Private and Confidential

Report to ECC from the Board of Examiners

SEMESTER 2 2012

PART III

BOARD OF EXAMINERS' REPORT

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The Semester 2 2012 Part III examinations of the Actuaries Institute ("Institute") were held from the 3rd October to 23rd October 2012.

Pass Rates

The number of candidates presenting for the Semester 2 2012 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

	2012 (2)			2012 (1)			2011 (2)			2011 (1)		
	Sat	**Pass**	**%**	**Sat**	**Pass**	**%**	**Sat**	**Pass**	**%**	**Sat**	**Pass**	**%**
1 Investments	43	18	42%	56	17	30%	67	21	31%	80	26	33%
2A Life Insurance	43	14	33%	67	22	33%	49	10	20%	60	18	30%
2B Life Insurance	43	17	40%	52	13	25%	41	6	15%	41	16	39%
3A General	96	29	30%	103	29	28%	78	18	23%	72	24	33%
3B General	69	26	38%	71	27	38%	65	20	31%	58	20	34%
5A Invest. Man. &	30	17	57%	n/a	n/a	n/a	26	16	62%	n/a	n/a	n/a
5B Invest. Man. &	n/a	n/a	n/a	22	13	59%	n/a	n/a	n/a	16	6	38%
6A GRIS	n/a	n/a	n/a	16	5	31%	n/a	n/a	n/a	18	9	50%
6B GRIS	14	3	21%	n/a	n/a	n/a	8	5	63%	n/a	n/a	n/a
7A ERM	91	30	33%[1]	83	31	37%[2]	82	21	26[3]	82	17	21%[4]
ST1 Health & Care	16	6	38%	13	5	38%	n/a	n/a	n/a	n/a	n/a	n/a
C10 CAP	71	40	56%	82	47	57%	87	48	55%	79	47	59%
Total	**516**	**200**	**39%**	**469**	**173**	**37%**	**421**	**144**	**33%**	**424**	**166**	**39%**

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 39% is higher than the previous semester. The number of candidates sitting the Part III exams in the latest period shows a 10% increase over the previous semester.

The pass rate for 2A is consistent with the previous semester while the 2B pass rate has increased by 15%. The pass rate for 6B is considerably lower than in previous semesters.

1. Figure represents pass rate in respect of non-Fellows only. The pass rate for Fellows was 50%
2. Figure represents pass rate in respect of non-Fellows only. The pass rate for Fellows was 67%
3. Figure represents pass rate in respect of non-Fellows only. The pass rate for Fellows was 67%
4. Figure represents pass rate in respect of non-Fellows only. The pass rate for fellows was 29%

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	2012 (2)	2012 (1)	2011 (2)	2011 (1)	2010(2)
New Fellows	31	43	36	40	40

Online Forum Participation

The online forum participation mark continued this semester for all subjects except Access Macquarie subjects (C1 and 5B) and C10, replacing the previous assignment assessment.

In semester 1 2012 students were asked to post three original posts and reply to three posts from other students. After considering Feedback from Course Leaders and students, ECC changed the online participation guidelines for semester 2 2012, students were asked 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 Mark	2A	2B	3A	3B	6B	Total
10	16	15	37	19	0	87
9	12	13	20	15	1	61
8	8	5	19	18	3	53
7	3	5	13	9	5	35
6	0	0	1	2	3	6
5	0	1	0	4	0	5
4	0	2	0	0	2	4
3	0	0	0	0	0	0
2	0	1	0	1	0	2
1	0	0	0	0	0	0
0	6	0	8	3	0	17
No. of Candidates	45	42	98	71	14	270
Average Mark	7.7	8.5	8.2	8.0	6.7	8.0
Average Mark (Previous Semester)	8.0	8.1	7.4	9.6	6.8	8.1

Observations:

- The overall average mark was 8/10 (similar to the 8.1/10 mark for the previous semester, Semester 1 2012).
- Across the subjects there were generally small variations in the average mark from the previous semester to this semester. The biggest change was for 3B, where the average mark decreased from 9.6/10 for the previous semester to 8/10 this semester (which is now more in line with the other subjects).
- A high 32% 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.

- The poorer candidates in the exam generally had lower participation marks for the online forum.

- These results indicate that there continues to be a high level of student engagement in the new online assessment.

Success of Exam Interviews

As a one off exercise, the following table shows whether candidates receiving exam interviews last semester, passed or failed this semester's exam. Out of the 23 exam interviews conducted, 12 candidates passed this semester's exam. This indicates the exam interview is of benefit to students.

Semester 1 Subject	Number of Interviews	Passes
C1 Investments	2	1
C10 Commercial Actuarial Practice	2	1
C2A Life Insurance	2	1
C2B Life Insurance	4	3
C3A General Insurance	7	4
C3B General Insurance	6	2
Total	**23**	**12**

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 1:	Investments	David Pitt
Course 2A:	Life Insurance	David Service
Course 2B:	Life Insurance	Steve Miles
Course 3A:	General Insurance	James Pettifer
Course 3B:	General Insurance	Frankie Chan
Course 5B:	Investment Management & Finance	David Pitt
Course 6B:	Global Retirement Income Systems	Stephen Woods
Course 10:	Commercial Actuarial Practice	Bruce Thomson

1.3. *External Examiners*

Course 1:	Investments	Bruce Graham
Course 5B:	Investment Management & Finance	Jack Ng

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.

1.4. *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
6 July 2012	• 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
12 September 2012	• 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.
28 November 2012	• 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
1	Access Macquarie
2A	Anthony Asher, Bridget Browne, Matt Bower, Steve Miles, Bruce Thomson and Jill Withers (writers on project team), Bruce Thomson (tutorials, forums and participation).
2B	Anthony Asher, Bridget Browne, Matt Bower, Steve Miles, Bruce Thomson and Jill Withers (writers on project team), Steve Miles (tutorials, forums and participation).
3A	James Fitzpatrick (exam), Andrew Huszczo (tutorials) and Felix Tang(forums and participation).
3B	Andy White, Frankie Chan, Johnson Wong, David Xu, Jim Qin, Monica Gluschenko, Maiyuran and Ammar Khan (exam writers), Daniel Fung (forums and participation), Rick Shaw (tutorials).
5A	Access Macquarie
6B	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

Stage 2 and 3 of the new assessment structure was implemented in Course 2A and 2B Life insurance in Semester 2 2012. The following assessment structure was introduced:

- A new style of examination, which included:
    - 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 framework was followed:

- 6 multiple choice questions and sample answers were written for each course and made available to students in the LMS early in the semester
- Prototypes and guidelines were approved by ECC
- Arrangements were made with ANZIIF to customise their online exam system to include security features
- 47 questions were drafted and reviewed for 2A and 54 questions for 2B
- Review of questions by education consultant, Dr Matt Bower
- Review by Chief Examiners of the overall course coverage and pre-selection of 40 questions.
- Testing with new Fellows
    - 5 testers on the 2A and 2B multiple choice component in the actual ANZIIF online exam system
- Final selection of questions by the Chief Examiners and project team
    - 32 questions for 80 marks in 2A; 29 questions for 80 marks in 2B
- Sign-off of all questions for semester 2 2012 by Chief Examiners and one other writer from the project team.
- Students login created in the ANZIIF online exam system and all students notified of their details by email

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 framework was followed:

- 1 longer answer sample question was written for each course and made available to students in the LMS early in the semester
- Prototypes and guidelines were approved by ECC
- Review of questions by education consultant, Dr Matt Bower
- Review by Chief Examiners of the overall course coverage.
- Testing with new Fellows
    - 1 tester for the longer answer question in each course
- Sign-off of all questions for semester 2 2012 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:

- 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 for each question of A, B, C, D or E, 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 as follows:

Subject	Assessment	Weighting
2A, 2B, 3A, 3B, 6A/6B	Online forum participation	10%
2A, 2B	Multiple Choice Component	30%
Access Macquarie (C1, 5A/5B)	Assignment	15%
C10	Post course report assignment	20%

- 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 judgement 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: 2A, 2B, 3A, 3B and 6B, in Semester 1 2012, replacing the previous assignment assessment. 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.	

5.2. Assignment Marking for C1 and C5A

Assignments were retained for C1 and C5A, contributing 15% of the total assessment.

The general framework used to mark assignments, grade candidates and determine passes is described as follows:

- Marks were not scaled to allow for the fact that some questions were more difficult than others.
- Each candidate was awarded a grade for each question of A, B, C, D or E, where A was regarded as a strong pass and B an ordinary pass.
- Candidates' results were based on total raw 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, Ken McLeod, 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 other members of the Faculty.

The case study exam assessment questions were reviewed by Actuaries from the different areas of practice, specifically:

Life Insurance:	Julia Lessing
General Insurance:	Stephen Long
Global Retirement Income Systems:	Vivian Dang
Investments:	Yinghua Yu
Banking:	Kai Kuen Chui
Environment:	Travis Elsum
Health:	N/A
Enterprise Risk Management:	Ben Qin

7. Examination Dates

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

Table 3: Examination Dates

Course	Subject	Exam Date
1	Investments	15 October 2012
2A	Life Insurance	19 October 2012
2B	Life Insurance	22 October 2012
3A	General Insurance	17 October 2012
3B	General Insurance	16 October 2012
5A	Investment Management & Finance	18 October 2012
6B	Global Retirement Income Systems	18 October 2012
7A	Enterprise Risk Management	3 October 2012
ST1	Health & Care	5 October 2012
CAP	Commercial Actuarial Practice	23 October 2012

8. Assignment Dates

This semester's Part III assignments were due on the following dates:

Table 4: Assignment Dates

Courses	Due Date
C1	22 August 2012
5A	29 August 2012
CAP - Post Course Assignment	27 September 2012

9. Examination Centres

Candidates, not including those sitting Course 7A or UK ST1 Health and Care, sat the exams in 6 centres in Australia and 12 centres overseas.

Table 5: Candidates by Exam Centre

Location	Number of Candidates
Australia	439
Brisbane	15
Canberra	10
Melbourne	68
Sydney	337
Adelaide	3
Perth	5
Hobart	1
Overseas	77
Abu Dhabi	1
Ireland	1
China	4
Hong Kong	16
Indonesia	1
Malaysia	9
New Zealand	11
Singapore	13
Fiji	1
South Korea	1
United Kingdom	19
Total	**516**

10. Exam Candidature

10.1. *Candidate Mix*

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

As suspected, the proportion for Investments decreased by 2% however the Life Insurance proportion has been the lowest across four semesters. Global Retirement Income Systems and the Commercial Actuarial Practice were consistent with previous semester. The candidate mix increased by 1% for General Insurance and 2% for Investment Management and Finance. Course 7A and ST1 exams increased by 2% and 1% respectively.

Table 6: Candidate Mix by Part III Course

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

Examination Papers and Assignments

1. Examination Structure

The structure of the examinations was a single three-hour exam paper for Course 1, 3A, 3B, 5A and 6B.

The exams for Course 1, 3A, 3B, 5A and 6B were worth:

- 3A, 3B, 6B: 90% of the final assessment.
- C1 and 5A: 85% of the final assessment.

The new assessment structure implemented for Life Insurance this semester included a 1 hour multiple choice question component starting at 11:00am, followed by a one hour lunch break from 12pm to 1pm and concluding with a longer answer component with two questions being held from 1pm to 4pm.

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 structure of on the non-exam assessment for Course 1, and Modules 2 & 3 was:

- 2A, 2B, 3A, 3B, 6B: online forum participation worth 10% of the final assessment.
- C1 and 5A: assignment worth 15% of the final assessment.

Module 4 (Course 10 – Commercial Actuarial Practice) included a post course report 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

In Course 1, and Modules 2 & 3, there 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).

The questions aimed to cover the whole syllabus. In the case of Course 1 (Investments) the examination was based on the syllabus and a previously determined set of readings.

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' Assignment 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

	2012 (2)	2012 (1)	2011 (2)	2011 (1)	2010 (2)
Sydney	37%	33%	37%	37%	43%
Melbourne	38%	48%	38%	43%	43%
Other Australian	59%	27%	20%	61%	28%
Overseas	36%	30%	23%	36%	35%
Other Australian & Overseas	43%	29%	22%	42%	33%
Total	**39%**	**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 overseas examinations is the lowest this semester. This was not the case for the previous two semesters.
- The pass rate for Other Australian centres increased by 27% this semester.

3. Pass Marks

Table 8: Raw Pass Marks by Part III Subject

	Subject	2012 (2)	2012 (1)	2011 (2)	2011 (1)	2010 (2)
1	Investments	94.4	95.5	93.7	86.0	100.0
2A	Life Insurance	113.2	104.5	93.0	89.0	117.0
2B	Life Insurance	116	105.0	105.0	109.0	84.0
3A	General Insurance	111.4	109	105.0	109.8	98.0
3B	General Insurance	105	115.0	100.1	101.7	113.0
5A	Investment Management and Finance	107.1	N/A	111.9	n/a	105.0
5B	Investment Management and Finance	n/a	112.1	n/a	99.6	n/a
6A	Global Retirement Income Systems	n/a	104.4	n/a	106.5	n/a
6B	Global Retirement Income Systems	106.9	N/A	106.6	n/a	105.2

BoE Members for Semester 2 2012

1. Board of Examiners The recommended constitution for the Board of Examiners for next semester (semester 2 2012) is as follows:

1.1. *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 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	Robert Milohanic, 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 1 2013 are as follows:

Table 9: Examination Dates

Module	Subject	Exam Date
1 (7A – ST9)	Enterprise Risk Management	23rd April 2013
1 (STI)	Health & Care	25th April 2013
2 (3A)	General Insurance	29th April 2013
3 (5B)	Investment Management & Finance	29th April 2013
3 (3B)	General Insurance	30th April 2013
2 (6A)	Global Retirement Income Systems	30th April 2013
2 (2A)	Life Insurance	2nd May 2013
3 (2B)	Life Insurance	3rd May 2013
4 (10)	Commercial Actuarial Practice	6th May 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 2012 Semester 2 examination papers and exam solutions and marking guides be released on 13h December or as close to this time as possible.

Gary Musgrave
Chair, Board of Examiners – 13 December 2012

EXAMINER REPORTS

Course 1 Investments
Course Examiner's Report Semester 2 2012

1. Summary

1.1. *Course Overview*

The aim of the C1 Investment Management Course is to provide the knowledge, skills and judgement necessary for an actuary to tackle a range of investment management related problems. These skills are developed through a study of the investment process, asset modelling and issues related to the management of assets in practice.

1.2. *Pass Rates*

46 Candidates enrolled for the Semester 2 2012, C1 Investments Course. Of these, 3 did not present at the exam leaving 43 sitting the exam. The assessment comprised one assignment worth 15% and an exam worth the remaining 85%.

