

Report to ECC from the Board of Examiners

*2007 PART III
SEMESTER TWO
EXAMINATIONS
REPORT
(PUBLIC VERSION)*



Publisher

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SUMMARY

Examination Administration

The Semester Two 2007 Part III examinations of the Institute of Actuaries of Australia (“Institute”) were held between 29th October and 2nd November 2007. Candidates attended the examinations in Australia (Sydney, Melbourne, Canberra, Perth, Adelaide and Brisbane) and overseas (New Zealand, Hong Kong, China, France, Fiji, Germany, Japan, Korea, Malaysia, Singapore, Switzerland, Taiwan, The Netherlands, United Kingdom and USA).

This is the third year in which twice yearly examinations have been held. The tables below show the number of candidates sitting each exam over recent years. The number of candidates sitting in the latest period shows a slight increase over that in the previous period.

Table A: Candidate Numbers Sitting by Part III Subject (old courses)

	Subject	2000	2001	2002	2003	2004
1	Investment Management	102	92	80	110	136
2	Life Insurance	82	79	86	111	118
3	General Insurance	55	59	73	89	91
4	Superannuation & P.S.	25	23	26	26	25
5	Finance	45	47	68	74	62
	Total	309	300	333	410	432

Table B: Candidate Numbers Sitting by Part III Course (new courses)

	Subject	2004	2005 (1)	2005 (2)	2006 (1)	2006 (2)	2007 (1)	2007 (2)
1	Investments	136 ¹	187	129	162	150	171	166
2A	Life Insurance	118	61	62	53	51	53	54
2B	Life Insurance	114	22	28	25	32	37	43
3A	General Insurance	91	68	79	69	65	64	82
3B	General Insurance	91	18	34	48	41	48	44
4A	Superannuation & Planned Savings	25	19	11	12	8	15	n/a ¹⁰
4B	Superannuation & Planned Savings	25	5	10	n/a ⁵	7	n/a ⁹	16
5A	Investment Management & Finance	136 ²	20	19	14	18	17	n/a ¹⁰
5B	Investment Management & Finance	118 ³	10	16	14	15	n/a ⁹	44
10	Commercial Actuarial Practice	n/a	n/a	28	23 ⁶	47 ⁷	61 ⁸	70 ¹¹
	Total	432 / 854⁴	410	416	420	434	466	519

1. The 2004 Investment Paper 1 is broadly equivalent to the 2005 Investment Course.
2. The 2004 Investment Paper 2 is broadly equivalent to the 2005 Finance Course 5A.
3. The 2004 Finance Courses 5A and 5B are broadly equivalent to the 2005 Finance Course 5B. In 2004, 62 candidates sat Finance Paper 1 and 56 candidates sat Finance Paper 2.
4. In 2004 there were 432 individual candidates, with a total of 854 enrolments by each paper/course.
5. The 4B Course did not run in 2006 (1).
6. In Semester One 2006 23 Individual Candidates enrolled, though some candidates only attempted either the Exam or the Case Study.
7. In Semester Two 2006 47 Individual Candidates enrolled, though some candidates attempted either the Exam or the Case Study.
8. CAP Semester 1 2007 61 individual candidates enrolled, 44 full course, 1 exam only, 12 case study only and 4 re-sat the case study and exam.
9. Course 4B and 5B did not run Semester 1 2007.
10. Course 4A and 5A did not run Semester 2 2007.
11. CAP Semester 2 2007 70 individual candidates enrolled, 47 full course, 6 exam only, 11 case study only (3 re-sat the case study and exam)

Results

Pass Rates

The number of candidates presenting for the Semester Two 2007 Part III Exams, the recommended passes and the resulting pass rates are shown in the table below:

Table C: Recommended Number of Passes by Part III Course

	2007 (2) Sat	2007 (2) Passed	2007 (2) %	2007 (1) Sat	2007 (1) Passed	2007 (1) %	2006 (2)	2006 (1)	2005 (2)	2005 (1)	2004 ¹
1 Investments	166	69	42%	171	56	33%	31%	28%	29%	24%	30%
2A Life Insurance	54	21	39%	53	18	34%	27%	32%	31%	23%	22%
2B Life Insurance	43	14	33%	37	8	22%	41%	32%	29%	50%	26%
3A General Insurance	82	17	21%	64	24	38%	38%	42%	35%	28%	33%
3B General Insurance	44	21	48%	48	23	48%	39%	50%	32%	50%	25%
4A Super & PS	n/a	n/a	n/a	15	7	47%	38%	50%	18%	42%	24%
4B Super & PS	16	7	44%	n/a			57%	n/a	60%	80%	28%
5A Invest. Man. & Fin.	n/a	n/a	n/a	17	6	35%	44%	50%	26%	35%	29%
5B Invest. Man. & Fin.	44	15	34%	n/a			27%	43%	31%	40%	52%
10 CAP – Case Study	63	47	75%	59 ³	39	66%	64%	73%	68%	-	-
10 CAP – Exam	57	49	86%	49 ³	37	76%	88%	78%	82%	-	-
Total	519	211	41%	466⁴	177⁵	38%	38%	37%	34%	30%	29%

1. The 2004 Results have been adjusted to include the passes awarded separately for Paper 1 and Paper 2.
2. For CAP, in 2005 (2) the overall pass rate was 18/28 or 64%. In 2006 (1) the overall pass rate was 14/23 or 61%. In 2006 (2) the overall pass rate was 30/47 or 64%
3. CAP Numbers who presented for two different components
4. Includes all 61 CAP Candidates
5. Figure represents pass rate in respect of 61CAP students with 35 completing this module

The Chief Examiners aim to produce a consistent standard of passing candidates, rather than a consistent pass rate from year to year. This semester, the recommended overall pass rate of 41% is slightly above the range achieved in recent years of 29% - 38%. The overall pass rate is in line with last semester with the latest results as a whole boosted once again by the strong results in Course 10 CAP. However, excluding the CAP results the overall pass rate would have still been 37%.

Prizes

Prizes are awarded only once in a calendar year following the Semester Two examinations. Each subject prize will then be awarded based on the performance of candidates in both semesters. The minimum standard for a subject prize has been set at 120% of the pass mark for both subjects. In addition, the candidate must have achieved A grades in at least 50% of questions in both exams.

Fellows

As the Part III Examinations are in transition from the pre-2005 system to the new post-2005 system, there are two ways in which candidates can qualify as Fellows.

- (i) Under the pre-2005 system, candidates have to pass two courses (Modules 2 and 3 for two separate subjects).
- (ii) Under the post-2005 system, candidates must pass Module 1 (Investments), one full specialist subject (Modules 2 and 3) and Module 4 (Commercial Actuarial Practice).

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

Category	2007 (2)	2007 (1)	2006 (2)	2006 (1)	2005 (2)	2005 (1)	2004
Pre-2005 system	1	1	7	14	19	7	51
Post-2005 system	41	32	25	10	14	-	-
Total New Fellows	42	33	32	24	33	7	51

CHAIR'S REPORT

1. Examination Administration

1.1 The Board

The Board of Examiners oversees the Part III examination process of the Institute of Actuaries of Australia (Institute). The Board of Examiners consists of the Chair and her assistants and the Chief Examiners for each subject, supported by Institute staff.

For Semester Two 2007 the Chair and her Assistants were:

Chair	Ms Caroline Bayliss
Assistant Chair	Mr Andrew Smith
Assistant Chair	Mr Wesley Caine
Assistant Chair	Ms Raewin Davies
Assistant Chair	Ms Catherine Robertson-Hodder
Assistant Chair	Mr David Underwood

The Chief Examiners for Semester Two 2007 were:

Course 1: Investments	Mr Tim Kyng
Course 2A: Life Insurance	Mr Rodney Scott
Course 2B: Life Insurance	Mr Anthony Carey
Course 3A: General Insurance	Ms Laurel Kong
Course 3B: General Insurance	Mr Brett Riley
Course 4B: Superannuation & Planned Savings	Mr Stuart Cheetham
Course 5A: Investment Management & Finance	Mr Jim Qin
Course 10: Commercial Actuarial Practice	Mr Colin Westman

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. I would also like to thank my assistants, Andrew, Raewin, Catherine, David and Wesley for their support and untiring efforts in ensuring the overview process of the Chair worked smoothly and that the quality of the examinations and results was maintained.

1.2 Meetings of the Board

The Board met on three occasions as part of the Semester Two 2007 exam process.

- The first meeting was held on 18th July. It was attended by representatives from each Course (Chief Examiners/Assistant Examiners). The purposes of this meeting were to:
 - introduction of BoE Handbook and on-line resource
 - update on enrolment numbers and course offerings for Semester 2 2007
 - identify Chief & Assistant Examiners and Course Leaders for each course for Semester Two 2007
 - outline the responsibilities of Chief Examiners and the Semester Two schedule
 - review progress on the drafting of the exams to date



- The second meeting was held on September 19th. It was attended by a representative from all courses. The purposes of this meeting were to:
 - discuss the status of Semester Two 2007 examination papers, model solutions and sign-off process.
 - discuss the marking spreadsheets and confirmed number of passes relates only to exam questions.
 - review the recruitment of markers and arrangements for the marking day
 - discuss feedback given on students results letters and exam performance interviews
- The third meeting was held on 5th December and was attended by Board of Examiners, Chief Examiners or their representative from all courses. The purposes of this meeting were to:
 - review the recommended pass lists and treatment of borderline candidates
 - review the recruitment of Chief Examiners for Semester One 2008.
- Further meetings were held on 13th and 14th December, to review recommended pass list for the CAP paper and subject C1 respectively and on 17th December, to review the subject C1 pass list following requests for review by the Board at the previous meeting, and to finalise prize recommendations.

1.3 Administration and Exam Supervision

The Board of Examiners was ably assisted by a number of Institute staff, in particular Mr Stephen Wright, Mr Philip Latham, Mrs Robyn Bulless, Ms Carmen Joseph and Ms Lauren O'Donnell. Philip, Robyn, Carmen and Lauren 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 for Semester Two 2007 and the Board of Examiners team is indebted to them all.

The Semester Two 2007 Part III examinations in Sydney and Melbourne were again run by an external consultancy – Language and Testing Consultancy (LTC). Other examinations were administered by Fellows or other approved supervisors. All examinations ran smoothly.

1.4 Course Leaders

In October 2004, Course Leaders were appointed by the Institute to undertake a variety of tasks relating to modules 1-3 of the new Part III education program. One of the roles of the Course Leaders was to draft examination questions in consultation with the Chief Examiners. The following is a list of the Course Leaders for Semester 1 2007:

Course 1 - Andrew Leung (assignments and exams) and Tim Furlan, Stephen Milburn-Pyle, Jeron Van Koert, Stephen Britt and Simon Eagleton (tutorials)

Course 2A and 2B - Sue Howes (Faculty Leader), Owen Wormald (2A Assignment and Exams), Bruce Thomson (2A tutorials), Bruce Edwards (2B Assignments and Exams), and Alan Udell (2B tutorials)

Course 3A and 3B - GI Faculty, David Heath (3A and 3B Exams and tutorials) Dave Finnis (3A and 3B Assignments and exam), Richard Mayo (tutorial)

Course 4B –Peter May (Course Leader), Jeffrey Chee (assignments and exams), Saffron Sweeney (tutorials and discussion forums)

Course 5B – Jasmine Lee (Course Leader and tutorial, assignment and exam)

Course 10 David Service

Another role of the Course Leaders was to draft assignment questions in consultation with each subject Faculty. The Board of Examiners was not involved in this process. In most cases the drafting of the assignments worked well.

1.5 The Examination Process

The Semester Two 2007 examination process began officially on 18th July 2007 with an initial meeting of the Board of Examiners. Course Leaders, however, had begun drafting examination questions from June 2007. Once Chief Examiners had been appointed in all subjects they met with Course Leaders (where applicable) to discuss the draft exam questions.

Question setting

The basic framework followed by each subject to setting exam papers is the same. The Semester Two 2007 Part III examinations were run on an open book basis. Each subject includes rigorous review processes. 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 by scrutineers for coverage and fairness. The scrutineers are a mix of newly qualified actuaries and experienced actuaries.
- At least one scrutineer ‘sits’ the paper under exam conditions to assess the length of the paper.
- Exams are redrafted after feedback from the scrutineers.

- Draft exams, solutions and marking guides are then submitted to the BoE team for review. Two members of the BoE team review the draft exams and solutions.
- Exams, solutions and marking guides are finalised by the Chief Examiners and their Assistants.
- The Course Chief Examiners sign off the final examination papers and solutions.
- A member of the BoE team also signs off on the examination papers and solutions.

Exam marking

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

- Two markers marked each question. For Investments, due to the large number of candidates, a team of six markers marked each question with each marker marking one third of the papers, in teams of two. 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.
- 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' assignment grades and marks were added to the exam metrics, with a weighting of 15% for Course 1 Investments and Modules 2 and 3.
- 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.

1.6 The Assignment Process (Modules 1-3)

Question Setting

The basic framework followed by each course to setting assignment questions is the same and all subjects contain review processes. The general framework used to set assignments is described as follows:

- The Course Leader drafts the assignment. They are each worth 15% of the total marks for the subject.
- Draft assignments and solutions are then reviewed by each Faculty for coverage and fairness.
- Each Faculty signs off the assignments.

Students were given access to the assignments via the specific link on the Institute web site. The Board of Examiners did not review or comment on the assignments.

Assignment Marking

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

- Each question was marked only once, with the assignments being divided up among multiple markers. Different markers had different marking standards and pass criteria. Course Leaders sample marked 5% of all assignments (or at least one assignment from each marker). Inconsistencies in marks for a candidate were to have been discussed by the relevant marker and the Course Leaders and resolved, before the results were forwarded to the Chief Examiner.
- 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.

In Semester Two 2007 assignments were submitted both electronically and in hard copy. The electronic copy was to be received by the due date and the hard copy was to be received within two days of the due date. The hard copy was to be submitted for Australian based students only.

2B trialled a presentation of the course via an e-learning site. Students were required to submit an electronic copy of their assignment. Marker were allocated candidate numbers and accessed and marked on-line. This enabled a faster turn around and delivery of feedback as once all assignments were marked, students could access their feedback immediately.

1.7 Module 4 CAP - The Case Study Process

The CAP course was developed and originally delivered for the Institute by the ANU. Semester Two was run directly by the Institute. The CAP team involved in the previous semester have been retained on individual contracts. The team included David Service, Elayne Grace, Richard Madden, Peter Martin, Colin Priest and Andrew Brown. The team also developed the assessment materials for the course and did the marking.

The development and delivery of the course was overseen by a Faculty, consisting of Ken McLeod (Chair), Andrew Brown, Arie van den Berg, David Knox and Donna Walker. Colin Westman also acted as Chief Examiner, assisted by the other members of the Faculty.

1.8 Examination Dates

The Semester Two 2007 Part III examinations were held on the following dates:

Course 1: Investments	Monday 29 th October
Course 10: Commercial Actuarial Practice	Monday 29 th October
Course 2A: Life Insurance	Tuesday 30 th October
Course 2B: Life Insurance	Tuesday 30 th October
Course 3A: General Insurance	Wednesday 31 st October
Course 3B: General Insurance	Wednesday 31 st October
Course 4A: Superannuation & Planned Savings	Thursday 1 st November
Course 5A: Investment Management & Finance	Friday 2 nd November

1.9 Assignment Dates

The Semester Two 2007 Part III assignments were due on the following dates:

Assignment One:	29 August (2A, 3A)
	4 September (C1)
	12 September (2B, 3B, 4B, 5B)
	14 th September Case Study (CAP)

1.10 Examination Centres

Candidates sat the exams in 6 centres in Australia and 14 centres overseas. Individual exam locations were arranged in China (2), Korea (1), Japan (2), France (1), Germany (1), Fiji (1), Switzerland (1) The Netherlands (2), and USA (1).

Table 1: Candidates by Exam Centre - Semester Two 2007

	Number of Candidates
Australia	
Adelaide	1
Brisbane	7
Canberra	5
Melbourne	66
Sydney	336
Perth	3
Overseas	
China	2
Fiji	1
France	1
Germany	1
Hong Kong	19
Japan	2
Korea	1
Malaysia	11
New Zealand	10
Singapore	20
Switzerland	1
The Netherlands	2
United Kingdom	20
USA	1
Total	511



1.11 Exam Candidature

Candidate Numbers

The number of candidates sitting the Part III exams in Semester Two remained fairly static compared with the previous Semester. The slight decrease in the number of candidates for course C1 (Investments) over the previous semester is expected as this is the first course that recent graduates typically sit.

Table 2: Candidate Numbers Sitting by Part III Courses (old courses)

	Subject	2000	2001	2002	2003	2004
1	Investment Management	102	92	80	110	136
2	Life Insurance	82	79	86	111	118
3	General Insurance	55	59	73	89	91
4	Superannuation & P.S.	25	23	26	26	25
5	Finance	45	47	68	74	62
	Total	309	300	333	410	432

Table 3: Candidate Numbers Sitting by Part III Courses (new courses)

	Subject	2004	2005 (1)	2005 (2)	2006 (1)	2006 (2)	2007 (1)	2007 (2)
1	Investments	136 ¹	187	129	162	150	171	166
2A	Life Insurance	118	61	62	53	51	53	54
2B	Life Insurance	114	22	28	25	32	37	43
3A	General Insurance	91	68	79	69	65	64	82
3B	General Insurance	91	18	34	48	41	48	44
4A	Superannuation & Planned Savings	25	19	11	12	8	15	n/a ¹⁰
4B	Superannuation & Planned Savings	25	5	10	n/a ⁵	7	n/a ⁹	16
5A	Investment Management & Finance	136 ²	20	19	14	18	17	n/a ¹⁰
5B	Investment Management & Finance	118 ³	10	16	14	15	n/a ⁹	44
10	Commercial Actuarial Practice	n/a	n/a	28	23 ⁶	47 ⁷	61 ⁸	70 ¹¹
	Total	432 / 854⁴	410	416	420	434	466	519

1. The 2004 Investment Paper 1 is broadly equivalent to the 2005 Investment Course.
2. The 2004 Investment Paper 2 is broadly equivalent to the 2005 Finance Course 5A.
3. The 2004 Finance Courses 5A and 5B are broadly equivalent to the 2005 Finance Course 5B. In 2004, 62 candidates sat Finance Paper 1 and 56 candidates sat Finance Paper 2.
4. In 2004 there were 432 individual candidates, with a total of 854 enrolments by each paper/course.
5. The 4B Course did not run in 2006 (1).
6. In Semester One 2006 23 Individual Candidates enrolled, though some candidates only attempted either the Exam or the Case Study.
7. In Semester Two 2006 47 Individual Candidates enrolled, though some candidates attempted either the Exam or the Case Study.
8. CAP Semester 1 2007 61 individual candidates enrolled, 44 full course, 1 exam only, 12 case study only and 4 re-sat the case study and exam.
9. Courses 4B and 5B did not run Semester 1 2007.
10. Courses 4A and 5A did not run Semester 2 2007.
11. CAP Semester 2 2007 70 individual candidates enrolled, 47 full course, 6 exam only, 11 case study only (3 re-sat the case study and exam)



Table 2 reflects numbers of candidates presenting at the exam prior to 2005 (old courses).

Table 3 shows the number of candidates presenting at the exam in the new program from 2005, with the 2004 figures repeated for comparison purposes. In 2004 candidates sat two papers per subject. For transition purposes, for the 2004 Life Insurance, General Insurance and Superannuation & Planned Savings courses, Paper 1 now equates to the 'A' component of the new 2005 course and Paper 2 equates to the 'B' component of the new 2005 course. For the 2004 Investment Management course, Paper 1 equates to the 2005 Course 1 (Investments) and Paper 2 equates to the 2005 Course 5A (Investment Management & Finance). For the 2004 Finance course, Papers 1 and 2 equate to the 2005 Course 5B (Investment Management & Finance) with students only requiring to receive a pass in either one of the 2004 Finance papers to be given credit for Course 5B.

Withdrawal Rates

In Semester Two 2007, 554 candidates initially enrolled in courses, however 35 candidates subsequently withdrew from courses or did not present for the examination.

