

Report to ECC from the Board of Examiners

*SEMESTER TWO 2009*

*PART III*

*BOARD OF EXAMINERS REPORT*

*(PUBLIC VERSION)*



Institute of Actuaries of Australia

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# CHAIR'S REPORT

## SUMMARY

### Examination Administration

The Semester Two 2009 Part III examinations of the Institute of Actuaries of Australia ("Institute") were held between 19<sup>th</sup> October 2009 and 23<sup>rd</sup> October 2009. Candidates attended the examinations in Australia (Sydney, Melbourne, Canberra, Perth, Adelaide, Brisbane and Hobart) and overseas (New Zealand, Hong Kong, China, Fiji, Germany, Japan, Malaysia, Singapore, Switzerland, United Kingdom and USA).

This is the fifth year in which twice yearly examinations will be 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 an increase over that in Semester One 2009 and Semester Two 2008.

**Table A: Candidate Numbers Sitting by Part III Course**

	Subject	2006 (1)	2006 (2)	2007 (1)	2007 (2)	2008 (1)	2008 (2)	2009 (1)	2009 (2)
1	Investments	162	150	171	166	150	120	177	145
2A	Life Insurance	53	51	53	54	61	66	58	52
2B	Life Insurance	25	32	37	43	36	50	52	62
3A	General Insurance	69	65	64	82	69	51	65	57
3B	General Insurance	48	41	48	44	40	62	50	63
4A	Superannuation & Planned Savings	12	8	15	n/a <sup>6</sup>	n/a	n/a	n/a	n/a
4B	Superannuation & Planned Savings	n/a <sup>1</sup>	7	n/a <sup>5</sup>	16	n/a <sup>10</sup>	n/a	n/a	n/a
5A	Investment Management & Finance	14	18	17	n/a <sup>6</sup>	35	n/a <sup>11</sup>	n/a <sup>13</sup>	46
5B	Investment Management & Finance	14	15	n/a <sup>5</sup>	44	n/a <sup>10</sup>	35	44	n/a <sup>15</sup>
6A	Global Retirement Income Systems					19 <sup>8</sup>	n/a <sup>11</sup>	14	n/a <sup>15</sup>
6B	Global Retirement Income Systems						18	n/a <sup>13</sup>	19
10	Commercial Actuarial Practice	23 <sup>2</sup>	47 <sup>3</sup>	61 <sup>4</sup>	70 <sup>7</sup>	83 <sup>9</sup>	87 <sup>12</sup>	74 <sup>14</sup>	92 <sup>16</sup>
	<b>Total</b>	<b>420</b>	<b>434</b>	<b>466</b>	<b>519</b>	<b>493</b>	<b>489</b>	<b>534</b>	<b>536</b>

1. The 4B Course did not run in 2006 (1).
2. In Semester 1 2006 23 Individual Candidates enrolled, though some candidates only attempted either the Exam or the Case Study.
3. In Semester 2 2006 47 Individual Candidates enrolled, though some candidates attempted either the Exam or the Case Study.
4. 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.
5. Course 4B and 5B did not run Semester 1 2007.
6. Course 4A and 5A did not run Semester 2 2007.
7. 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)
8. 6A GRIS introduced in Semester 1 2008 replacing Course 4A
9. CAP Semester 1, 2008, 83 candidates enrolled, 63 full course, 5 exam only, 13 case study only, 2 exam and case study only
10. Course 6B (replacing 4B) and 5B did not run Semester 1 2008.
11. Courses 5A and 6A did not run in Semester 2 2008.
12. CAP Semester 2, 2008, 87 candidates enrolled, 46 full course, 15 exam only, 24 case study only, 2 exam and case study only
13. Courses 5A and 6B did not run in Semester 1 2009

14. CAP Semester 1, 2009, 74 candidates enrolled, 49 full course, 2 exam only, 21 case study only, 2 exam and case study only
15. Course 5B and 6A did not run in Semester 2 2009
16. CAP Semester 2 2009, 92 candidates enrolled, 61 full course, 2 post course report only, 28 case study exam only, 1 post course report and case study exam only.

## Results

### Pass Rates

The number of candidates presenting for the Semester Two 2009 Part III Exams, the recommended passes and the resulting pass rates are shown in the table below:

**Table B: Recommended Number of Passes by Part III Course**

	2009 (2) Sat	2009 (2) Pass	2009 (2) %	2009 (1) Sat	2009 (1) Pass	2009 (1) %	2008 (2) Sat	2008 (2) Pass	2008 (2) %	2008 (1) Sat	2008 (1) Pass	2008 (1) %
1 Investments	145	43	30%	177	86	49%	120	61	51%	150	59	39%
2A Life Insurance	52	31	60%	58	23	40%	66	32	48%	61	21	34%
2B Life Insurance	62	24	39%	52	20	38%	50	21	42%	36	14	39%
3A General Insurance	57	17	30%	65	24	37%	51	21	41%	69	36	52%
3B General Insurance	63	18	29%	50	16	32%	62	23	37%	40	16	40%
4A Super & PS	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
4B Super & PS	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
5A Invest. Man. & Fin.	46	17	37%	n/a	n/a	n/a	n/a	n/a	n/a	35	17	49%
5B Invest. Man. & Fin.	n/a	n/a	n/a	44	22	50%	35	11	31%	n/a	n/a	n/a
6A GRIS <sup>1</sup>	n/a	n/a	n/a	14	5	36%	n/a	n/a	n/a	19	11	58%
6B GRIS <sup>3</sup>	19	10	53%	n/a	n/a	n/a	18	10	56%			
10 CAP – Case Study	2	1	50%	72	40	56%	73	50	68%	78	51	65%
10 CAP – Exam	90	54	60%	52	48	92%	63	60	95%	70	51	73%
<b>Total</b>	<b>536</b>	<b>215</b>	<b>40%<sup>6</sup></b>	<b>534</b>	<b>237</b>	<b>44%<sup>5</sup></b>	<b>489</b>	<b>241</b>	<b>49%<sup>4</sup></b>	<b>493</b>	<b>215</b>	<b>44%<sup>2</sup></b>

1. 6A Global Retirement Income Systems new course Semester 1 2008
2. Figure represents pass rate in respect of all 83 CAP candidates
3. 6B Global Retirement Income Systems new course Semester 2 2008
4. Figure represents pass rate in respect of all 87 CAP candidates
5. Figure represents pass rate in respect of all 74 CAP candidates
6. Figure represents pass rate in respect of all 92 CAP candidates

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 40% is slightly below the previous semester.

### **Prizes**

Prizes are awarded only once in a calendar year following the Semester Two examinations.

### **Fellows**

The Part III Examination transition period from the pre-2005 system to the new post-2005 system ended at the end of 2007. So that students in transition (i.e. those who have passed at least one paper of a pre-2005 subject) would not be disadvantaged, a variation on the new pathway was approved in 2006. There are two ways in which candidates can qualify as Fellows.

- (i) Candidates must pass Module 1 (Investments), one full specialist subject (Modules 2 and 3) and Module 4 (Commercial Actuarial Practice).
- (ii) Candidates in transition (ie. those who have completed at least one paper of a pre-2005 subject) must pass three Modules and Module 4 (Commercial Actuarial Practice), providing that the equivalent of Modules 2 and 3 in one specialist area have been completed.

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	2009 (2)	2009 (1)	2008(2)	2008(1)	2007(2)	2007(1)	2006(2)	2006(1)
Pre-2005 system	0	0	0	0	1	1	7	14
Post-2005 system	51	34***	71**	37*	41	32	25	10
<b>Total New Fellows</b>	<b>51</b>	<b>34***</b>	<b>71**</b>	<b>37*</b>	<b>42</b>	<b>33</b>	<b>32</b>	<b>24</b>

\* 38 candidates completed all the Part III exams in semester one 2008 but one of these candidates had not completed all Part I exams. This candidate completed their last Part I exams in September 2008.

\*\* 72 candidates completed all the Part III exams in semester two 2008 but one of these candidates had not completed Part II.

\*\*\*35 candidates completed all the Part III exams in semester one 2009 but one of these candidates has a result pending for their last Part I exam.

# 1. Examination Administration

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## 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 his assistants and the Chief Examiners for each subject, supported by Institute staff. For this semester additional assistant chairs were recruited to meet the extra work required due to the change in the CAP course assessment format.

For Semester Two 2009 the Chair and his Assistants were:

Chair	Mr Anthony Brien
Assistant Chair	Mr Alistair Barker
Assistant Chair	Mr Wesley Caine
Assistant Chair	Ms Raewin Davies
Assistant Chair	Ms Catherine Robertson-Hodder
Assistant Chair	Mr Martyn Gilling
Assistant Chair	Michael Eabry
Assistant Chair	Ms Andrea McDonnell

The key Examiners for Semester Two 2009 were:

Course 1: Investments	Mr Raymond Yeow
Course 2A: Life Insurance	Mr Gary Musgrave
Course 2B: Life Insurance	Mr Andrew Gill
Course 3A: General Insurance	Mr David Gifford
Course 3B: General Insurance	Mr Jim Qin
Course 5B: Investment Management & Finance	Mr Colin Priest
Course 6B: Global Retirement Income Systems	Mrs Debra Lewis
Course 10: Commercial Actuarial Practice	Mr Bruce Thomson

I would like to take this opportunity to thank all of the members of the Board of Examiners and their assistants for their efforts in preparing and marking the examination papers. The management of the examination process is an extremely important function of the Institute and it is currently being run by a small group of committed volunteers. I would also like to thank the Assistant Chairs, Alistair, Wesley, Raewin, , Martyn, Michael and Andrea for their support and untiring efforts in ensuring the overview process of the Board worked smoothly and that the quality of the examinations and results was maintained. I would also like to particularly thank Catherine who has been of great assistance over many semesters and will leave the Board at the end of this year.

## 1.2 Meetings of the Board

The Board met on three occasions as part of the Semester Two 2009 exam process.

- The first meeting was held on 8<sup>th</sup> July 2009. It was attended by representatives from each Course (Chief Examiners/Assistant Examiners). The purposes of this meeting were to:
  - update on enrolment numbers and course offerings for Semester Two 2009
  - identify Chief & Assistant Examiners and Course Leaders for each course for Semester Two 2009
  - 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 16<sup>th</sup> September 2009. It was attended by a representative from all courses. The purposes of this meeting were to:
  - discuss proposed changes to the BoE Handbook
  - the status of Semester Two 2009 examination papers, model solutions and sign-off process.
  - discuss the marking spreadsheets and review the recruitment of markers.
- The third meeting was held on 2<sup>nd</sup> December 2009 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 2010.

### **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 and Ms Rebecca Moore. Philip and Rebecca were responsible for administering the entire process and ensuring key deadlines were met, compiling and formatting the examination papers, distributing material to candidates and to exam centres, processing results and collecting historical information for the production of this report. They did a great job for Semester Two 2009 and the Board of Examiners team is indebted to them all.

The Semester Two 2009 Part III Sydney and Melbourne examinations delivered by the Institute were once again run by an external consultancy – Language and Testing Consultancy (LTC). The Semester Two 2009 Part III examinations delivered by Access Macquarie were arranged with Macquarie City Campus in Sydney and the Centre for Adult Education in Melbourne as venues. Other examinations were administered by Fellows or other approved supervisors. All examinations ran smoothly.

### **1.4 Course Leaders**

Since October 2004, Course Leaders have been appointed by the Institute to undertake a variety of tasks relating to modules 1-3 of the 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 Two 2009:

Course 1 – Access Macquarie

Course 2A and 2B - Sue Howes (Faculty Convenor), Aaron Bruhn (2A Assignment and Exams), Bruce Thomson (2A tutorials and discussion forums), Andrew Patterson (2B Assignment and Exams), Alan Udell (2B tutorials and discussion forums))

Course 3A and 3B - GI Faculty, Daniel Keating (3A Assignment and Exams), David Finnes (3A Tutorial 2 and discussion forums) David Heath (3A Tutorial 1), Peter Mulquiney (3A Tutorial 3). Rachel Eagleton (3B assignments, exams, tutorials and discussion forums)

Course 5A – Access Macquarie

Course 6B – Peter May (Faculty Convenor), Jeffrey Chee (assignments and exams), David McNeice (tutorials and discussion forums)

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.



## 1.5 The Examination Process

The Semester Two 2009 examination process began with an initial meeting of the Board of Examiners and Course Leaders. 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 2009 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 one new Fellow scrutineer for coverage and fairness. Scrutineers were used for the Access Macquarie run examinations for the first time.
- The new Fellow 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. 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 learning management system.

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 2009 assignments were submitted electronically. Markers were allocated candidate numbers and accessed and marked on-line. Feedback was also posted electronically by the markers and/or IAA. 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 included David Service, Pat McConnell, Richard Madden, Peter Martin, Colin Priest, Jill Green, Adam Butt and Aaron Bruhn. The team also developed the assessment materials for the course and did the marking.