It is proposed that 18 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

Semester	Sat	Passed	Pass Rate
Semester 1 2012	56	17	30%
Semester 2 2011	67	21	31%
Semester 1 2011	80	26	33%
Semester 2 2010	88	27	31%
Semester 1 2010	93	33	35%
Semester 2 2009	145	43	30%
Semester 1 2009	177	86	49%

The 42% pass rate for this exam is higher than in most recent offerings. This being the final time that the course is offered may have led to increased study hours by enrolled candidates.

1.3. *Candidate Numbers*

The Candidate numbers can be summarised as follows:

Table 2 – Candidate Numbers

	Number of candidates
Originally enrolled	46
Withdrawn prior to exam	3
Absent from exam	0
Presented at exam	43
Passed	18
Failed	25

The analysis by examination centre is as follows:

Table 3 – Analysis by Examination Centre

Centre	Presented	Passed	Pass Rate
Sydney	27	11	41%
Melbourne	5	1	20%
Canberra	3	2	67%
Perth	3	1	33%
Subtotal Australia	**38**	**15**	**39%**
Singapore	1	0	0%
Suva	1	0	0%
Auckland	1	1	100%
Seoul	1	1	100%
Shanghai	1	1	100%
Subtotal International	**5**	**3**	**60%**
Total	**43**	**18**	**42%**

It is inappropriate to read too much into comparisons of international and Australian pass rates given the very low numbers of students attempting the subject from overseas this semester.

2. Examination Administration

2.1. *Examiners*

The examiners for this semester were:

Course Examiner: David Pitt

External Examiner: Bruce Graham

2.2. *Course Leader*

The Course Leader for this semester was:

Tim Kyng

3. Examination Papers and Assignments

3.1. *Degree of Difficulty and Course Coverage*

The following tables show the distribution of questions and marks by level of difficulty and course coverage:

Table 5 – Degree of Difficulty of Exam

Question	Syllabus Performance Outcome	Units	Knowledge & Understanding	Straight-forward Judgement	Complex Judgement	Total Marks
Q1(a)	4.1-4.5	2	4	4		8
Q1(b)	4.4	2		1		1
Q1(c)	5.1-5.5	3			6	6
Q1(d)	5.1-5.5	3			5	5
Q2(a)	4.1,4.2	2		2		2
Q2(b)	4.1,4.2	2		3		3
Q2(c)	5.1-5.5	3			4	4
Q2(d)	5.1-5.5	3		4	4	8
Q2(e)	5.1-5.5	3		3		3
Q3(a)	1.1, 4.1-4.7	1, 2		4	4	8
Q3(b)	4.1-4.7	2		4	4	8
Q3(c)	4.1-4.7	2		2	2	4
Q4(a)	1.1,3.1	1	3			3
Q4(b)	1.1,3.1	1	4			4
Q4(c)	1.1,3.1	1	4	4		8
Q4(d)	1.1,3.1	1			5	5
Q5(a)	5.1-5.5	3	2			2
Q5(b)	5.1-5.5	3	2			2
Q5(c)	5.1-5.5	3	2			2
Q5(d)	5.1-5.5	3		4		4
Q5(e)	5.1-5.5	3			7	7
Q5(f)	2.1, 5.1-5.5	1		3		3
Total			**21**	**38**	**41**	**100**

Table 6 – Course Coverage by Question

Question	Units	Knowledge & Understanding	Straight-Forward Judgement	Complex Judgement	Total Marks
1	2,3	4	5	11	20
2	2,3	0	12	8	20
3	1,2	0	10	10	20
4	1	11	4	5	20
5	1,3	6	7	7	20
Total		**21**	**38**	**41**	**100**

The spread of marks across the KU, SJ and CJ are in very close agreement with the recommended 20:40:40 split. The course coverage of the exam is very complete with questions testing all areas of the course with appropriate emphasis on the most fundamental aspects of the syllabus.

There is now a single criterion of achieving a minimum scaled mark of 120 (i.e. a pass mark of 60%). The pass mark for previous semester was set at 120.

3.2. *Overall Performance*

Overall this was a very challenging exam and candidates who passed performed sufficiently well across the syllabus. Pass marks on questions recommended by the markers and examiners were quite low to reflect the difficulty level. Candidates found the situation in Question 2 different to what they had previously encountered and in some cases clearly did not exhibit the judgement and knowledge they normally would in a question on more familiar grounds. Candidates would do well to read novel questions carefully and remember to place their answers in the context of the knowledge they have learned from the subject. The most difficult part for the candidates on Question 4 was part (d) with some weak responses that did not go beyond basic bookwork. A more analytical approach was needed in this part to secure marks.

3.3. *Exam Question by Question Analysis*

Question 1 **Total Marks: 40 (8 KU, 10 SJ, 22 CJ)**

	Marks Required	**% of Total Marks**	**Number of Candidates**	**Proportion of Candidates**
Strong Pass (A)	28	70.0	15	34.9%
Pass (B)	20	50.0	12	27.9%
Slightly Below Standard (C)	16	40.0	10	23.3%
Weak (D)	10	25.0	5	11.6%
Showed Little Knowledge (E)	1	2.5	1	2.3%
Did Not Attempt (X)	0	0.0	0	0.0%
		% of KU	**% SJ**	**% CJ**
Maximum Mark	38	100.0	100.0	97.7
Average Mark	23.4	64.0	65.9	53.0
Standard Deviation	7.0			
Coefficient of Variation	0.30			

Candidates performed well on this question, with a pass rate of 63%. The question was not particularly easy and candidates are to be congratulated on a good attempt at this question. Some perhaps spent too long on this as there was evidence in some cases that students wrote a lot on this part and did not finish the exam.

The question concerned an asset consultant advising a number of different investment funds who is planning to construct asset models to assist with asset allocation strategy for these funds.

Part a):

Candidates were asked to compare asset model classes.

This part was answered reasonably well by most students. Many students did not receive full marks because they did not explicitly comment on each distribution property for each model. In particular, many students did not comment at all on the "description of interaction between returns, past and present" (which were easy marks).

It is worth noting that the way in which some students answered this question part was very poor. Some students wrote very long paragraphs, mixing the advantages/disadvantages of different models (no bullet point answers). This type of response gave the impression that the student did not really clearly understand the differences between the models. The clearest (best) answers included those which used bullet points, listing the pros/cons of each of the four distributional properties given in the question, for each model separately.

The way the exam solutions to this question are written is a good template on how to structure an answer to this kind of question.

Part b):

Candidates were asked to comment on the use of the multivariate normal model in practice.

Only a handful of students managed to receive full marks for this question. Students recognised that the MVN model is used because it is simple, but failed to mention that the MVN model is a reasonable approximation for returns modeled over longer time horizons (e.g. annual and beyond). As one increases the time scale over which returns are calculated, their distribution looks more and more like a normal distribution.

Part c):

Candidates were asked to outline the financial requirements for three different fund types and to give implications for choice of an asset return model.

Many students successfully outlined the financial requirements for each fund, but did not describe the appropriate model characteristics for each fund. It also appeared that some students did not understand the distinctions between defined contribution funds and defined benefit funds. Surprisingly, not many students made any direct references to the importance of modeling increased volatility (market downturns, etc) in discussing the appropriate model characteristics for each fund.

Part d):

Candidates were asked to relate asset model types to the funds from part c.

There were many reasonable answers to this question part, but also some very poor ones. Some students were very vague in providing reasons for the choices of models. Furthermore, some students did not specifically mention a model choice for each of the three funds.

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)	19	47.5	1	2.3%
Pass (B)	16	40.0	4	9.3%
Slightly Below Standard (C)	13	32.5	6	14.0%
Weak (D)	8	20.0	20	46.5%
Showed Little Knowledge (E)	1	2.5	11	25.6%
Did Not Attempt (X)	0	0.0	1	2.3%
		% of KU	**% SJ**	**% CJ**
Maximum Mark	22	-	66.7	56.3
Average Mark	10.2	-	25.6	25.7
Standard Deviation	4,9			
Coefficient of Variation	0.48			

Candidates performed poorly on this question, with a pass rate of 12%. This was a challenging question with all parts involving judgement.

The question concerned investment management issues pertaining to the operation of a trust.

Part a):

Candidates were asked to comment on how to maintain real value of capital if entire sale proceeds were regarded as capital.

Almost everyone failed to at least suggest that a Perpetual fund would function more appropriately as a long term objective.

A mark was generally given where there was recognition of the difficulty in investing in low volatility assets yet achieving real returns. Most candidates were able to (and often in a round about way) state this issue.

Part b):

Candidates were asked to comment on the need for greater than real growth given the growing community population.

Many went down the path of gathering statistics to determine future demographics and consequent claim rates on the fund. Not totally unreasonable to explore this in answering the question, but the solution was not at all suggesting that this be considered.

Very few were as able to explain the financing of the scheme through retained earnings or injections of capital and, disappointingly, only a handful were able to stick to the need for real returns and the possibility of a growing population providing some scope for real returns to be enhanced because of this.

A few did make mention of the practical approach of controlling grants to a point that was affordable by the fund.

The only marks that were awarded were for the linking of population growth with real returns and the need to review grant levels where the need arose.

Part c):

Candidates were asked to determine how to allocate a fixed grant percentage.

There were some reasonably easy marks to be earned in this part - but again few were able to simply run through approximates of "G" e.g. expected returns reduced by a margin to cover volatility.

Marks were awarded to a significant number of candidates who suggested that "G" could be determined by simulations in an A/L model and setting "G" as a result of the projection outcomes. This was one of the better responses for the entire question 2.

Too many, though, simply did an equation which showed floors and caps of "G" but did not actually tell us anything that the question didn't already tell us.

Part d):

Candidates were asked to comment on long term dynamics in the context of the trust in the question.

Many unfortunately got the asset allocations between the two approaches back to front - believing that the first approach was to be more conservatively invested - even though it was spelled out in the question that the second approach had a conservative base and riskier allocation for reserves.

Some candidates did broadly cover off the transfers to and from the reserve fund and also that the reserves in approach 1 were reasonably substantial and hence could bear some volatility.

No mention of A/L models in this part and many other points that were provided couldn't be awarded marks because they were irrelevant to the question.

Part e):

Candidates were asked to describe the features of an asset model required for this trust and the investment approaches considered in the question.

Nearly all candidates were able to pick up at least a mark for running through the basic parameters for an A/L model and an extra half or full mark was given where there was due recognition of the need to consider shocks and or volatility in general. No one mentioned skewed returns.

Question 3 **Total Marks: 40 (0 KU, 20 SJ, 20 CJ)**

	Marks Required	**% of Total Marks**	**Number of Candidates**	**Proportion of Candidates**
Strong Pass (A)	22	55.0	2	4.7%
Pass (B)	16	40.0	13	30.2%
Slightly Below Standard (C)	13	32.5	10	23.3%
Weak (D)	8	20.0	14	32.6%
Showed Little Knowledge (E)	1	2.5	4	9.3%
Did Not Attempt (X)	0	0.0	0	0.0%
		% of KU	**% SJ**	**% CJ**
Maximum Mark	24.5	-	82.5	50.0
Average Mark	14.3	-	46.9	24.5
Standard Deviation	4.9			
Coefficient of Variation	0.34			

Candidates performed reasonably on this question, with a pass rate of 35%.

The question concerned giving advice to a financial planning firm to develop a series of model portfolios for use by their advisers.

Part a):

Candidates were asked to set out the information needed for developing strategic asset allocations and why this information would be needed.

Many candidates did not appear to understand the role of a Financial Planning Firm, fundamental to answering the question appropriately. A financial planning firm is made up of advisors that provides investment advice to their clients, appropriate to the client's investment objectives and risk tolerances. The question asks the candidate to develop the model portfolios used by the advisors for their clients. Answers should involve anything that understands the objectives and risk tolerances of the underlying investors that are clients to the Financial Planning firm. Too many candidates gave generic answers (eg asset liability matching) that are clearly not relevant. The second part of the question asks for internally generated sources of information. To aid a portfolio construction process, clearly relevant is information on the expected distribution of returns from asset classes. An SAA deals with selecting the right long term sector mixes, so clearly manager specific information is not relevant.

Part b):

Candidates were asked to describe the process they would take to determine the strategic asset allocations.

The key trip up point for this question is in the lack of detail; too many candidates provided vastly generic answers about liability and asset matching. Answers that attracted marks gave specific detail as to the process they would go through in developing a range of model portfolios for the financial planning firm. Superior answers did not focus specifically on the modelling aspects but also processes such as delivering a suitable report, monitoring the appropriateness of the SAA going forwards and so forth.

Part c):

Candidates were asked to comment on the principles guiding the choice of managed funds.

The phrasing of the question was quite broad so the markers allowed for a range of relevant points. Very few candidates provided the model answer. However the answers had to make sense in the context of the question; unfortunately many candidates appeared to simply make broad points about investments in general.

Question 4 **Total Marks: 40 (22 KU, 8 SJ, 10 CJ)**

	Marks Required	**% of Total Marks**	**Number of Candidates**	**Proportion of Candidates**
Strong Pass (A)	17	42.5	2	4.7%
Pass (B)	14	35.0	7	16.3%
Slightly Below Standard (C)	10	25.0	12	27.9%
Weak (D)	6	15.0	18	41.9%
Showed Little Knowledge (E)	1	2.5	4	9.3%
Did Not Attempt (X)	0	0.0	0	0.0%
		% of KU	**% SJ**	**% CJ**
Maximum Mark	23.0	63.6	62.5	50.0
Average Mark	10.1	32.6	20.5	13.3
Standard Deviation	3.9			
Coefficient of Variation	0.39			

Candidates performed quite poorly on this question, with a pass rate of 21%. As noted in Section 3.7, the challenge for candidates came in part (d).

The question concerned the characteristics of bond portfolios and associated judgments.

Part a):

Candidates were asked to discuss the relationship between price volatility and duration of a bond.

This was reasonably well handled by most as it was relatively straightforward knowledge style.

Part b):

Candidates were asked to comment on bond attributes useful in volatile markets.

Again this was reasonably well handled with many able to give some sensible points.

Part c):

Candidates were asked to comment on practical issues relating to adjusting bond portfolios subsequent to changes in yield.

No student tried to answer the premises on " small, frequent and selective". This indicates that the wording of the question might not be clear enough.

Part d):

Candidates were asked to comment on the use of options to protect a bond portfolio in times of volatility.

A majority provided a book work response on options (ie pay a premium to the option writer to protect your downside for unlimited upside gain). However, the application of option pricing was found lacking in all responses, eg very few students seem to know that one important feature of option is its value is affected by volatility and this can be used to hedge against volatility risk.