The number of candidates that enrolled for a course but withdrew prior to the examination was highest in absolute terms for Investments (12 officially withdrew prior to the examinations and 7 did not present for the exam, out of 185 originally enrolled). For other courses, the absolute number of withdrawals was generally lower than in previous semesters. The overall percentages that withdrew were broadly consistent with past experience. The withdrawal rates for all subjects were:

Table 4: Withdrawal Rates by Part III Course – Semester Two 2007

	Subject	Initially Enrolled	Withdrew prior to Exam	Absent from exam	Total Withdrawing	%
1	Investments	185	12	7	19	10.3%
2A	Life Insurance	55	0	1	1	1.8%
2B	Life Insurance	46	3	0	3	6.5%
3A	General Insurance	89	6	1	7	7.9%
3B	General Insurance	45	0	1	1	2.2%
4A	Superannuation & P.S.	n/a				
4B	Superannuation & P.S.	16	0	0	0	0
5A	Invest Management & Finance	n/a				
5B	Invest Management & Finance	48	1	3	4	8.3%
10	Commercial Actuarial Practice	70	0	0	0	0%
	Total	554	22	13	35	6.3%

1. Includes exam and case study CAP candidates

Candidate Mix

The mix of courses sat by candidates is broadly similar to that in previous years. The numbers for Investments has decreased compared with last Semester. It is expected that the percentage enrolling in Investments will be higher in Semester One than in Semester Two as it is compulsory under the new Part III structure and new students are likely to sit it first.

The enrolments for Life Insurance have been fairly constant at approximately 20% for the latest five semesters, down from a previous trend of 27%. This pattern is reversed for the General Insurance Course, where the latest four semesters show enrolments at 24% to 28%, while previously they were trending around the 20% mark. The enrolments in

Superannuation show a continuing gradual decline, reflecting the perceived reduction in employment opportunities in this area. The Investment Management and Finance enrolments show an increase over the previous semester, which had an unusually low enrolment for this subject, returning to more typical levels.

Table 5: Candidate Mix by Part III Course – Enrolments Semester Two 2007

	Subject	2003	2004	2005 (1)	2005 (2)	2006 (1)	2006 (2)	2007 (1)	2007 (2)
1	Investments ¹	27%	32%	46%	31%	39%	35%	38%	33%
2	Life Insurance	27%	27%	20%	21%	19%	19%	20%	19%
3	General Insurance	22%	21%	21%	27%	28%	25%	24%	24%
4	Superannuation & P.S.	6%	6%	6%	5%	3%	3%	3%	3%
5	Investment Mgt & Finance ²	18%	14%	7%	10%	7%	8%	4%	9%
10	Comm. Actuarial Practice	n/a	n/a	n/a	6%	5%	9%	12% ³	12% ⁴
	Total	100%	100%	100%	100%	100%	100%	100%	100%

1. Course 1 Investments prior to 2005 was equivalent to Investment Management.
2. Investment Management and Finance prior to 2005 was equivalent to Finance.
3. Includes all CAP candidates enrolled including case study and or exam only – 61
4. Includes all CAP candidates enrolled including case study and or exam only -70

2. Examination Papers and Assignments

2.1 Examination Structure

The structure of the examinations in Semester two 2007 was a single three-hour exam paper for Modules 1-3 and a two-hour exam paper for Module 4 (Course 10 – Commercial Actuarial Practice). The exams for Modules 1, 2 & 3 were worth 85% of the final assessment, with the assignment worth 15%.

For Modules 1-3, 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, assessment was determined as follows:

- *First piece:* participation in a one-week residential course (5%) and completion of a case study in a traditional practice area, over 8 hours, on the course's 5th day (45%).
- *Second piece:* two-hour exam paper on non-traditional areas of actuarial practice, answering 2 out of 4 questions (50%).
- In order for a candidate to obtain an overall pass in Module 4, both pieces of the assessment had to be passed. Students receiving an overall fail could be awarded a pass for either assessment piece and would only need to complete the other piece in a future semester, within a two-year period.

2.2 Assignment / Case Study Structure

The structure of the assignments in Semester Two 2007 was one assignment for Modules 1, 2 and 3 with the assignment worth 15% of the final assessment.

Module 4 (Course 10 – Commercial Actuarial Practice) was assessed by 50% exam and 50% case study. Within the 50% case study assessment, which needed to be passed independently of the exam, the case study itself was worth 90% of the final assessment. Candidates completed the case study on the final day of the residential course, under exam conditions. In addition, general participation in the residential course was assessed at 10% of the case study marks.

2.3 Examination Standards

In each course 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 Module 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. To ensure the examination papers had proper balance, guidance as to the proportion of marks given to each category needed to be established. The standards of difficulty as determined by the Chief Examiners at the time they set the papers are set out below, with a comparison to the prior semester.

Table 6: Standards of Difficulty by Part III Course

		Knowledge & Understanding		Simple Judgement		Complex Judgement	
	Subject	2007 (2)	2007 (1)	2007 (2)	2007 (1)	2007 (2)	2007 (1)
1	Investments	21%	17%	40%	42.5%	39%	40.5%
2A	Life Insurance	20%	20%	44%	41%	36%	39%
2B	Life Insurance	22%	21%	38%	38%	40%	41%
3A	General Insurance	16%	17%	43%	44%	41%	39%
3B	General Insurance	24%	20%	40%	50%	36%	30%
4A	Superannuation and PS	n/a	19%	n/a	42%	n/a	39%
4B	Superannuation and PS	26%	n/a	31%	n/a	43%	n/a
5A	Invest. Management & Finance	n/a	21%	n/a	41%	n/a	38%
5B	Invest. Management & Finance	20%	n/a	40%	n/a	40%	n/a
	Targets	15% - 25%		35% - 45%		35% - 45%	

The examination papers were broadly similar in standard of difficulty to prior periods.

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.

2.4 Assignment Standards

The setting of standards for the assignments used the same approach as for the examinations, that is, questions were set covering the following 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).

Whilst the target weighting of each category for the exams was essentially 20% KU / 40% SJ / 40% CJ, the target weighting for the assignments was 40% KU / 40% SJ / 20% CJ. With the introduction of assessable assignments the exam is only worth 85% of the final assessment from 2007. This means that a higher component of the assessment is KU ("bookwork") and a lower proportion of the assessment is CJ ("complex judgement"), under the new system, compared with 2004 and earlier.

Although the target weightings of the assignments for each subject were 40%/40%/20% the Board of Examiners was not informed of the actual weightings of any of the assignments. Copies of the assignments were not supplied to the Board of Examiners, but should be available from the Institute if required.

2.5 Security of Examination Papers

Procedures adopted in 2002 to improve the security of examination papers were continued in 2007:

- Life Insurance 2B held a marking day in Sydney and all markers were encouraged to attend.
- Those markers not able to attend the marking day, or who did not finish during the marking day, were allowed to mark papers in their own time but were given strict guidelines on how to safeguard the exam papers – to always keep them secure, mark them in one location, not leave them in cars or in offices unattended, etc.
- Overseas supervisors were required to photocopy papers before sending them by courier to the Institute office.
- Secure couriers were used to transport papers between markers.
- Chief Examiners allocated two markers from the same city for each question as far as were possible (so papers were not moving too frequently between cities).

2.6 Security of Assignments

The process for maintaining the security of assignments was similar to the process for the security of the exams.

2.7 Comments on Candidates' Examination Performance

General observations on candidates' performance in each subject are as follows. These observations include my own comments.

Course 1 – Investments

Based on the adjusted raw marks, the students on average scored 41% of the marks available on the exam. The pass rate this semester is higher than last semester (approximately 40% vs 30%). The exam was about the same level of difficulty as that of last semester.

Analysing the results overall into the three levels of difficulty, of Knowledge and Understanding (KU), Straightforward Judgement (SJ) and Complex Judgement (CJ) we find that for the average student:

- They scored 79% of the available marks on the KU parts of the exam
- They scored 45% of the available marks on the SJ parts of the exam
- They scored 18% of the available marks on the CJ parts of the exam.

Clearly their performance overall was much weaker on the parts of the exam requiring the exercise of judgement and was reasonably strong on the parts of the exam requiring only knowledge of bookwork.

Course 2A - Life Insurance

Overall the exam paper acted as a reasonable discriminator, with raw marks (including the assignment) ranging from 56 to 134 out of 200. Overall student performance was slightly better than in past semesters.

Markers consistently noted that candidates failed to read the questions properly, and to make sure that they answered all parts of the question, and commented that candidates were reluctant to state their opinions, even when specifically asked for them.

Course 2B - Life Insurance

The overall performance in the exam was considered fairly average overall. The examiners believed that the exam was both fair and reasonable, and in particular easier than that set for Semester One, which was noted to have been reasonably difficult.

As a general comment, many students either did not seem to have properly read the question, did not relate their answers back to the specific situations or products used in the questions (relying on simply copying out lists of generic steps), or covered very few different points in their answers (i.e. explaining in detail a couple of points rather than describing several different points where this was required).

Course 3A - General Insurance

In setting the paper, the intention was to have a consistent level of difficulty with previous papers, although the mix of knowledge and understanding, simple judgement and complex judgement suggested a slightly more difficult exam than the previous semester. However, the exam has proven more difficult than expected for candidates, with this showing clearly in the results.

There is more detail in the question by question analysis in the Chief Examiner's Report, however some knowledge areas where there has been some relatively consistent messages from this exam as follows:

- Candidates are not going beyond “stock” answers, ignoring information given in the question in favour of list-style responses and standard approaches without considering the appropriateness in the circumstances. It is difficult to conclude whether the candidates do not have the skills to apply their knowledge, or it is an exam technique issue.
- Candidates do not necessarily respond to all points raised in a given question, even where the question specifically asks them to consider a certain aspect.

Course 3B - General Insurance

The impression that the examiners had after setting the paper was that it was not a particularly difficult paper, in the sense that it did not contain one or more questions that required students to apply core concepts in extraordinary new areas. However, we felt that on balance it was a reasonably long paper that would provide a good broad test of students' knowledge and understanding and ability to apply this, and their judgement, to some practical situations.

The scores assigned by the markers were slightly lower than what might normally be assigned when marking exams for this course; this was (at least in part) due to quite detailed marking guides being provided. Markers adjusted their cut-offs accordingly. The examiners reviewed these scales and were satisfied with the thresholds assigned and the spread of marks.

Markers gave similar feedback to that received for subject 3A

Course 4B - Superannuation and Planned Savings

Overall, 7 out of 16 candidates passed, being a pass rate of 44%. Of the 9 candidates who did not pass i.e. the remaining 56% of candidates – 4 received an overall D grade and the other 5 received a grading of C overall.

Course 5B - Investment Management and Finance

As is par for the course, this year's exam proved to be reasonably difficult for the majority of candidates. The pass rate of 34% (15 from 44 candidates), is not dissimilar to past examinations and is marginally higher than last semester's pass rate of 27%. While some concerns could be expressed regarding the overall performance, an analysis of the results highlights a core group of 15 candidates that performed capably across a range of targeted areas of study and were clear passes.

The results should also be considered in light of the fact that the exam was challenging in terms of its breadth and the level of detailed knowledge required in each of the areas. Candidates were, as expected, presented with some difficult challenges, especially in light of the time constraints involved.

Course 10 – Commercial Actuarial Practice

The Commercial Actuarial Practice (CAP) Course was conducted for the fifth time in Semester Two 2007. The overall assessment was focused on the practical application of judgement and on the communication skills of the students, rather than on bookwork.

There were two separate pieces of assessment. The first assessment was based on participation in a one-week residential course and on completion of a case study in one of the traditional areas of actuarial practice on the last day of the residential course. The second assessment was a 2-hour examination on non-traditional areas of actuarial practice. Students were required to pass each of these assessments in order to pass the Module.

An overall pass rate of 67% (47 candidates out of 70) was achieved including a pass rate for the case study of 75% (47 candidates out of 63) and a pass rate for the exam of 86% (49 candidates out of 57). The overall course completion rate of 67% represents an increase from the pass rate of 57% achieved in Semester 1 2007.

3. Results

3.1 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.

3.2 Candidates' Results

Candidates' results in each subject and at each level are set out in the attachments to each Chief Examiner's report. In summary the results are:

Table 7: Recommended Candidate Passes by Part III Course

	Subject	2002	2003	2004	2005(1)	2005(2)	2006(1)	2006(2)	2007 (1)	2007 (2)
1	Investments ¹	29	44	39	45	38	45	46	56	69
2A	Life Insurance	33	31	21	14	19	17	14	18	21
2B	Life Insurance	33	31	21	11	8	8	13	8	14
3A	General Insurance	26	33	23	19	28	28	25	24	17
3B	General Insurance	26	33	23	9	11	24	16	23	21
4A	Superannuation & P.S.	8	6	6	8	2	6	3	7	n/a
4B	Superannuation & P.S.	8	6	6	4	6	n/a	4	-	7
5A	Invest. Mngmt & Finance ²	29	44	39	7	5	7	8	6	n/a
5B	Invest. Mngmt & Finance ³	21	31	22	4	5	6	4	-	15
10	Comm. Actuarial Practice	-	-	-	-	18	14 ⁵	30	35 ⁶	47 ⁷
	Total (pre 2005)⁴	117	145	111	n/a	n/a	n/a	n/a	n/a	n/a
	Total (post 2005)	213	259	200	121	140	156	163	177	211

1 The 2004 Investment Paper 1 is broadly equivalent to the 2005 Investment Course.

2 The 2004 Investment Paper 2 is broadly equivalent to the 2005 Finance Course 5A.

3 The 2004 Finance Courses 5A and 5B are broadly equivalent to the 2005 Finance Course 5B.

4 Pre 2005, only complete (A+B) passes were awarded, so the Total only includes one pass per complete Course.

5 CAP had 30 overall passes. out of 47 candidates presenting. It had 28 passes out of 44 candidates presenting for the case study and 38 passes out of 43 presenting for the exam.

6 61 candidates, 35 passes in the course (including case study and/or exam)

7 70 candidates, 47 passes in the course (including case study and/or exam)

Table 8: Recommended Pass Rates by Part III Course

	Subject	2002	2003	2004 ⁴	2005(1)	2005(2)	2006(1)	2006(2)	2007 (1)	2007 (2)
1	Investments ¹	36%	40%	30%	24%	29%	28%	31%	33%	42%
2A	Life Insurance	38%	28%	22%	23%	31%	32%	28%	34%	39%
2B	Life Insurance	38%	28%	26%	50%	29%	32%	41%	22%	33%
3A	General Insurance	36%	37%	33%	28%	35%	42%	38%	38%	21%
3B	General Insurance	36%	37%	25%	50%	32%	50%	39%	48%	48%
4A	Superannuation & P. S.	31%	23%	24%	42%	18%	50%	38%	47%	n/a
4B	Superannuation & P. S.	31%	23%	28%	80%	60%	n/a	57%	-	44%
5A	Invest. Mngmt & Finance ²	36%	40%	29%	35%	26%	50%	44%	35%	n/a
5B	Invest. Mngmt & Finance ³	31%	42%	52%	40%	31%	43%	27%	-	34%
10	CAP – Case Study	-	-	-	-	68%	73%	64%	66%	75%
10	CAP – Exam					82%	78%	77%	76%	86%
	Total	35%	35%	29%	30%	34%	37%	38%	38%⁵	41%⁶

1 The 2004 Investment Paper 1 is broadly equivalent to the 2005 Investment Course.

2 The 2004 Investment Paper 2 is broadly equivalent to the 2005 Finance Course 5A.

3 The 2004 Finance Courses 5A and 5B are broadly equivalent to the 2005 Finance Course 5B.

4 The 2004 Results have been adjusted to include the passes awarded separately for Paper 1 and Paper 2.

5 Based on CAP results of 61 candidates, 35 passes in the course (including case study and or exam) = 57%

6 Based on CAP results of 70 candidates, 47 passes in the course (including case study and or exam) = 67%

The Chief Examiners aim to produce a consistent standard of passing candidates, rather than a consistent pass rate from year to year. This semester, the recommended overall pass rate of 41% is slightly above the range achieved in recent years of 29% - 38%. The overall pass rate is in line with last semester with the latest results as a whole boosted once again by the strong results in Course 10 CAP of 75% for the Case Study and 86% for the Exam. However, excluding the CAP results the overall pass rate would have still been 37%.

The pass rate for Course 10, Commercial Actuarial Practice (CAP), of 67% overall and 75% for the Case Study and 86% for the exam was significantly higher than the average pass rate for Modules 1-3 of 37%. We believe that this is due to the following factors:

- CAP is a fundamentally different subject to those in Modules 1-3. It is undertaken as a one-week taught residential course, rather than as distance education, and has two assessment pieces, that is, the case study and the exam.
- CAP is undertaken by more experienced candidates that are generally closer to final qualification. These candidates would be expected to achieve a higher pass rate than the average rate across all candidates.
- The actual pass rate achieved of 67% is close to that expected at the outset of the course.
- Each assessment piece was double marked and then reviewed by the CAP Chief Examiner. To ensure consistency across the different subjects, one of the markers marked all case studies and all exams.
- CAP will be compulsory to all Part III students once transition ends. Any fundamental differences between CAP and Modules 1-3 will impact equally on all students.

The Board agreed that the standard applied to marking the exams for all subjects was ultimately the same as in previous years.

Further detail on the deliberations of each Chief Examiner is contained in their individual reports. I am satisfied that the processes adopted in the marking of papers and grading of exam papers have been fair and robust. The single marking of assignments may have led to some discrepancies among candidates, though due to the relatively few candidates whose results were changed by their assignment result (partly as a result of the reduced weighting given to assessments), this would not have had a big impact overall. Every effort has been made to ensure consistency between years and between subjects.

3.4 Pass Rates by Centre

The pass rates by exam centre were as follows:

Table 9: Comparison of Pass Rates by Centre

	2003	2004	2005(1)	2005(2)	2006(1)	2006(2)	2007 (1)	2007 (2)
Sydney	40%	28%	33%	43%	36%	42%	40%	45%
Melbourne	32%	38%	33%	30%	38%	37%	50%	44%
Other*	30%	15%	21%	19%	39%	25%	34%	29%
Total	35%	26%	30%	34%	37%	38%	38%¹	41%

* Other Australian and overseas exam centres

1. Number incorporates only 49 CAP students sitting the exam out of a total of 61 candidates
2. Number incorporates only 57 CAP students sitting the exam out of a total of 70 candidates

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 non-Sydney/Melbourne examination centres is much lower than the overall pass rate for the Sydney/Melbourne examination centres (29% compared with 45%).
- The pass rate in Sydney, the largest centre with 66% of all candidates, was 45% this semester.
- In New Zealand only 3 candidates from 10 attempts passed (30%).
- There were 8 passes in the United Kingdom (the largest overseas centre) from 20 attempts (40%).
- The overall pass rate for overseas students was low at 28%. This is boosted by the London pass rate referred to above. Once this is taken out the pass rate is 25%.

3.5 Pass Marks and Scaling

The scaled pass marks for 2004 and prior, out of 400 marks, have been as follows, together with the scaled pass marks for 2005 Semesters one and onward, out of 200 marks:

Table 10: Scaled Pass Marks by Part III Course

	Subject	2003	2004	2005(1) ⁴	2005(2) ⁴	2006(1) ⁴	2006(2) ⁴	2007(1)	2007 (2)
1	Investments ¹	216	220	103	114	103	120	121	90 ⁶
2A	Life Insurance	231	224	121	115	114	122	115	123
2B	Life Insurance	231	224	123.5	110	119	124	111	110
3A	General Insurance	230	225	117	109	116	113	111	113
3B	General Insurance	230	225	116	112	115	118	120	120
4A	Superannuation & P.S.	250	230	111	115	122	127	120	-
4B	Superannuation & P.S.	250	230	112	115	n/a	128	-	122
5A	Invest. Mngmt & Finance ²	216	220	120	107	120	102	100	-
5B	Invest. Mngmt & Finance ³	251	236	110	108	120	123	-	121
10	Comm. Actuarial Practice	-	-	-	50 - 50 ⁵	50 - 50 ⁵	50 - 50 ⁵	50-50 ⁵	50-50 ⁵

1 The 2004 Investment Paper 1 is broadly equivalent to the 2005 Investment Course.

2 The 2004 Investment Paper 2 is broadly equivalent to the 2005 Finance Course 5A.

3 The 2004 Finance Courses 5A and 5B are broadly equivalent to the 2005 Finance Course 5B.

4 The post 2004 exams are only one paper and are out of 200. Prior years consist of two papers out of 400.

5 For CAP, the case study and the exam each had a pass mark of 50%.

6 Grossed up from 45/100 for consistency with historic data



The relationship between scaled and raw marks for 2007 Semester Two was:

Table 11: Raw and Scaled Pass Marks by Part III Subject

	Subject	Raw	Scaled
1	Investments	90 ¹	90 ¹
2A	Life Insurance	110	123
2B	Life Insurance	100	110
3A	General Insurance	93	113
3B	General Insurance	100	120
4A	Superannuation & Planned Savings	n/a	n/a
4B	Superannuation & Planned Savings	122	122
5A	Investment Management and Finance	n/a	n/a
5B	Investment Management and Finance	107	121

1. Grossed up from 45/100 for consistency with historic data

Consistent pass criteria have been used for all subjects. The criteria are:

- the scaled mark
- a grade point average of around 2.5
- number of questions passed being “50% of questions + 1, rounded down” e.g. pass 4 from 6 questions; pass 4 from 7 questions or pass 3 from 5 questions.
- no more than 1D and no E grades.
- borderline candidates are to be assessed carefully, with the examiners re-marking their papers, as in previous years.
- assignments were included in the assessment process, being weighted at 15% of the overall assessment.

