maximum Mark	29.0	90%	86%	86%
Average Mark	18.2	29%	59%	50%
Standard Deviation	4.5			
Co-efficient of Variation	0.25			

Candidates performed well on this question, with a pass rate of 49%.

This question concerned reserving analysis with a focus on accident compensation and reserve movement attribution analysis. Students were asked to discuss the rationale of the choice of valuation methods, roll forward a valuation provision and attribute the prior year impact between several components. The latter half of the question asked students to discuss CTP cover for autonomously driven vehicles and the role of CTP insurance.

Part a) asked students to discuss the choice of valuation models relative to accident year maturity, their drivers and relative to different benefit types. Relatively few candidates discussed the existence of both lump sum and periodic payments and considering adopting different models for each. Overall, the average mark was 2.3 out of 4.

Part b) asked what additional data students would ask for after being notified fleet policies were only being recorded against one policy record and thus affecting claim frequency. Most candidates obtained some marks on this, although there was variation in the quality of responses. Overall, the average mark was 1.2 out of 2.

Part c) asked students to roll forward a liability provision and calculate the prior year impact. This wasn't a difficult question yet it was poorly answered by candidates. Many candidates ignored risk margins and claim handling expenses in their solutions. Overall, the average mark was 0.5 out of 2.

Part d) asked students to attribute the prior impact into changes due to risk margin, discount rates, payments AvE and the other elements in the valuation basis. This question was poorly answered with differing treatments of interaction effects, carry-forward errors. Many students ignored the need to adjust the duration in calculating the change in discount rate as well. Overall, the average mark was 1 out of 4.

Part e) Most candidates were able to identify the two types of investment income, however few candidates noted the investment decision would depend on the rate of return on capital that could be achieved. Overall, the average mark was 1.2 out of 2.

Part f) This question was relatively simply bookwork question and it was well answered by most candidates Overall, the average mark was 1.4 out of 2.

Part g) asked students to discuss the role of CTP in society and outline issues with an insurer declining CTP cover for autonomously driven vehicles. In general this question wasn't answered well by students with many missing points around market failure and potential market intervention. Many students also confused the fact that CTP is compulsory and that the government would expect all vehicles to be insured. Overall, the average mark was 1.4 out of 3.

Question 3 **Total Marks: 44** **(18 KU 10 SJ 16 CJ)**

	Raw Marks Required	% of Total Marks	Number of Candidates	Proportion of Candidates
Strong Pass	35.0	79.5%	6	6%
Pass	29.0	65.9%	36	38%
Below Standard	21.0	47.7%	44	46%
Weak	12.0	27.3%	5	5%
Showed Little Knowledge	1.0	2.3%	5	5%
Did Not Attempt	0.0	0.0%	0	0%
		% KU	% SJ	% CJ
Maximum Mark	37.0	97%	100%	88%
Average Mark	26.5	61%	60%	59%
Standard Deviation	6.9			
Co-efficient of Variation	0.26			

Generally a straightforward question and candidates performed well on this question.

This is a reserving question on a burglary product underwritten by a diversified insurer which has undergone changes in the claims assessment procedure. Students were asked a range of calculation questions on outstanding claims liabilities using the PPCI valuation methods and estimation of premium liabilities.

Part a) asked students to select appropriate chain ladder factors and calculate ultimate number of claims, making adjustment required given the know change in claims assessment procedure. This question is generally answered well, however a small amount of students did not understand how faster claims reporting would change the development factors and ignored the last diagonal. The average mark was 2.3 out of 6.

Part b) asked students what addition information they would seek to aid with the selections in part a). Many students listed general comments about additional information without thinking through how that would aid with chain ladder factor selections in part a). The average mark was 0.9 out of 2.

Part c) required students to consider any changes made to the ultimate number of claims in part a) to make selections for the ultimate claims cost per claim incurred for the latest accident half year. This part was generally answered well. The average mark was 1.3 out of 3.

Part d) required students to calculate the discounted outstanding claims liability. Generally well answered although a small number of students applied inflation and discounting incorrectly assuming PPCIs were annual payments, rather than half-yearly. The average mark was 1.4 out of 2.

Part e) required students to calculate central estimate of premium liabilities and including risk margins. A number of students struggled with the calculation of premium liabilities. Most candidates tried to use a loss ratio approach and not the claim frequency times average claim size approach. However, it was encouraging to see sense checks being applied to results which looked unrealistic. The average mark was 1.7 out of 3.

Part f) asked student to undertake the Liability Adequacy Test and state whether any adjustments to the accounts are required as a result. This is a relatively straightforward question with many students scoring full marks. The average mark was 1.5 out of 2.

Part g) provides a scenario where consensus forecasts indicated a recession ahead and required students to comment on possible impacts on the portfolio and estimates for outstanding claims and premium liabilities. Students were also asked to comment on how the valuation work should be adjusted to reflect this. This was generally answered well with most candidates correctly identifying the impacts an economic downturn for this product. The average mark was 4.3 out of 7.

Question 4	**Total Marks:**	**36**	**(6 KU 12 SJ 18 CJ)**	
	Raw Marks Required	% of Total Marks	Number of Candidates	Proportion of Candidates
Strong Pass	24.0	66.7%	6	6%
Pass	20.0	55.6%	24	25%
Below Standard	15.0	41.7%	38	40%
Weak	10.0	27.8%	22	23%
Showed Little Knowledge	1.0	2.8%	6	6%
Did Not Attempt	0.0	0.0%	0	0%
		% KU	% SJ	% CJ
Maximum Mark	28.5	100%	75%	92%
Average Mark	17.0	51%	47%	46%
Standard Deviation	4.6			
Co-efficient of Variation	0.27			

Candidates were presented with a Workers Compensation Scheme, with the focus on scheme design and the role of government in management of the scheme. Overall the performance on this question was reasonable.

Part a) required an explanation on why government would be concerned about workers rights in an unregulated market. Most candidates took the question to mean that they should discuss the social aims of Workers Compensation. The average mark was 0.8 out of 2.

Part b) asked students to provide an overview of protections and controls which could be implemented by the government to address the concerns in Part a). Many candidates showed a surprising tendency to assume that given little regulation insurers will behave poorly towards claimants. The average mark was 2 out of 3.

Part c) required students to discuss and comment on an appropriate valuation model and an approach to setting inflation assumptions for each of the three major benefit types in a Workers Compensation Scheme. This question was generally done reasonably well. Many candidates mentioned long term care as the third benefit type rather than common law. No candidate mentioned the offset effect of common law claims on income and medical benefits. The average mark was 3.9 out of 8.

Part d) presented students with three large claims information and asked students to calculate the financial impact in the current period of the large claims. This part was done poorly. A large number of candidates did not appear to understand the concept of the financial impact in a calendar year of the movements in a claim. The average mark was 1.4 out of 3.

Part e) asked students to comment on whether the uncertainty around one of the large claims presented in part d) would impact other elements of the valuation. This part was generally done poorly. The average mark was 0.5 out of 2.

Question 5 **Total Marks: 40** **(22 KU 10 SJ 8 CJ)**

	Raw Marks Required	% of Total Marks	Number of Candidates	Proportion of Candidates
Strong Pass	27.0	67.5%	5	5%
Pass	21.0	52.5%	23	24%
Below Standard	15.0	37.5%	48	50%
Weak	10.0	25.0%	17	18%
Showed Little Knowledge	1.0	2.5%	3	3%
Did Not Attempt	0.0	0.0%	0	0%
		% KU	% SJ	% CJ
Maximum Mark	29.0	89%	90%	75%
Average Mark	18.3	48%	52%	31%
Standard Deviation	4.8			
Co-efficient of Variation	0.26			

This question related to the home portfolio for an Australian multiline insurer and covered a range of areas including concepts around risk margins and risk margins as well as modeling and insurability of catastrophic risks. Overall, the question had a number of easy bookwork style marks which a surprising number of students failed to obtain. The examiners were concerned about the large number of students that were comfortable with the general insurer smoothing their profits through accounting adjustments.