Question 5 **Total Marks: 40 (12 KU, 14 SJ, 14 CJ)**

	Marks Required	**% of Total Marks**	**Number of Candidates**	**Proportion of Candidates**
Strong Pass (A)	30	75.0	8	18.6%
Pass (B)	23	57.5	11	25.6%
Slightly Below Standard (C)	19	47.5	9	20.9%
Weak (D)	10	25.0	10	23.3%
Showed Little Knowledge (E)	1	2.5	5	11.6%
Did Not Attempt (X)	0	0.0	0	0.0%
		% of KU	**% SJ**	**% CJ**
Maximum Mark	35.0	100.0	67.9	100.0
Average Mark	21.5	71.7	42.4	49.6
Standard Deviation	8.1			
Coefficient of Variation	0.38			

Candidates performed reasonably on this question, with a pass rate of 44%.

The question concerned mainly technical issues around the analysis of a managed equity portfolio.

Part a):

Candidates were asked to perform a Brinson arithmetic attribution on given data.

This was well answered.

Part b):

Candidates were asked to calculate ratios of information ratios.

Again reasonably well handled with most knowing the method required.

Part c):

Candidates were asked to give an advantage and a disadvantage of using monthly internal rates of return as a performance measure.

This proved more difficult with many unable to give the key issues.

Part d):

Candidates were asked to assess the ability of active managers using given data.

This was poorly handled by many.

Part e):

Candidates were asked to maximise the information ratio by combining active style managers within a given mathematical framework.

This was not handled well by the majority of candidates.

Part f):

Candidates were asked to comment on the implications of the Fama French (1992) study for the efficient markets hypothesis.

This was better handled although some clearly had missed this part of the reading or not appreciated its significance.

Course 2A Life Insurance
Chief Examiner's Report Semester 2 2012

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*

This semester the assessment for both 2A & 2B changed to the style intended for all Part III subjects (except CAP) in future.

Assessment has three parts

Forum Participation 10%

Multiple Choice Exam 30%

Long Answer Question Exam 60%

The multiple choice exam contained 32 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*

47 Candidates enrolled for the Semester 2 2012, 2A Life Insurance Course. Of these, 3 withdrew and 1 did not present at the exam, leaving 43 sitting the exam.

It is proposed that 14 Candidates be awarded a pass, which implies a pass rate of 33%. Table 1 shows the historical pass rates for this subject:

Table 1 – Course Experience

Semester	Sat	Passed	Pass Rate
2012 Semester 2	43	14	33%
	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 33% pass rate for this exam is the same as the previous exam (Semester 1 2012). The significant change in assessment has not lead to a change in pass rate. This fact does should not lead to any conclusions being drawn in respect to the new assessment. It is likely that the change in assessment has led a number of students to decide not to sit the first iteration of the new assessment, resulting in the significant drop in numbers.

1.4. *Candidate Numbers*

The Candidate numbers can be summarised as follows:

Table 2 – Candidate Numbers

	Number of candidates
Originally enrolled	47
Withdrawn prior to exam	3
Absent from exam	1
Presented at exam	43
Passed	14
Failed	29

The analysis by examination centre is as follows:

Table 3 – Analysis by Examination Centre

Centre	**Presented**	**Passed**	**Pass Rate**
Sydney	36	9	25%
Melbourne	3	2	67%
Subtotal Australia	**39**	**11**	**28%**
Singapore	1	1	100%
Wellington	1	1	100%
Hong Kong	2	1	50%
Subtotal International	**4**	**3**	**75%**
Total	**43**	**14**	**33%**

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 lower than the others.

2. Examination Administration

2.1. *Examiners*

The examiners for this semester were:

Chief Examiner: David Service

Assistant Examiner: Bridget Browne.

2.2. *Course Leader*

The Course Leader for this semester was Bruce Thomson who was also a member of the working group.

3. Assessment Results

3.1. *Forum Participation*

The marks ranged between 7 and 10 apart from 4 students with 0 and 1 with 6.5. The average was 8. The four students with 0 all failed.

3.2. *MCQ*

There were 32 questions with a total of 80 marks available. The questions were distributed as 20 with 2 marks, 8 with 3 marks and 4 with 4 marks. The marks per question do not reflect the difficulty. Rather, they reflect the time required to think about the question and the list of possible answers.

The highest mark was 59 (out of 80), the lowest 27 and the average 41.

The coverage of the course material was comprehensive but not complete.

3.3. *Long Answer Exam*

There were 2 questions.

Question 1 required students to price a 5 year level term product which was to be sold though financial planners who would charge the customer direct rather than be remunerated by commission. The assumptions used for the pricing of the existing 5 year level term with commission were provided as well as the reinsurers view of the companies mortality.

Students were required to submit their spreadsheet in addition to their answer.

The question covered course Units 2, 9, 10, 11, 13 & 14; and Learning Objectives 2.3, 2.4, 9.1, 9.2, 10.3, 11.6, 11.7, 13.1 & 14.2.

Question 2 required students to produce a plan for the rectification of a unit pricing error in the prices for a large diversified fund manager and the detailed tasks to be performed. It also required examples of the different types of transactions and the effect of the errors on each.

The question covered course Units 1, 2, 3, 7 & 16; and Learning Objectives 1.1, 2.1, 3.2, 7.4, 7.5, 7.6 & 16.2.

The highest mark for the Long Answer component was 41 out of 60 with 3 candidates scoring this. The lowest mark was 14 out of 60.

3.4. *Overall Performance*

The Forum Participation marks were, with few exceptions, high. Perhaps it is no surprise that all four who scored 0 failed. This reinforces the pedagogical view that participation in shared learning by students is a valuable part of the teaching and learning process.

The prior view in respect to the MCQ was varied. Some thought it would be "easy"; others thought that because of its "newness" in Part III examinations, it might be poorly answered. As it turned out it appears to have been a useful test of candidates' understanding across a very wide range of material in the syllabus. While a top mark of 75% is perhaps lower than desired, the average of 50%, while not a "pass", suggests that in future candidates may be better prepared for this assessment component. In addition the fact that it was "closed book" may have contributed to the results.

The results to the Long Answer questions were particularly disappointing. They demonstrated a fundamental lack of understanding of what, arguably, is at the heart of 2A, namely pricing and the associated assumption setting. Question 1 required students to

set the price for a 5 year level term insurance. They were instructed to submit their spreadsheet, which was also marked.

Such a pricing spreadsheet is arguably one of the simplest. It should not be beyond a graduate with an actuarial degree but no work experience. Yet, not one of the 43 spreadsheets was without error. Some had errors which demonstrated a very serious lack of understanding. In addition, students' ability to set assumptions was, in many cases, absent.

Question 2 was about fixing a unit pricing error in a large diversified fund manager. Many answers contained little other than a list of bookwork bullet points which, while "correct", had no particular relevance to the scenario of the situation. The question specifically asked for numerical examples. Some candidates failed to provide any. Others, while providing them, did not use the specific error numbers given in the question.

The conclusion which can be drawn is 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.

3.5. *Long Question Analysis*

Question 1: Total Marks 30

	Marks Required	**% of Total Marks**	**Number of Candidates**	**Percentage of Candidates**
Strong Pass (A)	22.5	75	1	2
Pass (B)	18.0	60	8	19
Slightly Below Standard (C)	13.5	45	14	33
Weak (D)	7.5	25	16	37
Showed Little Knowledge (E)	3.0	10	4	9
Did Not Attempt (X)	0	0	0	0
Maximum Mark	22.5			
Average Mark	13.2			
Standard Deviation	4.5			
Coefficient of Variation	0.34			

As noted earlier this question was poorly answered.

Question 2: Total Marks 30

	Marks Required	% of Total Marks	Number of Candidates	Percentage of Candidates
Strong Pass (A)	22.5	75	2	5
Pass (B)	18.0	60	9	21
Slightly Below Standard (C)	14.5	45	14	33
Weak (D)	7.5	25	17	40
Showed Little Knowledge (E)	3	10	1	2
Did Not Attempt (X)	0	0	0	0

Maximum Mark	24
Average Mark	15.3
Standard Deviation	4.1
Coefficient of Variation	0.27

Candidates performed better on this question than on Q1. Nevertheless it was not the desired level of competence which could reasonably be expected.

Course 2B Life Insurance
Chief Examiner's Report Semester 2 2012

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.

1.2. *Pass Rates*

47 Candidates enrolled for the Semester 2, 2012 Course 2B. Of these, 4 did not present at the exam.

The assessment comprised:

- A participation mark for forum discussions worth 10%,
- A one hour multiple choice (MCQ) exam worth 30%. There were 39 multiple choice questions worth a total of 80 marks. Questions were worth 2, 3 or 4 marks. The questions also indicated whether or not there was one correct answer or more than one correct answer
- A long answer exam worth 60%. There were two questions in the three hour exam. Each was worth 30 marks.

This was the first semester for using the new MCQ exam and the new format long answer exam.

It is proposed that 17 Candidates be awarded a pass, which implies a pass rate of 40%. This compares with the following historical pass rates for this subject:

Table 1 – Course Experience

Semester	Sat	Passed	Pass Rate
2012, Semester 2	**43**	**17**	**40%**
2012 Semester 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 40% pass rate represents a return to the historic level of pass rates after poor experience in the previous two exams. There was some anecdotal concern that the low pass rates of recent years were caused by candidates sitting 2A before passing 2B. Whilst an analysis was not done for past years there were 7 candidates who attempted 2B without passing 2A. Only one of these candidates passed and even then, was in the marginal pass category.

1.3. *Candidate Numbers*

The Candidate numbers can be summarised as follows:

Table 2 – Candidate Numbers

	Number of candidates
Originally enrolled	47
Withdrawn prior to exam	4
Absent from exam	0
Presented at exam	43
Passed	17
Did not Pass	26

A high percentage of enrolled students sit the exam.

Table 3 – Analysis by Examination Centre

Centre	Presented	Passed	Pass Rate
Sydney	25	9	36%
Melbourne	9	5	56%
Canberra	1	1	100%
Sub Total Australia	**35**	**15**	**43%**
Auckland	1	0	0%
Singapore	3	1	33%
Hong Kong	2	0	0%
London	2	1	50%
Sub Total Overseas	**8**	**2**	**25%**
All Centres	**43**	**17**	**40%**

Overseas students continue to perform below average but the numbers are small.

2. Examination Administration

2.1. *Examiners*

There were many people involved in the development and review of the exam. This year in particular was a team effort and my personal thanks go to the team members. Their names and roles are given below:

Role	Persons Involved
Chief Examiner	Steve Miles
Assistant Examiners	Mark Bada, Robert Milohanic
Course Leader	Steve Miles
Exam Markers	Anthony Asher, Steve Miles, Owen Wormald
New Examination Framework Project Team	Anthony Asher, Andrew Brown, Bridget Browne, Steve Miles, David Service, Bruce Thompson, Jill Withers, Phil Latham, Sue , Rebecca Moore
MCQ testers	Jessica Cheng, Sylvia He, Georgia Hemmings, Jarrod Spowart
Long Answer Testers	Vinko Matic

As always, the work could not have been completed without the support of the staff of the Actuaries Institute particularly Phil Latham, Rebecca Moore and Liz Harding. They were always helpful and patient as deadlines were stretched and work piled up.

This year the course leader was the same person as the Chief Examiner. Having a course leader who was also Chief Examiner is a break from past practice. Whilst others need to judge whether or not this was a good idea, I personally found that the deep knowledge of the course you need to be a Course Leader was very helpful in being Chief Examiner.

The real question is whether or not the new system is a better form of assessment than the old system. The author's opinion is yes, but it will be good to see the feedback from the other parties involved. Some fine tuning is needed and it is important that there is enough lead time given when the new process is applied to other subjects.

2.2. *Development of the Exam*

As the MCQ and long answer questions were new they were developed by a project team. That project originally developed 50 questions and selected 40 for the MCQ exam but after testing the number of questions was reduced to 29 given that there was only one hour to complete the exam.

The project team was concerned that the MCQ exam might be too easy and completed too quickly. Testing indicated that these concerns were unfounded and the examination results confirmed this.

2.3. *Forum Participation Assessment*

The Forum participation mark was assessed by the Course Leader using a set marking scale. Students who participate fully can expect to achieve marks of 16 to 20 (out of 200 marks in 200). 79% of students (34) achieved a mark of at least 16. Students below this mark failed to meet requirements for timing of posts (5 students who received 14) or minimum number of posts (4 students)

2.4. *Course Coverage*

The course coverage was reviewed by the project team. The MCQ covered all 11 Key Performance Outcomes units but with less emphasis on the areas covered by the long answer exam. The long answer exam covered

- Other Aspects of the Control Cycle - Determining Target Surplus (Q1b)

- Analysis of Profit (Q2a)
- Analysis of Profit – Distribution of Profit (Q2b)
- Reporting Results (Q1a, Q1c, Q2c).

2.5. Exam Question by Question Analysis

Item	Participation	MCQ	Q1	Q2
Maximum Mark	20.00	45.00	45.00	59.00
Avg Mark	16.98	33.96	24.84	29.67
Standard Deviation	3.71	5.96	8.30	12.83
Coefficient of Variation (SD/Av)	0.22	0.18	0.33	0.43
% Pass		49%	37%	35%

MCQ

The MCQ exam performance was generally stronger than the long answer exam. The lower standard deviation and higher marks meant that the usual scaling process was not appropriate. The long answer questions provided a greater dispersion of marks and were therefore critical in determining a pass or fail recommendation.

Question 1

Question 1 gave some financial data about a company and then asked the candidate to:

a) Analyse the financial position of the company

b) Make a recommendation on how to determine target surplus for the company

c) Quantify the calculation in b)

The basic approach to questions such as this should be to analyse each item of data given. However time and time again students omitted an analysis of the dividend and profit. Students also did not know how to calculate the excess assets and virtually every student forgot that other liabilities need to be deducted from total assets when calculating excess assets. The format given in the question was similar to the data sources an actuary would have available. In addition students were reminded about other liabilities in the tutorials and given a flowchart to follow to calculate the solvency and capital adequacy requirement (these are also given in the standards). Students who did not allow for other liabilities should have noticed that the excess assets on a solvency basis were higher than the excess assets determined using policy liabilities (this being given in the data).

The course may be weak in these areas but these are fundamental skills for an actuary and required by KPO 11: Analyse and interpret the financial statements of a life insurer or funds management company.

However it could be argued that the layout of the question misled students and as a result the marking guide was adjusted so students were not penalised more than once for this error. Personally I find it worrying that students are not able to interrogate and review data. Perhaps that is a result of the fact that the learning experience is largely passive reading with no active exercises. An indication of this is that students do not seem to understand how retained earnings are built up by the addition of profits and the payment of dividends.