The assessment method changed this semester due to the restructure of the CAP course. There are still two assessment tasks, but they are now:

1. A take-home report on one of the non-traditional topics, distributed after the residential course. This semester it was on the Health topic. It is worth 20% of the final mark.
2. An 8-hour case study report chosen by each student from among the other 7 topic areas, to be prepared under exam conditions but with use of a computer. This is worth 80% of the final mark.

The pass mark is 50%. Students who had passed part of the previous course, were allowed to submit only the other equivalent part this semester. Last semester all candidates were awarded with marks ranging from 4 to 8.5 out of 10 for participation in the residential course. Marks are no longer awarded for quality of participation in the residential course.

The development and delivery of the course was overseen by a Faculty, consisting of Ken McLeod (Chair), Arie van den Berg, David Knox and Donna Walker. Bruce Thomson was the Chief Examiner, assisted by James Fitzpatrick and other members of the Faculty.

## **1.8 Examination Dates**

The Semester Two 2009 Part III examinations were held on the following dates:

Course 1:	Investments	Monday 19 <sup>th</sup> October
Course 10:	Commercial Actuarial Practice	Friday 23 <sup>rd</sup> October
Course 2A:	Life Insurance	Tuesday 20 <sup>th</sup> October
Course 2B:	Life Insurance	Wednesday 21 <sup>st</sup> October
Course 3A:	General Insurance	Wednesday 21 <sup>st</sup> October
Course 3B:	General Insurance	Tuesday 20 <sup>th</sup> October
Course 5A:	Investment Management & Finance	Thursday 22 <sup>nd</sup> October
Course 6B:	Global Retirement Income Systems	Thursday 22 <sup>nd</sup> October

## **1.9 Assignment Dates**

The Semester Two 2009 Part III assignments were due on the following dates:

19<sup>th</sup> August (2A, 3A)  
2<sup>nd</sup> September (C1, 2B, 3B, 5A, 6B)  
25<sup>th</sup> September (CAP - Post Course Report)

### 1.10 Examination Centres

Candidates sat the exams in 7 centres in Australia and 14 centres overseas. Individual exam locations were arranged in China (3), Fiji (1), Germany (1), Hong Kong (1), Japan (1), Malaysia (1), New Zealand (2), Singapore (1), Switzerland (1), UK (1) and USA (1). This table includes candidates who sat the CAP Exam

**Table 1: Candidates by Exam Centre – Semester Two 2009**

Location	Number of Candidates
Australia	456
Adelaide	1
Brisbane	2
Canberra	4
Hobart	1
Melbourne	96
Sydney	350
Perth	4
Overseas	78
China	3
Fiji	2
Germany	1
Hong Kong	14
Japan	5
Malaysia	7
New Zealand	11
Singapore	16
Switzerland	1
United Kingdom	17
USA	1
Total	536

### 1.11 Exam Candidature

#### Candidate Numbers

The number of candidates sitting the Part III exams in Semester Two remained broadly consistent compared with the previous semesters, being slightly above Semester One 2009 and an increase from Semester Two 2008. There was a considerable decrease in the number of candidates sitting course C1 (Investments) over the previous semester. Courses 2A (Life insurance) and 3A (General Insurance) had slight decreases in candidate numbers where as courses 2B (Life Insurance), 3B (General Insurance), 5A (Investment Management & Finance) and 6B (Global Retirement Income Systems) all had increases in candidate numbers over Semester 1 2009.

**Table 2: Candidate Numbers Sitting by Part III Courses**

	Subject	2006 (1)	2006 (2)	2007 (1)	2007 (2)	2008 (1)	2008 (2)	2009 (1)	2009 (2)
1	Investments	162	150	171	166	150	120	177	145
2A	Life Insurance	53	51	53	54	61	66	58	52
2B	Life Insurance	25	32	37	43	36	50	52	62
3A	General Insurance	69	65	64	82	69	51	65	57
3B	General Insurance	48	41	48	44	40	62	50	63
4A	Superannuation & Planned Savings	12	8	15	n/a <sup>6</sup>	n/a <sup>8</sup>	n/a	n/a	n/a
4B	Superannuation & Planned Savings	n/a <sup>1</sup>	7	n/a <sup>5</sup>	16	n/a <sup>10</sup>	n/a	n/a	n/a
5A	Investment Management & Finance	14	18	17	n/a <sup>6</sup>	35	n/a	n/a	46
5B	Investment Management & Finance	14	15	n/a <sup>5</sup>	44	n/a <sup>10</sup>	35	44	n/a
6A	Global Retirement Income Systems					19 <sup>8</sup>	n/a	n/a	n/a
6B	Global Retirement Income Systems						18	14	19
10	Commercial Actuarial Practice	23 <sup>2</sup>	47 <sup>3</sup>	61 <sup>4</sup>	70 <sup>7</sup>	83 <sup>9</sup>	87 <sup>11</sup>	74 <sup>12</sup>	92 <sup>13</sup>
	<b>Total</b>	<b>420</b>	<b>434</b>	<b>466</b>	<b>519</b>	<b>493</b>	<b>489</b>	<b>534</b>	<b>536</b>

1. The 4B Course did not run in 2006 (1).
2. In Semester One 2006 23 Individual Candidates enrolled, though some candidates only attempted either the Exam or the Case Study.
3. In Semester Two 2006 47 Individual Candidates enrolled, though some candidates attempted either the Exam or the Case Study.
4. 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.
5. Courses 4B and 5B did not run Semester 1 2007.
6. Courses 4A and 5A did not run Semester 2 2007.
7. 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)
8. Course 6A was introduced in Sem 1 2008, replacing Course 4A
9. CAP Semester 1, 2008, 83 candidates enrolled, 63 full course, 5 exam only, 13 case study only, 2 exam and case study only
10. Courses 4B (to be replaced by Course 6B) and 5B did not run Semester 1 2008.
11. CAP Semester 2, 2008, 89 candidates enrolled, 2 withdrew, 47 full course, 15 exam only, 24 case study only, 3 exam and case study only.
12. CAP Semester 1, 2009, 78 candidates enrolled, 4 withdrew, 52 full course, 2 exam only, 21 case study only, 3 exam and case study only.
13. CAP Semester 2, 2009, 93 candidates enrolled, 1 withdrew, 61 full course, 2 post course report only, 28 case study exam only, 1 post course report and case study exam only.

### Withdrawal Rates

In Semester Two 2009, 576 candidates initially enrolled in courses, however 41 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 (11 officially withdrew prior to the examinations and 8 did not present for the exam, out of 164 originally enrolled). C1 (Investments) and 2A (Life Insurance) had the highest rate of withdrawal each at 12%. Compared to Semester 1 2009, the overall withdrawal rate was slightly lower. The number of candidates being absent from the exam was again slightly lower – there were 17 in Semester 1 2009. The withdrawal rates for all subjects were:

**Table 3: Withdrawal Rates by Part III Course – Semester Two 2009**

	Subject	Initially Enrolled	Withdrew prior to Exam	Absent from exam	Total Withdrawing	%
1	Investments	164	11	8	19	12%
2A	Life Insurance	58	6	0	6	10%
2B	Life Insurance	63	1	0	1	2%
3A	General Insurance	63	4	2	6	10%
3B	General Insurance	64	1	0	1	2%
5B	Invest Management & Finance	52	5	1	6	12%
6B	Global Retirement Income Systems	19	0	0	0	0%
10	Commercial Actuarial Practice	93	1	0	1	1%
	<b>Total</b>	<b>576<sup>1</sup></b>	<b>29</b>	<b>12</b>	<b>41</b>	<b>7%</b>

1. Includes case study exam and post course report CAP candidates

### Candidate Mix

The mix of courses sat by candidates is broadly similar to that in previous years. The increased proportion for Investments seen in previous semesters seems to have abated this semester and the examiner commented that they are generally not of as high a standard as previous semesters. Typically, 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 General Insurance have been fairly constant at approximately 22% with a slight decline over last semesters. The Global Retirement Income Systems course, which effectively replaced the Superannuation & Planned Savings course, has had a slight decline in proportion enrolled at 3%. The Investment Management and Finance enrolments show a slight increase over the previous semester. The CAP (Commercial Actuarial Practice) course has decreased in overall proportion comparing with previous semesters.

**Table 4: Candidate Mix by Part III Course – Enrolments Semester Two 2009**

	Subject	2006 (1)	2006 (2)	2007 (1)	2007 (2)	2008 (1)	2008 (2)	2009 (1)	2009 (2)
1	Investments <sup>1</sup>	39%	35%	38%	33%	32%	25%	33%	27%
2	Life Insurance	19%	19%	20%	19%	19%	24%	21%	21%
3	General Insurance	28%	25%	24%	24%	23%	23%	22%	22%
4	Superannuation & P.S.	3%	3%	3%	3%	n/a	n/a	n/a	n/a
5	Investment Mgt & Finance <sup>2</sup>	7%	8%	4%	9%	8%	7%	8%	9%
6	Global Retirement Income Systems					4%	4%	3%	4%
10	Comm. Actuarial Practice	5%	9%	12% <sup>1</sup>	12% <sup>2</sup>	16% <sup>3</sup>	18% <sup>4</sup>	14% <sup>5</sup>	17% <sup>6</sup>
	<b>Total</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>

1. Includes all CAP candidates enrolled including case study and or exam only – 61

2. Includes all CAP candidates enrolled including case study and or exam only – 70

3. Indicates all CAP candidates enrolled including case study and or exam only – 83

4. Includes all CAP candidates enrolled including case study and or exam only – 87

5. Includes all CAP candidates enrolled including case study and or exam only – 74

6. Includes all CAP candidates enrolled including case study exam and post course report only – 92

## **2. Examination Papers and Assignments**

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### **2.1 Examination Structure**

The structure of the examinations in Semester two 2009 was a single three-hour exam paper for Modules 1-3. The exams for Modules 1, 2 & 3 were worth 85% of the final assessment.

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, candidates sat an eight-hour case study exam paper on four traditional and three non-traditional areas of actuarial practice (other than the area covered in the post course report), answering 1 out of 7 questions and worth 80% of the final assessment.

### **2.2 Assignment / Case Study Structure**

The structure of the assignments in Semester Two 2009 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) included a post course report on a non-traditional area and was worth 20% of the final assessment.

### **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 5: Standards of Difficulty by Part III Course**

		Knowledge & Understanding		Simple Judgement		Complex Judgement	
	Subject	2009 (1)	2009 (2)	2009 (1)	2009 (2)	2009 (1)	2009 (2)
1	Investments	19%	20%	40%	40%	41 %	40%
2A	Life Insurance	20%	20%	45%	44%	35%	36%
2B	Life Insurance	21%	19%	40%	40%	39%	41%
3A	General Insurance	24%	20%	39%	38%	37%	42%
3B	General Insurance	22%	12%	38%	47%	40%	41%
5A	Invest. Management & Finance	n/a	18%	n/a	38%	n/a	44%
5B	Invest. Management & Finance	22%	n/a	40%	n/a	38%	n/a
6A	Global Retirement Income Systems	18%	n/a	38%	n/a	44%	n/a
6B	Global Retirement Income System	n/a	19%	n/a	41%	n/a	40%
	<b>Targets</b>	<b>15% - 25%</b>		<b>35% - 45%</b>		<b>35% - 45%</b>	

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 2009:

- A marking day was held on Saturday 24 October
- Scanned version of exam answers were made available to markers in an internal installation of the Institute's Learning Management System.
- 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***

In Semester Two 2009 markers accessed and loaded comments via the on-line learning management system (LMS). This enabled students to receive feedback in a more timely manner than previous semesters.

For all results, spreadsheets were sent directly to either and/or the IAA and the Course Leader.

## **2.7     *Comments on Candidates' Assignment Performance***

As the Chief Examiners were unable to review candidates' assignments, no comments on assignment performance can be provided.

## 3. Results

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### 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 6: Recommended Candidate Passes by Part III Course**

	Subject	2006 (1)	2006 (2)	2007 (1)	2007 (2)	2008 (1)	2008 (2)	2009 (1)	2009 (2)
1	Investments	45	46	56	69	59	61	86	43
2A	Life Insurance	17	14	18	21	21	32	23	31
2B	Life Insurance	8	13	8	14	14	21	20	24
3A	General Insurance	28	25	24	17	36	21	24	17
3B	General Insurance	24	16	23	21	16	23	16	18
4A	Superannuation & P.S.	6	3	7	n/a	n/a	n/a	n/a	n/a
4B	Superannuation & P.S.	n/a	4	-	7	n/a	n/a	n/a	n/a
5A	Invest. Mngmt & Finance	7	8	6	n/a	17	n/a	n/a	17
5B	Invest. Mngmt & Finance	6	4	-	15	n/a	11	22	n/a
6A	Global Retirement Income Systems					11	n/a	5	n/a
6B	Global Retirement Income Systems						10	n/a	10
10	Comm. Actuarial Practice	14 <sup>1</sup>	30	35 <sup>2</sup>	47 <sup>3</sup>	41 <sup>4</sup>	62 <sup>5</sup>	41 <sup>6</sup>	55 <sup>7</sup>
	<b>Total</b>	<b>156</b>	<b>163</b>	<b>177</b>	<b>211</b>	<b>215</b>	<b>241</b>	<b>237</b>	<b>215</b>

1 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.