Part a) had 2 main sections. The first, risk appetite and risk culture were textbook questions which were generally answered well but with varying levels of detail. With regards to the three levels of recognised risk it was not uncommon for candidates to incorrectly write "credit risk/ market risk/ operational risk or for candidates to state "model / process/ parameter error" which is out-dated terminology in this context. The part of the question that required providing examples relating to the home insurance context was not answered so well. Average mark 2.6 out of 5.

Part b) dealt with the setting of the claims side of a budget for a home portfolio. The split of claims into working/ large/ catastrophe was not recognised by a large proportion of candidates and therefore, in general, the question was not answered well. Descriptions of the budgeting approach were not too bad but many candidates simply listed possible budget considerations without clearly articulating the process. To gain full marks candidates need to describe a logical, sequential approach otherwise it was not clear that the candidate really knew the answer. Average mark 1 out of 3.

Part c) was a straightforward question around Fire Service Levy that was misunderstood by a number of students. Average mark 0.5 out of 1.

Part d) was split into 2 parts around modeling of catastrophic risks. Part (i) – In general, candidates made a reasonable attempt at this question although a large proportion did not pick up that this was hinting at stochastic vs deterministic methods. Average mark 1.0 out of 2. Part (ii) was a textbook question and most candidates answered this very well. Average mark 1.7 out of 2.

Part e) was around the estimation of the outstanding claims estimate from a recent event. Most of the candidates did not identify that because the cyclone had already occurred the insurance company would have a good indication of the number of claims and where the event occurred to compare to the insurer's exposure to use a deterministic approach on actual data. Even after one week a lot of information would have been processed about the event so this would be a better way to determine OSC estimates rather than using a forward looking catastrophe model. Average mark 0.4 out of 2.

Part f) was around the smoothing of insurance results. The majority of candidates correctly answered that smoothing was not allowed but no candidate discussed the tensions between stakeholders. A fair proportion mentioned reinsurance as an appropriate smoothing methodology but the markers and examiners were concerned about the significant number of candidates discussed adjusting risk margins or the Probability of Adequacy as a method of smoothing. Average mark 1.2 out of 3.

Part g) was around the insurability of a risk under immediate threat of a cyclone. This question was not answered well with less than half the candidates stating that the risk was not insurable and providing appropriate reasoning. This part of the question was left out by many candidates so possibly some ran out of time. Average mark 0.8 out of 2.

Course 3B General Insurance
Chief Examiner's Report Semester 1 2013

1. Summary

1.1. Course Overview

The aim of the 3B General Insurance Course is to provide the knowledge, skills and judgement necessary for an actuary to tackle a range of management related problems in general insurance relating to the pricing of all general insurance products, including capital management and financial condition reporting.

1.2. Pass Rates

69 candidates enrolled for the Semester 1 2013, 3B Course. Of these, 6 withdrew before the exam and 1 was absent from the exam leaving 62 sitting the exam. The assessment comprised of an online participation mark weighted at 10% and an exam weighted at 90%.

It is proposed that 22 candidates be awarded a pass, which implies a pass rate of 35%. This compares with the following historical pass rates for this subject:

Table 1 – Course Experience

Semester	Sat	Passed	Pass Rate
2012 Semester 2	69	26	38%
2012 Semester 1	71	27	38%
2011 Semester 2	65	20	31%
2011 Semester 1	58	20	34%
2010 Semester 2	53	21	40%
2010 Semester 1	53	21	40%
2009 Semester 2	63	33	52%
2009 Semester 1	50	16	32%

The 35% pass rate for this exam is slightly lower than the 38% pass rate for the previous exam (Semester 2 2012).

1.3. Candidate Numbers

The Candidate numbers are summarised as follows:

Table 2 – Candidate Numbers

	Number of candidates
Originally enrolled	69
Withdrawn prior to exam	6
Absent from exam	1
Presented at exam	62
Passed	22
Failed	40

The analysis by examination centre is as follows:

Table 3 – Analysis by Examination Centre

Centre	Presented	Passed	Pass Rate
Sydney	38	15	39%
Melbourne	7	0	0%
Adelaide	0	0	0%
Brisbane	2	1	50%
Canberra	1	1	100%
Australia	**48**	**17**	**35%**
London	2	0	0%
Hong Kong	3	1	33%
Singapore	1	1	100%
Auckland	3	1	33%
Wellington	1	1	100%
Shanghai	1	1	100%
Dublin	1	0	0%
Munich	1	0	0%
Ho Chi Minh City	1	0	0%
International	**14**	**5**	**36%**
Total	**62**	**22**	**35%**

The Australian pass rate of 35% is slightly below the pass rate for the previous semester (39%).

The number of international candidates at this sitting was significantly higher than for the 2012 Semester 2 examination (14 compared to 7). Overall, the pass rate for international candidates of 36% was marginally above that of Australian candidates. This represents an improvement over the 2012 Semester 2 result where 29% (2 out of 7) of international candidates passed.

2. Examination Administration

2.1. Examiners

The examiners for this semester were:

Table 4 – 2013 Semester 1 3B Examiners

Chief Examiner	John Tucci
Assistant Examiner	Cindy Lau
Assistant Examiner	David Xu

2.2. Course Leader

The Course Leader role for this semester was shared by the following individuals:

Table 5 – Course Leaders

Name	Role
Jim Qin	Main Exam Writer
John Tucci	Reviewer/ Writer
Cindy Lau	Reviewer
Davi Xu	Reviewer
Jeffrey Thorpe	Tutorials
Daniel Fung	Online Forum

2.3. Overall Performance

Overall performance is in line with the examiner's expectation, and the paper does a reasonable job in differentiating students' performance. The variation in pass rate among questions adequately reflected the difficulty and the level of judgment required.

Some variation was observed for online participation assessment, but this was not a clear differentiator between passing and failing overall.

For candidates selected for review, the examiners focused more on their overall exam performance and relatively less weight was put in their online assessment result.

Common issues observed this semester are:

- Overall, the quality of responses was disappointing. There were no outstanding candidates with the highest scaled mark being 143.7 marks.
- Performance for Question 1, a question assessing fairly standard pricing knowledge, was particularly poor.
- Inability to demonstrate judgement in practical and/or novel situations, as reflected in the poor passing rate for Question 1 and 4.
- Poor hand writing remained a major problem. Some candidates appeared to have had to rush through latter parts of the exam.

As discussed in Section 3.3, the Chief Examiner reviewed and reduced some of the cut off marks set by the Markers for each question in the exam.

While this did not impact on the number or distribution of failing candidates, it did improve the overall distribution of higher letter grades.

Specific common mistakes and weakness are discussed in the question analysis below.

2.4. Exam Question by Question Analysis

Question 1	**Total Marks: 34**		(16 KU, 10 SJ, 8 CJ)	
	Marks Required	**% of Total Marks**	**Number of Candidates**	**Proportion of Candidates**
Strong Pass (A)	22.0	64.7%	0	0%
Pass (B)	13.5	39.7%	9	14%
Slightly Below Standard (C)	9.0	26.5%	29	46%
Weak (D)	6.0	17.6%	15	24%
Showed Little Knowledge (E)	1.0	2.9%	8	13%
Did Not Attempt (X)	0.0	0.0%	2	3%
		% of KU	**% SJ**	**% CJ**
Maximum Mark	16.0	53%	70%	50%
Average Mark	9.5	26%	31%	27%
Standard Deviation	3.6			
Coefficient of Variation	0.38			

The overall performance on this question was very poor with a pass rate of 14%.