In addition a significant number of students did not compare 2011 with 2012 and many did not comment on business volumes and the payment of a dividend. Time and time again students have been told to use all of the data in the question. Students who ignore this fact will usually find it difficult to pass, and this was especially true for this question.

Given that the students had spreadsheets available it was surprising that results were usually presented in a narrative bullet point format which invariably overlooked many issues which would have been highlighted in a table comparison of one year to another as well as the calculation of ratios. Retyping data from the question does not earn marks but provides the basis presenting an analysis in the form of tables for the file note. When comparing solvency and capital adequacy the ratio of the requirement to policy liabilities is important. Numerical differences from one year to the next should be supplemented by ratios. Students often gave data but did not explain what it meant. Many students seem to treat this as a 30 minute question and rushed through the answer. It was obvious that very little time was spent analysing data and thinking about the issues.

Some students added new business and inforce together to get a total business measure indicating they did not understand the definitions of new business and in force which is defined in Course 2A and also discussed in 2B when determining appraisal values.
Some students also made wrong assumptions about the calculations. This is a file note so students should show calculations, not just give totals. This is especially important when they have made mistakes.

Students performed better when in part b) when asked to recommend an approach to determine target surplus. Most recognised that target surplus provided a safety margin above capital adequacy requirements. The current target surplus measure was low yet many students chose a proposed formula that produced a similar level of surplus

In part c) students were required to give the increase in capital as a result of their recommendation in b). This was handled reasonably well

Question 2

This question required the students to make a recommendation on a crediting rate for a product given some financial data. The question required:

a) An analysis of surplus on a fees plus earnings approach

b) The justification and recommendation of a crediting rate

c) The presentation of that crediting rate in the accounts

Most students could recognise that a fees plus earnings approach was required. However a surprising number of candidates forgot to calculate the asset related fees which were described in the product structure. Candidates are constantly advised to read the question twice, then think before they write. This approach would have benefited many students.

Part b) was answered reasonably well with must students identifying the key issues. However the recommended rates were sometimes surprisingly low (not taking into account Policyholder Retained Earnings) or high (not taking into account the ability to pay dividends and historical practice).

In part c) students understood the basic numbers but many did not discuss whether or not the product was participating.

Overall both questions did show that candidates need to develop a more inquiring approach to the data presented. In professional work actuaries are often presented with incomplete or inconsistent data and detecting this is one of the necessary skills of an actuary.

Course 3A General Insurance
Chief Examiner's Report Semester 2 2012

1. Summary

1.1. *Course Overview*

The aim of the 3A 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 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*

103 Candidates enrolled for the Semester 2, 2012 3A General Insurance exam. Of these, 5 withdrew and 2 did not present at the exam leaving 96 candidates sitting the exam. The assessment comprised on-line participation worth 10% and an exam worth the remaining 90%.

It is proposed that 29 Candidates be awarded a pass, which implies a pass rate of 30%. This compares with the following historical pass rates for this subject:

Table 1 – Course Experience

Semester	Sat	Passed	Pass Rate
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 30% pass rate for this exam is higher than the 28% pass rate for the previous exam (Semester 1 2012) although slightly lower than historic pass rates, which have 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	103
Withdrawn prior to exam	5
Absent from exam	2
Presented at exam	96
Passed	29
Failed	67

The analysis by examination centre is as follows:

Table 3 – Analysis by Examination Centre

Centre	Presented	Passed	Pass Rate
Sydney	55	14	25%
Melbourne	13	5	38%
Brisbane	8	2	25%
Canberra	2	1	50%
Perth	2	1	50%
Adelaide	1	1	100%
Australia	**81**	**24**	**30%**
Abu Dhabi	1	0	0%
Singapore	4	1	25%
Shanghai	1	0	0%
Wellington	2	1	50%
Kuala Lumpur	2	0	0%
Dublin	1	1	100%
London	3	2	67%
Auckland	1	0	0%
International	**15**	**5**	**33%**
Total	**96**	**29**	**30%**

The Australian pass rate is at 30% and is slightly higher than the 29% Australian pass rate for previous semester. The international pass rate is at 33% and is much higher than the 13% International pass rate for the previous semester.

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. *Forum Participation Assessment*

Online participation was assessed by the Course Leader (Online Participation). The pass rate for online participation was 92%.

3. Examination Papers and Assignments

3.1. *Degree of Difficulty and Course Coverage*

The following tables show the distribution of questions and marks by level of difficulty and course coverage:

Table 5 – Degree of Difficulty of Exam

Question	Syllabus Performance Outcome	Units	Knowledge & Understanding	Straight-forward Judgement	Complex Judgement	Total Marks
1 (a)	2,3	2,3	2		2	4
1 (b)	2,3	2,3	1		3	4
1 (c)	2,3	2,3		3		3
1 (d)	2	2	2			2
1 (e)	3	3		3		3
1 (f)	1,3	1,3	2			2
1 (g)	1,3	1,3		2		2
2 (a)	4	4	2			2
2 (b)	2	2	1			1
2 (c)	2,3	2,3	2	1		3
2 (d)	2,3	2,3			2	2
2 (e)	2,3	2,3			4	4
2 (f)	2,3	2,3	2	1		3
2 (g)	2,3,4	2,3,4		3	2	5
3 (a)	2	2		2		2
3 (b)	1, 3	1, 3		3		3
3 (c)	2,3	2,3	5			5
3 (d)	3	3	1			1
3 (e)	3	3	2			2
3 (f)	2	2	2		2	4
4 (a) (i)	1,4	1,4			1	1
4 (a) (ii)	1,2,3	1,2,3		1		1

4 (b)	2,4	2,4	1		2	3
4 (c)	4	4			3	3
4 (d)	1	1		2	3	5
4 (e)	1	1	2			2
4 (f)	2	2	4			4
4 (g)	1	1		2		2
5 (a)	4	4	3			3
5 (b)	2,3	2,3			3	3
5 (c)	2,3	2,3		2		2
5 (d)	2	2		4		4
5 (e)	2,3	2,3	3			3
5 (f)	3	3	2			2
5 (g)i)	1,3	1,3			3	3
5 (g)ii)	1	1			2	2
TOTAL			**39**	**29**	**32**	**100**

Table 6 – Course Coverage by Question

Question	Units	Knowledge & Understanding	Straight-Forward Judgement	Complex Judgement	Total Marks
1	1,2,3	7	8	5	20
2	2,3,4	7	5	8	20
3	1,2,3	10	5	2	17
4	1,2,3,4	7	5	9	21
5	1,2,3,4	8	6	8	22
Total		**39**	**29**	**32**	**100**

The paper was slightly more weighted towards Knowledge & Understanding than the previous semester and the exam overall was regarded as being of moderate difficulty.

3.2. *Overall Performance*

In setting the paper, the intention was to have a consistent level of difficulty with previous papers. The final standard was slightly lower than the average of previous semesters. Pass rates over the previous eight semesters varied between 23% and 41% with an average of 33%. The pass rate for this semester is therefore in the lower half of the range of historic pass rates. We do note that the number of students sitting 3A for the current and the last semester were 96 and 103 respectively which is much higher than has been seen in the prior 4 years where the number of students had never exceeded 80 in a semester.

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 (six of seven borderline candidates received at least eight out of ten for the participation component with three of these receiving ten out of ten). As it appears that the participation component was marked relatively generously, it is not unexpected that the performance of the borderline candidates (only 1 out of 7 passing) was relatively poor.

Overall, the examiners felt that the paper was slightly easier than the previous semester. This was consistent with the higher overall pass rate. However, it was noted that only 43% of student achieved a scaled mark on the exam of over 90 compared to 57% of students achieving a scaled mark over 90 in the previous semester. In addition, there were no students who achieved a scaled mark in the exam of over 140 compared to 4 students who achieved this in the previous exam.

3.3. *Exam Question by Question Analysis*

Question 1	**Total Marks:**	**40**	**(14 KU 16 SJ 10 CJ)**	
	Raw Marks Required	% of Total Marks	Number of Candidates	Proportion of Candidates
Strong Pass	24.0	60.0%	10	10%
Pass	19.5	48.8%	17	17%
Below Standard	15.0	37.5%	27	28%
Weak	10.0	25.0%	25	26%
Showed Little Knowledge	1.0	2.5%	13	13%
Did Not Attempt	0.0	0.0%	6	6%
		% KU	% SJ	% CJ
Maximum Mark	28.5	100%	66%	85%
Average Mark	15.0	57%	26%	29%
Standard Deviation	6.8			
Co-efficient of Variation	0.45			

Candidates performed relatively poorly in this question, with a pass rate of 27%

This question concerned a reserving analysis of a bushfire catastrophe. Students were asked to estimate ultimate claim numbers, sizes and total costs. Students were also asked to review the experience/data by postcode and make reference to the data provided for a previous catastrophe. Students were also asked to discuss a safety net feature in the product and estimate reinsurance recoveries & equitable methods for allocating recoveries between regions.

Part a) asked students to estimate the ultimate claim numbers for the bushfire based on the experience to date & using the experience provided for a past cyclone. Students were also asked to provide commentary on the margin of error. This question was generally well answered with the better students relating the margin of error commentary to the different reporting patterns between cyclones & bushfires. Overall the average mark was 2.2 out of 4.

Part b) asked students to use the data provided by postcode to estimate the ultimate average claim size. This question was not particularly difficult yet many students struggled with it in particular not appreciating the significant difference between the average sum insured and the reported average claim size for PC1 and the need to separately analyse this. The average for this question was 0.7 out of 4

Part c) asked students what additional information they would seek before attempting to estimate the ultimate average claim size. The better answers noted the need to ask about the level of case estimate development used and whether this was appropriate for a bushfire. Overall, the average mark was 0.9 out of 3.

Part d) asked students to use their estimate of size and frequency of bushfire claims to provide a gross ultimate estimate and discuss potential recovery types. The first part of this question was well answered by students however students missed easy marks in the 2nd part due to inadequate explanations provided. Overall, the average mark was 1 out of 2.

Part e) asked students what additional information they would ask to adjust their average claim size if the product had a feature that provided an additional 25% sum insured coverage if the declared sum insured wasn't adequate. Many candidates failed to recognise that the market values of houses (house prices) are unlikely to be the same as the cost of rebuilding, and went on to discuss house price indexation rather than the inflationary costs of rebuilding materials and labor. Overall, the average mark was 0.6 out of 3.

Part f) provided details of the company's RI coverage and asked students to estimate the expected RI recoveries and net cost of each event for the company. This question was generally well answered by students. Overall, the average mark was 1.5 out of 2.

Part g) asked students to discuss and calculate an equitable way to allocate RI recoveries between events in management accounts. Currently, later events get the full benefit of the drop down in the retention. Many candidates failed to note the current inequity in the existing method. The better students who did were able to use this to calculate more equitable RI allocation methods. Overall, the average mark was 0.6 out of 2.

Question 2	**Total Marks:**	**40**	**(14 KU 10 SJ 16 CJ)**	
	Raw Marks Required	% of Total Marks	Number of Candidates	Proportion of Candidates
Strong Pass	25.0	62.5%	9	9%
Pass	20.0	50.0%	30	31%
Below Standard	15.0	37.5%	36	37%
Weak	10.0	25.0%	19	19%
Showed Little Knowledge	1.0	2.5%	2	2%
Did Not Attempt	0.0	0.0%	2	2%
		% KU	% SJ	% CJ
Maximum Mark	29.0	93%	70%	78%
Average Mark	18.0	67%	33%	33%
Standard Deviation	5.4			
Co-efficient of Variation	0.30			

Candidates performed well on this question, with a pass rate of 40%.

Q2 was essentially a reserving question with students asked a range of calculation questions and then asked to explain & justify the choice of reserving methods. The portfolio was a liability portfolio where one of the schemes in it has recently ceased to be written and rate increases had been put through.

Part a) and b) were relatively simple calculation questions asking students to undertake earned premium calculations and to calculate chain ladder factors. Overall, the average mark was 1.8 out of 2 in a and 1 out of 1 in b.

Part c) asked students to estimate the incremental number of claims to be lodged in a particular accident half year and to assess the reasonableness of this estimate. Students were also asked to recommend changes if appropriate. More than ½ of students made sensible adjustments. Overall, the average mark was 1.6 out of 3.

Part d) asked students to explain why the PPCF was showing a higher incurred cost than the PPCI result. This question tested student's ability to understand the drivers of these common models and only about ½ of students understood this. Overall, the average mark was 0.9 out of 2.

Part e) asked students to discuss, in light of the portfolio changes, which models they would choose. They were also asked to discuss any residual concerns and further analysis to take. This question wasn't well answered with a lot of generic answers. Almost all students selected the PCE method for older accident years. Only about ½ of students suggested using the PPCF in the more recent accident years and many students did not note the frequency effect on the PPCI model. Quite a few students neglected to mention the possibility of analyzing the claims experience excluding the HW portfolio. Overall, the average mark was 1.3 out of 4.

Part f) asked students to use the data available to estimate the discounted loss ratios. This question could have been answered better given the bookwork nature of it. Most students ignored the fact that the incurred cost triangle was already in nominal dollars and made additional allowance for inflation. Overall, the average mark was 1.2 out of 3.

Part g) asked students to explain to the CEO why there have not been bigger improvements to profitability in light of the portfolio changes and rate increases. This wasn't particularly well answered with many students making generic comments. Many students failed to note the impact of inflation on the improvements in the loss ratio. Overall, the average mark was 1.2 out of 5.

Question 3	**Total Marks:**	**34**	**(20 KU 10 SJ 4 CJ)**	
	Raw Marks Required	% of Total Marks	Number of Candidates	Proportion of Candidates
Strong Pass	26.0	76.5%	9	9%
Pass	20.0	58.8%	31	32%
Below Standard	15.5	45.6%	24	24%
Weak	8.0	23.5%	26	27%
Showed Little Knowledge	1.0	2.9%	5	5%
Did Not Attempt	0.0	0.0%	3	3%
		% KU	% SJ	% CJ
Maximum Mark	29.0	95%	100%	100%
Average Mark	17.4	49%	70%	15%
Standard Deviation	6.5			
Co-efficient of Variation	0.37			

Candidates performed well on this question, with a pass rate of 41%.

This question concerned a PPCI model on a standard motor portfolio where a retrospective change to excess was forced on the company.

Part a) asked for students to select PPCI factors and justify the selection. Most students were able to select appropriate PPCI factor assumptions. Some tried to allow for the excess in the PPCI factor assumptions with limited success. The commentary on the selections was also fine. Overall, the average mark was 1.3 out of 2.