2 61 candidates, 35 passes in the course (including case study and/or exam)

3 70 candidates, 47 passes in the course (including case study and/or exam)

4 83 candidates, 41 passes in the course (including case study and/or exam)

5 87 candidates, 62 passes in the course (including case study and/or exam)

6 74 candidates, 41 passes in the course (including case study and/or exam)

7 92 candidates, 55 passes in the course (including post course report/ or exam)

**Table 7: Recommended Pass Rates by Part III Course**

	Subject	2006(1)	2006(2)	2007 (1)	2007 (2)	2008 (1)	2008 (2)	2009 (1)	2009 (2)
1	Investments <sup>1</sup>	28%	31%	33%	42%	39%	51%	49%	30%
2A	Life Insurance	32%	28%	34%	39%	34%	48%	40%	60%
2B	Life Insurance	32%	41%	22%	33%	39%	42%	38%	39%
3A	General Insurance	42%	38%	38%	21%	52%	41%	37%	30%
3B	General Insurance	50%	39%	48%	48%	40%	37%	32%	29%
4A	Superannuation & P. S.	50%	38%	47%	n/a	n/a	n/a	n/a	n/a
4B	Superannuation & P. S.	n/a	57%	-	44%	n/a	n/a	n/a	n/a
5A	Invest. Mngmt & Finance <sup>2</sup>	50%	44%	35%	n/a	49%	n/a	n/a	37%
5B	Invest. Mngmt & Finance <sup>3</sup>	43%	27%	-	34%	n/a	31%	50%	n/a
6A	GRIS					58% <sup>3</sup>	n/a	36%	n/a
6B	GRIS					n/a	56% <sup>5</sup>	n/a	53%
10	CAP – Post Course Report	73%	64%	66%	75%	65%	68%	56%	50%
10	CAP – Case Study Exam	78%	77%	76%	86%	73%	95%	92%	60%
	<b>Total</b>	<b>37%</b>	<b>38%</b>	<b>38%<sup>1</sup></b>	<b>41%<sup>2</sup></b>	<b>44%<sup>4</sup></b>	<b>49%<sup>6</sup></b>	<b>44%<sup>7</sup></b>	<b>40%<sup>8</sup></b>

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

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

3 6A GRIS –new course Semester 1 2008.

4 Based on CAP results of 83 candidates, 41 passes in the course (including case study and/or exam) = 49%

5 6B GRIS –new course Semester 2 2008.

6 Based on CAP results of 87 candidates, 62 passes in the course (including case study and/or exam) = 54%

7 Based on CAP results of 74 candidates, 41 passes in the course (including case study and/or exam) = 55%

8 Based on Cap results of 92 candidates, 55 passes in the course (including post course report and exam) = 60%

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 40% is slightly below the range achieved in the previous semester. However, excluding the CAP results the overall pass rate would have still been 36%.

The pass rate for Course 10, Commercial Actuarial Practice (CAP), of 60% overall was significantly higher than the average pass rate for Modules 1-3 of 40%. 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 four day taught residential course, rather than as distance education, and has two assessment pieces, that is, the post course report 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.
- 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 study exams and reviewed all reviewed all post course reports.
- CAP is compulsory to all Part III students. 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 8: Comparison of Pass Rates by Centre**

	2006(1)	2006(2)	2007 (1)	2007 (2)	2008 (1)	2008 (2)	2009 (1)	2009 (2)
Sydney	36%	42%	40%	45%	47%	55%	50%	39%
Melbourne	38%	37%	50%	44%	50%	45%	44%	45%
Other Australian						61%	55%	67%
Overseas						40%	41%	37%
All Other*	39%	25%	34%	29%	43%	44%	43%	41%
<b>Total</b>	<b>37%</b>	<b>38%</b>	<b>38%<sup>1</sup></b>	<b>41%<sup>2</sup></b>	<b>47%<sup>3</sup></b>	<b>51%<sup>4</sup></b>	<b>48%<sup>5</sup></b>	<b>40%<sup>6</sup></b>

\* 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
3. Number incorporates only 70 CAP students sitting the exam out of a total of 83 candidates
4. Number incorporates only 63 CAP students sitting the exam out of a total of 87 candidates
5. Number incorporates only 52 CAP students sitting the exam out of a total of 74 candidates
6. Number incorporates 90 CAP students sitting the exam and 2 sitting the post course report out of a total 92 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 slightly lower than the overall pass rate for the Sydney/Melbourne examination centres (43% compared with 50%). The difference between Sydney/Melbourne and other centres was also marked in Semester 2 2007
- The pass rate in Sydney, the largest centre with 63% of all candidates, was 50% this semester.
- In Singapore only 6 candidates from 20 attempts passed (30%).

### 3.5 Pass Marks and Scaling

The scaled pass marks for 2006 Semesters one and onward, out of 200 marks have been as follows:

**Table 9: Scaled Pass Marks by Part III Course**

	Subject	2006 (1)	2006 (2)	2007 (1)	2007 (2)	2008 (1)	2008 (2)	2009 (1)	2009 (2)
1	Investments	103	120	121	90 <sup>1</sup>	100	100	100	120
2A	Life Insurance	114	122	115	123	123	123	120	120
2B	Life Insurance	119	124	111	110	110	117	121.5	120
3A	General Insurance	116	113	111	113	115	120	115	120
3B	General Insurance	115	118	120	120	120	120	120	120
4A	Superannuation & P.S.	122	127	120	-	n/a	n/a	n/a	n/a
4B	Superannuation & P.S.	n/a	128	-	122	n/a	n/a	n/a	n/a
5A	Invest. Mngmt & Finance <sup>2</sup>	120	102	100	-	120	n/a	n/a	120
5B	Invest. Mngmt & Finance	120	123	-	121	n/a	120	100	n/a
6A	Global Retirement Income Systems					120	n/a	120	n/a
6B	Global Retirement Income Systems					n/a	115	n/a	120
10	Comm. Actuarial Practice <sup>1</sup>	50 - 50	50 - 50	50-50	50-50	50-50	50-50	50-50	50-50

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

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

The relationship between scaled and raw marks for 2009 Semester Two was:

**Table 10: Raw and Scaled Pass Marks by Part III Subject**

	Subject	Raw	Scaled
1	Investments	50	120
2A	Life Insurance	110	120
2B	Life Insurance	79.2	120
3A	General Insurance	115	120
3B	General Insurance	109.4	120
5A	Investment Management and Finance	88	120
6B	Global Retirement Income Systems	106	120

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 "at least 50% of questions" e.g. pass 3 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.

This semester the range of scaled marks was consistent for all subjects. The range of scaled marks in Semester One 2009 was 100-121.5 out of 200, a range of 21.5 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 are awarded only once in a calendar year following the Semester Two examinations.

### **3.7 Fellows**

The Part III Examination transition period from the pre-2005 system to the new post-2005 system ended at the end of 2007. So that students in transition (i.e. those who have passed at least one paper of a pre-2005 subject) would not be disadvantaged, a variation on the new pathway was approved in 2006. There are two ways in which candidates can qualify as Fellows.

- (iii) Candidates must pass Module 1 (Investments), one full specialist subject (Modules 2 and 3) and Module 4 (Commercial Actuarial Practice).
- (iv) Candidates in transition (ie. those who have completed at least one paper of a pre-2005 subject) must pass three Modules and Module 4 (Commercial Actuarial Practice), providing that the equivalent of Modules 2 and 3 in one special area have been completed.

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	2009 (2)	2009(1)	2008(2)	2008(1)	2007 (2)	2007 (1)	2006 (2)	2006 (1)
Pre-2005 system	0	0	0	0	1	1	7	14
Post-2005 system	49	34	71**	37*	41	32	25	10

<b>Total New Fellows</b>	<b>49</b>	<b>34***</b>	<b>71**</b>	<b>37*</b>	<b>42</b>	<b>33</b>	<b>32</b>	<b>24</b>
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\* 38 candidates completed all the Part III exams in semester one 2008 but one of these candidates had not completed all Part I exams. This candidate completed their last Part I exams in September 2008.

\*\* 72 candidates completed all the Part III exams in semester two 2008 but one of these candidates had not completed Part II.

\*\*\* 34 candidates completed all of the Part III exams in semester 1 2009. An additional candidate may be included pending on the release of the Part I results on 3<sup>rd</sup> July 2009.

# CHIEF EXAMINERS' REPORTS

## ***C1 Investments Examiner Report Semester 2 2009***

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### **1. Summary**

#### ***1.1. Pass Rates***

164 Candidates enrolled for the Semester 2 2009, C1 Investments exam. Of these, 11 withdrew prior to the exam and 8 did not present at the exam. The assessment comprised one assignment worth 15% and an exam worth the remaining 85%.

It is proposed that 43 Candidates be awarded a pass, which implies a pass rate of 30% for those sitting the exam. This compares with the following pass rates for this subject in recent semesters:

#### **Overall Pass Rates**

Year	Semester 1	Semester 2
2009	49%	
2008	39%	51%
2007	33%	42%
2006	28%	31%
2005	24%	29%
2004		30%

#### ***1.2. Candidate Numbers***

The Candidate numbers can be summarised as follows:

**Table 1 – Candidate Numbers**

	Number of candidates
Originally enrolled	164
Withdrawn prior to exam	11
Absent from exam	8
Presented at exam	145
Passed	43
Failed	110



The analysis by examination centre is as follows:

**Table 2 – Analysis by Examination Centre**

<b>Centre</b>	<b>Presented</b>	<b>Passed</b>	<b>Pass Rate</b>
Brisbane	1	1	100%
Canberra	2	2	100%
Sydney	94	22	23%
Melbourne	29	12	41%
Perth	3	2	67%
<b>Subtotal: Australia</b>	129	39	30%
Auckland	2	2	100%
Wellington	1	1	100%
Malaysia	3	1	33%
Hong Kong	3	0	0%
Singapore	3	0	0%
Fiji	1	0	0%
London	3	0	0%
<b>Subtotal: International</b>	16	4	25%
<b>Total</b>	145	43	30%

## 2. Examination Administration

### 2.1. Examiners

The examiners for this semester were:

Chief Examiner (CE): Raymond Yeow

External Examiner (EE): Bruce Graham

## 3. Examination Papers and Assignments

### 3.1. Degree of Difficulty and Course Coverage

The following table shows 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		2		2
1 (b)	1	2			2
1 (c)	1		4		4
1 (d)	1		2		2
1 (e)	1			4	4
1 (f)	1			3	3
2 (a)	1	2			2
2 (b)	1			3	3
2 (c)	1		2		2
2 (d)	1	2			2
2 (e)	1		5		5
2 (f)	1		1		1
3 (a)	2			4	4
3 (b)	2	2	3		5
3 (c)	2			2	2
3 (d)	2	2			2
3 (e)	2			4	4
4 (a)	2	4	5	1	10
4 (b)	2	1	4		5
4 (c)	2		2		2
5 (a)	3		2	2	4
5 (b)	3	1	2		3
5 (c)	3		4		4
5 (d)	3	1	1	3	5
5 (e)	3			4	4
6 (a)	3	1		5	6
6 (b)	3	2	1	1	4
6 (c)	3			4	4
<b>TOTAL</b>		<b>20</b>	<b>40</b>	<b>40</b>	<b>100</b>

### 3.5. Overall Performance

The exam paper proved to be a very good discriminator of student understanding and ability to apply judgement with raw marks (on the exam component only) ranging from 17% to 66% of raw marks. It had a coefficient of variation of 33% which indicates good discriminating power.

The following table summarises the exam performance in terms of raw marks:

	Question 1	Question 2	Question 3	Question 4	Question 5	Question 6
AVE	7.5	6.1	8.5	6.7	8.1	4.8
STD DEV	2.4	1.4	2.5	2.6	2.7	2.2
CV	32%	23%	29%	39%	34%	46%
% PASSING	49%	39%	35%	26%	30%	33%
B/C cutoff	44%	44%	60%	47%	50%	43%

The coefficient of variation measures the relative variability of the mark and gives some information about the discriminating power of the question / exam. The average mark and the % passing give some idea of how difficult the questions are relative to each other.

The examiners felt that this year's exam would provide a suitable level of challenge to the candidates. A very detailed marking guide was prepared for the markers which meant that some candidates showed understanding but did not pick up as many marks as they may have thought they would because their answer did not cover all points required as per the marking guide. This fact was taken into account by both the markers and examiners in determining the cut-off points for the letter grades awarded to each question.

Candidates found that Q1 was the easiest. Questions 4 and 5 were the most difficult. Question 6 had the lowest percentage mark required to pass reflecting that students appeared to run into time allocation problems toward the end of the exam and were rushed for time. This is reflected in the average mark, coefficient of variation and the % passing. The figures for % passing are after the adjustments made for borderline candidates.