The range of scaled marks in Semester Two 2007 was 100-121 out of 200, a range of 21 marks. This compares to Semester One 2007 being 100-121 out of 200, a range of 21 marks.

It should be noted that, as discussed above, the scaled mark was not the sole factor used to determine whether a candidate passed or did not pass.

3.6 Andrew Prescott Memorial & Katherine Robertson Prizes

In December 1978, Council agreed to establish the Andrew Prescott Memorial Prize, in honour of the late Andrew Prescott, for meritorious performance in the Institute’s examinations. Prizes are awarded in two divisions:

- Prizes for the highest mark in the examination in each Part III subject provided a certain minimum standard is attained.
- A prize for outstanding performance over the whole examination process on completing the Fellowship.

Since 2001, the Katherine Robertson Prize has been awarded for General Insurance in lieu of the Andrew Prescott Memorial Prize. Katherine Robertson was an outstanding young actuary working in General Insurance who passed away in October 2000.

Subject Prizes

Prizes will be awarded only once in a calendar year following the Semester Two examinations based on the performance of candidates in both semesters. The minimum standard for a subject prize has been set at 120% of the pass mark for both subjects. In addition, the candidate must have achieved A grades in at least 50% of questions in both exams. Outstanding candidates from Semester One were considered in conjunction with the Semester Two candidates.

3.7 Fellows

As the Part III Examinations are in transition from the pre-2005 system to the new post-2005 system, there are two ways in which candidates can qualify as Fellows:

- (i) Under the pre-2005 system, candidates have to pass two courses (Modules 2 and 3 for two separate subjects).
- (ii) Under the post-2005 system, candidates have to pass Module 1 (Investments), one complete specialist subject (Module 2 and Module 3) and Module 4 (Commercial Actuarial Practice).

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

Category	2007 (2)	2007 (1)	2006 (2)	2006 (1)	2005 (2)	2005 (1)
Pre-2005 system	1	1	7	14	19	7
Post-2005 system	41	32	25	10	14	-
Total New Fellows	42	33	32	24	33	7

4. Recommendations for Semester One 2008

4.1 Board of Examiners

The recommended constitution for the Board of Examiners for Semester One 2008 is as follows:

Chair and Assistants

Chair	Ms Caroline Bayliss
Assistant Chair	Mr Wesley Caine
Assistant Chair	Ms Raewin Davies - TBC
Assistant Chair	Mr David Underwood
Assistant Chair	Ms Catherine Robertson-Hodder
Assistant Chair	TBC

Chief Examiners

Course 1: Investments	Tim Kyng
Course 2A: Life Insurance	TBC
Course 2B: Life Insurance	TBC
Course 3A: General Insurance	Mr Albert Napoli
Course 3B: General Insurance	Mr Brett Riley
Course 5A: Investment Management & Finance	TBC
Course 6A: GRIS	TBC
Course 10: Commercial Actuarial Practice	Colin Westman

A number of the Chief Examiner positions are yet to be confirmed for Semester One 2008.

4.2 Examination Dates

The dates for the examinations in Semester One 2008 are as follows:

Semester 1 2008

Module 1	Investments	Mon	28 April am
Module 4 (10)	Commercial Actuarial Practice	Mon	28 April pm
Modules 2/3 (2A/2B)	Life Insurance	Tues	29 April am and pm
Modules 2/3 (3A/3B)	General Insurance	Wed	30 April am and pm
Modules 2/3 (5A)	Investment Management & Finance	Thur	1 April am
Modules 2/3 (6A)	Global Retirement Income Systems	Thur	1 April pm

4.3 Exam Solutions

The Board of Examiners has agreed to release the Semester Two 2007 examination papers along with the examination specimen solutions and marking guides. It is recommended that the 2007 Semester Two examination papers and exam solutions and marking guides be released on 20 December 2007 or as close to this time as possible.

Caroline Bayliss
Chair, Board of Examiners
18 December 2007



C1: Investments Chief Examiners Report Semester 2, 2007

1. Summary

1.1. Candidate numbers

	Number of candidates
Originally enrolled	185
Withdrew prior to examination	12
Absent from examination	7
Presented at examination	166
Recommended Passes	69
Recommended Fails	97

1.2. Pass rates

The recommended passes correspond to a pass rate of 42% of candidates presented at the examination. This compares to the pass rates in recent sessions as follows:

Year	Semester 1	Semester 2
2007	33%	42%
2006	28%	31%
2005	24%	29%

1.3. Examination centres

Centre	Presented	Passed	Pass Rate
Auckland	3	2	66.7%
Brisbane	2	0	0.0%
Canberra	1	0	0.0%
China	1	0	0.0%
France	1	0	0.0%
Germany	1	1	100.0%
Hong Kong	4	0	0.0%
Japan	1	0	0.0%
London	4	4	100.0%
Malaysia	2	0	0.0%
Melbourne	27	11	40.7%
Singapore	9	1	11.1%
Sydney	109	50	45.9%
Wellington	1	0	0.0%
Other	0	0	0.0%
Total	166	69	41.6%
Australia	139	61	43.9%
Overseas	27	8	29.6%

2. Examination Administration

2.1 Examiners

Chief examiner: Tim Kyng
Assistant examiners: Natalie Lun, Shaun Gibbs

2.2 Course leader

Course leader: Andrew Leung

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3. Examination Papers and Assignments

3.1 Degree of difficulty and course coverage of examination

The following table shows the distribution of questions and marks by level of difficulty and course coverage:

Question	Units	Knowledge & Understanding	Straight-forward Judgement	Complex Judgement	Total Marks
1a	BM	1	1		2
1b	BM	1	2	1	4
1c	BM			2	2
1d	BM	2	2	2	6
1e	BM			2	2
1f	BM		2	2	4
2a	1	4	4		8
2b	1,2		2	2	4
2c	1,2		2	2	4
2d	1	1	2	1	4
3a	1	2	4		6
3b	1	2	3	3	8
3c	1	1	1	2	4
3d	1			2	2
4a	2		2	2	4
4b	2		2	4	6
4c	2	1	2	2	5
4d	2	2	1		3
4e	2		1	1	2
5a	2	3			3
5b	2		3	3	6
5c	2		1	2	3
5d	2	1	3	4	8
TOTAL		21	40	39	100

3.2 Question By Question Analysis

The breakdown of the questions in terms of the proportion of the marks attributed to the 3 levels of difficulty and a measure of the overall difficulty level of the questions is as per the next table

Question	1	2	3	4	5
% KU	20%	25%	25%	15%	20%
% SJ	35%	50%	40%	40%	35%
% CJ	45%	25%	35%	45%	45%

DIFFICULTY	1.35	1.125	1.225	1.375	1.35
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The overall difficulty of the question is an index computed by giving a score of 50% to the KU proportion, a score of 100% to the CJ proportion and a score of 200% to the SJ proportion of the marks for the question. Question 4 was the most difficult question according to our index of difficulty.

Students performance by question:

The average mark scored by students, by question was as follows:

Question	Q1	Q2	Q3	Q4	Q5	ALL
Ave mark	40%	40%	50%	34%	43%	41%
Coeff of Variation	43%	31%	38%	39%	32%	28%

Based on this data we see that Q3 was the easiest question and Q4 was the most difficult for the students. The other 3 questions were approximately equally difficult for the students to score marks on. Student's performance on the questions does not quite match the level of difficulty. Question 3 was rated by the chief examiner and course leader as more difficult than question 2 but students performance is indicating the opposite is true. The coefficient of variation (CV) is the ratio of the standard deviation to the average and is a measure of the discriminating power of the questions and of the exam overall. Questions 1 and 4 had the highest CV and overall the exam had a CV of 28% indicating reasonably good level of discrimination between good and poor candidates.

Next we analyse the results by what proportion of the available marks for the more difficult parts of the question were scored by students on the average, for each question.

	Q1	Q2	Q3	Q4	Q5	OVERALL
SJ	51%	35%	30%	55%	45%	43%
CJ	21%	14%	21%	14%	18%	18%
ALL	40%	40%	50%	34%	43%	41%

We see that for question 1, on the average the students scored 51% of the available marks for the SJ parts of the question but only 21% of the available marks for the CJ parts of the question.

4. Results

4.1 Pass recommendations

The recommended pass list is as follows:

72090	72142	72449	72187	72110	72001	72472	72351
72147	72372	72399	72212	72168	72477	72299	72407
72403	72119	72182	72478	72152	72460	72002	72384
72448	72254	72374	72441	72495	72050	72367	72444
72349	72278	72377	72440	72381	72344	72471	72339
72140	72191	72353	72118	72255	72170	72295	72386
72258	72133	72271	72137	72106	72058	72227	
72076	72365	72231	72438	72352	72073	72242	
72150	72136	72330	72030	72292	72276	72011	

4.2 Overall performance

Based on the adjusted raw marks, the students on the average scored 41% of the marks available on the exam. The pass rate this semester is higher than last semester (approximately 40% vs 30%). It is my opinion that the exam was about the same level of difficulty as that of last semester.

Analysing the results overall into the three levels of difficulty, of Knowledge and Understanding (KU), Straightforward Judgement (SJ) and Complex Judgement (CJ) we find that for the average student:

- They scored 79% of the available marks on the KU parts of the exam
- They scored 45% of the available marks on the SJ parts of the exam
- They scored 18% of the available marks on the CJ parts of the exam.

Clearly their performance overall was much weaker on the parts of the exam requiring the exercise of judgement and was reasonably strong on the parts of the exam requiring only knowledge of bookwork.

2A Life Insurance Chief Examiner's Report Semester Two 2007

1. Summary

1.1. Pass Rates

55 Candidates enrolled for the Semester 2 2007, Life Insurance 2A exam. Of these, 1 did not present at the exam. The assessment comprised one assignment worth 15% and an exam worth the remaining 85%.

It is proposed that 21 Candidates be awarded a pass, which implies a pass rate of 39%. This compares with a pass rate of 34% for the Semester 1, 2007 exam.

1.2. Candidate Numbers

The Candidate numbers can be summarised as follows:

Table 1 – Candidate Numbers

	Number of candidates
Originally enrolled	55
Withdrawn prior to exam	0
Absent from exam	1
Presented at exam	54
Passed	21
Failed	33

The analysis by examination centre is as follows:

Table 2 – Analysis by Examination Centre

Centre	Presented	Passed	Pass Rate
Sydney	34	16	47%
Melbourne	4	0	0%
Canberra	1	1	100%
Sub-Total Australia	39	17	44%
Auckland	2	1	50%
Wellington	1	0	0%
Fiji	1	0	0%
China	1	0	0%
Hong Kong	6	2	33%
Singapore	2	1	50%
Malaysia	2	0	0%
Sub-Total Other	15	4	27%
Total	54	21	39%

2. Examination Administration

2.1. Examiners

The examiners for this semester were:

Chief Examiner:	Rodney Scott
Assistant Examiner:	Ian Werner

To spread the work load (particularly in the critical period between exam marking and presentation of the Chief Examiner's report) and to ensure an orderly succession, it would be desirable for there to be two assistant examiners for this subject.

2.2. Course Leader

Course Leader (exam and assignment setting):	Owen Wormald
Course Leader (other duties):	Bruce Thomson

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 3 – Degree of Difficulty of Exam

Question	Units	Knowledge & Understanding	Straight-forward Judgement	Complex Judgement	Total Marks
1a	1	3		1	4
1b	1	3			3
1c	1		5		5
1d	1			3	3
1e	1			3	3
2a	2,3	4			4
2b	1,2,3		3	3	6
2c	1,2		3		3
2d	1,2,3			3	3
3a	1,2,3	2	2		4
3b	1,2,3		3		3
3c	2,3	2	2		4
3d i	2,3			3	3
3d ii	2,3			2	2
4a	1,2,4	2			2
4b	1,2,4		4		4
4c	3,4		2		2
4d	1,2,4			6	6
4e	2,3,4			4	4
5a	3,4	1			1
5b	1,4		2		2
5c	1,4	3			3
5d	3,4		2		2
5e	1,2,4		4		4
5f	3,4			5	5
6a	2,5		6		6
6b	2,5		4		4
6c	3,4,5		2	3	5
TOTAL		20	44	36	100

Table 4 – Course Coverage

Question	Units	Knowledge & Understanding	Straight-Forward Judgement	Complex Judgement	Total Marks
1	1	6	5	7	18
2	1,2,3	4	6	6	16
3	1,2,3	4	7	5	16
4	1,2,3,4	2	6	10	18
5	1,2,3,4	4	8	5	17
6	2,3,4,5	0	12	3	15
Total		20	44	36	100

Based on the table above, question 4 was the most difficult as it required the most complex judgement. The other 5 questions have a similar spread of KU, SJ and CJ marks (question 6 had less KU balanced by less CJ) and so should have been of similar difficulty. With the exception of question 3, this is reflected in the pass rates shown in the following table:

Table 5 – Pass Rates by Question

	Ass 1	Q1	Q2	Q3	Q4	Q5	Q6
Pass (before remarking)	64%	52%	67%	83%	7%	33%	35%
Pass (after remarking)	64%	54%	69%	83%	11%	33%	39%
Fail	36%	46%	31%	17%	89%	67%	61%

In respect of question 3 the markers noted that it was relatively easy to get high marks for this question, as there was a number of different ways to achieve marks. Consequently high marks didn't necessarily mean that the candidate had fully understood the question. In their opinion the high number of passes was not always indicative of a well answered question. As mentioned above the examiners increased the pass mark for this question to reflect this experience.

The markers for question 4 report that in their opinion “most candidates missed the concept of a new product development process”, which was a central part of the question. Consequently pass rates were very low. In the opinion of the examiners this question was marked in a manner that was quite tough, but still fair. We increased the marks of some of the borderline candidates for this question where we thought this was warranted.

For question 6, the markers had adjusted the marking scheme following suggested changes to the model solutions. However the revised marking scheme resulted in the maximum available marks for this question being less than those which should have been allocated. The number of candidates passing this question was increased by adjusting the marks awarded for this discrepancy.

3.2 Overall Performance

Overall the exam paper acted as a reasonable discriminator, with raw marks (including the assignment) ranging from 56 to 134 (excluding the candidate who did not present for the exam). Overall student performance was slightly better than that in past semesters.

The exam was set based on a different philosophy to that used in the recent past semesters. Previously the examiners had identified interesting, unusual or relevant situations that had arisen in their careers, and crafted questions around these events, within the bounds of the syllabus. For this semester the exam questions were set based solely on the syllabus. The aim was for a paper which was perhaps more mundane, but less likely to unintentionally cause trouble to candidates around the boundaries of the syllabus.

The examiners' impression of the paper was that it was not particularly difficult, with in many cases multiple ways to earn the available marks. On the other hand it was a reasonably long paper that should provide a good broad test of candidates' knowledge, understanding and judgement.

Markers cut-offs were slightly higher than in previous semesters, reflecting the number of ways to achieve the available marks. The examiners reviewed these scales, and with the exception of question 3 described elsewhere, were satisfied with the thresholds assigned.

Question 3 stood out as one in which candidates obtained particularly high marks. This was to some extent balanced by the generally low marks achieved in question 4.

There is more detail in the question by question analysis provided below. Nonetheless some consistent messages from the markers were as follows:

- Candidates are failing to read the questions carefully, and to make sure they are answering everything that is asked in them.
- Candidates are generally reluctant to state their opinions, even when this is specifically requested by the question.

3.6. Question by Question Analysis

QUESTION 1 (18 MARKS)

Course coverage:	Unit 1, Syllabus Aims 1, 2 & 3	
Mark allocation:	Knowledge and Understanding	6 marks
	Straightforward Judgement	5 marks
	Complex Judgement	7 marks

This question tested candidates' understanding of what was required to set up a life office, and the relative benefits of establishing your own company vis-à-vis selling policies rebadged from another office.

Overall, the performance on this question was reasonable, with the many easy marks available negating the impact of some parts of the question being interpreted incorrectly. Of the candidates who sat the exam, 54% passed this question.

Part (a) – Many easy marks were available for this part of the question, so most students achieved some marks, with many achieving full marks. Most students achieved marks for mentioning the capital requirements and the need to apply to APRA to register a life insurance company. Students were more likely to have listed the information required under the Life Insurance regulations (eg company name,

board structure) than the documentation required (eg business plan). Most students received some marks for formatting, although some students missed this easy mark.

Part (b) – This part of the question was answered poorly, with most students not realising that the question required students to describe the various functions / departments in the operations of a life insurance company (e.g. distribution, policy issue, investment of assets, claims management etc) rather than the ongoing requirements to APRA that a life insurance company is required to perform (e.g. Statutory returns). Due to the actuarial focus of most students' answers, almost every student got the mark for reporting.

Part (c) – This part was generally well answered, particularly the section discussing disadvantages. Many students got marks for identifying the advantages that CFM will control product design and could cater to their own distribution channels. The disadvantages section had more marks available, and students did better in this section accordingly. Most students identified that CFM had a lack of expertise in life insurance, and many identified the points regarding capital requirements and the hefty initial setup costs as deterrents.

Part (d) – This part was poorly answered. Many students either did not fully grasp the question, or structured their answers badly, and did not address both parts of the question, while many repeated points from part (c). Most students were able to identify at least one impact on the product range, while many students did not identify any impacts on the distribution channels. Some students identified actual products and methods of distribution, while many students included lengthy discussions of one issue which did not lend well to the marking guide which required more issues to be identified to achieve full marks.

Part (e) – This part was reasonably well answered, with easy marks available if students included sensible reasons for their recommendation. The marking guide recommended that CFM use life insurance products from another company initially, while deferring the decision whether or not to set up its own life company to a later stage. However marks were also given to students who recommended that CFM use the life products of another company on a permanent basis, or set up their own company, provided reasonable justification was given. Some students did not give a recommendation, noting that additional work that should be performed before a recommendation could be given. As the question states that the actuary in question is a consultant engaged for guidance on this issue, and clearly asks for a recommendation, we feel that an actual recommendation was required, so this was not considered as a 'reasonable recommendation'. However, students were still awarded marks for appropriate reasons for this response.

Final grades for this question were:

• A	Strong Pass	6
• B	Pass	23
• C	Slightly Below Standard	17
• D	Weak	7
• E	Showed Little Knowledge	1

QUESTION 2 (16 MARKS)

Course coverage:	Unit 2 & 3, Syllabus Aims 2, 4, 5, 7, 8 & 9	
Mark allocation:	Knowledge and Understanding	4 marks
	Straightforward Judgement	6 marks
	Complex Judgement	6 marks

Candidates were expected for this question to put themselves in the shoes of an actuary for a medium-sized life office which was having problems with its disability income portfolio. To complicate matters most of the problems appear to arise on business sourced from a single distribution group, which also contributes a major share of the new disability income business.

This question was fairly straightforward and was answered reasonably well by a good number of candidates, especially the knowledge & understanding and simple judgement sections. Overall, 69% of the candidates who sat the exam passed this question.

Part (a) - 29 candidates scored 3 or more marks out of 4 in this part, as there were a good number of possible points to make. Breaking down the experience results by incidence and continuation, consistency with other investigations and effect of large claims were well covered by many candidates. The effect of possible changes in underwriting and claims management were mentioned often (not in the marking guide). Few candidates made some of the more subtle points, eg seasonal analysis or business segment analysis. "Extra" marks for sub-division of analysis by rating factors and distribution group were scored by many candidates (although the latter was a give away from the other question parts).