Part b) asked for students to assess the impact of the excess change on the recovery rate and note two additional recoveries. A not-insignificant number thought the non-recoverability of excess meant adding to the recovery rate rather than reducing the recovery rate. Many candidates suggested GST recoveries and reinsurance recoveries rather than the expected salvage or subrogation answers. Overall, the average mark was 2.2 out of 3.

Part c) asked for students to calculate the net present value of the gross and net outstanding claims liability. The inability of candidates to apply the correct duration for inflation and discounting was disappointing with many assuming the inflation & discount rates were per half-year rather than per annum. Most candidates failed to explicitly note treatment of the tail. A few recognised the need to provide for the return of past excesses, but given this had not been covered in the specimen solution, candidates were not penalised for failing to do this. Overall, the average mark was 2.8/5.

Part d) asked for the students to complete the estimate of the outstanding claims provision. This was fairly simple given part c). Overall, the average mark was 0.7/1.

Part e) asked for students to calculate the net incurred claims expected in the P&L. Candidates generally struggled with identifying the correct payments, as well as allowance for CHE in the Net Incurred Claims. Overall, the average mark was 0.5/2.

Part f) asked for a description of the statistical case estimate method and whether this could be applied to the motor portfolio. This part was by far the worst answered part of the question. A large number of students were unable to describe the method and some confused the statistical case estimate method with the stochastic chain ladder method. Of those who accurately described the method, most felt the SCE method could be used for a motor book and this was accepted if they had a sensible reason. Very few of these students also recognised the limitations of the method with the need to separately identify IBNR only noted by a small number of students. Overall, the average mark was 0.3/2.

Question 4	**Total Marks:**	**42**	**(14 KU 11 SJ 18 CJ)**	
	Raw Marks Required	% of Total Marks	Number of Candidates	Proportion of Candidates
Strong Pass	28.5	67.9%	4	4%
Pass	24.0	57.1%	27	28%
Below Standard	18.0	42.9%	40	41%
Weak	14.0	33.3%	17	17%
Showed Little Knowledge	1.0	2.4%	8	8%
Did Not Attempt	0.0	0.0%	2	2%
		% KU	% SJ	% CJ
Maximum Mark	33.0	89%	100%	75%
Average Mark	20.4	58%	62%	32%

Standard Deviation	5.8
Co-efficient of Variation	0.29

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

Part a) required candidates to discuss the possible causes of the underlying trends observed in average claim size and total number of claims, after the introduction of an arbitrated settlement option. Most students attributed the increase in arbitrated average claims size to lawyers/claimants learning to work the system after an initial 'honeymoon' period instead of realising that smaller and less complex claims would finalise faster at a lower cost in the initial years. In relation to total number of claims, the question was answered quite well overall but there were some students who speculated over reasons for increasing finalisation speeds, etc. Some students didn't seem to understand that this design change was meant to improve accessibility to benefits through greater simplicity and instead thought that this was an unintended outcome. The average mark was 0.9 out of 2.

Part b) required candidates to discuss possible reasons why costs may escalate in the years after a benefit design change and recommend improvements to management reporting to better identify the underlying trend of the scheme. Majority of students discussed that costs could increase once there was greater familiarity with the system after initial testing of the process, but did not comment on the overall inflation of average cost and that this is actually lower post the change. Most students also did not realise the usefulness of reporting on an accident period basis instead of finalisation year so that claims of the same duration can be compared. The average mark was 1.1 out of 3.

Part (c) asked candidates to describe additional information about claimants and their injuries which would be useful in monitoring settlement trends. This question was not answered very well, with the majority of students listing data that is basic information and would already be included. Some students discussed breaking down of settlements by heads of damage, and developing severity/impairment scores. The average mark was 0.6/2.

Part d) required candidates to discuss the reasons for greater government intervention for CTP and WC insurance and outline the different roles government could take in these schemes. Most candidates discussed the social nature of these two classes of insurance. A lot of students did not comment on how the policyholder and benefit receiver are not the same person, despite the question specifying that students should have regard to this. The second part of the question was answered fairly well overall, though some students merely created a list of possibilities without any description which didn't show clear understanding. The average mark for the first part was 1.4/3 and the average mark for the second part was 1.6 out of 3.

Part e) asked candidates to discuss alternate models the government could consider for distribution of WC policies. Most students were able to come up with two alternate models (brokers/agents and online being the most popular) but few actually discussed the costs and complexities involved in each. The average mark was 1 out of 4.

Part f) asked candidates to recommend appropriate modeling techniques for performing a valuation on periodic medical costs element of the Workers Compensation Scheme and describe the data requirements for the model. Majority of students came up with reasonable recommendations for models, including PPCI, PPAC/PPCH and Annuity method. There was some confusion about the difference between PPCH and PPAC, with some students listing them as two separate models when there are only very minor differences. The average mark for the first part was 1.6 out of 2 and the average mark for the second part was 1.1 out of 2.

Part (g) asked candidates to discuss whether a product, which provides insurance cover to fund the excess of the Workers Compensation policy, is insurable. This was answered fairly well, though some students did not list out all the insurability criteria and hence did not score full marks. The average mark was 0.9 out of 2.

Question 5	**Total Marks:**	**44**	**(16 KU 12 SJ 16 CJ)**	
	Raw Marks Required	% of Total Marks	Number of Candidates	Proportion of Candidates
Strong Pass	28.5	64.8%	13	13%
Pass	25.0	56.8%	22	22%
Below Standard	21.0	47.7%	31	32%
Weak	12.0	27.3%	24	24%
Showed Little Knowledge	1.0	2.3%	4	4%
Did Not Attempt	0.0	0.0%	4	4%
		% KU	% SJ	% CJ
Maximum Mark	33.5	84%	92%	72%
Average Mark	21.5	51%	62%	37%
Standard Deviation	7.1			
Co-efficient of Variation	0.33			

This question related to a small non-Australian regional insurer, FW&S, which provides a broad range of products with the majority written with in the metropolitan area. The question specifically related to a local crop insurance portfolio that FW&S had launched 5 years ago. Overall the question was well attempted. Candidates tended to perform reasonably well at simple judgement as well as knowledge and understanding however only a few candidates received marks for complex judgement.

Part a) required candidates to calculate gross written premium, unearned premium and net underwriting profit for FW&S. Around half of the candidates scored full marks. A common error was for the student to not understand how to calculate these statistics for a portfolio where policies are only written for 6 months of the year. The average mark was 1.9 out of 3.

Part b) required candidates to comment on whether a roll forward approach is reasonable for determining the premium liabilities for this portfolio and to identify a deterministic model that may be appropriate. Most candidates scored reasonably well however many failed to form a specific view and tended to provide justifications for both an appropriate and an inappropriate approach. It was surprising that more candidates didn't score marks given that the question suggested that the model was inappropriate. The average mark was 1.6 out of 3.

Part c) asked candidates for questions they would ask the underwriting department prior to commending their valuation. Marks were awarded for solutions that focused on the pricing basis and whether there have been any rate changes or growth in the portfolio. The question was well attempted but many candidates tended to ask questions that were not appropriate to ask the underwriting department. Overall many candidates gained half of the available marks. The average mark was 0.5 out of 2.

Part d) required candidates to list two advantages and two disadvantages to a stochastic approach. It was surprising to see that most candidates had the exact same solutions to the marking guide indicating that they were able to copy the required solution from their notes. Given the simplicity of this question most candidates scored at least 3 of the 4 available marks. It is disappointing that many candidates applied a shotgun approach, with one candidate listing up to seven advantages and seven disadvantages. It is important that candidates follow the instructions given in the question. The average mark was 3.2 out of 4.

Part e) required candidates to calculate the premium liabilities both at a central estimate and at the 85th probability of adequacy. It is evident that candidates lack understanding of the components to be included in the central estimate of premium liabilities. Few candidates included claims handling expenses and virtually no candidates included administration expenses. A significant number of students also seemed to get confused as the portfolio had a mean estimate which was much higher than the 50th percentile. The average mark was 0.7 out of 3.

Part f) required candidates to calculate the Liability Adequacy Test (LAT). Most candidates gained full marks indicating that candidates generally understand how to calculate the LAT. Many candidates that carried forward calculation errors from previous parts of the question failed to comment on the large unexpired risk reserve that they required. This should be a signal to candidates that they may have a calculation error throughout their calculations. The average mark was 2 out of 3.

Part g) required candidates to discuss what factors would influence the removal of the storm peril from the product and increasing exposure to recover the lost GWP. This question was poorly understood by candidates with many unsure of what was required. Only the better candidates received marks. The average mark was 1.4 out of 5.

Course 3B General Insurance
Chief Examiner's Report Semester 2 2012

1. Summary

1.1. *Course Overview*

The aim of the 3B 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 pricing of all general insurance products, capital management and financial condition reporting.

1.2. *Pass Rates*

71 Candidates enrolled for the Semester 2 2012, 3B General Insurance Course. Of these, 1 withdrew before the exam and 1 was absent from the exam, leaving 69 sitting the exam. The assessment comprised of an online participation worth 10% and an exam worth the remaining 90%.

It is proposed that 26 Candidates be awarded a pass, which implies a pass rate of 38%. This compares with the following historical pass rates for this subject:

Table 1 – Course Experience

Semester	Sat	Passed	Pass Rate
2012 Semester 1	71	27	38%
2011 Semester 2	65	20	31%
2011 Semester 1	58	20	35%
2010 Semester 2	53	21	40%
2010 Semester 1	53	21	40%
2009 Semester 2	63	33	35%
2009 Semester 1	50	16	32%

The 38% pass rate for this exam is on par with the 38% pass rate for the previous semester.

1.3. *Candidate Numbers*

The Candidate numbers can be summarised as follows:

Table 2 – Candidate Numbers

	Number of candidates
Originally enrolled	71
Withdrawn prior to exam	1
Absent from exam	1
Presented at exam	69
Passed	26
Failed	43

The analysis by examination centre is as follows:

Table 3 – Analysis by Examination Centre

Centre	Presented	Passed	Pass Rate
Sydney	51	20	39%
Melbourne	7	3	43%
Adelaide	1	0	0%
Brisbane	3	1	0%
Australia	**62**	**24**	**39%**
London	3	1	33%
Hong Kong	2	0	0%
Singapore	1	1	100%
Wellington	1	0	0%
International	**7**	**2**	**29%**
Total	**69**	**26**	**38%**

The Australian pass rate of 39% is the same compared to the pass rate for the previous semester.

International candidates performed relatively poorly with a pass rate of 29% (2 out of 7 passed), which is also the same when compared to previous semester.

2. Examination Administration

2.1. *Examiners*

The examiners for this semester were:

Chief Examiner: Frankie Chan

Assistant Examiners: Johnson Wong & David Xu

2.2. *Course Leader*

The course leader role was shared by the following individuals:

Exam writing and review:

Name	Role
Andy White	Reviewer/Writer
Rick Shaw	Co-ordinator/Reviewer/Writer
Frankie Chan	Reviewer / Question Writer
Johnson Wong	Reviewer/Writer
David Xu	Reviewr/Question Writer
Jim Qin	Question Writer
Monica Gluschenko	Question Writer
Maiyuran Arumugam	Question Writer
Ammar Khan	Question Writer

Tutorials:

Rick Shaw

Online forum:

Daniel Fung

in Appendix 1.

2.3. *Forum Participation Assessment*

This is the second semester where online participation assessment was introduced; this replaced the assignment and is worth 10%. The course leader (online forum) provided assessment for online participation. No pass mark was set.

Below is a distribution of the marks for the online participation assessment:

Participation mark	Number of candidates
10	18
9	15
8	18
7	9
6	2
5	4
2	1
0	2
Total	69
Average Mark	8.1

This compared to an average mark of 9.6 last semester.

3. Examination Papers and Assignments

3.1. *Degree of Difficulty and Course Coverage*

The following tables show the distribution of questions and marks by level of difficulty and course coverage:

Table 5 – Degree of Difficulty of Exam

Question	Syllabus Performance Outcome	Units	Knowledge & Understanding	Straight-forward Judgement	Complex Judgement	Total Marks
1 (a)	2.3	2		2		2
1 (b)	2.3	2		3		3
1 (c)	2.3	2		4		4
1 (d)	1.3, 2.3	1, 2	4			4
1 (e)	1.1, 1.4	1			7	7
2 (a)	3.3	3	2			2
2 (b)	1.1, 2.4, 3.3	1, 2, 3	4			4
2 (c)	2.4	2			4	4
2 (d)	2.4	2		7	2	9
3 (a)	2.4	2	2			2
3 (b)	2.2	2	3			3
3 (c)	2.2	2		5		5
3 (d)	1.3, 2.2	1, 2			4	4
3 (e)	1.6, 2.2	1, 2			4	4
3 (f)	1.6, 2.2	1, 2			5	5
4 (a)	1.6	1		3		3
4 (b)	1.3, 1.4, 1.6	1			6	6
4 (c)	1.1	1		4		4
4 (d)	1.6, 2.2, 2.3	1, 2			3	3
4 (e)	2.2, 2.3	2		4		4
5 (a)	4.1	4	3			3
5 (b)	4.1, 4.2	4		3		3
5 (c)	2.3	2			3	3
5 (d)	3.3	3			3	3
5 (e)	2.3	2		3		3
5 (f)	4.1, 4.2	4		3		3
TOTAL			**18**	**41**	**41**	**100**

Table 6 – Course Coverage by Question

Question	Units	Knowledge & Understanding	Straight-Forward Judgement	Complex Judgement	Total Marks
1	1,2	4	9	7	20
2	1,2,3	6	7	6	19
3	1,2	5	5	13	23
4	1,2	0	11	9	20
5	2,3,4	3	9	6	18
Total		**18**	**41**	**41**	**100**

The paper consisted of questions of varying level of difficulties, and the examiners are satisfied that it represents a good differentiator of student's performance.

3.2. *Overall Performance*

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

Additional variation was observed this semester for online participation assessment, with some candidates becoming borderlines or highest fails for having low participation marks. For candidates selected for review, the examiners focus more on their overall exam performance and relatively less weight was put in their online assessment result.

Common issues observed this semester are:

- Candidates missed out on easy marks in some questions by not having sufficient and/or relevant points. Some candidates were penalised for utilising the "brain dump" approach without specifically relating to the context of the question
- Inability to demonstrate judgement in practical and/or novel situations, as reflected in the poor passing rate for Question 1 and 3.
- Poor hand writing remained a major problem, and appears worse this semester. Some candidates had to rush through later part of the exam. Markers cannot give marks for answers that cannot be read. This will improve in the future when computers are used in exams.