As a guide to the relative of this student cohort in Semester 2, 2009, the assignment pass rate was 68% versus an assignment pass rate of 78% in Semester 1, 2009.

### 3.6. Question by Question Analysis

#### Question 1 (17 marks)

This question was about the active management of Australian shares by a fund manager using fundamental analysis with an emphasis on return on equity. It was not a difficult question, but it required judgment for most parts. Better marks were to be had by most students if they'd followed the thread of the various parts of the exam questions and the various hints given.

As much of the marking was fairly subjective, full marks were rarely given for any one section, excluding (a) and (b). This may have been a contributing factor to the overall low marks. As few answers seemed deserving of full marks for a given section, marks were withheld in each of parts c,d,e and f resulting in at least 2 full marks rarely being awarded.

Part (f) about backtesting was considered to be a great question in discriminating between students allowing stronger candidates to demonstrate their understanding.

The average mark was 44% and the proportion passing was 49%.

**(a)** Around a third of candidates did not or could not identify the version of EMH suggesting they weren't properly prepared.

Virtually no-one managed to reproduce the straightforward reasoning presented in the model solution. An application of some logical reasoning would have assisted students in this regard.

**(b)** The markers found that there were many different formula provided by the candidates. They varied from the very simple "return/equity" to one with 6 items (structured in the form  $A/B * B/C * C/D * D/E * E/F$ ) with definitions of the items and the corresponding ratios making up the formula.

A common mistake made by candidates was to not have mean shareholder equity for denominator (less than 1/3 got this).

Some of the weaker candidates lost marks because they had a denominator of market capitalization (which they also often described as shareholder equity).

**(c)** In (c) & (d) very few candidates made a conscious use of the ROE formula. Mostly they just made points of detail. We certainly didn't get the disciplined argument of the model solution for which the quality mark was probably intended. Few candidates received the full 1 mark for "3 part focus" or "relativity".

For part (c) the examiners were looking for a quality answer that derived from the formula for ROE in (b). The answer should cover items of detail relating to income, expenses and equity. In practice the marks for this "3 Part Focus" and quality were rarely awarded, candidates treating this part as bookwork, with solutions being mostly unordered lists of qualitative factors affecting ROE.

Comments on equity tended to just be about the impact on interest costs or of the "leverage is dangerous" type, rather than how capital should be managed and its impact on ROE.

Many candidates wasted time on providing lists of financial ratios that "should be stable over time" but there was only a ½ mark for historical record and these other points mostly lacked relevance to the issue of sustainable ROE.

**(d)** Few candidates attempted to "use the answer in (c) to frame your answer". This would have made it an easy way to answer (d). For example, a typical answer in (c) that was in point form - one way of framing the answer for (d) would be to provide analogous comments, e.g. Management quality in (c), change non-performing management in (d), organic growth in (c), growth by acquisition and hence greater efficiency in (d), high product margins in (c), diversify from low to higher margin products in (d), etc.

Mostly candidate answers were points of detail (often quite different to those raised in (c)) Again very few received the ½ mark for 3 part focus. It's possible a few candidates assumed 2 points of detail would be worth 2 marks.

**(e)** The question suggested a couple of points to be covered (capitalization, style) which candidates often didn't address for the differences between two portfolios chosen on different fundamental bases.

Candidates did a poor job of bringing up the usual suspects: Tracking error/Volatility, turnover, liquidity, etc. for some easy marks. Other points given some credit included sector bias, liquidity, active/passive, etc. Some simply listed the characteristics of Developing holdings with little or no comparison to Core holdings.

(f) Back-testing. Candidate answers were mostly off target.

Markers allowed some credit for other points than in model solutions e.g. bias related to data period used for back-testing, 6-9 month period being short, etc.

Very few considered the availability of stocks, or the possible impact of stock acquisition on the share price.

The wording of the question was fine, but it's possible many candidates answered a different question to that asked, many didn't focus on the problems and compromises in carrying out the back-testing.

It appeared to the markers that many read the question as something like "what precautions .... when using the results of back-testing" rather than "what precautions ... when interpreting the results of back-testing".

Others chose to answer the question of 'what are the dangers of using models'.

Maybe responses would have been better to a question something like "What difficulties are there likely to be in carrying out reliable back-testing?"

## Question 2 (15 marks)

This question was about how to meet the investment objectives of a small family trust over the next five years using the current investment market conditions.

The question proposed a scenario where the trust had challenging investment objectives, and how to meet the objectives using various instruments. It asked about the asset-liability matching, and required an understanding about general characteristics of various assets and market conditions in Australia at the current time.

The average mark was 40% and the proportion passing was 39%.

Part a: Given that part (a) could be copied out of any textbook, this question was straightforward and across the candidates there were generally no major issues. However many candidates lost easy marks from providing 'lazy' answers, for example merely stating the theories without explanation of how they apply to the term structure of interest rates, or simply equating term structure to the yield curve. A full explanation of how term structure related yields to maturity and term structure was generally required.

The marking was lenient as no marks were taken off for not mentioning that a different yield curve exists for securities of differing credit risk, nor was it required for candidates to link forward, swap, spot etc curves.

Another common error with regards to the first part was where candidates described term structure as being the relationship between time to maturity and changes in interest rates. This is highly ambiguous, and at face value this seems to refer to the evolution of the yield curve, which for this question is of course wrong.

No marks were deducted if liquidity and preferred habitat were provided as separate theories as opposed to subsets of expectations theories.

Part b:

This question was generally poorly answered with very few candidates understanding the key idea behind this question. Most candidates struggled, and failed to appreciate some of the concepts of the two theories discussed in (a) above might help with answering (b).

A number of candidates proceeded to discuss topics that were outside of what was asked for in the question and not directly relevant. For example, there were a number of references to the "Golden Rule" without it being directly relevant to the question.

Of the candidates that partly understood the question, most related to nominal rates being formed by inflation expectations (varying with term) and a straight deduction of inflation was not appropriate.

Fewer candidates appreciated the different dynamics of the two markets (nominal and inflation linked):

- different types of investors investing into these markets (i.e. Superannuation funds/Insurance companies matching Investment Linked (IL) liabilities with IL assets);
- supply issues (lack of supply in Australian IL market)

both of which would impact differently on the term structures of the two markets.

Zero or few marks were given to the majority of candidates that simply restated the question in terms of Taylor's equation. For the markers the key point to understand is that firstly Taylor's isn't a binding universal rule, but merely a theory. Crucial to answering the question well requires understanding separate dynamics between real rates and nominal rates, but are related.

Low marks were allocated for answers that simply threw out related-sounding concepts without stringing together a coherent and meaningful argument. However partial marks were still allocated for insightful points in isolation such as central bank policies being a strong determinant of nominal rates, and how that relates to inflationary expectations.

Part c:

There were two main approaches taken to this question: some candidates took the IRR approach and others took the discount approach. The first approach was simple enough to mark and attracted the highest mark. Given the situation as described, IRR should be the immediate tool that comes to the candidate's mind as being the cleanest, least clumsy approach. The better candidates set out an NPV calculation with explicit cash flows and derived the IRR required and then considered how to assess whether this return was achievable and the risks involved.

Full marks required full discussion of how to apply the IRR once obtained; i.e. compare to returns available in the market and also account for tax.

The second approach is a bit more complicated. The highest marks allocated to the second approach were for those candidates that implicitly found an IRR by discounting the cashflows at rates provided by different asset mixes in the markets. Asset Liability type models fall into this category. However these did not achieve as high a marks as this is a really clumsy approach requiring significant amount of work, given the question asked for a 'quick assessment'.

A number of candidates explained they would calculate the present value of the liabilities using swap rates by term or something similar without questioning whether this is an appropriate basis of assessment.

Attracting much lower marks are responses that simply discounted the cashflows at a single rate, be it the risk free rate, an assumed bond rate, or an arbitrary made up rate (e.g. 5%). This does nothing to answer the question. Discounting at risk free rate merely tells me that were the assets left in a cash account there are insufficient funds to meet the liabilities. This is insufficient advice from an actuary.

Virtually no candidates considered the tax status of the family trust and that this may impact on the ability to meet liability payments. From a practical perspective this was quite important especially as the trust would likely be taxed at the highest marginal rate.

Some candidates went into too much detail on constructing asset/liability scenario generators without noting the question asked for a "quick assessment" but were not penalised for doing so as long as they had an understanding of the concepts required by the question.

Part d:

This question was quite straightforward and was reasonably well answered. Marks were allocated simply as ½ per point provided. The majority of candidates provided between 2 and 3 points. The key points covered were that with Zero Coupon Bonds (ZCB) we can

construct exact cash flow matches, which is desirable to lower the AL matching risk, and that ZCB are unlikely to provide the required return without taking on excessive credit risk. However a couple of comments:

Not all candidates appreciated the “no coupon” aspect of ZCB and the fact that it could theoretically provide an exact match to liabilities compared to vanilla bonds where this would not be possible.

Some candidates loosely used the word “duration” and confused cash flow matching with duration matching where cash flow matching was relevant to this question.

Some candidates were also confused about the level of credit risk they might be taking on with ZCB.

Most candidates appreciated that currently a return of 8.75% would be difficult to achieve without significantly increasing credit risk (and therefore risk of not meeting liabilities) by investing solely into ZCB's.

Many candidates lost silly marks for again providing ‘lazy’ answers, such as saying that “ZCB are a good match and hence are desirable” without reference to cash flows or risks or anything else. Candidates are expected to provide more than just “good match” as an answer – why is it a good match?

Following the same vein, while not heavily penalised, many candidates answered that ZCB provide good duration match for the liabilities. While true, this is a really weak answer, since we can duration match with any fixed interest security.

For other points there were a whole raft of other seemingly random guesses. There is a fairly flat distribution of answers referring to Australian ZCB variously as liquid, illiquid, non-existent, high risk, low risk etc

For the record, there are ZCB in the Australian market, but low availability, liquidity is not significantly lower than their coupon bond counterparts, have lower risk in a cash flow matching sense, but have higher duration risk than bonds of a similar maturity. As such, two-word answers attracted few or low marks without a fuller explanation of what the candidate actually means.

Part e:

Most candidates were able to make some attempt at this question. Candidates provided a wide range of answers; those that attracted the higher marks were those that provided specific insightful points, those that scored lower provided more generic ambiguous responses.

The better candidates were able to think about the profile of the liabilities and appropriateness of different asset classes from the context of meeting liability payments whilst at the same time being able to achieve the return objectives.

More marks were also given for candidates that gave good discussions on current market conditions and how this could potentially impact on the ability to meet the objectives.

Few raised the ideas of a risk appetite in building a strategy to meet the objectives of the Trust.

Most traditional asset classes (equities, bonds, cash, property etc.) were considered and discussed but not everyone brought it all together to consider diversifying across a number of asset classes or consider how investments might be structured (managed fund and/or direct investments and the issues involved).

Surprisingly few raised the idea of investing in Bank Term deposits as a practical way of matching the payments of the trust.

The first 2.5 marks were allocated based on the discussion of the asset classes themselves, and generally marks were allocated quite generously. Lower marks were given to responses that only discusses equity and fixed interest as alternatives; full marks were given for discussions on all the major asset classes while also allowing for the possibility of a mixed asset portfolio approach. The second 2.5 marks were allocated in a much more discretionary way. The best responses not only discussed the characteristics of the asset classes themselves (Returns expectations, risk profile, liquidity etc) but also talked about the recent economic conditions (as required by the question) and also related this to the

situation at hand with appropriateness of the asset class. Many candidates forgot the context of the question and launched into generic discussions.

Part f:

The final question again was quite easy. Answers to what was quite a simple question with no investment knowledge required were average. Most candidates lost marks by not reading the question, and provided investment strategies (recommendations on what to invest). A number of candidates discussed investment related issues that a simple reading of the question showed this was not what was required.

### **Question 3 (17 marks)**

This question was about the problems of non-stationary covariance structures in the practical application of classical mean-variance models in portfolio construction. Corrective actions and alternative approaches were required to be discussed. Markers were more lenient in their marking awarding full marks for answers that were encompassed most of the point but not necessarily wholly. Thus the average mark was high despite the question being almost 60% CJ. The average mark was 50% and the proportion passing was 35%.

- (a) Generally answered reasonably well and interpreted correctly, however students had difficulty scoring maximum points on this part. A repetition or variant of the same idea across several bullet points does not score extra marks.
- (b) Students generally had a good understanding of the nature of scenario testing and could devise plausible possible scenarios. A wide latitude of possible scenarios was allowed over and above the model solutions. Students were not so strong at suggesting corrective actions.
- (c) Alternative approaches to asset modelling in the presence of non-stationary covariance was generally well answered and interpreted correctly.
- (d) Approaches that could be used to quantify potential losses from an unexpected change in market conditions was generally well answered and interpreted correctly.
- (e) The management of non-stationary correlation between asset classes was generally not very well answered. Students may have experienced problems interpreting this sub-part.