Part (b) - Most candidates scored the full 3 marks for possible options as there were 8 or more possibilities. Many candidates mentioned such things as experience-related commission and termination of the agency agreement, which showed a degree of good thinking. The issues limiting the options were less well answered, with many answers not explaining clearly what the limitations were.

Part (c) - This part was answered relatively poorly, with many candidates scoring 1.5 or less out of the 3 available marks. Compliance, legal and regulatory risk issues were often mentioned, however lapse problems were only hinted and not covered adequately.

Part (d) - This part proved to be the most difficult one. Few candidates showed an appreciation that reinsurers need to make profits, but a good number mentioned the reinsurers need to take experience into account. Many candidates simply accepted that it was a good suggestion and mentioned possible reinsurance methods that could be used.

Final grades for this question were:

• A	Strong Pass	15
• B	Pass	22
• C	Slightly Below Standard	12
• D	Weak	5
• E	Showed Little Knowledge	0



QUESTION 3 (16 MARKS)

Course coverage:	Unit 2 & 3, Syllabus Aims 1, 2, 4, 5, 6, 7, 8 & 9	
Mark allocation:	Knowledge and Understanding	4 marks
	Straightforward Judgement	7 marks
	Complex Judgement	5 marks

This question concerned a company writing lifetime annuity business on both healthy and impaired lives. It required candidates to analyse the experience results, understand the basic financial characteristics of lifetime annuities and consider the implications of these results and characteristics for the company.

The results for this question were quite unusual. Overall, it was quite easy to get full marks for the different parts of the question since there were so many points making up the total marks and a number of different ways to achieve full marks. But it was obvious that getting full marks for a part of a question didn't necessarily mean that the candidate's answer was a good complete answer and the candidate fully understood the question. As a result most students got strong passes, but this didn't necessarily mean that the overall standard of answers was strong.

As mentioned above the examiners increased the cut-off marks for a pass by 1.5 marks and for a strong pass by 1.0 marks in recognition of the ease with which marks could be obtained. Of the candidates who sat the exam, 83% passed this question.

That being said, there was a lack of general business acumen from a lot of candidates, for example:

- Some mentioned "stop selling business" (or suggested it in different terms) as a risk mitigation strategy;
- "Repricing" under part (d) was applied in some cases to existing policies... and this is single premium business; and
- Some candidates just kept mentioning reinsurance like it was the solution when you had a poorly performing block of business - without realizing that it would make the profitability of the block even worse by the time the reinsurer added in their margins etc.

As a further point, many candidates simply did not answer all parts of the question. Parts (a), (c) and (d) all asked two questions and many students did not answer both parts and consequently forfeited marks.

Part (a) - Many candidates discussed the A/E ratios and commented extensively on these, without simply saying that the product was profitable or unprofitable. Quite a few candidates did not answer the second part of the question ("Outline possible explanations ...").

Part (b) - Many candidates discussed the full range of risks but the question specifically asked for issues raised by the mortality results. Marks were awarded for additional points not covered in the model solutions including mismatch risk due to the longer duration of the liabilities, concentration risk, increased expenses etc.

Part (c) - Very few comments were made on the competitive pricing of annuities and the need for a competitive investment return and also the capital requirements of annuities.

Part (d) - Many candidates simply did not answer all parts of this question eg did not consider the company as a whole but only considered the annuity portfolio - this resulted in the loss of 2 out of 5 marks. Another common mistake was not to mention the mitigation strategies for each of the risks (should have been easy marks). Most candidates did well however since there were many ways to get full marks in this part.

Final grades for this question were:

• A	Strong Pass	33
• B	Pass	12
• C	Slightly Below Standard	8
• D	Weak	1
• E	Showed Little Knowledge	0

QUESTION 4 (18 MARKS)

Course coverage:	Unit 2 & 4, Syllabus Aims 1, 2, 4, 5, 9, 10 & 12	
Mark allocation:	Knowledge and Understanding	2 marks
	Straightforward Judgement	6 marks
	Complex Judgement	10 marks

With more than half the marks available requiring complex judgement, this should have been the most difficult question of the exam. The results reflect this, with only 11% of the candidates sitting the exam passing this question.

This question required the candidate, as actuary for a medium-sized Australian life office, to respond to suggestions by the marketing manager for a term insurance product adapted to a particular market niche. The question sought to have the candidates consider the importance for a life office of having a new product development process by giving them a practical situation, rather than requiring a rote bookwork response. In this it failed as most candidates approached their answers from a narrow technical actuarial aspect, rather than considering the broader issues included in the course.

Parts (a) & (b) – As mentioned, most candidates took far too narrow a focus with their answers, and consequently lost marks. It was of some concern to the markers that so few candidates were able to consider the importance to a life office of having an identified product development process.

Part (c) – This was the most technical part of the question, asking candidates to adapt a benchmark premium rate for changes to the expected mortality and expenses. This was generally well done, but candidates lost marks for failing to adequately explain what they were doing and why.

Part (d) – Candidates were specifically asked to provide their assessment of the likely validity of each of the marketing manager's assertions. Many candidates shied away from this and tried to answer in more general terms, losing marks.

Part (e) – This section was poorly answered. Many candidates were able to identify reinsurance as an issue, but expressed a poor understanding of how it was an issue.

Most candidates were unable to identify the broader issues which should be considered in conjunction with such a proposal.

Final grades for this question were:

• A	Strong Pass	0
• B	Pass	6
• C	Slightly Below Standard	15
• D	Weak	20
• E	Showed Little Knowledge	12
• X	Did Not Attempt	1

QUESTION 5 (17 MARKS)

Course coverage:	Unit 4, Syllabus Aims 1, 2, 3, 4, 8, 13 & 14	
Mark allocation:	Knowledge and Understanding	4 marks
	Straightforward Judgement	8 marks
	Complex Judgement	5 marks

This question dealt with the yield on transfers for a short term unit linked product. It required candidates to understand the concept and meaning of a yield on transfers, and to be able to calculate one for a simple numerical example. It also required candidates to be able to predict what impact changes to the product's terms and conditions would have on the yield on transfers.

This was a straight forward question which, overall, was not particularly well answered. Few candidates scored well across all sections of the question. The average raw mark was about 7 out of 17, and 33% of the candidates were awarded a pass grade. The difference in average mark between the two markers was about 0.7 with a standard deviation of around 3, indicating the question had moderate discriminating power.

Part (a) – This section was very straightforward and most candidates got full marks.

Part (b) – A number of candidates were awarded marks for reasonable comments about hurdle rates.

Part (c) – Only a few candidates adjusted the interest to reflect the earnings on the additional capital that had been injected. Very few candidates attempted to calculate the revised IRR, but most recognised that it would be lower than the original. The markers amended the marking guide (but not the model solution) after it became apparent that the original guide produced anomalous results (eg full marks for answers that were clearly wrong). The revised marking approach more reasonably reflected the knowledge displayed by the candidates.

Part (d) – Very few candidates took the “weighted average” approach (as in the model solutions) to explaining the IRR change (ie extra capital gets a return equal to the investment assumption, while existing capital earns a return at the old IRR). Most candidates merely made general remarks about higher capital resulting in a lower return.

Part (e) – Many candidates didn't notice the question referred to a unit linked product, and made irrelevant comments about reinsurance, investment strategy, asset-liability



mismatches or resilience reserves. Many of the answers were excessively focused on fees and didn't consider other elements of product design or company management.

Part (f) - Credit was given for reasonable comments on alternative profitability measures (which weren't dealt with extensively in the model solution). However some candidates focused too much on these alternative measures (to the exclusion of yield on transfers).

Final grades for this question were:

• A	Strong Pass	3
• B	Pass	15
• C	Slightly Below Standard	17
• D	Weak	8
• E	Showed Little Knowledge	11

QUESTION 6 (15 MARKS)

Course coverage:	Unit 5, Syllabus Aims 4, 7, 8, 14, 15 & 16	
Mark allocation:	Knowledge and Understanding	0 marks
	Straightforward Judgement	12 marks
	Complex Judgement	3 marks

Candidates were required to consider the setting of bonus rates for traditional business and credited interest rates for investment account business. They were expected to be able to identify the issues to be addressed in declaring bonus or crediting rates, the risks associated with not reviewing surrender value bases, and the linkages required between the monitoring of experience and the management of bonus policy and surrender value setting.

This question proved difficult for many candidates. Marks (summed for the two markers, and therefore out of a possible 30) ranged from 4.5 to 19, with a standard deviation of 3.5. This indicates the question was a reasonable discriminator between candidates. After adjustment for the marking discrepancy in part (a) (see below), 39% of the candidates who attempted the exam passed this question.

Part (a) – This section asked candidates to “describe the matters which should be addressed in drafting the policy on bonuses and crediting rates”. In setting the model solutions the examiners expected a broad approach to this question, covering the identification of the amounts available for distribution, the distribution methodologies available, any required relativities between products and bonus series, and key procedural timeframes and authorities. In practice many candidates answered both more generally and more narrowly, by describing the philosophic requirements of a bonus distribution methodology (equity, meeting expectations, preserving solvency, compliance etc). This was judged by the markers to be an adequate interpretation of the question, and so some adjustments were required to the marking scheme.

Unfortunately for one marker the adjustment resulted in the maximum marks available for this section reducing from 6 to 4.5. For the borderline candidates identified in Section 3.3, their marks for this section and marker were analysed, and if the impact was deemed material to their result, they were adjusted by a factor of 4/3. As the adjustment was typically less than 1 mark, it was deemed unnecessary to extend this to all candidates as it would be immaterial to their results.



Part (b) – More than half the candidates were able to identify the risks to solvency, equity and non-compliance, but a significantly smaller proportion were able to explain these adequately. Other risks were mentioned by only a very few candidates.

Part (c) – Most candidates made a reasonable attempt at identifying the relevant investigations, and at describing the management of bonus policy and review of surrender bases. Most candidates failed however to adequately identify the necessary linkages between these.

Final grades for this question were:

• A	Strong Pass	3
• B	Pass	18
• C	Slightly Below Standard	15
• D	Weak	15
• E	Showed Little Knowledge	3

4. Results

4.1. Pass List Recommendations

The recommended pass list is as follows:

Table 8 – Pass List

72014	72126	72229	72336	72394
72030	72148	72238	72358	72439
72041	72153	72241	72361	72443
72056	72224	72329	72373	72459
72102				

2B Life Insurance Chief Examiner's Report

Semester 2 2007

1. Summary

1.1. Pass Rates

Forty Six candidates enrolled for the Semester 2 2007, Life Insurance 2B exam. Of these, three did not present at the exam. In addition, one candidate attended but made no attempt to answer any questions and left the exam room at the appropriate time. The assessment comprised one assignment worth 15% and an exam worth the remaining 85%.

It is proposed that 14 Candidates be awarded a pass, which implies a pass rate of 33%. This compares with a pass rate of 22% for the 2007, Semester 1 exam.

1.2. Candidate Numbers

The Candidate numbers can be summarised as follows:

Table 1 – Candidate Numbers

	Number of candidates
Originally enrolled	46
Withdrawn prior to exam	3
Absent from exam	0
Presented at exam	43
Passed	14
Failed	29

The analysis by examination centre is as follows:

Table 2 – Analysis by Examination Centre

Centre	Presented	Passed	Pass Rate
Sydney	24	5	21%
Melbourne	7	6	86%
Brisbane	2	1	50%
Canberra	1	0	0%
Hong Kong	1	0	0%
Singapore	2	1	50%
Malaysia	1	0	0%
Korea	1	0	0%
United Kingdom	2	1	50%
New Zealand	2	0	0%
Total	43	14	33%

2. Examination Administration

2.1. Examiners

The examiners for this semester were:

Chief Examiner:	Mr Anthony Carey
Assistant Examiner:	Mr Wesley Chan
Assistant Examiner:	Mr Andrew Gill

Course Leader:	Mr Bruce Edwards
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From a continuity perspective, Mr Andrew Gill was the only new member of the examination team from last semester.

The Course Leader prepared advanced drafts of the exam and the Chief Examiner and Assistant Examiner's role in this process were principally to review the exam. The interaction between the Course Leader and Examiners continued to work well this 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 3 – Degree of Difficulty of Exam

Question	Units	Knowledge & Understanding	Straight-forward Judgement	Complex Judgement	Total Marks
1 (a)	1	3			3
1 (b)	1	6			6
1 (c)	1	4			4
1 (d)	1, 3			3	3
2 (a)	1	3			3
2 (b)	1		4		4
2 (c)	1, 4, 5			4	4
2 (d)	1		3		3
2 (e)	1, 4, 5			2	2
3 (a)	1	2			2
3 (b)	2		6		6
3 (c)	2			3	3
3 (d)	2, 6			6	6
4 (a)	3		7		7
4 (b)	3		6		6
4 (c)	3			5	5
5 (a)	4, 6		4		4
5 (b)	4, 6		5		5
5 (c)	4, 6			9	9
6 (a)	5	4			4
6 (b)	5		3		3
6 (c)	2, 6			4	4
6 (d)	6			4	4
TOTAL		22	38	40	100

Table 4 – Course Coverage

Question	Units	Knowledge & Understanding	Straight-Forward Judgement	Complex Judgement	Total Marks
1	1, 3	13	0	3	16
2	1, 4, 5	3	7	6	16
3	1,2, 6	2	6	9	17
4	3	0	13	5	18
5	4, 6	0	9	9	18
6	2, 5, 6	4	3	8	15
Total		22	38	40	100

Based on the table above, it is noted that Questions 4 and 5 had the heaviest emphasis towards SJ and CJ type marks, with no KU type marks. Question 1 had a high weighting towards KU type marks and, not surprisingly, candidates generally found this question relatively easy, with 71% of candidates passing this question. Students generally found Question 6 to be most challenging, with only 18% of candidates passing this question. All other questions resulted in a good spread of marks.

The overall degree of difficulty is well within the permissible range of +/-5, as against the target spread of 20/40/40.

Table 5 – Pass Rates

COURSE 2B	Ass1	Q1	Q2	Q3	Q4	Q5	Q6
Pass	93%	71%	39%	43%	39%	39%	18%
Fail	7%	29%	61%	57%	61%	61%	82%

3.2. Overall Performance

The overall performance in the exam was considered fairly average overall. The examiners believe that on balance the exam was both fair and reasonable, as displayed in the spread of marks for questions 2, 3, 4 and 5, and less difficult overall than the exam set for semester 1. Candidate responses were generally quite weak for question 6, which should not have been an overly difficult question.

As a general comment, many students either did not seem to have properly read the question, did not relate their answers back to the specific situations or products used in the questions (relying on simply copying out lists of generic steps), or covered very few different points in their answers (i.e. explaining in detail a couple of points rather than describing several different points where this was required).

3.3. Question by Question Analysis

Question 1 (16 Marks)

This preamble to the question presents a situation where a life insurer is being merged and their projection valuation systems combined. The questions test the candidates understanding of the valuation of MoS policy liabilities and in particular some of the steps that need to be undertaken to calculate a MoS policy liability under a projection approach.

Specifically, the candidate as manager of the valuation department is asked to:

- a) List three (3) important sources of information that you would want to study before commencing your work and explain briefly the information you would hope to obtain from each. (KU)
- b) What checks would you make to ensure the completeness and accuracy of the policy data and new CLAS system output for the calculations at 31 December 2007? (KU)
- c) Describe the main steps you would take to calculate the MoS policy liabilities for a related product group consisting of non-participating policies, using the projection method. (For this part (c) you do not need to consider the issues arising from the merger). (KU)
- d) What additional issues would you expect to arise in calculating the MoS policy liabilities at 31 December 2007 for a proposed related product group that consists of participating policies from each of the former companies, and how would you deal with these issues? (CJ)

The overall results for this question were as follows:

	Marks Required	% of Total Marks	Number of Candidates	Proportion of Candidates
Strong Pass	11.0	68.8%	7	16%
Pass	8.0	50.0%	24	55%
Slightly Below Standard	4.5	28.1%	11	25%
Weak	1.0	6.3%	0	0%
Showed Little Knowledge	0.1	0.3%	0	0%
Did Not Attempt	0.0	0.0%	<u>2</u>	5%
			<u>44</u>	
Maximum Mark	11.75			
Average Mark	8.4			
Standard Deviation	3.4			

Overall, this question, which mainly comprised of Knowledge and Understanding marks, was well answered with 71% of all candidates receiving a pass mark or above. Some general comments on the answers below:

Part (a)

This question was generally well answered. Most candidates knew the types of information required but few showed good knowledge where such data would be obtained (i.e. the source).

Additional 0.5 marks were awarded to each of the following points if they were well explained:

- Financial statements
- Valuation results
- Product documents / PDS
- APRA returns
- Reinsurance arrangement
- Par Bonus scheme
- Previous model inefficiencies

Part (b)

Most candidates were able to come up with a list of reasonable checks to be done. Interestingly, a few candidates mentioned involving third parties (consultants & auditors) in the checking. Whilst this is a valid practice in real life, this shows a lack of understanding of the types of checks required here by simply delegating the tasks to another person.

Additional 0.5 marks were awarded to each of the following points if they were well explained up to a maximum of 2 marks

- Analysis of profit for results produced by CLAS
- Check capital requirement for results produced by old and new models
- Check cash flow projections against budget
- Sensitivity analysis
- Break down of results by RPG and analyse
- Output results are consistent with input
- Ratio checks such as ratio of net premium over office premium
- Check data against other sources such as accounts

Part (c)

This question was generally well answered. Most candidates were able to reproduce the formulae involved but very few candidates picked up on the need to rerun on old assumptions. Also only a few managed to pick up the point that the PVFP needs to be recalculated.

Additional 0.5 marks were awarded to the following points:

- Project future cash flows using best estimate assumptions
- Correctly identify the formula for BEL
- Mentioned possible loss recognition
- Mention of adjusting the PL for IBNR and other claims reserves

Part (d)

Most candidates picked up on the PRE/equity issue but few mentioned other issues that could affect par business due to its participating nature such as the possibility of loss recognition or the use of different profit carriers.

Additional 0.5 marks were awarded to the following points if they were well explained

- Issues surrounding expense apportionment post merger
- Issues surrounding setting new projection assumptions post merger
- Issues surrounding different investment policies

Question 2 (16 Marks)

The preamble to this question puts the candidate in the position of a Life Insurance share analyst employed by a stock broking firm. A table for a particular life company (LLL) is shown presenting the present value of profit margins at 2005 under the 2005 basis, 2006 under the 2005 basis and 2006 under the 2006 basis. The values are presented separately for Lump Sum and Disability Income business.

Specifically, the candidate is asked to:

- a) Explain the meaning of “Related Product Group” and explain with reasons the Related Product Groups you would expect LLL to maintain. (KU)
- b) Identify the most likely causes of the reduction in the PVFPM for the Lump Sum Related Product Groups and give your reasons for your choices. (SJ)
- c) For each of the causes you have identified in Part (b) of this question, explain the consequences on the Margin on Services profit for the 2006 year and on the change in Appraisal Value for that year. (CJ)
- d) Identify the most likely causes of the increase in PVFPM for the Disability Income Related Product Group and give your reasons for your choices. (SJ)
- e) For each of the causes you have identified in Part (d) of this question, explain the consequences on the Margin on Services profit for the 2006 year and on the change in Appraisal Value for that year. (CJ)

The overall results for this question were as follows:

	Marks Required	% of Total Marks	Number of Candidates	Proportion of Candidates
Strong Pass	10.0	62.5%	5	11.4%
Pass	8.0	50.0%	12	27.3%
Slightly Below Standard	7.0	43.8%	8	18.2%
Weak	5.0	31.3%	14	31.8%
Serious Lack of Knowledge	0.1	0.3%	3	6.8%
Did Not Attempt	0.0	0.0%	<u>2</u>	4.5%
			<u>44</u>	
Maximum Mark	10.75			
Average Mark	6.9			
Standard Deviation	3.2			

This question was anticipated to be reasonably challenging for the candidates with a total of 12 judgment marks allocated. The candidates' responses to the questions were reasonable with 39% of candidates receiving a pass mark or above. The question also proved to be a reasonable discriminator with a standard deviation of 3.2.