This was designed as a question to test understanding of pricing adequacy, and how a good pricing review should be performed. Unfortunately, very few candidates were able to score sufficient marks to pass the question overall. This could be down to time pressure in exam conditions on what was a difficult start in part a).

a)Many candidates missed the point of the question and calculated a historical loss ratio rather than a target pricing loss ratio. Of those that calculated a prospective pricing loss ratio, the best responses had calculation of the average investment period on insurance liabilities.

b)A few candidates noticed the intricacies of the question such as projecting the exposure to the average exposure date for the underwriting year, and noting the increasing trend in claims costs. Most candidates though scored full marks for calculating the ultimate claims cost.

c)Candidate responses tended to be too generic. Answers missed or failed to relate to context of the question, a pricing actuary working for an insurer writing SME policies who has been asked to estimate a renewal premium for a tradesperson's scheme. Instead candidates listed general responses in approaching a pricing review.

d)Candidates generally noted the main points - impact on expenses, adverse selection and moral hazard.

Question 2	**Total Marks: 40**		(0 KU, 24 SJ, 16 CJ)	
	Marks Required	**% of Total Marks**	**Number of Candidates**	**Proportion of Candidates**
Strong Pass (A)	28.0	70.0%	6	10%
Pass (B)	23.0	57.5%	26	41%
Slightly Below Standard (C)	17.5	43.8%	22	35%
Weak (D)	11.0	27.5%	7	11%
Showed Little Knowledge (E)	1.0	2.5%	0	0%
Did Not Attempt (X)	0.0	0.0%	2	3%
		% of KU	**% SJ**	**% CJ**
Maximum Mark	34.0	0%	88%	97%
Average Mark	21.8	0%	60%	46%
Standard Deviation	5.8			
Coefficient of Variation	0.26			

The overall performance on this question was reasonably good, with a pass rate of 53%.

This question was designed to test understanding of market deregulation, specifically what may occur, pros, cons and practical implications. Candidates were generally able to give satisfactory answers in all parts.

Specific comments on question:

a)Issues relating to premium setting and competition/licensing issues were well addressed. Distribution and product coverage issues were poorly considered.

b)Candidates found the issues considered in part a) more challenging from an insurers' standpoint. Only the premium setting issue was well considered.

c)There was significant variation in the answers, with few answering as per the marking guide. A number of candidates provided options which were mainly repetitive.

d)There were very few high quality answers. Very few candidates mentioned an important concern of deregulation, being the impact of competition on profitability. Whilst most addressed the pricing and underwriting, capital and reinsurance aspects, other practical aspects, such as claims, data issues and IT were missed.

Question 3	**Total Marks: 36**		(16 KU, 16 SJ, 4 CJ)	
	Marks Required	**% of Total Marks**	**Number of Candidates**	**Proportion of Candidates**
Strong Pass (A)	25.0	69.4%	3	5%
Pass (B)	21.0	58.3%	31	49%
Slightly Below Standard (C)	17.5	48.6%	17	27%
Weak (D)	12.0	33.3%	7	11%
Showed Little Knowledge (E)	1.0	2.8%	4	6%
Did Not Attempt (X)	0.0	0.0%	1	2%
		% of KU	**% SJ**	**% CJ**
Maximum Mark	27.3	100%	63%	56%
Average Mark	19.7	76%	40%	25%
Standard Deviation	4.8			
Coefficient of Variation	0.24			

The overall performance on this question was reasonably good with a pass rate of 54%.

This question was on a relatively unconventional product (consumer credit insurance), but tested the fundamental understanding of pricing for the product. Most students did well in the knowledge and understanding sections (in particular the definition of CCI and the rating factors), and fared much worse in the simple and complex judgement parts.

a)Most candidates had a good idea of the definition of CCI and its triggers.

b)Most candidates had a good attempt at identifying rating factors for CCI, but some got caught up in general economic factors, rather than focusing on policy holder risk characteristics or the loan characteristics.

c)Candidates could generally draw reasonable correlation relationships between rating factors.

d)The majority of candidates noted the need to separately analyse claim frequency and claim size, and could make other reasonable points. However, a lot of candidates didn't say enough about checking the appropriateness of distributional assumptions used.

e)The majority of candidates could make general commentary on the usefulness of GLMs, but many failed to note that GLMs could be used to identify significant rating variables and strike / retention rates. The fact that GLMs could be used for assessing relativities and testing numerous factors at the same time was better understood by candidates.

f)A lot of candidates understood that one-way relativities were different to GLM relativities due to correlations / mix of business. The vast majority of candidates however didn't understand the interpretation of "fitted" relativities in the question, with most interpreting it as 'smoothed' GLM relativities.

Question 4	**Total Marks: 48**		(14 KU, 28 SJ, 6 CJ)	
	Marks Required	**% of Total Marks**	**Number of Candidates**	**Proportion of Candidates**
Strong Pass (A)	32.0	66.7%	1	2%
Pass (B)	26.0	54.2%	16	25%
Slightly Below Standard (C)	20.0	41.7%	22	35%
Weak (D)	14.0	29.2%	16	25%
Showed Little Knowledge (E)	1.0	2.1%	7	11%
Did Not Attempt (X)	0.0	0.0%	1	2%
		% of KU	**% SJ**	**% CJ**
Maximum Mark	34.0	86%	71%	83%
Average Mark	21.0	55%	40%	35%
Standard Deviation	6.5			
Coefficient of Variation	0.31			

The overall performance on this question was poor with a pass rate of 27%.

This question required students to consider the purpose and some of the items present in the Financial Condition Report, including adequacy of outstanding claims, premium adequacy, liquidity and financial performance.

a)Most candidates scored highly.

b)Many students struggled with the format of the data presented, in particular using payments to date as incremental payments, which lead to unusual results and incorrect conclusions about the adequacy. Few students suggested that the risk margin should vary by the age of the accident year.

c)Many students discussed the issues regarding the change in business mix on these averages, whilst few mentioned the potential for multiple risk policies, using alternate exposures to assess averages, and adjusting past premiums for claims inflation.

d)The question asked for observations and possible explanations, using key performance metrics. However, a number of students appeared to perform some analysis of the information, but not present the numbers in their solutions, thus foregoing the marks.

e)Most students identified the key benefit of protecting shareholders' equity (or minimising liquidity risk). The key challenges tended to focus on the challenges relating to the assets, rather than general insurance liabilities

f)Generally this question was well answered, with students recognising the need to calculate cashflow requirements, to compare inflows and outflows, as well as suggesting scenario and stress testing. Better solutions included discussion of reinsurance recoveries, including the potential to have cash available from the reinsurer if required.

Question 5	**Total Marks: 42**		(10 KU, 18 SJ, 14 CJ)	
	Marks Required	**% of Total Marks**	**Number of Candidates**	**Proportion of Candidates**
Strong Pass (A)	34.5	82.1%	3	5%
Pass (B)	27.5	65.5%	34	54%
Slightly Below Standard (C)	21.0	50.0%	21	33%
Weak (D)	17.0	40.5%	3	5%
Showed Little Knowledge (E)	1.0	2.4%	0	0%
Did Not Attempt (X)	0.0	0.0%	2	3%
		% of KU	**% SJ**	**% CJ**
Maximum Mark	36.3	95%	100%	96%
Average Mark	27.7	60%	79%	54%
Standard Deviation	6.6			
Coefficient of Variation	0.24			

The overall performance on this question was reasonably good with a pass rate of 59%.

This question initially required students to make considered judgements of appropriate reinsurance arrangements for two different insurers in various stages of maturity and with different business strategies. It then led on to consideration of capital assessment including testing an appreciation of why an insurer needs to hold capital, reasons for considering an internal capital model, and other related areas of capital management.