### **Question 4 (17 marks)**

This question was about setting assumptions for asset models, calculating before and after-tax returns and applying pooled investment vehicles to charity investment. Numerical answers, and the underlying reasoning were required. Answers were accepted within a specified reasonable range. Consequently candidates were required of both current investment conditions. It was a reasonably straightforward question based on application of an example in the course notes. Stronger answers that applied the course note example did well. There were also numerous weak answers. This question had the highest CV except for Q6.

The average mark was 40% and the proportion passing was 26%.

Part A - Generally answered poorly, with no common misinterpretations. This was a straightforward return assumptions setting question requiring both reasoning and numeric figures. The average for this part was about 5 out of 10 which were lower than expected. Common mistakes included inconsistent set of assumptions, disconnected and non-



cohesive explanations, not demonstrating in-depth knowledge of how key macro variables interact with each other, confusion between hedged and unhedged return and incorrect adjustment for equity risk premium (ERP).

Part B - Relatively few were able to calculate the post tax returns in part B. Very poorly answered overall. Few candidates were able to calculate correctly the post tax returns set out in Part (a) of the question. This was surprising as there is a similar case study in Unit 2 of the Course Note. Few candidates knew that a charity is entitled to franking credits and most candidates assumed there was no impact on return. Few candidates knew how to calculate franking credits correctly. Lack of this knowledge would make it difficult for the student to answer this sub-part well because three adjustments were needed namely adjusted risk free discount rate, proportion of franking and the actual franking credits amounts. However, as mentioned, Case Study in Unit 2 has a similar work example. For listed property trusts, most candidates failed to demonstrate the knowledge required for distribution yield.

Part C - Generally poorly answered. Most candidates failed to relate the nature of charity investment to the drawbacks of pooled investment vehicles. Some mentioned tax issues without explaining further on franking taxation. This is probably understandable because not many candidates involve in managing charity funds

#### **Question 5 (20 marks)**

This question was about being the Portfolio Manager for a diversified Australian infrastructure fund that is significantly leveraged in the current economic and financial conditions. Candidates were asked about setting investment objectives and potential major risks for the coming twelve months. An assessment of over-the-counter put option pricing and parameter assessment was required. Finally, the view of external investors was required in the event of a rights issue by the Australian infrastructure fund. Overall, the quality of answers was relatively poor. The average mark was 40% and the proportion passing was 30%.

a. many candidates failed to mention the obvious need to repay the \$400m debt in 9 months time as a primary objective for the next year. A lot of candidates suggested using the 'probability of insolvency' or 'probability of being able to service debt when it is due' as possible quantitative measurements. These are not practical and are not used in the infrastructure/funds management industry. This potentially has something to do with the training of an actuarial graduate where insurance is the main focus while general business/finance teaching is lacking.

b. When asked for two alternative methods of classifying the assets in the fund, many candidates failed to appreciate the different risk/return characteristics associated with different types of infrastructure asset. Marking was lenient in accepting a general statement along the lines that the three types of infrastructure asset are fundamentally different with different risk-return profiles

c. Clearly the best answered part of the question with a number of easy marks available for identifying risks such as those associated with the short-term debt, long-term debt, operational performance and liquidity risks.

d. Candidates struggled with part (d), in particular with explaining the difficulties associated with determining the put option premium due to the opacity of choosing the correct numerical inputs into the option pricing formula.

e. A large number of candidates incorrectly focused on the considerations in assessing the merits of the infrastructure fund, whereas the question specifically sought portfolio management considerations from the point of view of an existing investor (such as asset allocation, investment mandate, dilution etc). The point of view of an existing investor was emphasised in the question itself.

### Question 6 (14 marks)

This question was evaluating and advising on the investment portfolio of an established unlisted buyout firm. The portfolio consists of cash, bonds, unlisted and listed companies. Discussion of the significant features of the portfolio's investments was required. A description of the Investment style and analytical steps for considering whether a new company investment should be included into their portfolio was needed. Finally, the challenges around formulating an annual performance-based fee was examined.

The markers felt that the answers were of poor quality leading to a low pass rate. This could be due to the fact it is a last question and lots of students seemed to be in a rush answering the question. The markers set the passing mark according to the quality of answers rather than try to target a particular pass rate. This passing mark was subsequently adjusted down 0.5 marks.

The average mark was 34% and the proportion passing was 33% which is the second lowest of the six questions despite this question having the lowest B/C cutoff percentage.

(a) Most answers recognized that equities were reasonably diversified.

Very few pointed out the additional risk inherent in Conquest's private equity oriented strategy (in buying, delisting and turning around companies marked down)

Virtually no candidates recognized that Health was overweight relative to the index.

Few candidates mentioned the impact of changing interest rates on the fixed interest part of the portfolio.

Only 0.5 marks were awarded if the candidate merely stated the % allocated to equities without making any comment about it being more risky

(b) Most candidates were able to identify that it was a value style of investing; quite a few also described the style as active.

Most seemed to recognize that the idea was to identify undervalued companies, but fewer were able to describe how one would systematically go about performing such identification, i.e. use ratio metrics such as P/E, P/B, PeG etc as screens, then drilling down further

Quite a few did recognize that one ought to consider the diversification benefits (or otherwise) that a new investment would bring to the portfolio

(c) This part had the greatest sensitivity to results, with a whole 2 points being awarded for every well argued point.

Candidates mentioned the issue of the misalignment of investor and manager interests – the asymmetry in the reward/risk equation that might encourage Conquest to take on undue risk. This is valid but less important than other points, e.g. the benchmark point. A good benchmark which correctly adjust the performance by risk taken correctly could help mitigate this risk. So no or not many points awarded for mentioning "encouraging taking excessive risk etc".

Candidates also recognized the difficulty with the concept of a performance fee paid annually when the investment timeframes associated with private equity are typically longer.

Otherwise, candidates mentioned the difficulty of obtaining a suitable benchmark. Markers were lenient in awarding marks for the mention of the word benchmark, even if the candidate may not have known the particular difficulty in coming up with a suitable benchmark.

Overall, with the initial 20% pass rate (33% after adjustments), the markers do not feel that they had been too generous on this point.

## **2A Course Chief Examiner's Report Semester 2 2009**

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### **1. Summary**

#### **1.1 Pass Rates**

58 Candidates enrolled for the Semester 2 2009, 2A course. Of these, 1 transferred to another course and 5 withdrew prior to the exam.

The assessment comprised one assignment worth 15% and an exam worth the remaining 85%.

It is proposed that 31 Candidates be awarded a pass, which gives a pass rate of 60%. This compares with previous pass rates from recent exams as follows:

**Table 2 – Pass Rates from Recent Exams**

<b>Exam</b>	<b>Pass Rate</b>
Semester 1 2009	40%
Semester 2 2008	48%
Semester 1 2008	33%

#### **1.2 Candidate Numbers**

The Candidate numbers can be summarised as follows:

**Table 2 – Candidate Numbers**

	<b>Number of candidates</b>
Originally enrolled	58
Withdrawn prior to exam	6
Absent from exam	-
Presented at exam	52
Passed	31
Failed	21

The analysis by examination centre is as follows:

**Table 3 – Analysis by Examination Centre**

Centre	Presented	Passed	Pass Rate
Sydney	28	17	61%
Melbourne	14	9	64%
<b>Australia</b>	<b>42</b>	<b>26</b>	<b>62%</b>
Auckland	2	1	50%
Hong Kong	3	1	33%
Singapore	3	1	33%
Tianjin	1	1	100%
London	1	1	100%
<b>International</b>	<b>10</b>	<b>5</b>	<b>50%</b>
<b>Total</b>	<b>52</b>	<b>31</b>	<b>60%</b>

The Australian pass rate of 62% is a significant improvement on the 38% pass rate for Semester 1 2009. Note, the Semester 2 2008 pass rate was 55% for Australian candidates.

The International candidates 50% pass rate is a slight increase on the 47% pass rate for Semester 1 2009.

## **2. Examination Administration**

### **2.1 Examiners**

The examiners for this semester were:

Chief Examiner: Gary Musgrave  
Assistant Examiners: Aaron Bruhn (Course leader for 2A)  
James Hickey

## **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 4 – Degree of Difficulty of Exam**

Question	Units	Knowledge & Understanding	Straight-forward Judgement	Complex Judgement	Total Marks
1a	2,3	4			4
1b	3,4	2			2
1c	3,4		4		4
1d	1,4		4		4
1e	1,3,4		3		3
2a	3,4		4		4
2b	3,4		6	3	9

2c	1,2,3,4			8	8
3a	2		6	2	8
3b	1,3	4			4
3c	1,2,4		4		4
3d	1,2,3,4			7	7
4a	1,2,4		6		6
4b	2	2	3		5
4c	2,3,4,5			9	9
5a	1,2	4			4
5b	1,2,5	4			4
5c	1,2,3,4		4		4
5d	1,2,3,4			7	7
<b>TOTAL</b>		<b>20</b>	<b>44</b>	<b>36</b>	<b>100</b>

**Table 5 – Course Coverage**

Question	Units	Knowledge & Understanding	Straight-Forward Judgement	Complex Judgement	Total Marks
1	1,2,3,4	6	11	0	17
2	1,2,3,4	0	10	11	21
3	1,2,3,4	4	10	9	23
4	1,2,3,4,5	2	9	9	20
5	1,2,3,4	8	4	7	19
<b>Total</b>		<b>20</b>	<b>44</b>	<b>36</b>	<b>100</b>

Based on the table above, each of the five questions have similar coverage of the course material but a differing spread of KU, SJ and CJ type marks. This means that although the questions had differing degrees of difficulty, candidates were required to demonstrate an understanding of the course material in each question.

**Table 7 – Pass Rates**

	<b>Ass 1</b>	<b>Q1</b>	<b>Q2</b>	<b>Q3</b>	<b>Q4</b>	<b>Q5</b>
Pass	65%	35%	58%	52%	44%	56%
Fail	35%	65%	42%	48%	56%	44%

### **3.6 Question by Question Analysis (Exam out of 200)**

#### **QUESTION 1**

	Raw Marks Required	% of Total Marks	Number of Candidates	Proportion of Candidates
Strong Pass	26.0	76.5%	3	6%
Pass	22.0	64.7%	15	29%
Below Standard	16.0	47.1%	26	50%
Weak	10.0	29.4%	7	13%
Showed Little Knowledge	1.0	2.9%	1	2%
Did Not Attempt	0.0	0.0%	0	0%
 Total Marks Available	 34.0			
 Maximum Mark	 29.0			
Average Mark	19.6			
Standard Deviation	4.5			

This question was expected to be relatively easy for candidates. Even moderately prepared candidates should have scored well as there was no CJ component in the question. For this reason, the raw pass mark was set at 22 out of 34. However, candidates did not perform very well in this question, with a pass rate of 35%, which was the lowest of all the questions.

#### **Part (a)**

- The expense assumptions were generally well identified, but few candidates listed more than one or two fee-related items, if any.
- Most candidates were able to list at least three other assumptions needed to examine profitability in the case cited.

#### **Part (b)**

- Many candidates only scored half marks for this part, identifying recouping expenses and assessing profitability and nothing else.
- Some candidates mentioned sensitivity analysis, for which we generally gave 0.5 mark.

Part (c)

- Most candidates were able to identify one appropriate profit measure, but then did not explain why well enough.
- Some candidates mentioned the yield on transfers and/or MOS methods, which are not appropriate profit measures and thus did not gain marks. The inappropriateness of the yield of transfers is covered in the text book. This indicates candidates are not thoroughly reading the course material in the text book.
- Only a few specified a second appropriate profit measure, but again the why part of this question was poorly done.

Part (d)

- This mechanical calculation part was answered well by most, as it should have been.

Part (e)

- Full marks were obtained by many candidates here. They easily demonstrated the links between a reduction in the tax liability when calculated on a discounted basis, the resulting increase in NAV and hence increase in unit prices.

## QUESTION 2

	Raw Marks Required	% of Total Marks	Number of Candidates	Proportion of Candidates
Strong Pass	26.5	63.1%	5	10%
Pass	20.5	48.8%	25	48%
Below Standard	14.5	34.5%	17	33%
Weak	10.5	25.0%	2	4%
Showed Little Knowledge	1.0	2.4%	3	6%
Did Not Attempt	0.0	0.0%	0	0%
Total Marks Available	42.0			
Maximum Mark	31.0			
Average Mark	20.3			
Standard Deviation	5.3			

This question was reasonably well answered by candidates, with a pass rate of 58%.

Part (a)

- Only half of the candidates mentioned the full cost of the IT system needs to be included in the pricing basis.
- Very few candidates mentioned the full cost should be recovered over three years. Candidates are not thoroughly reading the course material, as this concept is covered in the text book.
- Most candidates were able to identify issues such as utility with other existing products.