Some General comments on the answers:

Part (a)

- Most candidates were able to provide a reasonable response to this bookwork question and were able to come up with a reasonable list of RPGs

Part (b)

- Many candidates were able to identify that the reduction to the PVFPM may be due to the runoff of existing business or new business loss.
- Disappointingly, almost no candidates suggested a shock lapse as a possible cause of the reduction in the PVFPM
- Candidates were penalised if they suggested that a change in assumptions was the cause of the change (since it was made clear in the question that the PVFPM was calculated on the same assumption basis for both years)

Part (c)

- The candidates' response for this question was dependent on the answers for (b). Hence, candidates that did well in (b) would have a better chance at doing well in (c)
- Generally the marks for this question were low, to a degree this is due to the poor responses to (b)

Part (d)

- Most candidates were able to identify a change in assumptions as the sole explanation for the change
- Furthermore, many candidates were able to suggest that there is a potential for loss reversal and likely change to best estimate assumptions

Part (e)

- This question was generally answered well by candidates
- Most candidates correctly identified that there would be a resultant increase in the VIF and VNB

Question 3 (17 Marks)

This question places the candidate in the position of the appointed actuary of SLL Ltd, a company with a well established portfolio of Group Life and TPD and group salary continuance insurances all of which are valued under MoS using the accumulation method.

SLL have recently been offered a new, relatively large, block of business which has some unusual benefit features, slower claims processing relative to the rest of SLL's portfolio and little information on which to form assumptions. Furthermore, the expected profit of this new business is calculated as being nil but could well fall in the range of plus or minus \$5million.

Specifically, the candidate, in the role of appointed actuary, is asked to:

- a) List the component parts of the policy liabilities for this product. (KU)
- b) The Capital Adequacy Requirements for SLL are set out in AS 3.04. Outline the steps in the calculation of the Capital Adequacy Requirement for the existing group risk business (excluding the proposed new contract), and explain which elements of this calculation are most likely to give rise to a material capital requirement, with reference to the components identified in Part (a) above. (SJ)
- c) How is your answer to Part (b) of this question altered after the new contract is included in the portfolio? Please give your reasons. (CJ)
- d) Draft the "Summary and Recommendations" section of your Section 116 report on the new contract (report to the directors of SLL under Section 116 of the Life Insurance Act), including your summary of the profitability and capital requirements for this contract, and any recommendations you would make to mitigate the risks of the new contract. (CJ)

The overall results for this question were as follows:

	Marks Required	% of Total Marks	Number of Candidates	Proportion of Candidates
Strong Pass	11.75	69.1%	3	7%
Pass	9.5	55.9%	16	36%
Slightly Below Standard	7.5	44.1%	8	18%
Weak	4.25	25.0%	11	25%
Serious Lack of Knowledge	0.1	0.3%	2	5%
Did Not Attempt	0.0	0.0%	<u>4</u>	9%
			<u>44</u>	
Maximum Mark	13.25			
Average Mark	7.8			
Standard Deviation	4.8			

This question tested the candidates' knowledge of Capital Adequacy and includes a significant component of judgment marks (18 in all).

The question was generally answered well with 43% of candidates achieving a pass or above. The question was also a good discriminator with a standard deviation of 4.8.

General comments on the answers:

Part (a)

- This was a straightforward question which candidates generally answered quite well

Part (b)

- Many candidates did not mention the Capital Adequacy margin (and in particular did not suggest using a low/medium margin).
- However, most candidates did mention the asset mismatch and the resilience reserve as well as the new business reserve (expected to be low or zero)
- A number of candidates did mention the effect of the CTV minimum., However, a number of candidates incorrectly suggested either that the CTV equals zero or that the CTV minimum would exceed the CAL

Part (c)

- This question was reasonably well answered and most candidates understood that the new scheme would increase the CapAd requirement by an increase in CapAd margins as well as an increase in IBNR (due to delays in claims reporting)

Part (d)

- Many candidates were able to suggest that the premium should be higher for the new scheme as well as suggesting reinsurance
- Few candidates however pointed out that lower return on capital would result nor that additional monitoring is required at the outset of the new scheme



- Additional marks were given for a mention of some profit sharing terms with regards to a reinsurance contract (i.e. limiting the downside, but not giving away all the profits)
- In general, the candidates presented a reasonable report with clear points made and a balanced approach used

Question 4 (18 Marks)

The candidate is placed in the position of an actuary for a funds management company named CFM, who manages a series of investment portfolios.

The company requires monthly forecasts to be made for the 2008 year. The candidate is given the Budget results (derived from the actuary's model) and the actual results for 2007 for a range of P&L and Balance Sheet items.

Specifically, the candidate is asked to:

- Begin the budgeting process by analysing the actual shareholder profit between investment income on the shareholders funds, the planned profit, and the experience profit and further analyse the experience profit between planners' fees, management expenses and the residual profit. (SJ)
- Suggest a likely cause for each of the three experience variance items from Part (a) and the effect of each on your 2008 budget. (SJ)
- Having then updated your model for 2008, you proceed to prepare a budget for 2008. On the business volumes expected by management your model indicates Other expenses of \$45.4 million. The chief accountant has also made an estimate of expenses for 2008 by estimating staff numbers, payrolls, and other expenses allowing for inflation increases in all cases. The result was total expenses of \$41.8 million. Explain the steps you would take to reconcile the two estimates of expenses for 2008. (CJ)

The overall results for this question were as follows:

	Marks Required	% of Total Marks	Number of Candidates	Proportion of Candidates
Strong Pass	12.0	66.7%	3	7%
Pass	9.0	50.0%	14	32%
Slightly Below Standard	7.0	38.9%	11	25%
Weak	5.0	27.8%	12	27%
Serious Lack of Knowledge	0.1	0.3%	2	5%
Did Not Attempt	0.0	0.0%	<u>2</u>	5%
			<u>44</u>	
Maximum Mark	15.25			
Average Mark	7.7			
Standard Deviation	4.1			

This question was reasonably answered by candidates with 39% of candidates getting a pass or above. With a standard deviation of 4.1, this question is a reasonable differentiator of candidates.

Some general comments on the questions below:

Part (a)

- Most candidates were able to make a reasonable attempt at the calculation of the various items. Many did not calculate the interest correctly nor did they reconcile to the total experience profit

Part (b)

- Again, most candidates made a reasonable attempt at this question. Most were able to give a sensible reason for the fee loss and expense variance

Part (c)

- Again, most candidates made a reasonable attempt at this question with candidates making most of the points from the solutions

Question 5 (18 Marks)

The candidate is placed in the position of a member of an acquisition team at an Australian Life Insurance company looking at a potential takeover target in Asia. The potential takeover company (“Target”) which sells mainly traditional, non-participating business with high initial commissions has prepared an Appraisal Value, the details of the calculation of this value are covered in the question in detail.

Specifically, the candidate is asked:

- a) What two major aspects of the AV calculation method (other than the selection of the risk discount rate) would you adjust in order to provide a more realistic valuation? Please provide your reasons. (SJ)
- b) Considering the assumptions used in the AV calculations, which assumptions would you expect to change to reflect the new ownership of AP Life? AP Life has no other operations in the country in which Target is located and is planning to continue selling the same products through the same agents. (SJ)
- c) The due diligence team has now completed its research on Target and has discovered new information not included in the AV. What is the effect of each of the following and how would you adjust the AV calculation to allow for them? (CJ)
 - (i) Target owns an office building which the AP Life property experts believe is worth considerably more than the market value included in the accounts and the AV calculation.

- (ii) Some new business has been written through a related company of Target and the acquisition costs for this business were absorbed by the related company and not passed through to Target. In future under the ownership of AP Life, Target will have to meet these acquisition costs itself.
- (iii) A major agent for Target, which produces 15% of its new business, has stated that it intends to place its business with another company.

The overall results for this question were as follows:

	Marks Required	% of Total Marks	Number of Candidates	Proportion of Candidates
Strong Pass	12.5	69.4%	1	2%
Pass	9.0	50.0%	16	36%
Slightly Below Standard	6.5	36.1%	13	30%
Weak	4.5	25.0%	8	18%
Serious Lack of Knowledge	0.1	0.3%	4	9%
Did Not Attempt	0.0	0.0%	<u>2</u>	5%
			<u>44</u>	
Maximum Mark	13.0			
Average Mark	7.4			
Standard Deviation	4.1			

This question was generally not very well answered by the candidates. It appears that not many candidates have good AV modelling experience, which is surprising given the day-to-day use of EV in life companies.

Also, an alarming number of candidates showed a weak understanding of cost of capital, and the timing cost of using different reserving bases. It was surprising that a large number of candidates thought that the use of a more conservative reserving basis for AV calculation was wrong but in fact this only introduces a timing cost.

The allowance for cost of capital on the other hand is a lot more significant and is the key element being tested in Part A of the question.

The standard deviation of 4.1 shows that this question was a good differentiator.

General Comments on the questions:

Part a)

- Most recognised the allowance for capital requirement but failed to articulate what cost of capital actually means – ie. only 1 student mentioned the difference between the RDR and earning rate.
- A large number of candidates thought that the reserving basis should be changed to Australian prudential standards – this is simply not the case. Target is required to calculate reserves which satisfy its local regulator, which is the SRB as mentioned in the question.

Part b)

- A lot of candidates made speculative comments in order to justify the change of assumptions, therefore missing out on the more obvious and valid points.
- A lot of candidates mentioned the right assumptions but sometimes with the wrong reasoning. In cases like these either no marks or half the marks were awarded.

Part c)

- A lot of candidates did not answer the question in full. The question asked for the impact, the reason as well as the method of adjustment. Most identified the impact but did not provide any reason or methods of adjustments.
- The answers generally showed a lack of AV modelling experience. This is quite obvious in Part iii as a number of candidates suggested changing the NB growth rate rather than stripping off the NB volumes of the specific agent.

Question 6 (15 Marks)

This question relates to the accounts of an Australian Life Insurance Company (Megabank Life) which is a wholly owned subsidiary of Megabank. The senior executive is concerned about potential variability under AIFRS reporting and the candidate, in the position of Enterprise Risk Manager, has been asked to review this issue. The candidate is provided with a table showing separately the AIFRS transition effects for Megabank Life's Life Insurance and Investment Contract business.

Specifically, the candidate is asked to:

- a) From your general knowledge of AIFRS, explain the most likely causes of each of the variations in the above table. (KU)
- b) In relation to the variations to the Life Insurance and Life Investment Contract Liabilities, explain how these changes might affect the variability of ML's reported profits in future. (SJ)
- c) Due to adverse experience during the year, the level of retained profits has been reduced to the point where ML only just meets its capital adequacy requirement. The Chief Executive Officer of ML proposes to remedy this by reinsuring a quota share of the existing term life business with a life reinsurance company and by reinsuring a quota share of the existing investment business with the funds management subsidiary of Megabank. As the Risk Manager for ML, what do you see as the advantages, disadvantages and any issues arising from these suggestions, and their impact on the capital position of ML? (CJ)
- d) In relation to the proposal to reinsure the existing term life business in Part (c) of this question, what perspectives do you think that each of the Appointed Actuary, auditor, and independent directors of ML would have on this proposal? (CJ)

The overall results for this question were as follows:

	Marks Required	% of Total Marks	Number of Candidates	Proportion of Candidates
Strong Pass	9.0	60.0%	1	2%
Pass	6.5	43.3%	7	16%
Slightly Below Standard	4.5	30.0%	20	45%
Weak	2.5	16.7%	11	25%
Serious Lack of Knowledge	0.1	0.3%	3	7%
Did Not Attempt	0.0	0.0%	<u>2</u>	5%
			<u>44</u>	
Maximum Mark	9.25			
Average Mark	4.7			
Standard Deviation	3.1			

Clearly, this question was the most poorly answered in the exam with only 16% of candidates achieving a pass or above. This may be due to candidates running out of time in the exam (assuming many did the exam questions in order).

Some general comments on the questions below:

Part (a)

- Most candidates correctly identified the impact of the change of discount rate (from earning rate to risk free) for life insurance contract liabilities and the impact of change in definition of deferred acquisition costs. There were some candidates who gave the wrong direction of change in liability given a direction of the change in discount rate.
- Many candidates mentioned discounting of deferred tax. While certainly a possible reason, it is unlikely that zero deferred tax is impacted by discounting or non-discounting, and thus no marks were awarded.
- No candidate identified the change in policy liabilities (not PM) and only two identified the impact on DAC resulting from change in policy liabilities.

Part (b)

- Generally this did not seem to be well answered. It seems that candidates confused variability of profit with variability of liability OR change in pattern of profit.
- A number of candidates discussed the variability of the insurance contract liability. It is possible to have a very variable liability but stable profit, if assets move similarly.
- Very few candidates mentioned difficulty of matching assets and liabilities.
- Interestingly enough, few candidates gave an overall conclusion

Part (c)

- This seemed more straightforward – most candidates stated that the reinsurance would reduce capital requirements, and listed sensible points in terms of advantages and disadvantages of reinsurance.
- None mentioned the need for a cost benefit study.
- A few candidates did mention that the funds management subsidiary might not be an approved reinsurer, but those few did not go further and say it would not be allowed. Most did not realize that the reinsurance would not be allowed, which is concerning.

Part (d)

- This question was not very well answered with many candidates answering based on stereotypes (e.g. directors are only interested in profit).
- Many candidates listed issues that they thought the actuary, auditor and directors would be concerned with, without clearly distinguishing between them. However, most put down some valid points for the above roles.

4. Results

4.1. Pass List Recommendations

The recommended pass list is as follows:

Table 8 – Pass List

72102	72313	72382	72243	72084
72167	72396	72235	72010	72343
72146	72402	72374	72120	

3A General Insurance Chief Examiner's Report Semester 2, 2007

1. Summary

1.1. Pass Rates

89 candidates enrolled for the 2007, Semester 2, 3A General Insurance exam. Of these, 7 did not present at 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 21%. This compares with a pass rate of 38% for the 2007, Semester 1 exam.

1.2. Candidate Numbers

The Candidate numbers can be summarised as follows:

Table 1 - Candidate Numbers

	Number of candidates
Originally enrolled	89
Withdrawn prior to exam	6
Absent from exam	1
Presented at exam	82
Passed	17
Failed	65

The analysis by examination centre is as follows:

Table 2 - Analysis by Examination Centre

Centre	Presented	Passes	Pass Rate
Brisbane	2	0	0%
Melbourne	6	1	17%
Perth	1	0	0%
Sydney	61	15	25%
Subtotal: Australia	70	16	23%
Auckland	1	0	0%
Hong Kong	2	1	50%
London	5	0	0%
Malaysia	1	0	0%
Singapore	1	0	0%
Wellington	1	0	0%
Japan	1	0	0%
Subtotal: International	12	1	8%
Total	82	17	21%

2. Examination Administration

2.1. Examiners

The examiners for this semester were:

Chief Examiner: Laurel Kong

Assistant Examiner: Albert Napoli

Assistant Examiner: David Gifford

2.2. Course Leader

The Course Leaders were Dave Finnis and David Heath.

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 3 – Degree of Difficulty of Exam

Question	Subpart	Unit	Aim	Marks	KU	SJ	CJ
1	a	4	8b	1	1		
	b	4	9a, 9d	1.5	1	0.5	
	c	4	8b	4		2	2
	d	4	9c	2.5	0.5	2	
	e	1	3a, 3c	4	1	3	
2	a	3,4	6d, 8g	4		2	2
	b	3,4	7b, 8g	2		1.5	0.5
	c	1	2c, 3d	3	3		
	d	1	1a, 1c	2	2		
	e	3	7c	7		1	6
3	a	3	7c	8		1.5	6.5
	b	3,4	7d, 8f	5		4	1
	c	4	8f	3		3	
4	a	2	4a	1		1	
	b	2	4a, 4c	6	2.5	2.5	1
	c	2	4d	4			4
	d	2	5b	3		3	
	e	2	4b, 4c	3			3
	f	2	4a, 4d	2		2	
5	a	1, 3	1a, 7d	2	2		
	b	4	8b	2		1	1
	c	3, 4	7d, 8b	2		1	1
	d	4	9b	12		6	6
6	a	1, 3	3b, 7a	4	1	2	1
	b	3	7b	2	2		
	c	3, 4	7b, 8b	4		2	2
	d	3, 4	7b, 8b	3		1	2
	e	1, 3	3b, 6e	3		1	2
Total				100	16	43	41

Table 4 – Course Coverage

Question	Units	Knowledge & Understanding	Straight-Forward Judgement	Complex Judgement	Total Marks
1	1, 4	3.5	7.5	2	13
2	1, 3, 4	5	4.5	8.5	18
3	3, 4	0	8.5	7.5	16
4	2	2.5	8.5	8	19
5	1, 3, 4	2	8	8	18
6	1, 3, 4	3	6	7	16
Total		16	43	41	100

Based on the table above, it can be seen that question 1 had relatively less complex judgement, while question 3 was entirely judgement based. While the latter is perhaps reflected in the pass rates, question 1 also had a low pass rate.

The pass rates by question were as follows (based on the number of candidates attempting the question):

Table 5 – Pass Rates

	Ass1	Q1	Q2	Q3	Q4	Q5	Q6
Pass	52%	22%	40%	15%	43%	17%	28%
Fail	48%	78%	60%	85%	57%	83%	73%
International pass %	67%	8%	25%	25%	25%	17%	8%

3.2. Overall Performance

In setting the paper, the intention was to have a consistent level of difficulty with previous papers, although the mix of knowledge and understanding, simple judgement and complex judgement suggested a slightly more difficult exam than the previous semester. However, the exam has proven more difficult than expected for candidates, with this showing clearly in the results.

Clearly, the pass rate is at the lowest end of historic pass rates. However, we feel that the adjustments to pass marks by question and raw pass mark overall have been appropriate to reflect any increased difficulty of the paper. Comments from markers do not suggest overall that the paper was particularly difficult, and the questions were considered fair.

The average raw exam mark this semester was 74, relative to 104 for May 2007, and 85, 100 and 86 for the November 2006, May 2006 and November 2005 examinations.

The average raw marks in each of the six exam questions ranged from 27% to 45% of the total marks available, lower in all cases than the May 2007 range (47% to 59%), and at the lower end of the November 2006 range (29% to 58%). This is also lower than the May 2006 exam (43% to 55%), but is closer to the November 2005 paper (26% to 57%).

No single question stood out as having particularly poor responses, with Questions 3 and 5 having pass rates in the teens, and Questions 1 and 6 in the twenties.

There is more detail in the question by question analysis below, however some knowledge areas where there has been some relatively consistent messages from this exam as follows:

- Candidates are not going beyond “stock” answers, ignoring information given in the question in favour of list-style responses and standard approaches without considering the appropriateness in the circumstances. It is difficult to conclude whether the candidates do not have the skills to apply their knowledge, or it is an exam technique issue.
- Candidates do not necessarily respond to all points raised in a given question, even where the question specifically asks them to consider a certain aspect.

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

3.3. Question by Question Analysis

QUESTION 1 (13 MARKS)

Course coverage: Units 1 & 4, Syllabus Aims 3, 8 & 9
Mark allocation: Knowledge and Understanding – 3.5 marks
Straightforward Judgement – 7.5 marks
Complex Judgement – 2 marks

This question primarily tested simple concepts with respect to the split of liabilities between past and future events, and how accident year and underwriting year bases dealt with this issue. There was also a section relating to a potential data recording problem.

Part a) Most students were able to distinguish between what an accident and underwriting year basis would include in terms of insurance liabilities.

Part b) Many candidates scored well on this question, which essentially required the use of accident and underwriting year results to derive outstanding claim and premium liabilities.

However, several candidates showed a clear misunderstanding of the interaction of unexpired risk/premium liabilities and outstanding claims, applying incorrect relativities between the two to derive the former. It is disappointing to note that a relatively simple concept can present a challenge to students.

Part c) asked students to comment on the relativity between outstanding claims and premium liabilities. This was generally not answered well, with students often being vague with respect to the central estimate comparison (ie stating an expected direction or difference), or calculating the relativity as premium liabilities over outstanding claims, which does not naturally lead to a consideration of mean term. Risk margin relativities were generally discussed reasonably. Suggested additional information was not well addressed, and generally presented as list points, without explanation of why it would be useful. However, it was pleasing that many students considered the nature of Marine in assessing what the relativities should be.