Generally the question appeared to be quite straight forward.

a)This part was generally answered well. Some candidates lost marks for failing to identify enough different types of reinsurance arrangements

b)Most candidates were able to identify that quota share was required. Some candidates failed to tie the need for quota share to a capital requirement. Many candidates also failed either failed mention the continued need for a non-proportional cover or provided a recommendation that it wasn't required.

c)Many candidates failed to list enough different points to attain full marks. Most candidates stuck to points such as a regulatory requirement or claims volatility. Not many responses made mention of investment or security of the company.

Customers were often mentioned in relation to image or confidence. Few pointed out customer protection, which was one of the primary (professional) responsibilities of actuaries.

d)Generally most candidates were able to identify key points. Many candidates mentioned issues of time and cost of development an ICM – this was irrelevant to the question.

e)A range of responses were found in this part.

Many responses were quite weak, simply saying that "it's simple" or "it's easy". These did not attract any marks. Some candidates repeated the same points for premium and liability – demonstrating that they could not distinguish the different advantages/disadvantages around the two measures.

Many candidates appeared to make guesses for alternative measures or made suggestions that weren't ratios or formulas.

Many candidates provided suggestion that may result in 0 or negative results, or bases that were too volatile to correlate with operational risks, such as % of profit, % of change in expense, % of staff turnover etc.

Many responses assumed XYZ would manipulate liabilities estimates or risk margins to reduce the operation risk estimate. This missed the intent of the question.

Some assumed reserves were incorrect, which should in fact be an insurance risk rather than operational risk.

f)Generally answered well, however many candidates failed to score maximum marks for not listing enough different points. Some candidates seemed to draw on the same points from part C, although these points were not relevant.

g)Some weak responses here. Many candidates made vague statements.

Many responses confused scenario analysis with DFA. Common invalid answers include "Time consuming", "Costly" and assuming the scenarios being unrealistic.

Course 5B Investment Management and Finance Chief Examiner's Report Semester 1 2013

1. Summary

1.1. Course Overview

The aim of the 5B Investment Management and Finance Course is to provide the knowledge, skills and judgement necessary for an actuary to tackle a range of problems relating to the use of derivative securities and the pricing and modelling frameworks for derivative securities including exotic options. The course also equips candidates with an understanding of interest rate derivatives, capital and risk management. The importance of professionalism is also emphasised in the course.

1.2. Pass Rates

43 candidates enrolled for the Semester 1 2013, Investment Management and Finance 5B Course. Of these, 6 did not present at the exam leaving 37 sitting the exam. The assessment comprised of an online participation mark weighted at 10% and an exam weighted at 90%.

It is proposed that 21 Candidates be awarded a pass, which implies a pass rate of 56.8%. This compares with the following historical pass rates for this subject:

Table 1 – Course Experience

Year	Semester	Course	Sat	Passed	Pass Rate
2012	Semester 2	A	30	17	57%
2012	Semester 1	B	22	13	59%
2011	Semester 2	A	26	16	62%
2011	Semester 1	B	16	6	38%
2010	Semester 2	A	38	20	53%
2010	Semester 1	B	34	19	56%

The 57% pass rate for this exam is in line with recent offerings of Subject 5.

1.3. Candidate Numbers

The Candidate numbers can be summarised as follows:

Table 2 – Candidate Numbers

	Number of candidates
Originally enrolled	43
Withdrawn prior to exam	3
Absent from exam	3
Presented at exam	37
Passed	21
Failed	16

The three candidates who were absent for the exam had not interacted significantly in the participation forum.

The analysis by examination centre is as follows:

Table 3 – Analysis by Examination Centre

Centre	Presented	Passed	Pass Rate
Sydney	25	14	56%
Melbourne	3	1	33%
Brisbane	1	0	0%
Canberra	1	0	0%
Subtotal Australia	**30**	**15**	**50%**
Hong Kong	3	2	67%
London	3	3	100%
Singapore	1	1	100%
Subtotal International	**7**	**6**	**86%**
Total	**37**	**21**	**57%**

The Sydney exam centre was by far the largest and performed comparably to other centres. It was pleasing to see the strong performance from the international students.

2. Examination Administration

2.1. Examiners

The examiners for this semester were:

Chief Examiners: David Pitt and Tim Kyng

2.2. Course Leader

The Course Leaders for this semester were David Pitt and Tim Kyng

2.3. Overall Performance

Overall this was a challenging exam and candidates who passed performed sufficiently well across the syllabus. Pass marks on questions recommended by the markers and examiners were close to 50% on all of the questions to reflect the difficulty level.

2.4. Exam Question by Question Analysis

Question 1	**Total Marks: 40**		(14: KU, 12: SJ, 14: CJ)	
	Marks Required	**% of Total Marks**	**Number of Candidates**	**Proportion of Candidates**
Strong Pass (A)	24	60.0	13	35.1%
Pass (B)	20	50.0	4	10.8%
Slightly Below Standard (C)	15	37.5	9	24.3%
Weak (D)	10	25.0	8	21.6%
Showed Little Knowledge (E)	1	2.5	3	8.1%
Did Not Attempt (X)	0	0.0	0	0.0%
		% of KU	**% SJ**	**% CJ**
Maximum Mark	37.5	100.0	100.0	100.0
Average Mark	19.8	63.0	30.4	52.5
Standard Deviation	8.5			
Coefficient of Variation	0.39			

Candidates performed reasonably on this question, with a pass rate of 46%.

The question covered the fundamentals of the option pricing methodology covered early in the course which is later applied to a range of derivative securities. The martingale approach to valuation was emphasised this year which differed from the recent past where the partial differential equation approach was tested.

Part a):

Candidates were asked to draw a payoff diagram for an exotic option and to determine its price using arbitrage-free pricing arguments. Candidates were then required to show the effect on the price and probability that the option would expire in the money of changes to the underlying assumed stock price diffusion.

Performance on this part was mixed with candidates generally able to draw the payoff diagram. The pricing parts proved to be good discriminators. The effect of the drift coefficient on the option price was generally well understood although some candidates demonstrated a weakness in their understanding of basic ideas in this part.

Part b):

This question tested candidates' understanding of martingales and Ito's Lemma in a technical context.

Candidates' performance on this part was again very mixed with well-prepared candidates picking up the relatively straightforward marks on offer here.

Question 2	**Total Marks: 40**		(0: KU, 21: SJ, 19: CJ)	
	Marks Required	**% of Total Marks**	**Number of Candidates**	**Proportion of Candidates**
Strong Pass (A)	24	60.0	16	43.2%
Pass (B)	18	45.0	5	13.5%
Slightly Below Standard (C)	15	37.5	5	13.5%
Weak (D)	10	25.0	4	10.8%
Showed Little Knowledge (E)	1	2.5	7	18.9%
Did Not Attempt (X)	0	0.0	0	0.0%
		% of KU	**% SJ**	**% CJ**
Maximum Mark	29.5	-	85.7	78.9
Average Mark	19.1	-	44.4	51.5
Standard Deviation	8.0			
Coefficient of Variation	0.42			

The performance on this question was very mixed with 57% passing but also 11 candidates scoring either D or E grades.

This question considered the practical aspects of pricing a complex executive share option subject to multiple performance hurdles.

Part a): Candidates were asked to express the payoff from an executive share option in terms of the mathematical structure given in the question.

Performance was mixed here with some able to comprehend the background information given while others struggled to apply the framework described in the question to the given context.

Part b): Candidates were asked to derive a valuation formula for the executive share option.

Candidates generally made partial progress on this part of the question. Some candidates unfortunately used standard pricing formulae which are not relevant here instead of those developed specifically for this executive option. This approach did not attract any marks.

Part c): Candidates were asked to comment on the effect of the executive leaving service early either due to death or retirement on the value of the option.

This part was quite well handled with most candidates able to produce clear arguments about the impact of these events on the option value.

Part d): Candidates were asked to describe how they would apply the binomial option pricing model to the valuation of the executive option when the hurdles are changed to be American and to have a barrier type feature.