Part (b)(i)

- Most candidates were able to identify TPD as a good starting point. Few candidates covered the other points, particularly the smoker/non-smoker, sex and age profile issues.

Part (b)(ii)

- Many candidates were able to identify the disadvantage of the TPD profile not reflecting the DI profile.
- Few candidates were able to mention other valid disadvantages.



- Many candidates thought “profile” meant more than just the mix of age, sex and smoker/non-smoker status, often discussing incorrectly incidence rates.

Part (c)

- Candidates were able to raise the issue of immoral conduct and definition of serious injury. However, few candidates mentioned that the 30% benefit had no rationale.
- Candidates provided a reasonable discussion on the risks associated with the additional product feature.

### QUESTION 3

	Raw Marks Required	% of Total Marks	Number of Candidates	Proportion of Candidates
Strong Pass	30.0	65.2%	5	10%
Pass	24.0	52.2%	22	42%
Below Standard	19.0	41.3%	16	31%
Weak	12.5	27.2%	7	13%
Showed Little Knowledge	1.0	2.2%	2	4%
Did Not Attempt	0.0	0.0%	0	0%
Total Marks Available	46.0			
Maximum Mark	33.5			
Average Mark	23.1			
Standard Deviation	5.1			

Overall the standard of answers was reasonable for this question, with a pass rate of 52%.

Part (a)

- This was expected to be a fairly standard question about asset allocations for lump sum protection and disability products, with similar style questions being asked in past exams. A well prepared candidate should know the appropriate assets with all the reasons for backing liabilities for various products, and thus should do well in this type of question. However, the average mark for this question was only 7.7 out of 16.
- Although many candidates made sensible comments about the short term nature of liabilities and the need to hold defensive assets, they then proposed highly risky asset allocations in equities and property.
- The weaker candidates did not comment separately on active lives and disability claims in payment.

Part (b)

- This was well answered, with most candidates able to identify the differences between a hypothetical disability product in the question and a standard disability product.

Part (c)

- This was well answered, with most candidates able to identify the risks with the hypothetical disability product in the question.
- Most candidates correctly identified anti-selection as a major issue, although an adequate explanation was often lacking.
- A few candidates launched into their pre-prepared lists of risks, but weren't able to relate these to the actual product in the question.

Part (d)

- This part of the question required the application of complex judgement. The question was poorly answered, with most candidates struggling to identify the issues associated with a conversion option on the hypothetical disability product.

#### QUESTION 4

	Raw Marks Required	% of Total Marks	Number of Candidates	Proportion of Candidates
Strong Pass	26.0	65.0%	4	8%
Pass	20.0	50.0%	19	37%
Below Standard	14.0	35.0%	22	42%
Weak	10.0	25.0%	7	13%
Showed Little Knowledge	1.0	2.5%	0	0%
Did Not Attempt	0.0	0.0%	0	0%
Total Marks Available	40.0			
Maximum Mark	27.0			
Average Mark	19.2			
Standard Deviation	4.3			

This was a relatively challenging question for candidates, with a pass rate of 44%.

Overall, few candidates demonstrated sound knowledge of all 3 areas covered in group risk, non-proportional reinsurance and pandemics.

Part (a)

- Reasonable answers were given to this part of the question.
- It tended to be answered well by students who demonstrated a sound knowledge of the features of group risk business. Those without such knowledge lacked the basis from which to demonstrate significant judgement.
- Candidates were generally able to identify the risks, but struggled to identify the benefits associated with the group life product in the question.

Part (b)(i)

- This was a book work question. Thus it was well answered by candidates, with many able to describe catastrophe and excess of loss reinsurance.

Part (b)(ii)

- Reasonable answers were given to this part of the question.
- However, students who gave poor answers, viewed that it was better to provide an ill informed opinion than acknowledge that not enough information had been provided to make a recommendation. In the circumstances a discussion of the relevant points was more appropriate than a decision.

Part (c)

- This part required the application of complex judgement to identify the issues with a pandemic. Candidates generally found this the most challenging part of the question, with an average mark of only 7.6 out of 18 possible marks.
- Most candidates identified the mortality risk.
- Only half of the candidates also identified operational risks with staff affected by the pandemic, concentration risk, reputation risk and the ability of the reinsurer to pay claims.

## QUESTION 5

	Raw Marks Required	% of Total Marks	Number of Candidates	Proportion of Candidates
Strong Pass	28.0	73.7%	3	6%
Pass	21.3	55.9%	26	50%
Below Standard	18.5	48.7%	16	31%
Weak	10.0	26.3%	6	12%
Showed Little Knowledge	1.0	2.6%	1	2%
Did Not Attempt	0.0	0.0%	0	0%
 Total Marks Available	 38.0			
Maximum Mark	30.8			
Average Mark	21.6			
Standard Deviation	4.0			

This lifetime annuity question was answered well by candidates. However, candidates scored low marks on the parts of the question requiring judgement. Overall, the question was reasonably well answered by candidates, with a pass rate of 56%.

### Part (a)

- A book work question (on the benefits of a lifetime annuity to a purchaser) answered well by candidates.

### Part (b)

- A book work question (on why lifetime annuities are not popular with individuals) with reasonable answers provided.
- Not many candidates realised that part b gave 0.5 marks per fact, whereas part a was 1 mark per fact. The markers suggested clearer guidance should be given in the exam question eg "list and describe" to give a hint that an explanation is required or not. This comment needs to be taken into account when setting future exam questions.
- Candidates missed out on getting marks by using keywords only. For example, don't just say "longevity risk is passed to the insurer", but add a sentence about what longevity risk is. This can be the difference between a pass and a fail for borderline cases.

### Part (c)

- Reasonable answers were given to this part, where candidates were asked why lifetime annuities in the Australian market are not popular with life insurance companies.

### Part (d)

- This part required the application of complex judgement associated with a rider attached to the annuity for a guaranteed period of 10 years. However, it was generally not well answered, with an average mark of 6 out of a possible 14 marks.
- Whilst many candidates were able to identify the advantages with the new feature, they struggled to identify the disadvantages.
- Some candidates missed out on a mark by not formatting their answer as a letter.

**The markers raised the issue of legible handwriting, making it hard to give marks.**

## 2B Life Insurance Examiner Report Semester 2 2009

### 1. Summary

#### 1.1. Pass Rates

63 Candidates enrolled for the Semester 2 2009, Life Insurance 2B exam. One student withdrew before the exam and all remaining candidates presented at the exam. The assessment comprised one assignment worth 15% and an exam worth the remaining 85%.

It is proposed that 24 Candidates be awarded a pass, which implies a pass rate of 39% for those sitting the exam. This compares with a pass rate of 33% for the 2009, Semester 1 exam.

#### 1.2. Candidate Numbers

The Candidate numbers can be summarised as follows:

**Table 1 – Candidate Numbers**

	Number of candidates
Originally enrolled	63
Withdrawn prior to exam	1
Absent from exam	0
Presented at exam	62
Passed	24
Failed	38

The analysis by examination centre is as follows:

**Table 2: Summary of Results by Exam Centre**

Centre	Presented	Passed	Pass Rate
Sydney	31	11	35%
Melbourne	16	7	44%
Fiji	1	0	0%
Hong Kong	1	0	0%
Kuala Lumpur	1	1	100%
London	4	1	25%
Singapore	5	3	60%
Tokyo	3	1	33%
Total	62	24	39%

## 2. Examination Administration

### 2.1. Examiners

The examiners for this semester were:

Chief Examiner: Andrew Gill

Assistant Examiners: Damian Thornley  
Gregory Bird

## 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	Syllabus Aims	Knowledge & Understanding	Straight - Forward Judgement	Complex Judgement	Total Marks
1(a)	1, 2	3			3
1(b)	10	2			2
1(c)	4		5		5
1(d)	4, 9, 13			7	7
2 (a)	4	2			2
2 (b)	4, 5		6		6
2 (c)	5, 12			8	8
3 (a)	8	2			2
3 (b)	2, 5, 8		6		6
3 (c)	8		3		3
3 (d)	7			6	6
4 (a)	11	3			3
4 (b)	1, 2		2		2
4 (c)	1, 2	3			3
4 (d)	2, 3, 4, 12			8	8
5 (a)	12		4		4
5 (b)	2		4		4
5 (c)	2, 6, 12			8	8
6 (a)	7	4			4
6 (b)	7, 8		4		4
6 (c)	7, 8		6		6
6 (d)	7, 8			4	4
<b>TOTAL</b>		<b>19</b>	<b>40</b>	<b>41</b>	<b>100</b>

Based on the table above, all six questions (with one exception noted below) have similar spread of KU, SJ and CJ type marks and hence, on this measure, a similar degree of difficulty.

An exception to this was question 5 which had no Knowledge and Understanding (KU) questions (with the question having 8 Straight-Forward Judgement (CJ) marks and 8 Complex Judgement (CJ) marks).

**Table 7 – Pass Rates**

	<b>Ass 1</b>	<b>Q1</b>	<b>Q2</b>	<b>Q3</b>	<b>Q4</b>	<b>Q5</b>	<b>Q6</b>
Pass	79%	35%	37%	45%	52%	34%	48%
Fail	21%	65%	63%	55%	48%	66%	52%

### **3.5. Overall Performance**

Unfortunately, a number of cases reviewed by the examiners displayed the most common deficiencies in exam technique, namely:

- Candidates not allocating sufficient time to answer each question and hence getting an E grade for the last question as they ran out of time;
- Candidates leaving the question for which they had the least understanding until last – this resulted in the candidates getting very few marks for this question by not raising the obvious points;
- Candidates not answering the question asked.

Particular areas where the candidates did not have an in-depth understanding included:

- Reporting of investment account business; and
- Understanding of Embedded Value concepts.

### **3.6. Question by Question Analysis**

#### **Question 1**

	Raw Marks Required	% of Total Marks	Number of Candidates	Proportion of Candidates
Strong Pass	16.0	47.1%	4	6%
Pass	12.3	36.0%	18	29%
Below Standard	8.0	23.5%	22	35%
Weak	4.5	13.2%	14	23%
Showed Little Knowledge	0.5	1.5%	4	6%
Did Not Attempt	0.0	0.0%	0	0%
Maximum Mark	18.3			
Average Mark	10.2			
Standard Deviation	3.8			

This question which related to the reporting treatment of investment business was generally answered poorly and displayed a significant lack of knowledge with regards to the reporting of this business among candidates. The low pass rate is a reflection of this.

Specific comments on the parts of the question are listed below:

#### Part a

This question asked candidates to describe the principles of how the policy liability for investment linked business is determined.

Many candidates answered in a very generic manner (referring to accumulation method) without relating it to AIFRS. Several candidates did not realise that a profit carrier is not relevant to investment linked business.

#### Part b

This question asked candidates to create a simple P&L in IFRS format based on budget information.

Quite concerning was that numerous candidates did not realise that the investment premium does not form part of the life office's revenue. These candidates showed significant profit as the premium income had been included (and charges taken out). This showed poor judgement (and ability to sanity check results) for these candidates.

Many candidates also failed to present their answer in a P&L format.

#### Parts c and d

These questions related to the main factors driving the Capital Adequacy Requirement for investment account business (part (c)) and part (d) focused on an example where a company is moving the business to a superannuation trust (the candidate is asked what are the key factors to consider in setting up a capital policy).

Most candidates performed poorly in part (c) as the components of the Capital Adequacy standard were listed without relating them to the question.

Many candidates did not seem to grasp that part (d) was essentially asking about a target surplus policy and many simply reiterated the points made in (c) with regards to the Capital Adequacy requirement. This was disappointing as Target Surplus questions are generally included in 2B exams, but in this case, in a slightly different manner. A concern is that many candidates have a standard answer for a target surplus question and are unable to think laterally to answer a target surplus question with a slightly different bent.

### **Question 2**

	Raw Marks Required	% of Total Marks	Number of Candidates	Proportion of Candidates
Strong Pass	18.5	57.8%	7	11%
Pass	15.5	48.4%	16	26%
Below Standard	12.0	37.5%	24	39%

Weak	5.5	17.2%	13	21%
Showed Little Knowledge	1.0	3.1%	2	3%
Did Not Attempt	0.0	0.0%	0	0%
Maximum Mark	23.0			
Average Mark	14.2			
Standard Deviation	3.8			

This question was reasonably answered. However, this question did focus on participating business and hence, many candidates did not perform that well given a lack of experience with this type of business.

Specific comments on the parts of the question are listed below:

#### Part a

Here candidates were asked to calculate the Capital Adequacy Requirement based on a set of data. This required understanding of the steps required in determining the Capital Adequacy Requirement (and did not require any significant calculation).

This question was generally well answered. Some candidates did not know that in assessing the larger of CTV and Capital Adequacy liability, it needs to be done separately for each product group.

#### Part b

This question gave the results of sensitivity testing relating to changes in interest, lapses and mortality on a book comprising of both investment account business and convention Whole of Life and Endowments. This was quite a challenging question and the better responses understood the impact in changes of these items on the workings of the participating insurance.