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

3.3. *Exam Question by Question Analysis*

Question 1	**Total Marks:**	**40**	**(8 KU 18 SJ 14 CJ)**	
	Raw Marks Required	% of Total Marks	Number of Candidates	Proportion of Candidates
Strong Pass	22.5	56.3%	2	3%
Pass	17.0	42.5%	23	33%
Below Standard	14.5	36.3%	21	30%
Weak	9.5	23.8%	18	26%
Showed Little Knowledge	1.0	2.5%	5	7%
Did Not Attempt	0.0	0.0%	1	1%

		% KU	% SJ	% CJ
Maximum Mark	23.8	81%	81%	54%
Average Mark	15.2	37%	53%	20%
Standard Deviation	4.4			
Co-efficient of Variation	0.29			

This question assesses student's ability to identify issues relating the privatizing a government workers compensation scheme, from the customer, government as well as potential insurers wishing to underwrite workers compensation insurance. The question also focused on pricing methodology as well as data/information requirements.

Overall passing rate for this question is 36%, and the question is of moderate difficulty.

This part of the question asked the student to list pros and cons from a consumer's point of view about the move to a privately run scheme. This part was interpreted correctly and generally well answered.

b)

This question asked the student to list design features that the government needs to consider in the privatised model. This question is generally well answered, with some students simply listing general features of the product without answering the question.

c)

This part of the question required student to discuss issues that an insurer needs to consider before making a decision to enter the workers compensation market. Overall this question was answered satisfactorily. Some students lost marks because of insufficient points or listing points without adequately discussing its appropriateness. Students need to be aware of the key word of the question is "discuss" which includes outlining a point and then providing a description relating to the context of the question. Generic answers such as "does the insurer have the necessary expertise etc…" scored little mark.

d)

This is a book work question where students were asked to describe and distinguish between industry and experience rating. This part was generally answered inadequately. Some candidates displayed evidence of knowing what experience and industry rating but failed to articulate properly. A number of candidates also interpreted "credibility rating" as experience rating and only few mentioned burners.

e)

Students were asked to list steps required to determine initial premium rates, as well as discussing data/information requirement and their limitations. This question was answered poorly. A lot of variations in answers were observed. Many candidates assumed that detailed claims data/experience was available without mentioning where/how Hasler would source this information. Also a number of candidates did not discuss steps from technical to book rates, and discuss limitations satisfactorily.

Some candidates listed generic steps involved in premium rating without tailoring response specific to Hasler's circumstances. Some even adopted a "scattered gun" approach and put down all points relevant in premium rating. Little marks was awarded for answers like this.

Question 2	**Total Marks:**	**38**	**(12 KU 14 SJ 12 CJ)**

	Raw Marks Required	% of Total Marks	Number of Candidates	Proportion of Candidates
Strong Pass	29.5	77.6%	5	7%
Pass	23.0	60.5%	26	37%
Below Standard	15.0	39.5%	34	49%
Weak	10.0	26.3%	3	4%
Showed Little Knowledge	1.0	2.6%	1	1%
Did Not Attempt	0.0	0.0%	1	1%
		% KU	% SJ	% CJ
Maximum Mark	33.5	94%	86%	96%
Average Mark	22.2	69%	49%	58%
Standard Deviation	5.6			
Co-efficient of Variation	0.25			

This question tested students' knowledge & understanding in reinsurance placements and pricing. Pass rate for this question is 44% which is fair.

a) & b) tested student's knowledge in reinsurance purchase, as well as requiring students to describe suitable reinsurance for major insurance classes. Both questions were generally well answered. Most candidates covered various aspects of risk appetite, risk profile, capital/regulatory requirements as well as cost and availability of the reinsurance. Some students showed lack of understanding of a company's reinsurance program. A few candidates did not understand why insurers choose proportional or non-proportional.

c) This question required students to calculate the recoveries and reinstatement premium under an aggregate deductible program. The expectation was that candidates could have done better on this technical question. Some candidates did not fully understand how aggregate deductible work and how it should be applied. The reinstatement calculation also proved to be quite challenging for some.

d) The 4 sub-questions in this part tested students' ability to consider issues relating to revising a company's reinsurance program. It ranged from input required to issues considered.

The range of responses for this part of the question was quite varied, mainly due to candidates not focusing on answering the question asked. A number of them wrote things which were not all that relevant. This was particular the case for parts i) and ii) of this section.

Part i) some candidates seem to have the idea that reinsurance is only for "large" claims (by focusing the data request on large claims only) This may be true for excess of loss treaties, however proportional treaties would deal with the attritional losses as well..

Part iii) some suggested diving straight into using a full-fledged detailed technical "DFA" analysis while not really knowing what the objective is. Part iv.) is generally well answered.

Question 3	**Total Marks:**	**46**	**(10 KU 10 SJ 26 CJ)**	
	Raw Marks Required	% of Total Marks	Number of Candidates	Proportion of Candidates

Strong Pass	29.9	65.0%	2	3%
Pass	23.0	50.0%	10	14%
Below Standard	18.4	40.0%	22	31%
Weak	9.2	20.0%	30	43%
Showed Little Knowledge	1.0	2.2%	5	7%
Did Not Attempt	0.0	0.0%	1	1%
		% KU	% SJ	% CJ
Maximum Mark	34.5	88%	90%	72%
Average Mark	17.4	45%	44%	33%
Standard Deviation	6.3			
Co-efficient of Variation	0.36			

This is the longest and most difficult question of the exam with complex judgment totaling 13 marks out of 23. Most of the candidates struggled to provide satisfactory answers overall; this resulted in a low pass rate at 17%.

This question dived in details one of the key topics within motor insurance pricing- vehicle grading. It started off with some basics on GLMs and data required to perform a GLMs analysis, then went on and tested student's ability to discuss issues and applying judgment in performing a vehicle re-grade analysis.

a)

i) It is a surprise that many candidates struggled to provide a clear answer that addressed the potential distortion of results in one-way analysis due to a change in business mix. Some candidates talked about other benefits such as allowance of interaction and test of statistical significance. A maximum of 0.25 marks was given for these minor points.

ii) Many students were able to explain correlation; however they often struggled to clearly explain interaction.

b)

Most candidates struggled with the two premium calculations. There are two possible ways that exposure-end dates on transactions can be shown:

i) Original coverage exposure-end date at the time when transactions are made, which will not be overwritten by the change from the subsequent transactions. Or

ii) Most-current Exposure end-date, as an older date is constantly updated by subsequent change-transactions.

Markers decided to follow guided solution and only award marks to ii. However, one exception was part (10), which we awarded 0.25 to the intended coverage exposure end-date ("1/2/2013"), as well as exposure cut-off date ("30/06/2012") suggested in the guided solution.

c)

i) Students were generally able to identify the cause, however many still struggled to clearly explain the impact on the GLM.

ii) Many students did not realize that claim type info is not available.

iii) Most students were able to identify differences in claims size, however few discussed potential recoveries.

iv) Students were able to identify at least 2 exclusions however they often were not

able to clearly articulate a suitable treatment and allowance.

d)

A large number of students did not discuss exposure clustering and poor price differentiation in the V02 to V04 groups. Furthermore, very few students completed the relatively straight-forward calculation and re-scaling of the cost relativities.

e)

Although many students did mention using competitors' rating structures and some form of GLM, very few explained in any detail how you would go about using this to grade vehicles.

f)

Many students correctly identified that quotes should be obtained from large competitors and on CAN's target market, but only a few talked about using the quotes to help break down competitors' rating structure. Most candidates gave reasonable responses to Rob and the claim manager's comments.

Question 4	**Total Marks:**	**40**	**(0 KU 22 SJ 18 CJ)**	
	Raw Marks Required	% of Total Marks	Number of Candidates	Proportion of Candidates
Strong Pass	25.5	63.8%	1	1%
Pass	18.0	45.0%	11	16%
Below Standard	15.5	38.8%	15	21%
Weak	10.0	25.0%	34	49%
Showed Little Knowledge	1.0	2.5%	8	11%
Did Not Attempt	0.0	0.0%	1	1%
		% KU	% SJ	% CJ
Maximum Mark	27.8	0%	72%	67%
Average Mark	14.5	0%	35%	37%
Standard Deviation	4.4			
Co-efficient of Variation	0.30			

This question tested the student's ability to provide sound pricing/rating advice and asked students to consider the impact of decisions made by insurers to both internal and external stakeholders.

a)

Most students wrote a few financial risks, but some had difficulty putting forward non-financial risks. While many students commented on profitability, a number of students were focused on past profitability whereas the risk was in respect to both current and future profitability.

b)

There were three distinct elements where students scored marks: 1. claims and policy data and the adjustments required for the farm package; 2. risk factors and the rating structure;

3. general approach to setting a premium (i.e. start with a risk premium, add expenses, profits and reinsurance cost). Students often focused on one or two of these elements so scores were often low for this question.

c)

Many students didn't understand the difference between BI and Fire/Storm perils so overall the question was answered poorly. Responses to the rating variables were also poor, with many candidates referring to risk management techniques as rating factors.

d)

While most students identified increasing the premium, the marks were varied as other actions often lacked commerciality or the appropriate supporting analysis. Some students thought that sound underwriting and changing premium rates were one and the same whereas in reality they are two ways to improve the loss ratio, i.e. sound underwriting requires experience and judgment on the part of underwriters, whereas premium rate changes often involves systematic changes in technical rates.

e)

This question had a large variation in responses. Marks were awarded if the student identified an appropriate mitigation i.e. students were generally not awarded many marks if they just wrote a list of potential stakeholders without describing how they can be effected and the mitigation steps.

Question 5	**Total Marks:**	**36**	**(6 KU 18 SJ 12 CJ)**	
	Raw Marks Required	% of Total Marks	Number of Candidates	Proportion of Candidates
Strong Pass	24.3	67.4%	14	20%
Pass	21.3	59.0%	22	31%
Below Standard	18.8	52.1%	19	27%
Weak	14.3	39.6%	10	14%
Showed Little Knowledge	1.0	2.8%	4	6%
Did Not Attempt	0.0	0.0%	1	1%
		% KU	% SJ	% CJ
Maximum Mark	27.3	100%	75%	94%
Average Mark	20.8	91%	49%	54%
Standard Deviation	4.6			
Co-efficient of Variation	0.22			

This question was mainly about the impact of government policy on existing schemes as well as critiquing on the pros and cons of an FCR in a non-traditional situation.

a)

This was relatively straight-forward question in requiring the listing of FCR components

b)

Most students were able to list the general advantages/disadvantages of an FCR (e.g. risk management, financial condition, etc.). Better students were able to recognise that the

government did not necessarily require an FCR. No student recognised that there are other government priorities that fall outside an FCR (e.g. the 'external' cost of disability).

c)

Most students were able to recognise that costs would be transferred, and thus premiums reduce for existing schemes. Better students were able to recognise that WC was run by the government, and thus no financial impact if benefits in total haven't changed. Many students discussed duplication of coverage, which was a secondary issue when compared to transfer of costs and reduction in premiums. Very few students identified the potential for adversarial costs in CTP to be reduced when contentious long term disability claims shift to UDIS.

d)

Well answered, with many candidates recognising the expertise provided by the reinsurer, as well as the cost/benefit tradeoff of reinsurance.

e)

Majority of candidates misunderstood the aim of the question, with many answers simply a list of levies on various parties. Some candidates were able to recognise pre-funding vs. PAYG, but failed to elaborate on the issues related to pre-funding. Very few students recommended what fund method would work best.

f)

Many students tended to use a "scatter-gun" approach, which meant that they did not necessarily get full marks if they did not relate their answer to capital. Many students mentioned "loss ratios", "combined operating ratio", etc. which did not receive much merit unless it was linked to a target/benchmark.

Course 5A Investment Management and Finance Course Examiner's Report Semester 2 2012

1. Summary

1.1. *Course Overview*

The aim of the 5A Investment Management and Finance Course is to provide the knowledge, skills and judgment necessary for an actuary to tackle a range of management related problems in investment and finance relating to analysis of accounting information, valuation of debt securities, equity markets and portfolio management, company valuation and asset allocation.

1.2. *Pass Rates*

32 Candidates enrolled for the Semester 2 2012, 5A Investment Management and Finance Course. Of these, 1 withdrew prior to the exam and 1 did not present at the exam leaving 30 sitting the exam. The assessment comprised one assignment worth 15% and an exam worth the remaining 85%.

It is proposed that 17 Candidates be awarded a pass, which implies a pass rate of 57%. This compares with the following historical pass rates for this subject:

Table 1 – Course Experience

Semester	Course	Sat	Passed	Pass Rate
Semester 1 2012	B	22	13	59%
Semester 2 2011	A	26	16	62%
Semester 1 2011	B	16	6	38%
Semester 2 2010	A	38	20	53%
Semester 1 2010	B	34	19	56%
Semester 2 2009	A	46	17	37%
Semester 1 2009	B	44	15	34%

The pass rate is consistent with the pass rates from recent offerings of this course and Course 5B.

1.3. *Candidate Numbers*

The Candidate numbers can be summarised as follows:

Table 2 – Candidate Numbers

	Number of candidates
Originally enrolled	32
Withdrawn prior to exam	1
Absent from exam	1
Presented at exam	30
Passed	17
Failed	13

The analysis by examination centre is as follows:

Table 3 – Analysis by Examination Centre

Centre	Presented	Passed	Pass Rate
Sydney	27	15	56%
Melbourne	1	1	100%
Subtotal Australia	**28**	**16**	**57%**
Hong Kong	1	1	100%
London	1	0	0%
Subtotal International	**2**	**1**	**50%**
Total	**30**	**17**	**57%**

90% of candidates who sat the examination were from Sydney so this table does not add any additional information of importance.

2. Examination Administration

2.1. *Examiners*

The examiners for this semester were:

Course Examiner: David Pitt

External Examiner: Jack Ng

2.2. *Course Leader*

The Course Leader for this semester was Tim Kyng.

3. Examination Papers and Assignments

3.1. *Degree of Difficulty and Course Coverage*

The following tables show the distribution of questions and marks by level of difficulty and course coverage:

Table 5 – Degree of Difficulty of Exam

Question	Syllabus Performance Outcome	Units	Knowledge & Understanding	Straight-forward Judgement	Complex Judgement	Total Marks
Q1(a)	5.1	5		3		3
Q1(b)	5.1, 5.2	5	4			4
Q1(c)	5.2	5		4		4
Q1(d)	5.2	5			3	3
Q1(e)	5.4	5			3	3
Q1(f)	5.2, 5.4	5		3		3
Q2(a)	3.5	3		2		2
Q2(b)	3.4	3	4	3		7
Q2(c)	3.1,3.4,3.6,3.8	3	2		9	11
Q3(a)	4.6	4	2			2

Q3(b)	4.1,4.2	4			8	8
Q3(c)	4.2,4.3	4		2		2
Q3(d)	4.4,4.6,4.7,4.8	4	4			4
Q3(e)	4.6,4.8	4		4		4
Q4(a)	2.1,2.2	2		1	4	5
Q4(b)	2.4	2	3			3
Q4(c)	2.4,2.5	2		4	8	12
Q5(a)	1.1	1	2	6	4	12
Q5(b)	1.2	1		4		4
Q5(c)	1.2,1.3	1			4	4
Total			**21**	**36**	**43**	**100**

Table 6 – Course Coverage by Question

Question	Units	Knowledge & Understanding	Straight-Forward Judgement	Complex Judgement	Total Marks
1	5	4	10	6	20
2	3	6	5	9	20
3	4	6	6	8	20
4	2	3	5	12	20
5	1	2	10	8	20
Total		**21**	**36**	**43**	**100**

The spread of marks across the KU, SJ and CJ are in very close agreement with the recommended 20:40:40 split. The course coverage of the exam is very complete with questions testing all areas of the course with appropriate emphasis on the most fundamental aspects of the syllabus.