For part d) students applied a LAT test with two different scenarios of unearned premium. This was a fairly simple numeric question, and many candidates did well. Students did not always articulate what the LAT test was – the question did not ask for it,

but it is somewhat akin to stating a formula prior to application. Although generally answered well, a number of errors were evident, including adding DAC rather than subtracting from unearned premium and comparing unearned premium to the central estimate of premium liabilities not the provision.

Part e) related to a problem with recording of data that would impact triangulations. This section was not answered particularly well, with the reasoning behind responses not always made clear. Some students interpreted from the question that payments were correct –although this was not intended in the question. Based on our review of the marking, this did not appear to have an effect on marks or grades, and we consider it reasonable to have responded to either interpretation. The biggest issue with this question was the fact that few candidates tried to consider impacts on other areas of the business.

Although several sections were answered well, the two largest subparts (c and e) accounted for more than half the marks for the question. This has contributed to the poor pass rate. Students should not assume that being able to complete the simple calculation sections of a question will lead to an overall passing grade.

Final grades were distributed as follows:

1. Strong Pass (A) – 4 candidates
2. Pass (B) – 14 candidates
3. Slightly Below Standard (C) – 33 candidates
4. Weak (D) – 17 candidates
5. Showed Little Knowledge (E) – 13 candidate
6. Did Not Attempt (X) – 1 candidate

QUESTION 2 (18 MARKS)

Course coverage: Units 1,3 & 4, Syllabus Aims 1-3, 6-8

Mark allocation: Knowledge and Understanding – 5 marks
Straightforward Judgement – 4.5 marks
Complex Judgement – 8.5 marks

This question covered off on topics such as analysis of change in basis, reasonableness checks on recovery levels and allowances for latent claims with no historical data.

Part a) required candidates to construct a change in basis in relation to an outstanding claims valuation. Responses were generally poor, with a number of candidates not considering expected payments and only using actual payments. A number also did not separately consider the current accident year as requested and/or did not take the non reinsurance recoveries into account.

A number performed some calculations but did not really construct a “change of basis”.

Part b) required candidates to comment on the CFO’s view that payments being less than expected for an accident year implies that liabilities should reduce. Responses were fair with a number of candidates correctly identifying that payment experience is not the only consideration.

Part c) required candidates to comment on the appropriateness of outstanding non-reinsurance recoveries relative to gross outstanding claims (considering that non-reinsurance recoveries incorporate recoveries of ITCs). Responses were quite poor although several of the points in the model solutions were arguably quite obscure. For example only 4 out of 83 candidates identified that ITC recoveries are only available for post 30/6/2000 accidents.

Parts d) and e) related to potential claims arising from the use of a particular chemical in the manufacturing of black and white televisions prior to 1979 (a situation with some similarities with asbestos-related claims). Part d) required candidates to identify which classes of insurance would be expected to give rise to claims. Responses were good with most candidates correctly identifying workers' compensation and product and/or public liability insurance.

Part e) required candidates to outline the procedure necessary to determine a central estimate for such claims. Responses were quite good with the majority of candidates identifying that both claim numbers and average claim size needed to be considered. Regarding claim frequency, most candidates identified the need to determine exposure. Less were able to then describe how claim numbers would be determined. The majority identified the similarities with asbestos claims and mentioned the need to consider the latency period of the condition.

Few identified that different cohorts of claims, giving rise to different average claim sizes may arise. The majority identified the need to consider the types of benefit which may be paid.

Final grades were distributed as follows:

- i. Strong Pass (A) – 0 candidates
- ii. Pass (B) – 33 candidates
- iii. Slightly Below Standard (C) – 18 candidates
- iv. Weak (D) – 20 candidates
- v. Showed Little Knowledge (E) – 11 candidate
- vi. Did Not Attempt (X) – 0 candidates

QUESTION 3 (16 MARKS)

Course coverage: Units 3 & 4, Syllabus Aims 7 & 8

Mark allocation: Knowledge and Understanding – 0 marks

Straightforward Judgement – 8.5 marks

Complex Judgement – 7.5 marks

This question was substantially relating to selection of methods for liabilities when several methods have already been applied, as well as smaller sections on sensitivity testing and correlations.

Part a) was the largest part of the question and asked students to consider which methods they would adopt, asking them to consider relativities between the methods. It is of concern that many students simply recited the usual “formula response” in terms of case estimate methods for older years etc, with many not commenting on the relativities between methods at all (ie not considering the information in the question or otherwise tailoring the response) and those that did often doing no more than making the observation, without explaining what might cause the differential. Many students managed to write a great deal explaining the formula comment (with formula explanations around reliability of case estimates).

Part b) was reasonably answered, although there was a tendency to list points without linking them at all to the question or explaining why it would be appropriate. Some students were more obviously listing points, mentioning items such as recoveries and expenses, the former in particular being noted as negligible in the question. Some students suggested scenarios considering the insurance cycle or even changes to

legislation (while not clear, these appeared to be referring to possible future changes). These would not generally be in the scope of sensitivity analysis.

Students made reasonable attempts at part c) but comments were often limited to comparisons to public liability only (hence the short tail classes might not be compared) or responses were too vague (eg liability and workers compensation are both long tail and involve bodily injury).

Performance on this question was primarily influenced by the quality of responses on part a), which was the largest part of the question. It was disappointing to see students not tailoring their response to the question.

Final grades were distributed as follows:

- i. Strong Pass (A) – 1 candidates
- ii. Pass (B) – 11 candidates
- iii. Slightly Below Standard (C) – 24 candidates
- iv. Weak (D) – 35 candidates
- v. Showed Little Knowledge (E) – 10 candidate
- vi. Did Not Attempt (X) – 1 candidate

QUESTION 4 (19 MARKS)

Course coverage: Unit 2, Syllabus Aims 4 & 5
Mark allocation: Knowledge and Understanding – 2.5 marks
Straightforward Judgement – 8.5 marks
Complex Judgement – 8 marks

This question related to the possible introduction in Victoria of an accident compensation scheme covering those injured in accidents, other than in the workplace or in motor vehicle accidents (along the lines of the ACC in New Zealand).

Part a) required candidates to define an event under such insurance. Responses were reasonable with more than half of the candidates identifying that claims already covered by CTP and workers' compensation needed to be excluded.

Part b) required candidates to recommend the benefits to be provided and how they should be delivered. Responses were fair with a number of candidates **not** considering how benefits should be delivered despite being asked specifically to do so. Most candidates identified major benefit groups (medical/treatment and income). The better responses also considered impairment, death and legal benefits. Relatively few identified the need to consider existing Medicare coverage. Most candidates achieved at least 1 (out of 6) with better candidates achieving 3 or more.

Part c) required candidates to consider possible approaches to funding such a scheme and issues associated with the proposed approaches, with four reasonable options being proposed in the model solution. Responses were fair with the majority of candidates identifying an additional personal tax as being one option. Fewer candidates identified the other possibilities, and the issues associated with the various options were not well covered. A relatively small number of candidates identified consolidated revenue as being a funding option.

Parts d) required candidates to consider the reasons for and against self insurance under such a scheme and conclude whether self insurance should be allowed. Responses were relatively poor – a number of candidates simply listed generic arguments for and against self insurance, with no consideration of the specific situation. A disappointing number referred to a “company” self insuring and did not recognize that it would be an individual



self insuring – it appears that the points were copied from the notes. A number did not conclude that self insurance should or shouldn't be allowed.

Parts e) and f) required consideration of the introduction of a High Cost Claims Scheme in response to employer concerns that workers' compensation premiums include common law access. Part e) required candidates to comment on whether the proposed scheme was an appropriate response to the issues raised by the employer groups and the unions. Marks were relatively difficult to achieve – some candidates identified the issue of equity for claimants but most other points were identified by relatively few candidates.

Part f) required candidates to suggest approaches to respreading the cost of such a scheme across the underlying workers' compensation, CTP and new schemes. Again responses were poor with a relatively small number identifying premium and/or claims as being an appropriate basis. A reasonable proportion of candidates made little or no progress on this part.

Final grades were distributed as follows:

- i. Strong Pass (A) – 7 candidates
- ii. Pass (B) – 28 candidates
- iii. Slightly Below Standard (C) – 30 candidates
- iv. Weak (D) – 17 candidates
- v. Showed Little Knowledge (E) – 0 candidate
- vi. Did Not Attempt (X) – 0 candidates

QUESTION 5 (18 MARKS)

Course coverage: Units 1,3 & 4, Syllabus Aims 1 & 7-9
Mark allocation: Knowledge and Understanding – 2 marks
Straightforward Judgement – 8 marks
Complex Judgement – 8 marks

This question asked students to consider the effects of inflation and perform calculations to determine the premium liability for a householders portfolio.

Part a) required candidates to consider the appropriateness of using CPI to inflation adjust payments. Responses were generally fair. Most students scored on some of the points.

Part b) required candidates to comment on the trend in claim frequency. Responses were quite varied. About half of the candidates realized that the erosion of the deductible which has not changed over time was a key reason. Most candidates were able to find other potential reasons.

Part c) required candidates to comment on allowing for superimposed inflation. Responses were quite poor. Many students commented that there should be no allowance for superimposed inflation in a short tail class. Many candidates understanding of superimposed inflation was that it was only related to long tail classes arising out of court awards and the like rather than any increase in average claim cost in excess of a suitable measure of community inflation.

Part d) required candidates to calculate the premium liability for a householders portfolio from the information given. For a 12 mark question, answers were quite limited in terms of showing working. Many candidates made broad assumptions particularly with regard to estimating the effect of superimposed inflation and calculating an average claim size. In general, most candidates took the approach of applying an exposure x frequency x average claim size methodology however often it was poorly executed. Common mistakes included:

- not multiplying the exposure by half to represent only the unexpired component
- some candidates did not consider CPI or superimposed inflation
- incorrect calculation of an average claim size from the payments per claim information given.

Final grades were distributed as follows:

- i. Strong Pass (A) – 4 candidates
- ii. Pass (B) – 10 candidates
- iii. Slightly Below Standard (C) – 24 candidates
- iv. Weak (D) – 34 candidates
- v. Showed Little Knowledge (E) – 10 candidates
- vi. Did Not Attempt (X) – 0 candidates

QUESTION 6 (16 MARKS)

Course coverage: Units 1,3 & 4, Syllabus Aims 3 & 6-8

Mark allocation: Knowledge and Understanding – 3 marks
 Straightforward Judgement – 6 marks
 Complex Judgement – 7 marks

This question asked candidates to assess the impact of a manipulation of case estimates by a claims manager on the valuation process.

Part a) required candidates to identify what checks could have been performed to identify the case estimate issue and explain how the requirements of PS300 may have highlighted the problem. Responses were generally poor with many candidates unable to come up with more than one check.

Part b) required candidates to comment on whether case estimates were an appropriate basis on which to apportion the liabilities between states. Responses were fair with most candidates able to come with at least some appropriate comments for and against.

Part c) required candidates to comment on how the manipulation of case estimates would have affected the valuation. Responses were generally poor with only a few candidates commenting on the effect of each of the different valuation methods used. Most candidates simply commented more broadly without linking their answer to the valuation methods being used.

Part d) required candidates to comment on how the manipulation of case estimates would have affected the bonus of each state manager. Responses were generally poor with most candidates again giving broad answers without linking their answer to the information in the question. Many candidates did not consider the effect on other state managers and many were unable to appropriately consider the effect of subsequent valuations.

Part e) required candidates to assess whether risk margins should be changed in response to the manipulation. Responses were relatively poor with very little written in many cases.

Final grades were distributed as follows:

- i. Strong Pass (A) – 2 candidates
- ii. Pass (B) – 20 candidates
- iii. Slightly Below Standard (C) – 21 candidates
- iv. Weak (D) – 24 candidates
- v. Showed Little Knowledge (E) – 13 candidate
- vi. Did Not Attempt (X) – 2 candidates



4. Results

4.1. Pass List Recommendations

The recommended pass list is as follows.

Table 8 – Pass List

72008	72117	72258
72021	72144	72348
72032	72195	72380
72078	72202	72388
72098	72216	72467
72104	72221	

3B General Insurance Chief Examiner's Report Semester 2 2007

1. Summary

1.1. Pass Rates

45 candidates enrolled for the Semester Two 2007, Course 3B: General Insurance exam. Of these, one did not present at the exam. The assessment comprised one assignment worth 15% and an exam worth the remaining 85%.

It is proposed that 21 candidates be awarded a pass, which implies a pass rate of **48%** for those sitting the exam. This compares with the following pass rates for this subject for recent semesters:

Year	Semester One	Semester Two
2007	48%	48%
2006	50%	39%
2005	50%	32%

1.2. Candidate Numbers

The candidate numbers can be summarised as follows:

Table 1 – Candidate Numbers

	Number of candidates
Originally enrolled	45
Withdrawn prior to exam	0
Absent from exam	1
Presented at exam	44
Passed	21
Failed	23

The analysis by examination centre is as follows:

Table 2 – Analysis by Examination Centre

Centre	Presented	Passed	Pass Rate
Adelaide	1	0	0%
Melbourne	2	0	0%
Perth	1	0	0%
Sydney	33	19	58%
Subtotal: Australia	37	19	51%
Singapore	2	0	0%
London	4	1	25%
USA	1	1	100%
Subtotal: International	7	2	29%
Total	44	21	48%

2. Examination Administration

2.1. Examiners

The examiners for this semester were:

Chief Examiner: Brett Riley

Assistant Examiner: Adam Payne

2.2. Course Leader

Course leader (exam setting): David Heath

Course leader (other duties): Dave Finnis.

3. Examination Papers and Assignments

3.1. Degree of Difficulty and Course Coverage

The following table shows a summary of the course syllabus. The table shows a brief description of the course aims and units. The course unit(s) and aim(s) applicable to each question are shown in Tables 4 and 5.

Table 3 – Summary of Syllabus

Aim	Summary Description
10	Risk classification, forecasting techniques
11	Understand premium rating & philosophy of pricing
12	Apply pricing principles to practical situations
13	Evaluate and apply experience rating systems
14	Understand the impact of investment policy for general insurers
15	Understand the theory & philosophy of reinsurance, programme design & inwards reinsurance
16	Financial control of general insurers including profit, solvency, investments & financial planning
17	Solvency, risk based capital and Minimum Capital Requirement
18	Appraisal values of general insurers & portfolios
19	Understand key risks impacting financial condition of insurer, issues in preparing a FCR
20	Actuary's responsibilities under professional and prudential standards
Unit	
5	Premium Rating
6	Investments, Reinsurance & Risk Management
7	Financial Control, Appraisal and Financial Condition Reports
8	Professionalism

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

Table 4 – Degree of Difficulty of Exam

Question	Units	Syllabus Aims	Knowledge & Understanding	Straight-forward Judgement	Complex Judgement	Total Marks
1 (a)	6	15	1			1
1 (b)	6	15	1	1		2
1 (c)	6	15	2	1		3
1 (d)	6	15	2	2		4
1 (e)	6	15			6	6
1 (f)	6	15		2		2
2 (a)	5	11		2	2	4
2 (b)	5	11		2	2	4
2 (c)	5	11	1			1
2 (d)	8	20	2	2	3	7
3 (a)	6	14	2	1		3
3 (b)	5, 7	11, 16		2	2	4
3 (c) i	7	18		1	1	2
3 (c) ii	7	18		1	1	2
3 (c) iii	7	18		1	1	2
3 (c) iv	7	18		1	1	2
4 (a)	5	11, 12	2	2		4
4 (b)	5	11, 12	4			4
4 (c) i	5	11, 12	1	1	1	3
4 (c) ii	5	11, 12	1	1		2
4 (c) iii	5	11, 12		1	1	2
5 (a)	5	11	1			1
5 (b)	6	14		2	1	3
5 (c)	6	15		2	1	3
5 (d)	7	16, 19		2	2	4
5 (e)	5	13		2		2
5 (f)	7	16			3	3
6 (a)	7	17		1	2	3
6 (b) i	7	17		1		1
6 (b) ii	7	17		1	1	2
6 (b) iii	7	17	4	3	2	9
6 (c)	7	17		2		2
6 (d)	7	17			3	3
TOTAL			24	40	36	100

Table 5 – Course Coverage

Question	Units	Syllabus Aims	Knowledge & Understanding	Straight-Forward Judgement	Complex Judgement	Total Marks
1	6	15	6	6	6	18
2	5, 8	11, 20	3	6	7	16
3	5, 6, 7	11, 14, 16, 18	2	7	6	15
4	5	11, 12	8	5	2	15
5	5, 6, 7	11, 13, 14, 15, 16, 19	1	8	7	16
6	7	17	4	8	8	20
Total			24	40	36	100

Based on the table above, questions 1 and 4 have relatively more weight to Knowledge & Understanding so might have a lower degree of difficulty. By way of contrast, questions 2, 3, 5 and 6 have relatively more marks allocated to Judgement (both Straightforward and Complex) so might be considered to have a higher degree of difficulty.

The pass rates by question were as follows (based on the number of candidates attempting the question):

Table 7 – Pass Rates

	Ass 1	Q1	Q2	Q3	Q4	Q5	Q6
Pass	73%	45%	52%	41%	70%	27%	59%
Fail	27%	55%	48%	59%	30%	73%	41%

3.2. Overall Performance

Overall, the exam paper acted as a reasonable discriminator, with raw marks ranging from 72 to 133 out of 200 (excluding the candidate who did not present for the exam). This range was comparable (albeit slightly narrower) than the range for last semester (78 to 144 out of 200). The lower average raw marks compared to last semester (101 compared to 113 for last semester) were mostly due to the exam, not the assignment. Overall student performance was similar to that in prior semesters.

The impression that the examiners had after setting the paper was that it was not a particularly difficult paper, in the sense that it did not contain one or more questions that required students to apply core concepts in extraordinary new areas. However, we felt that on balance it was a reasonably long paper that would provide a good broad test of students' knowledge and understanding and ability to apply this, and their judgement, to some practical situations.

The scores assigned by the markers were slightly lower than what might normally be assigned when marking exams for this course; this was (at least in part) due to quite detailed marking guides being provided. Markers adjusted their cut-offs accordingly. The examiners reviewed these scales and were satisfied with the thresholds assigned and the spread of marks.

As noted previously, there were few candidates meeting 3 or 4 of the pass criteria. Most students either did well overall (i.e. high aggregate mark, at least 3 exam questions passed, acceptable GPA, no E grades, no more than one D grade) or did poorly overall. This contrasted to the last couple of semesters where the signals from the various pass criteria were mixed. The examiners reviewed the marking thoroughly to ensure this was not the result of some anomaly in the marking process.

The overall pass rate is comparable to recent semesters for this course.

Candidates found question 4 the easiest of the exam questions (70% pass rate) and question 5 the most difficult (27% pass rate). Despite this, no single question stood out as having particularly poor responses.

There is more detail in the question by question analysis below. Nonetheless, some consistent messages from the markers were as follows:

- Candidates are not going beyond “stock” answers. They often ignore information given in the question in favour of “lists” of responses and standard approaches, without adapting these for the situation or considering the appropriateness in the circumstances. It is difficult to conclude whether the candidates do not have the requisite skills to apply their knowledge, or if this is exam technique issue. We identified this comment in the (draft) Chief Examiner’s report for Course 3A: General Insurance this semester and reproduced this here, as it is equally applicable for 3B.
- Candidates do not necessarily respond to all points raised in a question, even where the question specifically asks them to consider these.

Specific common mistakes and weaknesses are discussed further in the question by question analysis below.

3.3. Question by Question Analysis

QUESTION 1 (18 MARKS)

Course coverage: Unit 6, Syllabus Aim 15
Mark allocation: Knowledge and Understanding – 6 marks
Straightforward Judgement – 6 marks
Complex Judgement – 6 marks

This question examined students’ understanding of standard reinsurance concepts such as rate on line, calculation of reinsurance recoveries from a two treaty programme and reinstatements. It also tested judgement around choosing or refining a programme in practice. As such this question mixed the relatively straightforward with the complex, and was answered reasonably well. Of those students that sat the exam 45% of candidates passed the question.

Part a) required candidates to calculate the rate on line for an excess of loss (XOL) treaty. This was very straightforward and nearly two thirds of candidates received full marks. The average mark was 0.7 out of 1.