This part proved difficult for most candidates. The American exercise rights, being close to material directly covered in the course, were better handled. The barrier feature required more insight to value and candidates in general offered a solution that would not work in practice.

Part e):Candidates were asked to comment on the ability of an actuary to the valuation of an executive share option with specific reference to the relevant professional standard.

This part was well handled by candidates. They showed good understanding of the relevant professional standard and how it supports actuaries working in this field of practice.

Question 3	**Total Marks: 40**		(4: KU, 26: SJ, 10: CJ)	
	Marks Required	**% of Total Marks**	**Number of Candidates**	**Proportion of Candidates**
Strong Pass (A)	24	60.0	3	8.1%
Pass (B)	18	45.0	14	37.8%
Slightly Below Standard (C)	15	37.5	3	8.1%
Weak (D)	10	25.0	14	37.8%
Showed Little Knowledge (E)	1	2.5	3	8.1%
Did Not Attempt (X)	0	0.0	0	0.0%
		% of KU	**% SJ**	**% CJ**
Maximum Mark	26.5	75.0	76.9	100.0
Average Mark	15.9	38.1	43.7	30.0
Standard Deviation	5.2			
Coefficient of Variation	0.33			

Candidates performed reasonably on this question, with a pass rate of 46%.

The question concerned the issues arising from doing stochastic modelling of an investment portfolio with regards to longevity and spending patterns.

Part a): Candidates were asked to comment on mortality risk and its impact on the modelling approach.

Most candidates did not answer this in a way that was consistent with the marking guide. Many mentioned that you needed life tables to model life expectancy, which gained ½ -1 mark but few, if any, elaborated that you need to simulate life expectancy for each age and, importantly, each spending level. Hence, the maximum mark for this was generally 1 mark.

Part b): Candidates were asked to describe how they would quantify the risk of financial ruin and the risk of not fully utilising the asset pool.

Many candidates provided very vague answers such as running some simulations and recording the number of trials failing to meet the objectives. The intention of the question was to raise awareness of the use of conditional probabilities and conditional expectation. Hence, most students only scored around 1 mark.

Part c): Candidates were asked to describe how they would choose parameters for their model and how they would run the simulation.

Most candidates were able to identify the parameters needed for this simulation exercise, as well as ways to estimate the parameters. Students were well aware of the use of Cholesky decomposition but some failed to identify some key elements such as rebalancing portfolio periodically. In regards to the process of simulation, most candidates did not mention assumptions needed for the simulation and ways to handle conditional probabilities and conditional expectations which were required by this simulation exercise.

Part d): Candidates were asked to describe how they would adapt their simulation approach if applying a bootstrap or historical simulation method.

This was probably the easiest part of the question and hence, was handled reasonably well by most candidates. Many gave good attempts at explaining how Approach B differed from Approach A; however, some went off track. The advantages and disadvantages of simulation approaches were generally answered well, which is where the majority of marks (max of 3) were gained.

Part e): Candidates were asked to describe how they would apply value at risk approaches to estimating a sustainable income level and some of the associated challenges.

Most candidates provided the definition of VaR but some did not continue explaining how it should be applied in this specific context which involves spending level, age and simulation. Most candidates gained their marks for reasonably describing the challenges in the VaR analysis.

Question 4	**Total Marks: 40**		(10: KU, 18: SJ, 12: CJ)	
	Marks Required	**% of Total Marks**	**Number of Candidates**	**Proportion of Candidates**
Strong Pass (A)	22	55.0	5	13.5%
Pass (B)	18	45.0	4	10.8%
Slightly Below Standard (C)	14	35.0	10	27.0%
Weak (D)	8	20.0	15	40.5%
Showed Little Knowledge (E)	1	2.5	3	8.1%
Did Not Attempt (X)	0	0.0	0	0.0%
		% of KU	**% SJ**	**% CJ**
Maximum Mark	27.0	90.0	86.1	58.3
Average Mark	14.5	41.7	40.7	25.0
Standard Deviation	5.8			
Coefficient of Variation	0.40			

Candidates performed poorly on this question, with a pass rate of 24%.

The question concerned a number of issues relating to bonds, bond futures, yield curves and basis risk.

Part a): Candidates were asked to describe short selling and to contrast it wth a repurchase agreement.

This was reasonably well handled with candidates covering most of the required points in the solution.

Part b): Candidates were asked to describe how they would combine a bill and a futures contract over a bill to create a short position in a zero coupon bond. The implied earning rate of this transaction was also required to be calculated.

Candidates overall found this difficult. The question part showed the importance of candidates, as part of their preparation, carefully working through the standard arguments for creating synthetic securities.

Part c):

Candidates were asked to calculate a return on a synthetic loan given a 90-day bill yield.

This was reasonably well handled with candidates generally knowing what was required for this calculation.

Part d): Candidates were asked to comment on given yield rate information presented graphically and in a table.

This was not well handled. Candidates often responded with very vague answers that did not relate specifically to the provided information. It is important for candidates to remember to relate their answers to background information provided in exam questions.

Part e): Candidates were asked to describe the basis risk involved in using bond futures contracts to hedge against a fall in the value of a portfolio of government bonds.

Again candidates struggled to be sufficiently specific. The link to federal and state government bonds was not well described by the majority of candidates.

Part f): Candidates were asked to describe how to speculate on a perceived flattening in the yield curve. Modified duration calculations as well as a description of the risks inherent in the proposed strategy were covered.

This proved difficult for many candidates. Answers did not often go beyond generic statements about risks. The duration calculations were better handled.

Question 5	**Total Marks: 40**		(12: KU, 8: SJ, 20: CJ)	
	Marks Required	**% of Total Marks**	**Number of Candidates**	**Proportion of Candidates**
Strong Pass (A)	26	65.0	2	5.4%
Pass (B)	16	40.0	17	45.9%
Slightly Below Standard (C)	14	35.0	5	13.5%
Weak (D)	8	20.0	8	21.6%
Showed Little Knowledge (E)	1	2.5	5	13.5%
Did Not Attempt (X)	0	0.0	0	0.0%
		% of KU	**% SJ**	**% CJ**
Maximum Mark	30.5	95.8	100.0	75.0
Average Mark	16.0	61.5	37.2	28.0
Standard Deviation	6.7			
Coefficient of Variation	0.42			

Candidates performed reasonably well on this question, with a pass rate of 51%.

The question concerned a number of topics including cap and floor contracts, swaptions, valuation of callable bonds and related securities and duration calculations for a callable bond.

Part a): Candidates were asked to describe the put-call parity relationship for caps and floors.

Generally well answered, most candidates were able to evaluate the combination of long cap and short floor. Not many explicitly described that it was the combination of each caplet and flooret that produced the cashflow of the swap in the same time period, resulting in a partial deduction of half a mark. Marks were also deducted for a handful of candidates who named the swap without identifying it as a payer swap.

Part b): Candidates were asked to derive the put-call parity relationship for swaptions.

This one produced responses of more variable quality than those of the previous part. Many candidates tried to express the value of the swaption at maturity being the sum of the present value of each cashflow of the swap if the swaption was exercised, without realising this could be more compactly written as the difference a fixed and floating bond price. Half a mark was also deducted if the candidate confused the floating bond's price with its face value (many responses claimed these are equal at the expiry date of the swaption, which is clearly wrong).

Part c): Candidates were asked to explain how to use the Jamshidian (1989) approach to develop analytic valuation formulae for callable bonds, puttable bonds, payer swaptions and receiver swaptions.

The question was widely read as requiring some explanation of how the maths behind the Jamshidian model was to be applied in the valuation of the bond options, whereas the marking guide awarded marks as long as the candidate was able to correctly identify how to break down each instrument into bond options which can then be valued by the model. Our marking followed the guidance of the marking guide. Many responses wrongly state that a callable bond was a vanilla bond plus (i.e. long) a call option, for which half a mark was deducted. The swaption sections were generally poorly answered.