3.2. *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 four of the five questions to reflect the difficulty level.

3.3. *Exam Question by Question Analysis*

Question 1 **Total Marks: 40 (8 KU, 20 SJ, 12 CJ)**

	Marks Required	% of Total Marks	Number of Candidates	Proportion of Candidates
Strong Pass (A)	28	70.0	1	3.3%
Pass (B)	20	50.0	13	43.3%
Slightly Below Standard (C)	16	40.0	9	30.0%
Weak (D)	10	25.0	6	20.0%
Showed Little Knowledge (E)	1	2.5	1	3.3%
Did Not Attempt (X)	0	0.0	0	0.0%
		% of KU	**% SJ**	**% CJ**
Maximum Mark	30.5	100.0	75.0	79.2
Average Mark	19.2	73.3	42.4	40.7

Standard Deviation	5.1
Coefficient of Variation	0.27

Candidates performed reasonably on this question, with a pass rate of 47%.

The question concerned the issues around currency returns in view of established investment theories and statistical analysis.

Part a):

Candidates were asked to relate the existence of a risk premium in currency returns to market efficiency.

This part proved to be a good discriminator with about two-thirds of candidates answering correctly while one-third showed a lack of understanding of the important concepts being tested by this part of the question.

Part b):

Candidates were asked to comment on risks faced when trading currency in view of four commonly used factors.

This part was generally well handled although in a small number of cases answers were too vague and did not relate to the specific factors mentioned in the question sufficiently.

Part c):

Candidates were asked to analyse given regression output and draw inferences in relation to the efficient markets hypothesis.

This part was again quite well handled although some were unable to interpret t statistics in the given context correctly.

Part d):

Candidates were asked to interpret the estimated intercept term in a regression in a financial context.

This was well handled by the majority of candidates.

Part e):

Candidates were asked to comment on information required in selecting portfolio managers in a given context.

This was the most challenging part of the question and some candidates struggled to relate their answer to the specific case given in the question preferring instead to talk generally about issues of general interest but not of direct relevance to the question.

Question 2 **Total Marks: 40 (12 KU, 10 SJ, 18 CJ)**

	Marks Required	% of Total Marks	Number of Candidates	Proportion of Candidates
Strong Pass (A)	28	70.0	3	10.0%
Pass (B)	22	55.0	10	33.3%
Slightly Below Standard (C)	18	45.0	9	30.0%
Weak (D)	10	25.0	7	23.3%
Showed Little Knowledge (E)	1	2.5	1	3.3%
Did Not Attempt (X)	0	0.0	0	0.0%

		% of KU	% SJ	% CJ
Maximum Mark	31.0	95.8	100.0	86.1
Average Mark	21.0	53.1	63.0	46.2
Standard Deviation	5.1			
Coefficient of Variation	0.24			

Candidates performed reasonably on this question, with a pass rate of 43%.

The question concerned discounted cash flow valuation. Both theoretical and practical issues were investigated in a complex question.

Part a):

Candidates were asked to comment on the use of DCF valuation for a small biotechnology firm.

This was the best handled part of the question.

Part b):

Candidates were asked to value a share using the DCF method and to perform a sensitivity analysis.

There were some common mistakes here with students not calculating the price of debt and just using the face value was a common mistake. Also a common mistake was not calculating the equity value at the end by deducting the debt value from the enterprise value.

Part c):

Candidates were asked to analyse an investment in a proposed toll road. Questions covered tax considerations, valuation of related securities and issues related to fair value.

This was not answered as well, as some students struggled to identify key points / risks rather than just writing down all points / risks (whether material or not). There was also some confusion evident in students about the tax benefits available and who would benefit from such an investment.

Question 3 **Total Marks: 40 (12 KU, 12 SJ, 16 CJ)**

	Marks Required	% of Total Marks	Number of Candidates	Proportion of Candidates
Strong Pass (A)	24	60.0	3	10.0%
Pass (B)	18	45.0	12	40.0%
Slightly Below Standard (C)	15	37.5	2	6.7%
Weak (D)	10	25.0	9	30.0%
Showed Little Knowledge (E)	1	2.5	4	13.3%
Did Not Attempt (X)	0	0.0	0	0.0%
		% of KU	% SJ	% CJ
Maximum Mark	26.0	95.8	58.3	75.0
Average Mark	16.4	48.8	28.5	44.5
Standard Deviation	5.8			
Coefficient of Variation	0.35			

Candidates performed reasonably on this question, with a pass rate of 50%.

The question concerned the issues arising when analysis stock returns using factor models.

Part a):

Candidates were asked to formulate the return from an individual stock based on a given regression model.

This KU question was generally well answered with most students able to come up with the vector multiplication which gave the portfolio return. However, many responses used the vector of benchmark weights and simply stated that the return attributable to the ith member of the benchmark portfolio was the answer.

Part b):

Candidates were asked questions relating to the Arbitrage Pricing Theory.

Most students were able to state the APT theory. Many students recognised APT does not apply because of stock specific returns. However, most students did not illustrate this in vector notation. Some students stated that APT applying to well-diversified portfolios as one of their assumptions of APT and as such, did not recognise this as an implication of APT.

Part c):

Candidates were asked how to construct a growth factor portfolio.

Most students were able to state 'growth' factors. However, most students did not discuss the need to construct a long-short portfolio in order to eliminate all other factor exposures (including overall market 'beta' exposure).

Part d):

Candidates were asked questions relating to individual stock selection and factor selection.

Most students were able to show the correct formulae for active portfolio factor returns and active stock selection returns. However, many students made mistakes in formulating the ex-post Information Ratio for active factor selection and active stock selection; with the most common error being the missing square root. Also, a fair number of students misinterpreted the question and provided formulae for the total active return rather splitting up the factor and stock selection components. Many students were unable to state the expected relative magnitude of the active stock selection information ratio compared to the information ratio of the active factor selection (i.e. the 200 stocks against 10 factors). Some responses included a factor of 12 in the IR relating to the monthly review, this led to the same numerical answer when applied to both IRs.

Part e):

Candidates were asked about identifying return factors using principal components analysis.

Many students recognised PCA factors being orthogonal and abstract, but does not go on further to deduce that this limits its usefulness outside of factor risk management. Some responses stated that a PCA model on interest rates will lead to major factor being the duration. None of the students were unable to correctly calculate the number of statistics needed to calculate the covariance matrix of all stocks in the S&P 500 using PCA factor modelling; most students gave an answer of 21 statistics on the PCA factors (=n*(n-1)/2)) then added that to their number of statistics on the n x n covariance matrix.

Question 4 **Total Marks: 40 (6 KU, 10 SJ, 24 CJ)**

	Marks Required	% of Total Marks	Number of Candidates	Proportion of Candidates
Strong Pass (A)	26	65.0	4	13.3%
Pass (B)	20	50.0	11	36.7%
Slightly Below Standard (C)	16	40.0	8	26.7%
Weak (D)	10	25.0	5	16.7%
Showed Little Knowledge (E)	1	2.5	2	6.7%
Did Not Attempt (X)	0	0.0	0	0.0%
		% of KU	**% SJ**	**% CJ**
Maximum Mark	33.0	100.0	90.0	75.0
Average Mark	19.7	65.6	61.5	39.9
Standard Deviation	6.0			
Coefficient of Variation	0.30			

Candidates performed reasonably on this question, with a pass rate of 50%.

This question covered both matching and credit risk.

Part a):

Candidates were asked to analyse interest rate immunisation and related issues concerning duration and futures contracts.

This was reasonably well handled with most candidates able to provide some progress towards the solution.

Part b):

Candidates were asked to calculate a risk neutral default probability and to comment on ability to trade credit derivatives profitably in a given context.

This was again reasonably well handled by the candidates. It related reasonably closely to course material covered during classes.

Part c):

Candidates were asked to respond to four parts relating to credit risk models. Both theoretical and practical considerations were covered in the questions.

This was reasonably well handled again with candidates generally drawing on their knowledge from their study in an intelligent way.

Question 5 **Total Marks: 40 (4 KU, 20 SJ, 16 CJ)**

	Marks Required	% of Total Marks	Number of Candidates	Proportion of Candidates
Strong Pass (A)	32	80.0	2	6.7%
Pass (B)	26	65.0	10	33.3%
Slightly Below Standard (C)	20	50.0	12	40.0%
Weak (D)	10	25.0	5	16.7%
Showed Little Knowledge (E)	1	2.5	1	3.3%
Did Not Attempt (X)	0	0.0	0	0.0%
		% of KU	**% SJ**	**% CJ**
Maximum Mark	36.0	100.0	95.0	90.6
Average Mark	24.2	65.8	65.2	53.0
Standard Deviation	6.2			
Coefficient of Variation	0.26			

Candidates performed reasonably on this question, with a pass rate of 40%.

This question covered financial statement analysis.

Part a):

Candidates were asked to analyse the profitability of a company given financial information and using common ratio techniques.

This was very well done with candidates generally able to answer the questions using appropriate ratios and to comment accordingly on results they obtained.

Part b):

Candidates were asked to analyse issues around inventory valuation methods.

This was also well done.

Part c):

Candidates were asked to relate the concepts of profit margin, EBIT and EBITDA.

This part proved to be the most challenging as it required students to use judgement to relate different accounting concepts and understand how they interrelate. About half of the candidates performed well on this part with others unable to identify the drivers behind the scenario given in the question.

Course 6B Global Retirement Income Systems Chief Examiner's Report Semester 2 2012

1. Summary

1.1. *Course Overview*

The aim of the GRIS 6B course is to provide the knowledge, skills and judgement necessary for an actuary to effectively tackle a range of issues as retirement income systems evolve away from group-based defined benefit schemes to individual defined contribution plans. The changing context has significant implications for product design, risk management and how scheme members are communicated with. Actuaries need the skills and knowledge to help design and manage schemes to best meet members' individual retirement income needs.

1.2. *Pass Rates*

15 candidates enrolled for the semester 2 2012 6B Course. Of these, 1 withdrew prior to the exam and 14 attended the exam.

Assessment comprised performance in one assignment (10%) and an exam (90%).

It is proposed that 3 candidates be awarded a pass, which implies a pass rate of 21%. This compares with the following historical pass rates for this subject:

Table 1 – Course Experience

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

Table 2 – Candidate Numbers

	Number of candidates
Originally enrolled	15
Withdrawn prior to exam	1
Absent from exam	0
Presented at exam	14
Passed	3
Failed	11

Table 3 – Analysis by Examination Centre

Centre	Presented	Passed	Pass Rate
Sydney	9	1	11%
Melbourne	3	1	33%
Adelaide	1	1	100%
Hobart	1	0	0%
Subtotal Australia	14	3	21%
Total	14	3	21%

2. Examination 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. *Forum Participation Assessment*

The forum participation marks were received in a timely manner ahead of the exam marks. They had no material bearing on the final results.

The distribution of the participation marks reported to me by the course leader is shown.

Mark /20	20	18	16	14	12	10	8	Average
No. candidates	0	1	3	5	3	0	2	13.4

3. Examination Papers and Assignments

3.1. *Degree of Difficulty and Course Coverage*

Table 5 – Degree of Difficulty of Exam

Question	Syllabus Outcome	Units	Knowledge & Understanding	Straightforward Judgement	Complex Judgement	Total Marks
1 (a)	6, 7	3, 4	4			4
1 (b)	1	1	6			6
2 (a)	2	1	6			6
2 (b)	9	6	5			5
2 (c)	4	2		4		4
3	3, 8	2, 5			15	15
4 (a)	13	7	2	3		5
4 (b)	13, 14	7, 8	6	6		12

5	3, 5, 10	2, 3, 6		10	7	17
6 (a)	5	3		7		7
6 (b)	8	5			5	5
6 (c)	15	8		6		6
6 (d)	15	8			5	5
6 (e)	8	5			3	3
TOTAL			**29**	**36**	**35**	**100**

Table 6 – Course Coverage by Question

Question	Units	Knowledge & Understanding	Straightforward Judgement	Complex Judgement	Total Marks
1	1, 3, 4	10			10
2	1, 2, 6	11	4		15
3	2, 5			15	15
4	7, 8	8	9		17
5	2, 3, 6		10	7	17
6	3, 5, 8		13	13	26
Total		**29**	**36**	**35**	**100**

3.2. *Overall Performance*

The markers noted the poor standard of candidate responses, which was noticeable in every question of the exam. A couple of questions provided minimal direction, requiring candidates to apply their judgement in a free-form style response. These questions were useful in differentiating the performance of candidates. It was evident that some candidates were not of sufficient quality to address adequately this style of question.

3.3. *Exam Question by Question Analysis*

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

	Marks Required	% of Total Marks	Number of Candidates	Proportion of Candidates
Strong Pass (A)	17	85%		
Pass (B)	14	70%	3	21%
Slightly Below Standard (C)	9	45%	7	50%
Weak (D)	4	20%	4	29%
Showed Little Knowledge (E)	1			
Did Not Attempt (X)	0			
Maximum Mark	16	80%		
Average Mark	10.6	53%		
Standard Deviation	3.4			
Coefficient of Variation	0.32			

Pass rate: 21%
Q1 was a fair differentiator.

This question tested the roles and responsibilities of stakeholders to a defined benefit fund undergoing conversion to an accumulation fund. Candidate responses were poor. The

question was straightforward bookwork offering easy marks for any candidate with an understanding and yet no candidate excelled.

Part (a) asked candidates to identify the stakeholders and to explain their role and obligations.

Most candidates identified only the trustee and employer sponsor. That reflects a serious knowledge gap for candidates sitting this particular exam!

Part (b) asked candidates to connect the requirements of the Institute's Code of Conduct.

The better responses discussed the relevant actions required under the Code of Conduct in detail but many responses were lacking and incomplete.