Generally the question was not well answered, in particular:

- Candidates could not link the relationship between VSA and interest rates;
- Very few candidates mentioned the potential impact from adequacy threshold test;
- Candidates did not have a solid understanding of the interest rate sensitivity on capital adequacy liability;
- Most candidates did not realise the impact of change in lapse and mortality will be absorbed by changes in future bonus rates;
- Candidates could not clearly explain the impact of lapse rate assumption change on capital adequacy liability;
- Most candidates thought the reduction of Capital Adequacy Liability from a change in lapse rates was purely due to reduction in number of policies.

#### Part c

In this part, the candidates were placed in a situation where the managing director wants to use the Policyholder Retained Profits (PRP) to fund growth in its individual risk business. The



candidate was expected to respond to the proposal and make any suggestions as to alternative measures that could be taken to meet the growth needs.

Candidates' performance was fair in this question. In particular:

- Most candidates did not discuss the role of AA and directors in distribution of PRP;
- Most candidates did not mention the issue behind the SH RP being maintained at least 25% of PRP;
- Most candidates did not mention the potential problem of PRP becoming excessive;
- Most candidates are able to identify different ways to raise capital. However, very few identified the possibility of increasing retained capital by reducing shareholders distributions.

### Question 3

	Raw Marks Required	% of Total Marks	Number of Candidates	Proportion of Candidates
Strong Pass	17.0	50.0%	10	16%
Pass	13.5	39.7%	18	29%
Below Standard	10.0	29.4%	20	32%
Weak	5.5	16.2%	12	19%
Showed Little Knowledge	1.0	2.9%	2	3%
Did Not Attempt	0.0	0.0%	0	0%
Maximum Mark	20.5			
Average Mark	12.6			
Standard Deviation	3.7			

This question related to analysis of change in Embedded Value. Overall the answers were not as good as expected (for what was a reasonably straight-forward question), resulting in low pass rates. More marks should have been achieved, especially in parts (a) and (b).

Specific comments on the parts of the question are listed below:

#### Part (a)

This question simply asked for reasons for carrying out a change in Embedded Value. Some comments include:

- Few candidates commented about relating assumptions to experience;
- Using the analysis to check the calculation was also rarely mentioned.

#### Part (b)

In this question the CFO has asked a number of questions regarding the change in Embedded Value over the year based on three scenarios.

Comments with regards the candidates performance include:

- The difference in tax treatment between EV and AoP was barely mentioned;

- Most candidates referred to mortality experience in the year being random but not as many that assumptions should be based on experience over several years;
- Most candidates identified that the change in asset mix would lead to higher resilience/capital requirements and would increase the earning rate assumption, but not as many referred to the discount rate changing.

#### Part (c)

An actuarial student has incorrectly calculated the Value of New Business (VNB) for the 2<sup>nd</sup> half of the year based on some numbers provided. The candidate is asked to comment on the calculation and suggest an alternative method.

Some comments with regards to the candidates performance include:

- Close to half the candidates calculated a better estimate for the second half value (part (ii));
- However, but there were not as many good answers for why the value shown was wrong (change in assumptions meaning you couldn't subtract one value for the total) and even less for doing an accurate calculation.

#### Part (d)

This seemed a quite simple question asking candidates to calculate a simple "back of the envelope" appraisal value (which is needed in a hurry by the CFO). This however, was the most poorly answered part of the question (see more specific comments below):

- Virtually no-one said to change VNB for premium rate changes
- Margin squeeze and providing a range of answers were also rarely mentioned
- Allowing for impact on expenses was most frequently mentioned, followed by shock lapse rate impact and allowing for sales growth in NB multiplier or somehow else in the total VNB.
- Few people picked up on the statement that the CFO's meeting was tomorrow. Some suggested doing research to validate growth assumptions which clearly wouldn't have been possible in the timeframe.

#### **Question 4**

	Raw Marks Required	% of Total Marks	Number of Candidates	Proportion of Candidates
Strong Pass	16.0	50.0%	8	13%
Pass	12.5	39.1%	24	39%
Below Standard	9.5	29.7%	20	32%
Weak	5.5	17.2%	6	10%
Showed Little Knowledge	1.0	3.1%	2	3%
Did Not Attempt	0.0	0.0%	2	3%
Maximum Mark	18.0			

Average Mark	12.1
Standard Deviation	3.6

This was a tricky question dealing with Group Disability Income business and an accumulation valuation methodology. In particular it examined the position when in loss recognition, and the calculation of a loss ratio and a deficiency reserve. The final part explored the issues surrounding profit volatility.

A major issue with this question was that most candidates totally misinterpreted part (d) (including Marker 1 when he attempted the question) and instead answered it like a 2A pricing question rather than a 2B valuation question. While credit was given for 2A-style answers (the question was a little ambiguous), there were just not as many marks available to be earned by a 2A-style response (as there were not as many valid points that could have been made).

Overall, the question was not answered well. In part this reflected the confusion in interpreting part (d) of the question, but also revealed that many candidates were not fully conversant with an accumulation valuation approach.

There was occasionally confusion between parts (a), (b) and (c) and candidates were awarded credit for referring to relevant points in the part other than that intended by the question.

General comments on the answers:

#### Part (a)

Candidates were asked to outline the approach they would take in calculating the actual claims loss ratio.

Part (a) was generally answered fairly well, though many candidates did not pick up the basic need for the claims to be incurred and the premiums to be earned. Not a single candidate mentioned the point about discounting to the date incurred.

#### Part (b)

Candidates were asked what additional steps they would take to calculate a best-estimate claims loss ratio.

Part (b) was the best answered part of this question, though few candidates mentioned the need to consider changes in the premium rates during the investigation period (though this was not needed to gain full marks).

#### Part (c)

Candidates were asked what other information was required to calculate a deficiency reserve.

For part (c), very few candidates picked up the asymmetry point (though did refer to the need to consider the status of the profit share) or the need to consider the period until the premium rate guarantees expire. Some mentioned the need to consider future membership changes and this was awarded the premium mark.

#### Part (d)

In this question, the CFO has asked what can be done to smooth the profits for a group insurance contract that is about to be signed with a large professional association.

Most candidates interpreted part (d) as though it was a 2A pricing type question and this was picked up on the marking day and reflected in a revised marking schedule.

As a result, only one candidate made any mention to the requirement to follow actuarial standards, and just a small handful made any reference to RPG's. Credit was given to suggesting moving to premiums as the profit carrier (which a few suggested).

Virtually all candidates mentioned reinsurance and most also got at least one of the other reinsurance marks either for explaining the impacts or suggesting different reinsurance types.

A fair number of candidates referred to either matching assets or being high rated fixed interest (but rarely both).

The wording of the question – "non-profit sharing basis" suggested moving to profit sharing to reduce volatility – a point many candidates picked up and were given credit for. The wording 'indefinite term' suggested moving to a definite term, but this got no credit as it would not reduce volatility.

### Question 5

	Raw Marks Required	% of Total Marks	Number of Candidates	Proportion of Candidates
Strong Pass	14.0	43.8%	3	5%
Pass	9.5	29.7%	18	29%
Below Standard	5.0	15.6%	29	47%
Weak	1.0	3.1%	11	18%
Showed Little Knowledge	1.0	3.1%	0	0%
Did Not Attempt	0.0	0.0%	1	2%
Maximum Mark	20.5			
Average Mark	8.0			
Standard Deviation	3.9			

This question tested candidates knowledge of the MoS reporting in the context of a pandemic scenario where claims are increasing and (with claims as a profit carrier), profit is being released under MoS reporting.

This was a difficult question, but handled reasonably by the candidates given the unusual nature of the question.

#### Part (a)

This question asked candidates to identify where in the Financial Condition Report (FCR) that the effects of the pandemic would be noted.

This was the easiest part of the question but not answered well. Some candidates listed out the checklist but still managed to miss out on some important points. It was surprising only a few candidates mentioned operational risk considering its discussion after the swine and bird flu. Only a small number discussed par book business. Many candidates mentioned Solvency and Capital Adequacy along with target surplus but did not continue with

additional capital requirements nor sources of capital possibly because they believed they adequately covered capital.

#### Part (b)

This question required candidates to do a simple planned profit calculation with the data provided (few calculations).

The quality of responses for part (b) was below expectation. Only 2 candidates got full marks. Many candidates simply used the profit margin carried forward (30%) as the recalculated profit margin for calculations.

The way the question and the numbers have been presented in a table, it was quite straight forward and the student should have an idea what and how the numbers should be used making the question much easier than if the numbers were presented differently. There were no interpretation issues.

#### Part (c)

This related to the release in profit as the result of higher claims brought on by the pandemic. Candidates had to come up with a considered approach as to what a more reasonable approach may be.

This is the worst answered part but it is also the most difficult part. Some candidates were on the right track with changing the profit carrier (e.g. premiums) but did not give reasons nor consequences. Many candidates did not seem to understand the increased profit is not reasonable and simply knew they had to do something because the question said so. They then focused their responses on assumption setting.

A worrying prospect was that a handful of candidates argued the increased planned profit will be offset by the increased claims experience.

### **Question 6**

	Raw Marks Required	% of Total Marks	Number of Candidates	Proportion of Candidates
Strong Pass	13.3	36.8%	6	10%
Pass	10.0	27.8%	24	39%
Below Standard	7.5	20.8%	30	48%
Weak	3.8	10.4%	22	35%
Showed Little Knowledge	1.0	2.8%	9	15%
Did Not Attempt	0.0	0.0%	0	0%
Maximum Mark	17.8			
Average Mark	9.7			
Standard Deviation	3.1			

This question covered the Market Consistent Embedded Value approach (MCEV) and asked the student to discuss differences with Traditional Embedded Value (TEV). TEV and MCEV were explained in detail in the preamble to the question.

The question was the most difficult on the paper and was answered reasonably given the difficulty of the question.

#### Part (a)

Candidates were asked to list the differences between MCEV and TEV. This was well answered by candidates who seemed to understand the key differences in the approach.

#### Part (b)

Candidates were asked to calculate the Value of Inforce (VIF), Cost of Capital (CoC) and Adjusted Net Worth (ANW) based on information given in the question.

This was not well answered. A significant portion could correctly calculate the VIF, and some the ANW but many did not realize the CoC would be calculated as the "balancing item".

#### Part (c)

Candidates were asked to opine on how the MCEV would differ from the TEV for traditional, investment linked and lump sum term business.

Candidates made good attempts at this question and many understood the issues particularly for term and investment linked business. Many candidates were confused when it came to traditional business however (again, most likely due to many candidate not being exposed to this business as much on a day-to-day basis).

#### Part (d)

This question asked what changes to product and capital management would likely to be made as the result of the change.

This was a very difficult question and was not answered well except by a select few. In retrospect, this was likely too difficult to include in the exam given the responses received.

# 3A General Insurance *Examiner Report Semester 2 2009*

## 1. Summary

### 1.1. Pass Rates

63 Candidates enrolled for the Semester 2 2009, 3A General Insurance exam. Of these, 4 withdrew and 2 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 30%. This compares with a pass rate of 37% for the 2008, Semester 2 exam.

### 1.2. Candidate Numbers

The Candidate numbers can be summarised as follows:

**Table 1 – Candidate Numbers**

	Number of candidates
Originally enrolled	63
Withdrawn prior to exam	4
Absent from exam	2
Presented at exam	57
Passed	17
Failed	40

The analysis by examination centre is as follows:

**Table 2 – Analysis by Examination Centre**

Centre	Presented	Passed	Pass Rate
Sydney	46	13	28%
Melbourne	5	3	60%
Hobart	1	0	0%
Brisbane	1	0	0%
Auckland	1	0	0%
Singapore	2	0	0%
Tokyo	0	0	0%
London	1	1	100%
<b>Total</b>	<b>57</b>	<b>17</b>	<b>30%</b>

## 2. Examination Administration

### 2.1. Examiners

The examiners for this semester were:

Chief Examiner: David Gifford

Assistant Examiners: Susan Cooney and Bruce Harris

## 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)	2,3	5			5
1(b)	2			7	7
1(c)	3,4		5		5
1(d)	3			3	3
2(a)	1		3		3
2(b)	4		5		5
2(c)	1,4	7			7
3(a)	1	6			6
3(b)	1		4		4
3(c)	1			2	2
3(d)	1			3	3
3(e)	2		3		3
4(a)	1	2			2
4(b)	1			3	3
4(c)	2			4	4
4(d)	2,3		5		5
5(a)	3		6		6
5(b)	3		3		3
5(c)	4			8	8
6(a)	2			4	4
6(b)	2			5	5
6(c)	2		4		4
6(d)	3			3	3
<b>TOTAL</b>		<b>20</b>	<b>38</b>	<b>42</b>	<b>100</b>

**Table 5 – Pass Rates**

	Ass 1	Q1	Q2	Q3	Q4	Q5	Q6
Pass	63%	35%	40%	50%	42%	32%	38%
Fail	37%	65%	60%	50%	58%	68%	62%



### **3.5. Overall Performance**

In setting the paper, the intention was to have a consistent level of difficulty with previous papers, however the standard was somewhat lower than the previous three semesters - semester 1 2009 had a 37% pass rate, semester 2 2008 had a 41% pass rate and semester 1 2008 had a 52% pass rate, but higher than Semester 2 2007 which had a 20% pass rate. The pass rate is within the range of historic pass rates although at the lower end of this range.