Part d): Candidates were asked to develop analytic formulae, using the Vasicek model for interest rates, for the r-duration for a zero coupon bond, a coupon bearing bond and a callable bond.

It seems that the majority of candidates did not understand the mathematical operations required to derive the analytic formulae. Most were able to correctly work through the first zero coupon bond formula, and have a correct concept around applying that to get the second coupon bond formula (being the sum of a series of ZCBs). The third part was generally not attempted except for the few who had some understanding of the maths, and hence successfully applied the hint given to progress to the end result.

Part e): Candidates were asked to describe some of the issues when valuing a callable bond with American style exercise rights.

Most answers identified the path dependent nature of the payoff, and named at least one alternate numerical method. Both marks were given as a result.

Course 6A Global Retirement Income Systems Chief Examiner's Report Semester 1 2013

1. Summary

1.1. Course Overview

The aim of the GRIS 6A course is to provide the knowledge, skills and judgement necessary for an actuary to understand the different systems used to provide retirement incomes and recognise the management issues in areas of regulation, governance and risk management. The course is designed to teach actuaries to use the actuarial control cycle to identify issues and develop solutions. The course is not limited to the Australian retirement income field, but has cross-border application.

1.2. Pass Rates

19 candidates enrolled for the semester 1 2013 6A course, all of whom attended the exam.

It is proposed that 8 candidates be awarded a pass, which implies a pass rate of 42%.

This compares with the following historical pass rates for this subject:

Table 1 – Course Experience

GRIS	Course A Semester 1			Course B Semester 2		
Year	Sat	Passed	Pass Rate	Sat	Passed	Pass Rate
2012	16	5	31%	14	3	21%
2011	18	9	50%	8	5	63%
2010	16	4	25%	13	7	54%
2009	14	5	36%	19	10	53%

1.3. Candidate Numbers

Table 2 – Candidate Numbers

	Number of candidates
Originally enrolled	19
Withdrawn prior to exam	0
Absent from exam	0
Presented at exam	19
Passed	8
Failed	11

Table 3 – Analysis by Examination Centre

Centre	Presented	Passed	Pass Rate
Sydney	11	4	36%
Melbourne	5	3	60%
Adelaide	1	1	100%
Canberra	1	0	0%
Subtotal Australia	18	8	44%
London	1	0	0%
Total	19	8	42%

2. Exam Administration

2.1. Examiners

The examiners for this semester were:

Chief Examiner: Stephen Woods

Assistant Examiner: Jim Repanis

2.2. Course Leader

The Course Leader for this semester was David McNeice.

The draft exam paper was delivered just behind timetable and was already of a good standard, so the exam preparation schedule was comfortable.

2.3. Overall Performance

The exam paper contained less complex judgement content (38%) than last year (44%). Several markers commented that the categorisation of difficulty was possibly generous in places, so it is reasonable to conclude that this paper was easier than last year's paper. This probably boosted the pass rate, although the impact of scaling makes this hard to determine definitively. Indeed the most common word used by markers to assess the difficulty of their question was "straightforward". The later questions in the paper (Q5, 6 and 7) were the most difficult and also the best differentiators. Other common points raised by markers were an apparent lack of response planning and the inability to see beyond the parameters or wording of the question to the 'big picture' as appropriate.

2.4. Exam Question by Question Analysis

Question 1 **Total Marks: 26 (20 KU, 6 SJ, 0 CJ)**

	Marks Required	% of Total Marks	Number of Candidates	Proportion of Candidates
Strong Pass (A)	22	85%		
Pass (B)	15.25	70%	5	26%
Slightly Below Standard (C)	13	59%	7	37%
Weak (D)	9	35%	6	32%
Showed Little Knowledge (E)	1		1	5%
Did Not Attempt (X)	0			
Maximum Mark	20.25	77%		
Average Mark	14.0	53%		
Standard Deviation	2.9			
Coefficient of Variation	0.21			

Pass rate: 26%
Q1 was a fair differentiator.

This question tested the concept of retirement and sources of income in retirement.

The question was relatively straightforward and the markers explicitly noted that it was concerning that only 5 of 19 candidates passed.

Part (a) asked candidates to define 'retirement' and to explain how the concept has changed since the 1900s. This part was answered well.

Part (b) asked candidates to explain 'adequate retirement income'. Many candidates missed its subjective nature and longevity impacts.

Part (c) asked candidates to list sources of retirement income. Candidates appeared blinkered by the role of super, with non-super assets not being considered. Casual employment, medical care and charities were often missed. Some candidates even omitted the age pension.

Part (d) asked candidates to explain the circumstances that would affect reliance on the sources of income. The part was again answered narrowly, with most candidates failing to identify location, health and expense changes.

Question 2 **Total Marks: 28 (6 KU, 22 SJ, 0 CJ)**

	Marks Required	% of Total Marks	Number of Candidates	Proportion of Candidates
Strong Pass (A)	23.5	84%		
Pass (B)	17.5	63%	14	74%
Slightly Below Standard (C)	15	54%	5	26%
Weak (D)	9.5	34%		
Showed Little Knowledge (E)	1			
Did Not Attempt (X)	0			
Maximum Mark	21.75	78%		
Average Mark	18.4	66%		
Standard Deviation	2.0			
Coefficient of Variation	0.11			

Pass rate: 74%
Q2 was a poor differentiator, as most candidates performed well and thus the marks fell within a relatively small range.

This question tested the 3-pillar system of retirement. This topic was covered by most candidates, however it also restricted responses to part (c) as seemingly candidates were unable to think beyond the 3 pillars when a broader answer was possible.

The question was straightforward.

Part (a) asked candidates to explain the 3 pillars.

Part (b) asked candidates to describe the objectives of the pillars and assess how well those objectives are met.

Part (c) asked candidates to outline the advantages and disadvantages of removing government subsidies from pillar 3.

Few candidates identified the unfunded status of pillar 1.

Few candidates identified the lack of coverage to self-employed workers under pillar 2. There was limited ability to link life style maintenance with pillar 3. Most candidates identified the skewed application of tax incentives to pillar 3, however almost no one mentioned the differential treatment of pillar 3 from other discretionary savings.

Candidates did not identify the difficulty of administration (such as the need for grandfathering).

Also many candidates felt they had to limit themselves to the existing system instead of allowing their minds to think of alternatives.

Few candidates discussed how the compulsory annuitisation scenario would result in the introduction of annuity price risk.

Question 3 **Total Marks: 22 (12 KU, 10 SJ, 0 CJ)**

	Marks Required	% of Total Marks	Number of Candidates	Proportion of Candidates
Strong Pass (A)	17	77%	1	5%
Pass (B)	14	64%	7	37%
Slightly Below Standard (C)	12	55%	6	32%
Weak (D)	7	32%	5	26%
Showed Little Knowledge (E)	1			
Did Not Attempt (X)	0			
Maximum Mark	17.5	80%		
Average Mark	13.5	61%		
Standard Deviation	2.0			
Coefficient of Variation	0.15			

Pass rate: 42%
Q3 was a poor differentiator, as the marks fell within a relatively small range.

This question tested the advantages and disadvantages of means testing on an unfunded social security system.

The question was relatively straightforward.

Part (a) was from the retiree's perspective.

Most candidates noted the advantage of poverty alleviation and the disadvantages of complex administration and redistribution effects. However, the redistribution effect was often expressed in terms of having paid taxes while possibly receiving no benefit and didn't always refer to the perverse incentives that may arise. Very few candidates noted that retirees, when tax payers, would have paid less for a means-tested scheme and that such a scheme was more affordable to operate. Also, very few candidates noted the low level of benefit as a disadvantage.

Part (b) was from the government's perspective.