The markers determined that to pass the question, a response to this question must identify at least 2 stakeholders and nominate and explain at least 3 obligations under the Code. That seems to me a very generous minimum expectation for a simple bookwork question and hence it is disappointing that only 3 candidates could meet the standard. The markers received the impression that responses to this question were rushed and they were in no doubt that the responses should have been better.

Question 2 **Total Marks: 30 (22 KU, 8 SJ, 0 CJ)**

	Marks Required	% of Total Marks	Number of Candidates	Proportion of Candidates
Strong Pass (A)	24	80%		
Pass (B)	18	60%	1	7%
Slightly Below Standard (C)	12	40%	10	71%
Weak (D)	6	20%	3	21%
Showed Little Knowledge (E)	1			
Did Not Attempt (X)	0			
Maximum Mark	18	60%		
Average Mark	14.3	48%		
Standard Deviation	2.7			
Coefficient of Variation	0.19			

Pass rate: 7%
Q2 was a poor differentiator, possibly because candidate marks were so poor that they were compressed in a relatively small range.

This question tested the process and application of financial planning. Candidate responses were extremely poor, to the point that the markers felt it possible to pass (just!) only one candidate.

Part (a) asked candidates to describe the financial planning process.

No candidate was able to describe holistically the financial planning process; rather they focussed on particular specific details, such as defining adequacy or the steps in projecting benefits.

Part (b) asked candidates to identify the specialist advice a superannuation scheme member would need and why this advice is important.

Most candidates did not discuss the key steps in implementing a financial plan (viz. adjusting contributions, investment strategies, insurance arrangements etc.) in adequate detail, nor identify the need for a review process or feedback loop.

Part (c) asked candidates to identify the additional considerations required in respect of a lifetime pension or annuity.

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

The overall understanding of financial planning was very poor and candidates seemed unable to link the concept to the needs of a scheme member.

Question 3 **Total Marks: 30 (0 KU, 0 SJ, 30 CJ)**

	Marks Required	**% of Total Marks**	**Number of Candidates**	**Proportion of Candidates**
Strong Pass (A)	21	70%		
Pass (B)	15.5	52%	4	29%
Slightly Below Standard (C)	11	37%	7	50%
Weak (D)	7	23%	2	14%
Showed Little Knowledge (E)	1			
Did Not Attempt (X)	0		1	7%
Maximum Mark	20	67%		
Average Mark	12.7	42%		
Standard Deviation	5.0			
Coefficient of Variation	0.40			

Pass rate: 29%
Q3 was a good differentiator. Correlation to the overall results was high.

This question tested the evaluation for a large scheme of an investment, specifically in this instance a captive insurance arrangement. It was a difficult question because it provided candidates with minimal direction and therefore required candidates to apply complex judgment and to respond in free form.

Most candidates were able to identify the factors that make an insurance company a good investment. Fewer candidates could determine whether the insurance product from a captive would be better and/or cheaper than the current arrangements. Only the best candidates got any further than those two points.

Some candidates were confused between captive insurance and self-insurance.

Question 4 Total Marks: 34 (16 KU, 18 SJ, 0 CJ)

	Marks Required	% of Total Marks	Number of Candidates	Proportion of Candidates
Strong Pass (A)	24	71%	2	14%
Pass (B)	17	50%	4	29%
Slightly Below Standard (C)	13.5	40%	3	21%
Weak (D)	10	29%	3	21%
Showed Little Knowledge (E)	1		2	14%
Did Not Attempt (X)	0			
Maximum Mark	29.5	87%		
Average Mark	15.9	47%		
Standard Deviation	6.5			
Coefficient of Variation	0.41			

Pass rate: 43%
Q4 was a good differentiator. It provided a wide spread of marks, although interestingly correlation to overall results was not as strong as might be expected.

This question tested the international accounting standard and its application to a defined benefit scheme.

Part (a) asked candidates to explain why a different expense might be reported to individual employee members under a total remuneration system versus the accounting standard.

Most candidates covered the IAS19 issues reasonably well but were weak on the TR issues.

Part (b) asked candidates to address the concerns of the HR director and an employee member to explain by letter the issues of part (a).

Few candidates drafted a separate response to the employee on behalf of the employer. Again, the TR explanations were not strong and candidates did not take the opportunity to comment on their understanding of possible TR methods or the underlying principles behind the TR contribution.

Overall candidates missed a lot of easy marks but the better responses generally were satisfactory.

Question 5 **Total Marks: 34 (0 KU, 20 SJ, 14 CJ)**

	Marks Required	% of Total Marks	Number of Candidates	Proportion of Candidates
Strong Pass (A)	24	71%		
Pass (B)	17	50%	6	43%
Slightly Below Standard (C)	12	35%	6	43%
Weak (D)	8	24%		
Showed Little Knowledge (E)	1		2	14%
Did Not Attempt (X)	0			
Maximum Mark	19	56%		
Average Mark	14.8	44%		
Standard Deviation	4.2			
Coefficient of Variation	0.29			

Pass rate: 43%
Q5 was a good differentiator and correlation to overall results was quite high.

This question asked candidates to identify possible investment default options for a large public offer fund and to assess the relative merits of these. As with Q3, this question provided minimal direction to candidates, who had to apply judgement and respond in an appropriate and logical form.

Many candidates struggled to come up with a good structure for their answer. Better candidates successfully tailored their response to the question (e.g. the strategy applied to new entrants), set out a good discussion of factors affecting the choice of a default option and came to a considered recommendation. Weaker candidates only listed generic issues to consider, with no formal opinion.

The markers noted also that:

- All candidates showed some knowledge of how age and investment horizon should have a bearing on the default option
- Many candidates failed to appreciate the drawdown aspects and that the design exercise was for new entrants
- Many candidates identified only 2 or 3 factors affecting the choice of a default
- Many candidates did not explain how investment options are comprised of different asset classes
- Few candidates raised points about a trustee's duties and obligations
- A few candidates concentrated too much on the lifecycle default options and veered off topic
- A few candidates commented on lifetime or variable annuities (which were clearly outside the scope of the question)
- Very few candidates identified the behavioural aspects of implementing a default option
- No (!) candidate discussed tax

Question 6 **Total Marks: 52 (0 KU, 26 SJ, 26 CJ)**

	Marks Required	% of Total Marks	Number of Candidates	Proportion of Candidates
Strong Pass (A)	26	50%	2	14%
Pass (B)	21	40%	7	50%
Slightly Below Standard (C)	16	31%	3	21%
Weak (D)	10	19%	2	14%
Showed Little Knowledge (E)	1			
Did Not Attempt (X)	0			
Maximum Mark	30	58%		
Average Mark	21.7	42%		
Standard Deviation	4.6			
Coefficient of Variation	0.21			

Pass rate: 64%
Q6 was only a fair differentiator in respect of spread despite the marks available, possibly because the large number of question sub-parts tended to even out candidate results and depress marks overall. Nevertheless correlation to overall results was very high. This question tested the risks to a company in respect of an employee retirement scheme and the effects of various operational changes.

Part (a) asked candidates to identify the relevant risks.

It was generally well-answered, although it was clear that some candidates were quoting word-for-word from the course notes. Some candidates did not fully recognise that the question was asking about risks to the company and some of their responses related to risks to the trustee and the fund. Some candidates were ambiguous about interest rate movements affecting funding position on an accounting basis versus funding basis.

Part (b) asked candidates to identify the adverse ramifications that may result from the interaction of the identified risks.

Some candidates were better able to describe the ramifications to the company. Most candidates identified funding implications but only a few candidates covered reputation and financial statement impacts. Some candidates misinterpreted part (b) completely – either repeating answers in part (a) or discussing interactions of risks instead.

Part (c) asked candidates to make suggestions for amendments to the scheme to mitigate some of the identified risks.

Most candidates mentioned investment strategy and benefit design aspects. Several candidates recommended a full conversion to an accumulation design but the better candidates were able to explain how to reduce risks while retaining the defined benefit design. Few candidates mentioned improvements in risk management.

Part (d) asked candidates to explain the effects of changing the investment policy.

It was generally well-answered. Many candidates noted the effect on funding costs but few mentioned IAS 19 costs. While most candidates mentioned increased volatility risk for higher expected return, others also gained additional marks for mentioning higher costs of management and currency risks/hedging.

Part (e) asked candidates to explain their recommendation for the actuarial reduction factor following the change in investment policy in part (d).

Few candidates answered this well. Most candidates recommended increases in the actuarial reduction factor, without recognising that a decision by the company to change the investment strategy does not need to result in a change in member benefits.

Course 10 Commercial Actuarial Practice Chief Examiner's Report Semester 2 of 2012

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*

71 candidates presented for the course, the lowest number since 2007. Of these, it is proposed that 40 be awarded a pass, representing a **pass rate of 56%.** This rate is slightly lower than the long-term average pass rate of 61% but in line with recent semesters.

Table 1 – Recent Course Experience

Semester	Sat	Passed	Pass Rate
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 73 candidates were enrolled for the CAP course in Semester 2 of 2012. 5 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	72	**73**
Withdrawals	0	0	0	**0**
Absent	0	0	2	**2**
Presented	0	1	70	**71**
Passed	0	0	40	**40**
Failed	0	1	30	**31**

The analysis by number of attempts is as follows:

Table 2A – Number of CAP Attempts

Attempt	Candidates	Passes	Pass rate
1	38	25	66%
2	15	7	47%
3	8	5	63%
4	4	2	50%
5	4	0	-
6	2	1	50%
Total	71	40	56%
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.

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	5	3	60%
General Ins	30	17	57%
GRIS	6	3	50%
Investment	9	4	44%
Life Ins	21	13	62%
TOTAL	71	40	56%

The pass rate for Investment is particularly disappointing, and section 5 outlines how Investment candidates have performed worse in the exam than would have been predicted from their Assignment marks. However, one more pass or fail in any topic would make a noticeable difference to that pass rate, so in some ways it is surprising how consistent the pass rate is across topics.

In past semesters it has been usual for "Overseas" candidates to have a slightly lower pass rate than Australian-based candidates, but this year the difference is marked.

Results by Exam Centre			
Centre	Presented	Passed	Pass rate
Canberra	1	1	100%
Brisbane	2	2	100%
Melbourne	10	9	90%
Sydney	42	23	55%
Hong Kong	4	0	0%
Jakarta	1	1	100%
Kuala Lumpur	1	1	100%
London	8	3	38%
Singapore	2	0	0%
Total	71	40	56%
Australia	55	35	64%
Overseas	16	5	31%

Asia has a disappointing result, with only 2 passes from 8 candidates. However, Asia was not represented among the 7 fails closest to passing (5 Sydney, 2 London), nor among the lowest 7 fails (5 Sydney, 2 London).

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 2 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

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. Julie Cook is new this semester, replacing Peter Martin for GRIS.

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.

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. Due to time pressure, the Health case was not scrutineered, but it was carefully reviewed by the Chief Examiner.

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

3.2. *Marking Process*

In answers for any of the 5 traditional topics, candidates are expected to demonstrate detailed expertise at the level of the Actuaries Institute "B" level Module of Part III courses.

For the non-traditional topics, candidates are required to have a high-level general knowledge sufficient to contextualise actuarial solutions. They are not required to have the specific knowledge that would be required to pass equivalent Part III courses, were they to be offered in those areas. In marking the reports, the examiners were therefore mindful to assess candidates against the practical objectives of the course rather than test specific knowledge of the non-traditional areas.

Each report was marked firstly by the person who set the particular case. Borderline candidates, being at least those with scores between approximately 40 and 60, were then marked independently by one of the other course team members. (The independence cannot be complete, because Marker 2 knows that a borderline mark has already been given.) David Service was either the first or second marker for every paper and in this way had the opportunity to ensure a consistent standard across the different topics.

By the nature of the questions, some very different answers could be of pass standard. Consequently, the markers did not allocate marks according to a pre-determined scale for each point that a candidate might make. Rather, the markers took an integrated perspective as set out in the generic marking guides for each topic. Markers gave marks of 50% or more for reports they assessed as being of pass standard. As there is only 1 question within each assessment and no scaling is undertaken, the pass mark adopted is not specifically important. The 50% is intended to be equivalent to the scaled 60% pass mark in the other Part III courses. Inevitably, there is considerable scope for variation in the raw marks awarded, but in practice I believe good consistency has been achieved.

The review process consisted of the Chief Examiner and/or Assistant Examiner reviewing all the Exam and Assignment papers where the overall result could be in doubt ie those with weighted average raw scores between 46% and 54% or where there was a substantial difference between the Markers or between the Exam and the Assignment. Qualitative as well as quantitative aspects of borderline answers were considered, and we were particularly wary of candidates who said something "dangerous".

The final marks used were based on the average of the first and second markings, after any refinements agreed in review with the Chief Examiner and Assistant Examiner. At this final stage, the relative difficulty of each topic was also considered, described in section 5 below as "standardization", albeit we have not made any pass/fail changes due to standardization this semester.

4. Post Course Assignment results

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. Final scaled marks ranged from 40% to 78%. 61 of the 71, or 86% of candidates were awarded a "pass" mark of 50% or more. (Candidates were given the mark out of 20, but in this report all are quoted as percentages.) 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 foreign bank considering entry to Australia with an option for borrowers to sell their house to the bank and rent it back, rather than default on a mortgage.

There were some good answers, but over one-third of candidates were given a raw score below 50%, suggesting it was difficult question. The Markers' most frequent comment was that assertions were made without appropriate justification. Raw scores were improved by scaling, as described below.

4.2. *Environment*

The Environment case study required candidates to advise a biscuit manufacturer that is currently using "non-sustainable" Indonesian palm oil. Recommendations were required on the costs and benefits of avoiding becoming a target of environmental lobby groups.

The question was well answered, with the small number of failures being only marginal fails.

4.3. *Health*

The Health case study required candidates to advise the government of Hong Kong on the implications and risks of planned changes to their private health insurance system.

The raw marks were very good, ranging from 47% to 90%, which was a higher range than for Banking or Environment.

4.4. *Adjustments*

Candidates were allocated randomly to the assignment topics, so the expectation is that results will be similar for the 3 topics. David Service's marking helps to ensure a common standard.

The Chief Examiner reviewed some of the papers and decided, prior to results being published, to compress the lower Banking marks upwards, and to compress the higher Health marks downwards. No passing mark was converted to a failing mark. This changed the patterns to be very similar, as follows. The only difference in Environment marks is that, as with Banking and Health, all marks were rounded to a multiple of 2.5% so they would be exact half marks out of 20 when published.

Assignment marks were also reviewed for individual candidates with a borderline overall mark. However, no further adjustments were made. In addition, comparison of writing style in Assignment and Exam was used for several candidates where the Assignment mark was substantially higher than the Exam mark, but there was no indication of anomalies.

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26 November 2012