Part b) asked students to calculate XOL recoveries. Again, this was a straightforward

question with about two thirds of candidates receiving at least half the marks. Most handled the quota share calculation okay but some struggled with applying the stability clause for the XOL treaty. Marks were typically lost from simple errors (e.g. using the wrong gross claim). The average mark was 1.3 out of 2.

Part c) required the calculation of reinstatement premiums for the XOL treaty. The calculation for the first large claim was generally well answered as it exceeded the layer. Large claim 2 proved more troublesome overall. The average mark for this part was 1.4 out of 3.

Part d) asked candidates to describe the calculation of MCR charges in the context of this question. Overall this was poorly answered; most students gave generic answers about risk margins but gave no thought to the context to the question. The average mark was 1.0 out of 4.

Part e) was the largest section of Question 1 and asked students to assess which of two similar proposed reinsurance programmes (same overall cover, different layering structures) they would expect to cost the reinsured less, overall. This was a challenging question. Most students realised that administration costs would be an issue but some students focused on this at the expense of mentioning others. Few stated that in theory the two approaches should cost the same. The average mark was 2.3 out of 6.

Part f) asked candidates to describe ways to reduce the cost of reinsurance programme by modifying reinstatements. Many students were able to get at least one of the points for this part. Students had a habit of mentioning points unrelated to the question. The average mark was 0.9 out of 2.

Final grades were distributed as follows:

Strong Pass (A) – 5 candidates

Pass (B) – 15 candidates

Slightly Below Standard (C) – 14 candidates

Weak (D) – 7 candidates

Showed Little Knowledge (E) – 3 candidates

Not Attempted (X) – 1 candidate.

QUESTION 2 (16 MARKS)

Course coverage: Units 5 & 8, Syllabus Aims 11 & 20

Mark allocation: Knowledge and Understanding – 3 marks

Straightforward Judgement – 6 marks

Complex Judgement – 7 marks

This question examined students' understanding of product design issues for a new insurance cover not (likely) encountered before. This proved to be a moderately difficult question, with a pass rate of 52%.

Part a) required candidates to suggest suitable policy conditions. This was generally well answered. Candidates typically lost marks for not listing enough relevant conditions. The average mark was 2.0 out of 4.

Part b) asked students to describe where they would find the main data to price this new product. This was poorly answered. Few candidates mentioned expenses. Most students considered data from similar extended warranty portfolios/industry data or from manufacturers, but few considered reverse engineering market premium rates. The average mark was 1.3 out of 4.

Part c) asked candidates what effect the data from (b) would have on choosing a suitable profit margin. This was a relatively easy mark that only the weakest candidates missed. The average mark was 0.9 out of 1.

Part d) required students to consider the professional issues associated with taking on this assignment. The marks for this part were generally low. Most identified the potential conflict as the main issue, also picking up some points relating to the Code of Conduct and PS 100. Weaker candidates wasted time listing the requirements of other standards without stating they were irrelevant to the new assignment. The average mark was 2.1 out of 7.

Final grades were distributed as follows:

Strong Pass (A) – 3 candidates

Pass (B) – 20 candidates

Slightly Below Standard (C) – 12 candidates

Weak (D) – 7 candidates

Showed Little Knowledge (E) – 2 candidates

Not Attempted (X) – 1 candidate.

QUESTION 3 (15 MARKS)

Course coverage: Units 5, 6 & 7, Syllabus Aims 11, 14, 16 & 18

Mark allocation: Knowledge and Understanding – 2 marks

Straightforward Judgement – 7 marks

Complex Judgement – 6 marks

This question required candidates to consider the investment strategy of a hypothetical long tail general insurer. Students also had to describe ways to assess the source of strong profits in recent years. Finally, a series of statements in the context of a possible acquisition required comment. This seemed a relatively straightforward question but was answered quite poorly overall. Of those students that sat the exam 41% passed the question.

Part a) asked candidates to assess the advantages and disadvantages of a proposed alternative investment strategy. This was relatively straightforward and most candidates listed the easiest points, if not more. The markers did note that answers were generally

not well expressed, with insufficient explanation or poor use of terminology. The average mark was 1.6 out of 3.

Part b) asked students how they might test the assertion that the excellent profits came from strong underwriting. This was more difficult, requiring some judgement. Many identified at least some of the key technical points (e.g. separating insurance and investment profits) but did not describe these well. Most points lost were for missing points rather than for any lack of understanding. The average mark was 2.2 out of 4.

Part c) (i) required candidates to assess a statement on diversification, post merger. This part of (c) was relatively well answered, although some students were confused about diversification and were unsure at what level this was being applied (i.e. intra or inter-portfolio). The average mark was 1.0 out of 2.

Part c) (ii) asked students to assess a statement on investment policy. This was relatively poorly answered. The average mark was 0.8 out of 2.

Part c) (iii) required candidates to review a statement on expense rates, again relating to the proposed merger. As for (i), this was better answered than (ii). The average mark was 1.1 out of 2.

Part c) (iv) asked students to assess a statement on profit margins. This was also relatively poorly answered. Many answers focused on systemic versus independent risk – a standard textbook response – and did not focus on the question asked. The average mark was 0.8 out of 2.

Final grades were distributed as follows:

Strong Pass (A) – 4 candidates

Pass (B) – 14 candidates

Slightly Below Standard (C) – 18 candidates

Weak (D) – 7 candidates

Showed Little Knowledge (E) – 1 candidate

Not Attempted (X) – 1 candidate.

QUESTION 4 (16 MARKS)

Course coverage: Unit 5, Syllabus Aims 11 & 12

Mark allocation: Knowledge and Understanding – 8 marks

Straightforward Judgement – 5 marks

Complex Judgement – 2 marks

This question examined students' understanding of rating factors in motor insurance and the potential impact on an insurer of introducing rating structures into a newly deregulated motor market. This was a relatively straightforward question which was generally well answered. Of those students that sat the exam 70% of candidates passed the question.

Part a) asked candidates to explain the opportunities and threats to an existing insurer of deregulating the motor insurance industry, allowing premium rating structures where previously there were none. This was answered reasonably well with most students identifying the risk of increased competition and the benefits of using rating structures to set premiums based on underlying risk factors. The average mark was 2.3 out of 4.

Part b) asked students to list the rating variables that they would reasonably adopt as part of the rating structure. This was a very straightforward question with 24 candidates receiving full marks. The average mark was 3.6 out of 4.

Part c)(i) asked for possible reasons why experience in certain locations would be performing better than expected while experience in other locations is worse than expected. Most students noted the possibility of an inappropriate rating structure, while many also noted the variation may be due to random claims experience. The average mark was 1.4 out of 3.

Part c) (ii) asked candidates what adjustments could be made in response to the experience noted in Part c) (i). Most students noted the potential to change the rating structure to reflect the experience. The average mark was 0.8 out of 2.

Part c) (iii) asked what were the risks associated with the adjustments recommended in Part c) (ii). Most students noted the possibility of selection against the insurer if the rating structure was inappropriate but struggled to identify other risks. The average mark was 0.8 out of 2.

Final grades were distributed as follows:

Strong Pass (A) – 6 candidates

Pass (B) – 25 candidates

Slightly Below Standard (C) – 13 candidates

Weak (D) – no candidates

Showed Little Knowledge (E) – no candidates

Not Attempted (X) – 1 candidate.

QUESTION 5 (16 MARKS)

Course coverage: Units 5, 6 & 7, Syllabus Aims 11, 13, 14, 15, 16 & 19

Mark allocation: Knowledge and Understanding – 1 mark

Straightforward Judgement – 8 marks

Complex Judgement – 7 marks

This question examined student's ability to apply their knowledge of general insurance concepts to a new product that they would not (likely) have seen before. Students were given details of a new long term crop insurance product and asked to comment on how a general insurer might manage various aspects of such a product. Students generally understood the basic concepts of the question, but often failed to relate their responses to the specifics of the situation (i.e. crop insurance) to gain the high marks on offer.

Part a) asked students how such a product might be distributed. Most students recognised the need to use brokers given the nature of the product. The average mark was 0.8 out of 1.

Part b) required candidates to discuss the issues that need to be considered in selecting the investment allocation to back such a product. Most candidates identified liquidity and matching as key elements of the investment policy, with better students also discussing the practical limitations in the Australian market of securing such long dated securities. A disappointing two thirds of students failed to recognise the need to avoid assets with a strong correlation to crop prices. The average was 1.3 out of 3 marks.

Part c) required candidates to discuss the issues that need to be considered in designing a reinsurance programme for such a product. Most candidates identified the need for some form of catastrophe reinsurance, with better candidates providing good discussion of other elements of the reinsurance programme and when these might be applicable. The need for catastrophe reinsurance was poorly understood by some, with a few candidates showing poor understanding by listing unsuitable reinsurance options and/or misstating the functions of different types of reinsurance. The average was 1.2 out of 3 marks.

Part d) required students to explain the consequences of premium volumes below expectations and what investigations they might carry out to understand the reasons for the lower premium. Candidates were also asked what disclosures would be necessary in the FCR. This part was answered quite well and there were easy marks to be obtained here. The average was 1.9 out of 4.

Part e) asked candidates to respond to a suggestion of using experience rating for this new product. Most students recognised that weather claims were beyond the control of farmers and/or the claim frequency was too low for experience rating to be appropriate. The average mark was 1.1 out of 2.

Part f) asked candidates to explain an increase in the loss ratio over the last five years. This part of the question was very poorly done, reflecting the complex judgement component. A high number of students failed to identify that the earning pattern adopted by the company was not suitable and did not reflect the exposure and only two students discussed the premium earning pattern in sufficient detail. Some misunderstanding of loss ratios was apparent, with some candidates (unnecessarily) defining loss ratios but then not clearly stating or understanding that past accident year loss ratios relate to incurred events and do not include future events. The average mark was 0.6 out of 3.

Final grades were distributed as follows:

Strong Pass (A) – 1 candidate

Pass (B) – 11 candidates

Slightly Below Standard (C) – 19 candidates

Weak (D) – 11 candidates

Showed Little Knowledge (E) – 2 candidates

Not Attempted (X) – 1 candidate.

QUESTION 6 (20 MARKS)

Course coverage: Unit 17, Syllabus Aim 7
Mark allocation: Knowledge and Understanding – 4 mark
Straightforward Judgement – 8 marks
Complex Judgement – 8 marks

This question examined student's understanding of risk based capital regimes and how it might be applied to a developing insurance market. This question was generally well answered, with an overall pass rate of 59%.

Part a) asked students to document the shortcomings of an existing prudential framework but noting why it might be suitable for a developing market. Most students focussed on the need to move to a risk based prudential framework but failed to discuss the advantages of the simplified system. The average mark was 1.6 out of 3.

Part b) (i) required candidates to comment on the existing liability valuation guidelines. This was relatively straightforward and reasonably well answered. The average was 0.8 out of 1 mark.

Part b) (ii) required candidates to discuss how actuaries might be involved in the valuation of insurance liabilities, noting the limitations of the small emerging market. This question may have been a bit misleading with most candidates describing the role of actuaries in insurance liability valuations rather than addressing how actuaries could be involved given the shortage of actuaries in the new market. Marks were rewarded for either interpretation of the question with the better students addressing both issues. The average was 0.8 out of 2 marks.

Part b) (iii) required students to draft an outline of a new prudential framework, taking into account the specifics of the developing country. Most students gave a simple discussion of the risk charge components in APRA standard GPS110 rather than also discussing the broader prudential regulation framework as it could be applied in this emerging market. The average was 4.6 out of 9.

Part c) asked candidates to respond to a concern that the draft regulatory framework was "too much change" in a short space of time. Most students identified the need to phase in the changes with possible concessions applying for a period of time. The average mark was 1.3 out of 2.

Part d) asked candidates to respond to a representation from foreign insurers operating in the developing country for exemption from the new capital requirements. This question required students to argue the pro's and con's of applying different capital requirements on foreign insurers, with most students arguing against different rules and few students providing any arguments in favour of the concessions for foreign insurers. The average mark was 1.6 out of 3.

Final grades were distributed as follows:

Strong Pass (A) – 8 candidates

Pass (B) – 18 candidates

Slightly Below Standard (C) – 11 candidates



Weak (D) – 6 candidates

Showed Little Knowledge (E) – 1 candidate

Not Attempted (X) – 1 candidate.

4. Results

4.1. Pass List Recommendations

The recommended pass list is as follows.

Table 10 – Pass List

72013	72145	72173	72328	72445
72020	72155	72273	72397	72450
72057	72160	72319	72407	72467
72063	72169	72322	72415	72497
72065				

4B Superannuation & Planned Savings Chief Examiner's Report Semester 2, 2007

1. Summary

1.1. Pass Rates

16 Candidates enrolled for the Semester 2 2007, Superannuation and Planned Savings exam. All candidates presented for the exam. The assessment comprised one assignment worth 15% and an exam worth the remaining 85%.

It is proposed that 7 Candidates be awarded a pass, which implies a pass rate of 44%. This compares with a pass rate of 57% for the 2006, Semester 2 4B exam.

1.2. Candidate Numbers

The Candidate numbers can be summarised as follows:

Table 1 – Candidate Numbers

	Number of candidates
Originally enrolled	16
Withdrawn prior to exam	0
Absent from exam	0
Presented at exam	16
Passed	7
Failed	9

The analysis by examination centre is as follows:

Table 2 – Analysis by Examination Centre

Centre	Presented	Passed	Pass Rate
Canberra	1	1	100%
Hong Kong	1	0	0%
London	1	0	0%
Melbourne	7	5	71%
Switzerland	1	0	0%
Sydney	5	1	20%
Total	16	7	44%

2. Examination Administration

2.1. Examiners

The examiners for this semester were:

Chief Examiner: Stuart Cheetham

Assistant Examiner: Jim Repanis

2.2. Course Leader

The course leader was Jeffrey Chee of Melbourne and Saffron Sweeney from Sydney was the tutor.

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 3 – Degree of Difficulty of Exam

Question	Knowledge & Understanding	Straight-forward Judgement	Complex Judgement	Total Marks
1a	4	5	-	9
1b	6	-	-	6
1c	-	-	4	4
1d	-	6	-	6
2a	5	-	-	5
2b	2	3	-	5
2c	-	-	5	5
2d	-	-	5	5
2e	-	-	5	5
3a		3	9	12
3b	5	3	-	8
3c	3	3	-	6
4a	1	1	-	2
4b	-	2	4	6
4c	-	3	3	6
4d	-	2	4	6
4e	-	-	4	4
TOTAL	26	31	43	100

Table 4 – Course Coverage

Question	Course topic	Knowledge & Understanding	Straight-Forward Judgement	Complex Judgement	Total Marks
1	Insurance quotes	10	11	4	25
2	Asset liability modelling	7	3	15	25
3	Fund Transfers	8	9	9	26
4	Superannuation Guarantee / Benefit Design	1	8	15	24
Total		26	31	43	100

Based on the table above, each question has a different spread of KU, SJ and CJ type marks. The order of least difficult to more difficult would be Question 1, Question 3, Question 2 and Question 4.

Table 5 – Pass Rates

	Ass 1	Q1	Q2	Q3	Q4
Pass	88%	75%	37%	63%	44%
Fail	12%	25%	63%	37%	56%

3.2. Overall Performance

Overall, 7 out of 16 candidates passed. This is a pass rate of 44%. Five received a grade of C and four received a grade of D.

Of the seven passes, five (out of 7) were located in Melbourne, one (out of 5) in Sydney and one (out of 1) in Canberra.

3.3. Question by Question Analysis

The number and percentage of candidates that passed each individual question is set out in the following table:

Question	Number of passes (Grade of A or B)	Percentage Pass Rate
Assignment	14	88%
Q1	12	75%
Q2	6	37%
Q3	10	63%
Q4	7	44%
OVERALL	7	44%

Set out below are edited marker comments on each individual question.

Question 1

- a) Some provided checklists of comparison points but did not relate them to the question context.
- b) Only a few completely separated White Collar DB and White Collar DC. Most did not lay out premiums in a table or clear manner although maths generally correct. By not laying out the 3 columns they went onto poor responses in C.

Some students multiplied by 75% when calculating the SCI premium, though the question said the premiums were based on salary.

- c) Focus was on \$5,000 being "cheaper" no one commented on relativities against a \$600K premium, only one said 'broadly similar'.

Most did not SCI comparison. This was not useful as the question stated that only one insurer could be appointed.

- d) No comments.

Question 2

- a) This question asked for 2 things, i.e. ALM purpose and process. Not all students answered the "process" and therefore lost considerable marks because of it. Others had difficulty in explaining the process in enough detail to demonstrate they understood it.

- b) No comments

- c) Many responses lacked enough detail.

- d) Generally badly answered although a couple of students did well (these were students that passed the question).

- e) Generally badly answered.

Question 3

- a) Students typically identified three different structures for providing superannuation benefits going forward and generally provided their response in report format. There was a fairly wide spread in terms of the explanation of each option and the discussion of the associated advantages and disadvantages. In particular, we think there was a degree of misunderstanding in terms of distinguishing the structure of the benefits (i.e. benefit design) from the administrative structure as a number of students focussed more on the features of the administration platform rather than the benefit design.

We think it is also worth noting that a number of students mentioned that

members could exercise investment choice under a guaranteed arrangement provided a notional default account was tracked. We doubt that this would ever occur in practice.

Finally, the recommendation didn't tend to be handled very well and some students overlooked this requirement entirely. Furthermore, industrial relations issues, which are likely to be significant in practice, tended to be overlooked or underestimated.

- b) The responses to this part were reasonable but again there appeared to be some confusion in distinguishing between benefit design and the administration platform.

We were surprised at how infrequently students mentioned policy committees and the benefit of relieving the company of the trustee burden

- c) Overall this part was handled well although only one student mentioned the issue of commissions. Given that commission was a separate category many students immediately missed out on half a mark for failing to mention this. However, a bit of scope was allowed in other areas as it did not seem inappropriate for requests to include details of administration issues related to defined benefits and payroll/clearing house arrangements.

Question 4

Many DB super funds need to be considering this issue due to the SG salary definition changes coming in from 1 July 2008.

Many candidates lost 1-2 marks in each part of the question. They were failing to provide the complex judgement part of the answer which meant they would fail the question overall.

Early parts of the answers were required to be able to answer the later parts. Some students missed marks in (d) when they didn't answer part (b) well.

Some students talked about methods that involved a DB MRB. The fund in the question had an accumulation MRB.

Part (c) was not answered well by some students who missed many of the key criteria. Also, some students did not provide explanations of the criteria, as required by the question.

It appeared that some students may not have managed their time well, with this question being the last question of the paper. Some answers provided were too short and incomplete.

4. Results

4.1. *Pass List Recommendations*

The recommended pass list is as follows.

Table 8 – Pass List

72197	72033	72165	72447	72305
72109	72037			

5B Investment Management and Finance Chief Examiner's Report –Semester 2, 2007

1. Summary

1.1. Pass Rates

48 Candidates enrolled for the Semester 2 2007, 5B Investment Management and Finance exam. Of these, 4 did not present at the exam. The assessment comprised one assignment worth 15% and an exam worth the remaining 85%.

It is proposed that 15 Candidates be awarded a pass, which implies a pass rate of 34%. This compares with a pass rate of 27% for the 2006, Semester 2 exam.

1.2. Candidate Numbers

The Candidate numbers can be summarised as follows:

Table 1 – Candidate Numbers

	Number of candidates
Originally enrolled	48
Withdrawn prior to exam	1
Absent from exam	3
Presented at exam	44
Passed	15
Failed	29

The analysis by examination centre is as follows:

Table 2 – Analysis by Examination Centre

Centre	Presented	Passed	Pass Rate
Sydney	25	9	36%
Melbourne	7	2	29%
Malaysia	4	0	0%
Hong Kong	3	2	67%
Singapore	2	1	50%
Canberra	1	0	0%
Netherlands	1	0	0%
Perth	1	1	100%
Total	44	15	34%

2. Examination Administration

2.1. Examiners

The examiners for this semester were:

Chief Examiner: Jim Qin

Assistant Examiner: David Pitt

2.2. Course Leader

The course leader was Jasmine Lee for this examination session. The Course Leader was very helpful in assisting the Examination Team with all aspects of the examination process.