Almost all candidates identified the advantages that the scheme would ensure basic needs were met and that by doing so the cost of the scheme would be minimised. However, few candidates noted the potential for generation equity and the inequities that may arise under such a scheme. Most candidates repeated the point from part (a) of complexity and cost of administering a means-tested scheme.

Part (c) asked candidates to suggest systemic changes to manage the risk of the system becoming unsustainable.

This part of the question was handled reasonably well by most candidates with an array of design and benefit changes typically provided. Where policy issues, or other changes, were described poorly or with insufficient detail only half marks were awarded.

Question 4 Total Marks: 26 (6 KU, 20 SJ, 0 CJ)

	Marks Required	% of Total Marks	Number of Candidates	Proportion of Candidates
Strong Pass (A)	20	77%	3	16%
Pass (B)	17	65%	6	32%
Slightly Below Standard (C)	14	54%	8	42%
Weak (D)	9	35%	1	5%
Showed Little Knowledge (E)	1		1	5%
Did Not Attempt (X)	0			
Maximum Mark	22.5	87%		
Average Mark	16.5	63%		
Standard Deviation	4.1			
Coefficient of Variation	0.25			

Pass rate: 47%
Q4 was a fair differentiator.

This question tested the concept of governance in the context of managing occupational superannuation and pension schemes.

Part (a) asked candidates to explain the concept.

This part was well-answered by most candidates, who were able to provide an overview of what governance means. However, in most cases, insufficient explanation of the breadth of governance was provided. Instead, students often focussed on only one component of governance and broader comments around environmental factors and decision-making processes were provided.

Part (b) asked candidates to describe the various aspects of governance in the Australian system.

Many candidates seemed unclear about what was meant by 'elements' of the system and provided more general descriptions of some key measures. Most candidates made sufficient references to APRA and the role of trustees to be awarded marks. However, they typically focussed on these elements to the exclusion of others and very few references to the SCT or Financial Services law were provided.

Most candidates were able to list at least three key stakeholders. However, at times, the role of members was not well expressed and students simply referred to them as beneficiaries rather than discussing their duty to remain informed and to seek advice as required. References to the ATO were limited but marks were awarded for sufficient discussion of the role of government, in setting policy and legislation, as opposed to APRA's role in monitoring compliance.

Most candidates outlined the purpose of a risk management framework and provided a high-level overview of the identification, assessment and treatment of risks. However, a more detailed discussion was often lacking of the separation of decision making and monitoring for the operational function. Similarly, when candidates did express the need to monitor and review the framework, generally they did not elaborate on how this may impact relationships with service providers and potential conflicts of interest.

Question 5 **Total Marks: 34 (22 KU, 0 SJ, 12 CJ)**

	Marks Required	% of Total Marks	Number of Candidates	Proportion of Candidates
Strong Pass (A)	26	76%	1	5%
Pass (B)	20	59%	8	42%
Slightly Below Standard (C)	16	47%	6	32%
Weak (D)	12	35%	1	5%
Showed Little Knowledge (E)	1		3	16%
Did Not Attempt (X)	0			
Maximum Mark	26.5	78%		
Average Mark	18.2	54%		
Standard Deviation	5.9			
Coefficient of Variation	0.33			

Pass rate: 47%
Q5 was a good differentiator.

This question tested the features of a corporate DB plan and consideration of closing the plan in favour of a DC plan.

The question was relatively straightforward

Part (a) asked candidates to compare and contrast the features of the DB and DC plans.

All candidates covered the transfer of investment risk and most commented on the difference in member contribution and lump sum benefit. However, no candidate commented on the relative cost of the two forms of benefit. This omission flowed through the entire question, as this issue was not considered at all. Many candidates made reference to the "focus" on inputs in DB benefits versus outputs in DC benefits. Many candidates also referred to investment choice in DC. Extra marks were given for references to insurance risk, the concept of a fixed DC cost and variable DB cost and the uncertainty of the DC benefit

Part (b) asked candidates to describe the aspects of a DB plan on which actuaries provide advice.

Most candidates made a good attempt, scoring some marks for both DB and DC activities. Extra marks were available for reserve analysis, FCR, DB to DC transfers, investment option design and benefit design analysis.

Part (c) asked candidates to identify the legal obligations imposed on actuaries of DB plans.

Some candidates were confused between a SIS requirement and general actuarial roles. Most candidates identified 2 or 3 of the 4.

Part (d) asked candidates to provide advice on the proposal.

As no candidate covered the relative value of the two benefits (and arguably it is not obvious that the DC cost is clearly higher than the DB cost if you include expense and insurance costs and tax allowances), candidates struggled to accumulate marks. Extra marks were awarded for references to uncertainty, the exposure of members to risk in DC and higher costs to the employer of running a DB fund. Most candidates equated uncertainty of returns to problems with adequacy. Some candidates mentioned that DB

benefits allow greater confidence around adequacy as they are based on a future salary indicator.

Question 6 Total Marks: 26 (0 KU, 0 SJ, 26 CJ)

	Marks Required	% of Total Marks	Number of Candidates	Proportion of Candidates
Strong Pass (A)	19.5	75%	2	11%
Pass (B)	15	58%	3	16%
Slightly Below Standard (C)	10	38%	8	42%
Weak (D)	7	27%	2	11%
Showed Little Knowledge (E)	1		4	21%
Did Not Attempt (X)	0			
Maximum Mark	21	81%		
Average Mark	11.8	45%		
Standard Deviation	5.1			
Coefficient of Variation	0.43			

Pass rate: 26%
Q6 was a good differentiator.

This question tested the consideration of a new employee as to which superannuation fund to choose: the company DB, his former fund (a public offer fund) or establish a SMSF.

The question was relatively straightforward and almost all candidates were able to make a solid start.

Aside from a few candidates, who either had far too little time or nowhere near enough knowledge, most candidates scored at least some marks for the main points on control and engagement, size of balance and investment risk.

The key differentiator between candidates – and particularly those graded at B compared to C – was the depth of the response, how convincing the candidate was in their arguments and the number of other valid points that were made.

A few candidates made additional points and were rewarded:

1. That expected future salary progression could be a factor in choosing DB over DC
2. That SMSF can provide additional tax benefits for some individuals.

Question 7 **Total Marks: 38 (0 KU, 0 SJ, 38 CJ)**

	Marks Required	% of Total Marks	Number of Candidates	Proportion of Candidates
Strong Pass (A)	28	74%		
Pass (B)	20	53%	3	16%
Slightly Below Standard (C)	14	37%	9	47%
Weak (D)	10	26%	3	16%
Showed Little Knowledge (E)	1		4	21%
Did Not Attempt (X)	0			
Maximum Mark	21	55%		
Average Mark	14.0	36%		
Standard Deviation	5.2			
Coefficient of Variation	0.37			

Pass rate: 16%
Q6 was a good differentiator.

This question tested advice on optimal delivery of retirement benefits for a large public offer fund.

The question was not particularly difficult (assuming sufficient time was available to analyse the information and plan a response). However, the standard of responses was not particularly strong. Most responses seemed rushed – no doubt some candidates were running out of time on this final question but regardless across the board there appeared to be a distinct lack of planning in the responses.

Broadly speaking candidates only made a fair effort in identify the desirable features, with some candidates spending a lot of time concentrating on features not relevant to an actuarial response (eg financial planning/education). Generally candidates made a poor attempt at identifying the current fund's pertinent features and linking them to desirable features.

The poorer responses concentrated on the fund's investment options whereas the better responses also covered the lump sum/allocated pension benefit design issues.

No candidate referred to the adequacy point.

Candidates generally were able to suggest a number of changes, however they missed a number of pertinent points (often due to the failure to recognise the lump sum/allocated pension design and adequacy points).

Only half the candidates received full marks for the structure of their report layout. Too many reports were messy and poorly ordered or structured. Generally candidates relied on bullet points, without proper explanation as to how they applied to the context of the report.

Course 10 Commercial Actuarial Practice Chief Examiner's Report Semester 1 of 2013

1. Summary

1.1. Course Outline

The Commercial Actuarial Practice (CAP) Course is designed to teach students to apply actuarial skills across a range of traditional and non-traditional areas by "contextualizing" actuarial solutions or approaches in the wider commercial environment.

The two assessment tasks are:

1. A take-home Post-Course Assignment ("Assignment") on one of the 3 non-traditional topics (Banking, Health, Environment). One-third of the students were randomly allocated to each topic. It is worth 20% of the final mark.
2. An 8-hour Case Study Exam ("Exam") worth 80% of the final mark, under exam conditions with the use of a computer (open book, but no internet access). The candidates had to choose 1 from the 5 mainstream topics (Life Insurance, General Insurance, Investment, Global Retirement Income Systems - GRIS, Enterprise Risk Management - ERM), perform all the necessary analysis and prepare a substantial written report.

1.2. Pass Rates

74 candidates presented for the course, a slight increase compared to last semester (71). Of these, it is proposed that 39 be awarded a pass, representing a **pass rate of 53%.** This continues a recent trend of lower pass rates than the long term average.

Table 1 – Recent Course Experience

Semester	Sat	Passed	Pass Rate %
Semester 1 of 2013	74	39	53
Semester 2 of 2012	71	40	56
Semester 1 of 2012	82	47	57
Semester 2 of 2011	87	48	55
Semester 1 of 2011	79	47	59
Semester 2 of 2010	102	56	55
Semester 1 of 2010	97	57	59

1.3. Candidate Numbers

A total of 76 candidates were enrolled for the CAP course in Semester 1 of 2013. 3 repeat candidates took the option to attend part of the residential course, undoubtedly due to the flexibility to attend selected sessions for a reduced price.

The candidate numbers and results can be summarized as follows:

	Post-Course Assignment only	Case Study Exam only	Both	Total
Originally enrolled	0	1	75	**76**
Withdrawals	0	0	2	**2**
Absent	0	0	0	**0**
Presented	0	1	73	**74**
Passed	0	0	39	**39**
Failed	0	1	34	**35**

The analysis by number of attempts is as follows:

Table 2A – Number of CAP Attempts

Attempt	Candidates	Passes	Pass Rate
1	41	24	59%
2	13	5	38%
3	9	5	56%
4	3	2	67%
5	2	0	0%
6	5	3	60%
7	1	0	0%
Total	74	39	53%
2 or more	33	15	45%

Although the statistical credibility of the numbers is not convincing, it does appear that many stronger candidates will pass first time, while some candidates will always struggle with a CAP-type Exam, no matter how many times they sit. It was however gratifying to see five candidates to pass after four or more attempts. The candidate who sat for the seventh time was counselled after last semester but unfortunately did not pass.

The following table shows the experience separated by the Exam topic as chosen by each candidate:

Table 2B – Analysis by Topic

Exam Topic	Chosen by	Overall Pass	Pass %
ERM	6	5	83%
General Ins	34	19	56%
GRIS	6	3	50%
Investment	6	3	50%
Life Ins	22	9	41%
TOTAL	74	40	54%

The pass rate for Life candidates is lower than the other subjects and lower than it has been historically. This is discussed later.

In past semesters it has been usual for "Overseas" candidates to have a slightly lower pass rate than Australian-based candidates, and this has continued this semester.

Results by Exam Centre			
Centre	**Presented**	**Passed**	**Pass rate**
Auckland	2	1	50%
Beijing	1	1	100%
Hong Kong	4	2	50%
London	4	2	50%
Melbourne	11	8	73%
Singapore	3	1	33%
Sydney	48	24	50%
Wellington	1	0	0%
Total	74	39	53%
Australia	59	32	54%
Overseas	15	7	47%

The pass rate in Melbourne (73%) was noticeably higher than the average, as it was last semester (90%).

2. Course Administration

2.1. Course Outline

The overall objectives of the CAP course are to enable students to:

- Apply actuarial skills across a range of traditional and non-traditional areas by "contextualizing" actuarial solutions or approaches in the wider commercial environment;
- Apply ethical concepts, corporate governance requirements and actuarial professional standards when writing a report; and
- Successfully communicate the actuarial solutions or approaches to a range of audiences.

Given these objectives, the assessment for the course is focused on the practical application of judgment and on the written communication skills of the students, rather than on bookwork.

Since semester 2 of 2011, ERM has been moved into the mainstream topics. The two assessment tasks are now as follows:

1. A take-home Post-Course Assignment ("Assignment") on one of the 3 non-

traditional topics (Banking, Health, Environment), distributed after the residential course for completion within 2 weeks. One-third of the students were randomly allocated to each topic, albeit with a check that repeat candidates are not allocated to the same topic 3 times in a row. The Assignment is worth 20% of the final mark. The result and feedback were supplied to candidates 3 weeks prior to the Exam.

2. An 8-hour Case Study Exam ("Exam") worth 80% of the final mark, under exam conditions with the use of a computer (open book, but no internet access). The candidates had to absorb the question material, choose 1 from the 5 mainstream topics (Life, General, Investment, GRIS, ERM), perform all the necessary analysis and prepare a substantial written report.

The pass mark is 50%, which is regarded as equivalent to the 60% scaled pass mark adopted for the part III courses. Marks are no longer awarded for quality of participation in the residential course.

2.2. Examiners

The examiners for this semester were again:

Chief Examiner: Bruce Thomson

Assistant Examiner: Matthew Ralph

Due to Bruce's absence on holiday from 28 May, this report is being finalised by Matthew, and will be presented to BoE by Matthew. Prior to his departure, Bruce has signed-off on the pass and fail results for each candidate.

2.3. Course Leader

The assessment materials for the course were developed by a team, consisting of David Service (Course Leader), Colin Priest, Elayne Grace, Kirsten Armstrong, Julie Cook and Bruce Edwards. Bridget Browne is Chair of the CAP Faculty.

As part of his role, David Service presents 3 of the topics at the residential course, prepares 3 of the Exam case studies, and marks at least the borderline candidates for all 8 of the case studies in order to ensure consistency of standards across the topics.

A noteworthy result was the detailed, consistent and very good feedback received from candidates after the 4-day residential course. All the presenters and Institute staff are to be congratulated for a job done particularly well. This course delivery mode is being appreciated.

3. Case Studies

3.1. Preparation and structure

Case studies were prepared by the Course Presenters in the 8 topic areas listed below. Each was designed to be completed within 8 hours under exam conditions, even though the 3 non-traditional topics were completed as a take-home assignment. Each was fine-tuned in consultation with the Chief Examiner, formally scrutineered, and signed off by the Examiners.

Topic	Course Presenter / Author
Health	Kirsten Armstrong
Banking	David Service
Environment	Elayne Grace
ERM	Bruce Edwards
Life Insurance	David Service
Investments	David Service
GRIS	Julie Cook
General Insurance	Colin Priest

4. Post Course Assignment

Although marks and grades were given for the Post-Course Assignment, a pass/fail decision was not required for each candidate; this simply formed 20% of their overall mark. Nevertheless, marks around 50% were reviewed carefully by each Marker. David Service marked a selection from each topic to ensure consistency. The Examiners later reviewed other marks when they had the potential to impact the overall pass decision.

4.1. Banking

The Banking case study required candidates to provide advice to a bank considering the acquisition of a smaller rival, including placing a value on the target bank.

4.2. Environment

The Environment case study required candidates to prepare a report for the mayor of a flood-prone Queensland town that could be used to rally support for the building of a levee.

4.3. Health

The Health case study required candidates to advise a fictional medical association on the likely impact of a recent increase in medical graduates on the training needs for junior doctors.

Matthew Ralph
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Commercial Actuarial Practice

Bruce Thomson
Chief Examiner,
Commercial Actuarial Practice

4 June 2013