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 3 – Degree of Difficulty of Exam

Question	Units	Knowledge & Understanding	Straight-forward Judgement	Complex Judgement	Total Marks
1 (a)	1, 6	3			3
1 (b)	1	3	6		9
1 (c)	1, 6	4			4
2 (a)	5	4			4
2 (b)	5		4	4	8
2 (c)	5			4	4
2 (d)	6		5		5
3 (a)	2, 3		7		7
3 (b)	2, 3			5	5
3 (c)	2, 3, 4			8	8
3 (d)	4			4	4
4 (a)	4			5	5
4 (b)	5		4	6	10
5 (a)	6	2			2
5 (b)	6		3		3
5 (c)	6	4			4
5 (d)	6		4	4	8
5 (e)	6		4		4
5 (f)	6		3		3
Total		20	40	40	100

Table 4 – Course Coverage

Question	Units	Knowledge & Understanding	Straight-Forward Judgement	Complex Judgement	Total Marks
1	1, 6	10	6	0	16
2	5, 6	4	9	8	21
3	2, 3, 4	0	7	17	24
4	4, 5	0	4	11	15
5	6	6	14	4	24
Total		20	40	40	100

3.2. Overall Performance

As is par for the course, this year's exam proved to be reasonably difficult for the majority of candidates. The pass rate of 34% (15 from 44 candidates), is not dissimilar to past examinations and is marginally higher than last semester's pass rate of 27%. While some concerns could be expressed regarding the overall performance, an analysis of the results highlights a core group of 15 candidates that performed capably across a range of targeted areas of study and were clear passes. Keeping in mind that the marginal passes are just that – marginal, I am happy with where the line has been drawn and with the pass rate overall.

The results should also be considered in light of the fact that the exam was challenging in terms of its breadth and the level of detailed knowledge required in each of the areas. Candidates were, as expected, presented with some difficult challenges, especially in light of the time constraints involved.

3.3. Question by Question Analysis

Question 1 (16 marks)

This question covered currency swap, credit risk and market risk.

The overall results were as follows:

	Marks Required	% of Total Marks	Number of Candidates	Proportion of Candidates
Strong Pass	11	69%	9	20%
Pass	9	56%	18	41%
Slightly Below Standard	8	47%	5	11%
Weak	5	31%	10	23%
Showed Little Knowledge	1	3%	2	5%
No Attempt	0	0%	0	0%

This is largely a bookwork question where 10 out of 16 marks is KU. 27 candidates (61%) were awarded with a pass, which is not surprising considering the low level of difficulty.

Question 2 (21 marks)

This questions covered swaptions and hedging techniques.

The overall results were as follows:

	Marks Required	% of Total Marks	Number of Candidates	Proportion of Candidates
Strong Pass	14	67%	8	18%
Pass	12	57%	7	16%
Slightly Below Standard	10	48%	7	16%
Weak	5	24%	16	36%
Showed Little Knowledge	1	2%	4	9%
No Attempt	0	0%	2	5%

This question is average in terms of level of difficulty and overall candidates have performed to expectation.

Feedback from markers:

- (a) Most common reason for failing to get full marks was failing to disclose assumptions (in particular the lognormal distribution assumption). A number of students also failed to recognise it was a call option rather than a put option.
- (b) Only a limited number of students correctly derived the swap rate. If the swap rate was not derived correctly, the maximum available mark was 4/8.
- (c) Many students failed to be precise in their discussion (eg alluding to price and yield volatility as being the same thing). Generally marks were not awarded for regurgitating formulae.
- (d) Again, there was sometimes a lack of definition or clarity in student's answers. A number of students commented on the likely sign of the specific greeks for this case rather than accurately describing what each greek was and how it might be hedged. Marks were not awarded for generic "take the opposite side" hedging answers.

Question 3 (24 marks)

This question covered option pricing theory.

The overall results were as follows:

	Marks Required	% of Total Marks	Number of Candidates	Proportion of Candidates
Strong Pass	13	54%	5	11%
Pass	10	42%	8	18%
Slightly Below Standard	6	25%	17	39%
Weak	4	17%	7	16%
Showed Little Knowledge	1	2%	7	16%
No Attempt	0	0%	0	0%

This is probably the most difficult question where 17 out of 24 marks require complex judgement. Overall the question was not well answered by candidates with an average mark of 33%.

Feedback from markers:

There were no problems with interpretation of the questions by the candidates.

(a) Part (i) was a good discriminator with about half of the candidates able to describe suitable arbitrage possibilities. Weaker students tried to relate their answer to the risk-neutral probabilities that are calculated for pricing without giving a proper description of the available arbitrages.

Part (ii) was also a good discriminator. Some candidates were able to give a correct final expression for the price of the option while others quoted standard results for various exotic options which were not related to the question.

(b) This proved too difficult for the majority of candidates.

(c) Part (i) was a good discriminator. Many candidates could correctly write the payoff involving a call option. Others attempted to use standard formulae for Asian options which were not appropriate here given the discrete averaging used to determine the payoff.

Part (ii) proved too challenging for the vast majority of the candidature.

(d) This part was answered quite well by some candidates and very poorly by others. The main problem was the ability to correctly engineer the payment into an option and a certain payment where the option could be correctly valued in a Black-Scholes world.

Question 4 (15 marks)

This question tested forward start option and HJM model.

The overall results were as follows:

	Marks Required	% of Total Marks	Number of Candidates	Proportion of Candidates
Strong Pass	10	63%	3	7%
Pass	8	50%	9	20%
Slightly Below Standard	5	35%	11	25%
Weak	3	22%	18	41%
Showed Little Knowledge	1	3%	3	7%
No Attempt	0	0%	0	0%

Overall the question was poorly handled by candidates.

Feedback from markers:

Part a) this is poorly answered, many candidates did not consider the value of the option to be received and discount that back using risk neutral techniques.

Some candidates attempted to apply the BS formula straight away; while some came through with the correct answer, others were lost in the algebra.

Part b) This part is again poorly answered. Some candidates launched a discussion on the general merit of a HJM model rather than the 2 factor HJM specifically. Some candidates discussed the procedure or mechanics of the modelling / calibrating processes rather than the issues that should be considered or that may arise during these processes

Question 5 (24 marks)

This question covered the topic of Value at Risk.

The overall results were as follows:

	Marks Required	% of Total Marks	Number of Candidates	Proportion of Candidates
Strong Pass	15	61%	5	11%
Pass	13	53%	10	23%
Slightly Below Standard	10	41%	23	52%
Weak	6	24%	6	14%
Showed Little Knowledge	1	2%	0	0%
No Attempt	0	0%	0	0%

This question is average in terms of level of difficulty and overall candidates have performed to expectation.

Feedback from markers:

Part b) Almost everyone got confidence issue, but most only gave one point instead of trying to come up with three.

Part c) A lot of the responses sounded like a description of an historical VaR calculation. It is important to note that the VaR result used in a back test is a different VaR each day (compared against the relevant P&L - actual/hypothetical, total/attribution - for the day). Many responses implied that one current VaR number is used in performing a back-test.

Stress tests do not have to be historical scenarios - almost every response implied that they were. They should be a combination of historical scenarios and designed tests aimed at targeting possible biases in the company's portfolio.

Part d) Several students provided distributions showing a hump in the tail, implying this was "bad" if using VaR. A number of the drawings were rather poor though, meaning that it was not obvious from the distribution as drawn that VaR would be "bad".

4. Results

4.1. Pass List Recommendations

The recommended pass list is as follows.

Table 8 – Pass List

72000	72335	72154	72430	72309
72286	72116	72347	72053	72199
72435	72011	72366	72038	72333

C10 Commercial Actuarial Practice Chief Examiners Report Semester 2, 2007

SUMMARY

The overall objectives of the Commercial Actuarial Practice (CAP) Course are, in summary, to enable students to:

- Apply actuarial skills across a range of traditional and non-traditional areas by contextualising actuarial solutions or approaches in the wider commercial environment
- Apply ethical concepts, corporate governance requirements and actuarial professional standards when contextualising actuarial solutions or approaches
- 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 judgement and on the communication skills of the students rather than on bookwork.

There are two separate pieces of assessment. The first assessment is based on participation in a one-week residential course and on completion of a case assessment in one of the traditional areas of actuarial practice on the last day of the residential course. The second assessment is a 2-hour examination on non-traditional areas of actuarial practice. Students are required to pass each of these assessments in order to pass the Module. Students who fail one or both of these assessments may be permitted to resit the assessment(s) they failed without completing the whole course again.

A total of 70 candidates were enrolled for one or both of the assessments in Semester 2 of 2007. Of these 63 presented for the case assessment, 50 of these 63 also attended the residential course and 57 candidates presented for the examination.

Results

Of the 63 candidates who presented for the case assessment, it is proposed that 47 be awarded a pass, which results in a pass rate of 75%. Of the 57 candidates who presented for the examination, it is proposed that 49 be awarded a pass, which results in a pass rate of 86%.

In total, out of the 70 candidates who presented for one or both of the assessments, it is proposed that 47 be awarded a pass in the course. This results in an overall pass rate of 67%. This is up on the three previous semesters of 57%, 64% and 64% respectively.

In addition, it is proposed that 4 candidates be given a pass for the case assessment but a failure for the exam, and a further 11 candidates be given a pass for the exam but a failure for the case assessment (one of these was the No Attempt).

Results by Enrolment Category.

Of the 48 candidates who attended the residential course for everything, 33 passed both the case study assessment and the examination, resulting in a pass rate of 69%.

14 of the 22 repeat candidates (ie those sitting the case and exam, having previously attended the residential course without passing and including 2 candidates who attended again, and those sitting either the case only or the exam only), passed the course, resulting a pass rate of 64%.

There is no statistical difference in student performance between examination centres (outside Sydney the numbers for each centre are small).

A full summary of results is set out in Attachment 1

A listing of the grades for each candidate is given in Attachment 2. This listing is based on the Institute scale: A, strong pass (65+); B, pass (50 – 65); C, slightly below (40 – 49); D, weak (25 – 39); and E, showed little knowledge (<25). These grades were derived from the marks awarded by the markers, as described below, and were not used directly as part of the assessment process.

COURSE LEADER, SUPPORT TEAM AND EXAMINERS

The assessment materials for the course were developed and the marking was undertaken by a team, consisting of David Service (Course Leader), Elayne Grace, Richard Madden, Peter Martin and Colin Priest.

The Chief Examiner was Colin Westman, and the Assistant Examiner Ken McLeod.

ASSESSMENT PIECE 1

Residential Course and Case Assessment

10% of the potential marks for Assessment Piece 1 were based on the candidates' participation during the first four days of the residential course. The participation was graded according to the effort demonstrated in preparing a report and discussion notes prior to the course and to the candidates' general participation in syndicate work and plenary discussion at the course.

90% of the assessment was based on a single question delivered in "case study" format at the start of the fifth day of the residential course. The candidates were given up to 8 hours (the fifth day of the course) to absorb the question material, perform all the necessary

analysis and prepare the written communication of the answer. The answer was required to be a substantial written report.

Candidates were required to select one case study question from one of the four defined traditional practice areas, i.e. life insurance, general insurance, superannuation or investments. The assessment was open book, and candidates were allowed to bring any written material to the session, but were not allowed any outside communication.

The proposed pass results for Assessment Piece 1 as a whole are shown by subject below:

Subject	Sat	Pass	Fail	Pass Rate
Life Insurance	19	13	6	68.4%
General Insurance	34	29	5	85.3%
Superannuation	4	2	2	50.0%
Investments	6	3	3	50.0%
Total	63	47	16	74.6%

The overall pass rate for Semester 1, 2007 was 66%. David Service felt the improvement was attributable to changes made this semester, such as continually emphasising the importance of context as opposed to technical analysis, and providing copies of past successful papers.

Life Insurance

The Life Insurance case required candidates to prepare a report for a company considering purchasing a small life company which writes only term life business.

The candidate had to review assumptions prepared by an internal actuary, in the light of experience data, and then provide best estimate assumptions as well as critique the internal actuary's assumptions.

This was a relatively straightforward question in terms of the information provided and the issues to be addressed. However interpreting the data was not easy.

Even though the question made it clear that the candidate was meant to focus on the assumptions specified by the internal actuary, a number of candidates spent too much time on the proposed valuation basis. Some limited commentary on the basis was fine, however too often it required too much attention, as the question specified the basis was a given. Many did not critique the proposed assumptions.

Very few candidates answered all parts of the questions, and most had blemishes in one or more of interpreting trends, differentiating by class of business, and recognising the high level of equity investments as inappropriate for term policies.

The low level passes were reviewed and all the fail papers. In each case we agreed with the markers that the fails had too many of the abovementioned blemishes.

General Insurance

The General Insurance case required candidates as a consulting actuary to provide a report to a legal firm on the effectiveness of that legal firm and two other legal firms in providing legal services to a compulsory third party government insurance scheme.

A great deal of information was provided on court results with cases on impairment assessment, determination of at fault and on settling of common law damages. Predictably court success and legal costs were inversely related.

Generally this question was quite well answered, with most doing the required analysis and drawing sensible conclusions in relation to costs, time taken and results.

Superannuation

The Superannuation case required candidates to review a proposed transfer basis to be offered to members of a pension fund. Candidates were to suggest an alternative transfer basis if they thought it appropriate, and also to comment on some taxation issues.

The benefit design described presented some difficult issues. In particular, once 10 years' service had been completed and age 60 reached the lump sum value of the benefits actually decreased over time rather than increased as would normally occur.

Identifying the problems with the proposed basis should have been reasonably straight forward, however coming up with a satisfactory alternative basis would have been difficult even for an experienced actuary.

Two of the candidates adequately identified most of the issues, and pointed out the errors in the proposal.

Investment & Finance

The Investments case asked candidates as an investment consultant to advise an association representing general insurance companies in relation to changes proposed by the Government to the solvency rules for general insurance companies.

The changes revolved around new margins on the value of assets, and after refuting the arguments in the Government's actuarial advice the candidate then had to recommend a more reasonable set of changes.

Candidates were expected to deal with issues such as a correlation between the different asset classes, impact of excessive capital and existence of a liability reserve.

Given the expected use of the report, communication was particularly important.

ASSESSMENT PIECE 2

Non-Traditional Exam

Assessment Piece 2 was a two-hour examination at the end of the semester. One question was offered in each of 4 defined non-traditional practice areas, i.e. infrastructure, banking, environment and health. Each candidate was required to attempt 2 out of the 4 questions. Candidates were permitted to take any materials into the examination.

Results

The proposed marks for each candidate for Assessment Piece 2 as a whole are shown in Attachment 3. It is proposed that all those with a mark of 50 or more should pass. This means that 49 out of the 57 candidates who sat the exam should pass, or 86%. Students who did sufficiently well in one question to still achieve a mark in excess of 50 despite a fail in another question were not denied a pass if their weaker question was a marginal fail and did not contain gross errors of understanding.

The results by question are set out in the table below.

Question	Sat	Pass*	Pass Rate	Avg Mark A	Avg Mark B	Avg Mark
Banking	24	18	75%	66	60	63
Environment	34	25	73.5%	54.6	54.6	54.6
Health	30	24	80%	58.1	54.8	56.5
Infrastructure	26	21	80.8%	65.4	62.5	63.9
All Questions	114	88	77.2%	61	58	59.5

** This refers to the number of candidates who received a mark of 50 or more in the specific question rather than those who passed the exam as a whole.*

Overall, the pass rates in the individual questions for Assessment Piece 2 were relatively good. The average pass rate of 77.2% on all questions was an improvement on the 70% in the last semester. Comments on the individual questions are set out below.

Banking

Candidates were asked to prepare a report for the director of a major Australian bank, advising how the Bank should be dealing with the mismatch between assets (long term loans) and liabilities (short term deposits), including describing risk management processes the Bank should be following.

A complete answer to this question was not possible in the time allowed, however candidates were expected to recognise the very real risks involved and at least some of the processes in place to manage their risks (for example management reporting, projections, securitisation, capital holdings, the importance of public confidence, monitoring economic conditions).

Generally candidates found plenty to write about, however unfortunately some focussed on a limited number of issues. They would have been better off mentioning more issues but dealing with each one in less depth..

Environment

Candidates were asked to firstly estimate the impact on the value of a listed company of a potential Emissions Trading Scheme, and then secondly discuss the other main risks investors faced from such schemes.

The first part of the question was an investment question with an environmental flavour, the second part required candidates to delve into the wider issues.

Surprisingly a number of candidates had difficulty with the investment related issues, including not handling forex properly, leading to incorrect calculation of the costs. The second part was generally not handled well, although there were exceptions.

Health

Candidates were provided with some background information on alternative treatments for kidney failure (dialysis or transplant), including initial and annual costs, life expectancy and the effects of various investments in publicity and organ collection processes. They were then asked to advise the Health authority how best to spend an amount of money to maximise health gain.

This question had to be read carefully to pick up all relevant information. Not all candidates did this, leading to poor analysis. Many responses were not well structured, and candidates often claimed to have run out of time. This should have been an easy question for candidates who carefully analysed the question before commencing their answer.

Infrastructure

Candidates were required to provide advice to the NSW Government on the constraints which it should impose on a privatised Sydney City Council, to prevent abuse of monopoly power. They were also asked to advise the impact on the potential price of the suggested constraints.

Generally candidates recognized the key issues which would arise from the creation of a monopoly, however surprisingly many did not deal with the full range of services provided by the Council, even those spelt out in the question. A number of candidates neglected to comment on the effect on value despite the question asking for just that.

OVERALL PASS LIST RECOMMENDATION

The following 47 candidates are recommended for passes for the course this semester. Those candidates who have previously passed one or other assessment piece previously are shown with an asterisk.

72005	72271
72018	72275
72022*	72297
72025	72311*
72026	72315
72027	72317
72029*	72337*
72035	72345
72064	72354
72066	72369
72097	72394*
72113	72397
72134*	72399*
72141	72410
72142	72421*
72175*	72422*
72176	72423
72186	72431
72190*	72445
72212	72452*
72214	72453
72220	72461
72228*	72477
72240	

The following 4 candidates are recommended for passes for Assessment Piece 1 but not Assessment Piece 2.

72106
72291
72298
72319

The following 11 candidates are recommended for passes for Assessment Piece 2 but not Assessment Piece 1.

72034
72051
72208
72236

72243
72284
72293
72294
72322
72364
72413

Colin Westman

Chief Examiner, Commercial Actuarial Practice
15 December 2007

Attachment 1

Results by enrolment category

	<i>Full course</i>	<i>Case and exam only</i>	<i>Case only</i>	<i>Exam only</i>	<i>Total</i>
Enrolments	48	3	13	6	70
Presented	48	3	13	6	70
Passed case and exam	33	1			
Passed case failed exam	4	0			
Failed case passed exam	9	1			
No Attempt case passed exam	1	0			
Failed both case and exam	1	1			
Passed case only			9		
Failed case only			4		
Passed exam only				4	
Course Pass rate %	69	33	69	67	

Of the 48 full course enrolments, 47 were new students and 1 was a repeat who attended the Residential and sat the Case Study Assessment and Exam. Of the 47 new students who presented for the full course, 1 did not attempt the Case Study Assessment .

The Case Study Only figure includes two repeaters who again attended the Residential course as well as sat the Case Study Assessment.

Results by Assessment Piece

	Case	Exam	Course
Presented*	63	57	70
Passed	47	49	47
Failed	16	8	23
Pass rate %	75	86	67

* One candidate who had previously failed both Pieces only attempted the exams this time. This candidate was automatically treated as an overall course fail for the tables above and below.

Results by Examination Centre

	Case			Exam			Course		
Centre*	Presented	Passed	Pass Rate	Presented	Passed	Pass Rate	Presented	Passed	Pass Rate
Sydney	45	35	78%	38	34	89%	47	33	70%
Melbourne	5	4	80%	7	6	86%	7	4	57%
Brisbane	1	1	100%	1	1	100%	1	1	100%
Canberra	0	0	0%	0	0	0%	0	0	0%
Perth	0	0	0%	0	0	0%	0	0	0%
London	4	2	50%	5	3	60%	5	3	60%
Hong Kong	2	1	50%	1	1	100%	3	2	67%
Malaysia	1	0	0%	0	0	0%	1	0	0%
Singapore	2	1	50%	3	3	100%	3	2	67%
Other	3	3	100%	2	1	50%	3	2	67%
Total	63	47	75%	57	49	86%	70	47	67%

* Note that all of the candidates completing the residential course physically sat the case assessment in Sydney. This analysis is based on home location (where the candidate sat the exam).