The average raw exam mark this semester was 79, relative to 93 for May 2009 and 90, 110, 74, 104, 85, 100 and 86 for the November 2008, May 2008, November 2007, May 2007, November 2006, May 2006 and November 2005 examinations.

The average raw marks in each of the six exam questions ranged from 40% to 55% of the total marks available, similar to the May 2009 exam (38% to 55%). Prior exam raw marks were (39% to 61% in November 2008, 36% to 57% in May 2008, 27% to 45% in November 2007, 47% to 59% in May 2007, 29% to 58% in November 2006, 43% to 55% in May 2006 and 26% to 57% in November 2005).

The standard across questions was relatively even, with Question 5 having the lowest pass mark and Question 3 the highest.

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

### **3.6. Question by Question Analysis**

#### **QUESTION 1 (19 MARKS)**

Course coverage: Unit 2,3,4  
Mark allocation: Knowledge and Understanding – 5 marks  
Straightforward Judgement – 5 marks  
Complex Judgement – 10 marks

The question asked candidates to consider the outstanding claims valuation for a travel insurance portfolio. In addition, candidates were required to perform a LAT test and assess the impact of external changes in the claims environment on the both insurance liabilities.

The responses to this question were average, with many students either receiving a pass or a weak grade. Many students presented reasonable attempts of the calculations, however struggled to identify trends in the experience and discuss the impact on the liability of the swine flu.

Part a) required candidates to list the steps required to perform a PPCF valuation at 30 June 2009 using 31 March 2009 data. This was a bookwork question, however was not answered well. Many candidates missed out on the separate treatment of June 2009 ultimate claims incurred, and the fact that outstandings at June 2009 only relate to projected payments after June 2009. Also, actual versus expected and change in basis were components of the valuation process which were missed by almost all candidates.

Part b) involved calculating the outstanding claims estimate for the 30 June 2009 accident quarter using the PPCI method. Part (i) was the worst answered, although seasonality was noted by most candidates, the growth in claims incurred on top of the seasonality was not recognised by most candidates and as such, their projection of ultimate claims incurred for the Jun09 quarter were too low.

Part (ii) was well answered, with most candidates providing sensible PPCI assumptions. Part (iii) was poorly answered, with many candidates including payments at

development 0 in the outstandings claims estimate at Jun09.

Parts (c) required students to calculate the premium liability and perform a LAT test. This question was reasonably well answered. While most students were able to calculate the premium liability and recite how the LAT test works, many candidates struggled with the calculation of the unearned premium and did not use the information provided to calculate it.

Part (d) required a discussion of the impact on the insurance liabilities of the swine flu outbreak. This question was not answered well. Many candidates missed out on the fact that this portfolio related to travel insurance for holidays in Europe exclusively, and that the only existing travel advisory relating to Swine Flu was for Mexico, thus providing incorrect assessments on both the claim and premium liability.

Final grades were distributed as follows:

- i. Strong Pass (A) – 6 candidates
- ii. Pass (B) – 15 candidates
- iii. Slightly Below Standard (C) – 10 candidates
- iv. Weak (D) – 22 candidates
- v. Showed Little Knowledge (E) – 4 candidates
- vi. Did Not Attempt (X) – 0 candidates

## **QUESTION 2 (17 MARKS)**

Course coverage: Units 1 and 4  
Mark allocation: Knowledge and Understanding – 7 marks  
Straightforward Judgement – 8 marks  
Complex Judgement – 0 marks

The question involved an unprofitable comprehensive motor insurance portfolio, where candidates were required to discuss ways to improve profitability, calculate profit figures and discuss the feasibility of adjusting the provisions to impact future reported losses.

This was a straightforward question, however was answered quite poorly.

Part a) required candidates to list alternatives to putting the portfolio into run-off. Many candidates provided sensible suggestions, however did not make enough suggestions to receive the full marks. Many students also focused on ways to raise additional capital to support the product rather than addressing the unprofitability of the product.

Part b) involved calculating the profit and a loss ratio for the motor portfolio. The calculations of profit were average, with many students showing little understanding of the income and expense items that constitute underwriting and net profit. Many students calculated the net loss ratio for the wrong year, and the calculations of the net earned premium and net claims incurred were generally incorrect.

Parts (c) required a discussion on the feasibility of bringing forward potential future losses in the accounts. In part (i) most students got the mark for identifying the tax implications of bringing losses forward.

Part (ii) was reasonably well answered. While a number of students commented on the inappropriateness of the marketing manager's suggestions, knowledge of what is and isn't permissible by specific legislation / standards was at times vague. Many students identified that changes in the outstanding claims liability was inappropriate, that the earning pattern of policies drives the premium liabilities, and that changes to the risk margin required the permission of the board. Surprisingly, many students missed the easy half a mark for using the answering in a letter format.

Final grades were distributed as follows:

- i. Strong Pass (A) – 1 candidate
- ii. Pass (B) – 23 candidates
- iii. Slightly Below Standard (C) – 10 candidates
- iv. Weak (D) – 13 candidates
- v. Showed Little Knowledge (E) – 10 candidates
- vi. Did Not Attempt (X) – 0 candidates

### **QUESTION 3 (13 MARKS)**

Course coverage: 1 and 2  
Mark allocation: Knowledge and Understanding – 6 marks  
Straightforward Judgement – 7 marks  
Complex Judgement – 5 marks

The question involved a proposed new product (providing cover for property auctions) which needed to be considered on a number of fronts by candidates.

Part a) required candidates to consider whether the proposed product meets the criteria for insurability. This part was straightforward bookwork and was generally answered well with most candidates receiving the majority of marks.

Part b) required candidates to state any conditions or restrictions of cover. Again this was answered reasonably well with most candidates identifying that limits should be placed on benefits provided.

Parts (c) required candidates to consider how a product which provided cover for every auction that the policyholder participated in until they are successful in buying a property would you impact the level of premium. Most candidates identified that the premium would increase but didn't consider other implications of such as change.

Part (d) required candidates to consider home loan providers and real estate agents as two possible distributors for the cover and to discuss which of these two options would be a more appropriate method of distribution. This was answered reasonably although many candidates, despite being asked to do so, failed to discuss a preferred option.

Part (e) required candidates to state how they would determine a net central estimate for the product. This was answered quite well with most candidates making reasonable comments in relation to claim numbers and average claim sizes.

Final grades were distributed as follows:

- i. Strong Pass (A) – 10 candidates
- ii. Pass (B) – 20 candidates
- iii. Slightly Below Standard (C) – 18 candidates
- iv. Weak (D) – 7 candidates
- v. Showed Little Knowledge (E) – 2 candidates
- vi. Did Not Attempt (X) – 0 candidates

### **QUESTION 4 (17 MARKS)**

Course coverage: Units 1,2,3  
Mark allocation: Knowledge and Understanding – 2 marks  
Straightforward Judgement – 5 marks  
Complex Judgement – 7 marks

The question asked candidates to examine the non-reinsurance recovery experience for a comprehensive motor portfolio over a period of two years during which the insurer used two different agents for collection of recoveries, and to determine a provision for outstanding claims incorporating these recoveries.

Overall the quality of responses was solid with the majority of candidates receiving a strong pass, pass or slightly below standard result. The majority of candidates demonstrated a reasonable ability to interpret the experience presented in the question and to estimate the outstanding claims liability.

Part a) required candidates to list sources of non-reinsurance recoveries. This question was straightforward bookwork and was answered well.

Part b) required candidates to examine the experience presented in the question and to provide explanations for the variation in the recoveries experience since between the two agents used. Responses were mixed – some candidates could quickly interpret the experience presented, while some struggled to draw reasonable conclusions from the information.

Parts (c) and (d) required the candidates to perform various calculations (estimate impact of new agent in (c) and outstanding claims in (d)). Again these questions were answered reasonably well – most candidates achieved at least some marks for both parts although both parts did distinguish well between candidates.

Final grades were distributed as follows:

- i. Strong Pass (A) – 6 candidates
- ii. Pass (B) – 19 candidates
- iii. Slightly Below Standard (C) – 13 candidates
- iv. Weak (D) – 12 candidates
- v. Showed Little Knowledge (E) – 6 candidate
- vi. Did Not Attempt (X) – 1 candidate

#### **QUESTION 5 (18 MARKS)**

Course coverage: Units 3,4

Mark allocation: Knowledge and Understanding – 0 marks  
Straightforward Judgement – 9 marks  
Complex Judgement – 8 marks

This question examined reinsurance recoveries in respect of a series of claims arising from a hailstorm and required candidates to calculate premium liabilities for a portfolio.

Part a) asked candidates to calculate reinsurance recoveries for four large claims. This was answered quite poorly with many candidates not understanding the operations of surplus reinsurance treaties.

Part b) required candidates to calculate reinsurance recoveries from the overall hailstorm. This part was answered reasonably well with.

Part c) required candidates to calculate premium liabilities for the portfolio. This part was answered relatively poorly with most candidates not allowing for the cost of reinsurance or any large event loading.

Final grades were distributed as follows:

- i. Strong Pass (A) – 4 candidates
- ii. Pass (B) – 15 candidates
- iii. Slightly Below Standard (C) – 7 candidates
- iv. Weak (D) – 13 candidates

- v. Showed Little Knowledge (E) – 16 candidates
- vi. Did Not Attempt (X) – 2 candidates

#### **QUESTION 6 (16 MARKS)**

Course coverage: Units 2 and 3  
Mark allocation: Knowledge and Understanding – 0 marks  
Straightforward Judgement – 4 marks  
Complex Judgement – 12 marks

This question looked at a motor vehicle bodily injury scheme which changed from fault to no-fault (and hence from lump sums to periodic benefits) several years ago. Based on data provided the question asked candidates to consider the most appropriate valuation method and to perform various calculations. This question required more complex judgement and was useful in separating the students.

Parts a) asked candidates to consider the most appropriate valuation method between PPCI and PPCS, based on data provided. This was reasonably well answered with the majority of candidates correctly identifying the factors which resulted in the PPCS being the preferred method.

Part b) required candidates to estimate outstanding claims liabilities by selecting PPCS factors and claims finalized for two separate accident years (pre and post legislative change). Answers were mixed with students generally selecting reasonable PPCS assumptions prior to the legislative change, but with many candidates not understanding the implications of the legislative change, and a number of candidates not selecting reasonable assumptions relating to claims finalized.

Part (c) – required candidates to estimate outstanding claims liabilities for no fault periodic benefits post the legislative change, using annuity factors provided in the question. This part was not well answered – less than a third of candidates made any attempt at this part (candidates may have been running out of time).

Part (d) required candidates to consider the impact of the legislative change on the risk margin and claims handling expenses for the portfolio. This part was generally well answered.

Final grades were distributed as follows:

- i. Strong Pass (A) – 12 candidates
- ii. Pass (B) – 11 candidates
- iii. Slightly Below Standard (C) – 18 candidates
- iv. Weak (D) – 7 candidates
- v. Showed Little Knowledge (E) – 9 candidates
- vi. Did Not Attempt (X) – 0 candidates

## **3B General Insurance Examiner Report Semester 2 2009**

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### **1. Summary**

#### **1.1. Pass Rates**

64 Candidates enrolled for the Semester 2 2009, 3B General Insurance 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 18 Candidates be awarded a pass, which implies a pass rate of 29%. This compares with a pass rate of 32% for the 2009, Semester 1 exam.

#### **1.2. Candidate Numbers**

The Candidate numbers can be summarised as follows:

**Table 1 – Candidate Numbers**

	Number of candidates
Originally enrolled	64
Withdrawn prior to exam	1
Absent from exam	0
Presented at exam	63
Passed	18
Failed	45

The analysis by examination centre is as follows:

**Table 2 – Analysis by Examination Centre**

Centre	Presented	Passed	Pass Rate
<b>Centre</b>	<b>Presented</b>	<b>Passed</b>	<b>Pass Rate</b>
Sydney	49	14	29%
Melbourne	6	2	33%
Adelaide	1	0	0%
Perth	1	1	100%
Wellington	1	0	0%
Auckland	1	0	0%
Singapore	1	0	0%
Kuala Lumpur	1	1	100%
Tokyo	1	0	0%
Munich	1	0	0%
Total	63	18	29%

## 2. Examination Administration

### 2.1. Examiners

The examiners for this semester were:

Chief Examiner: Jim Qin

Assistant Examiner: Kitty Ho

## 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)	3		5		5
1 (b) (i) & (ii)	3		4		4
1 (b) (iii) - (iv)	3			6	6
1 (c)	3	3			3
2 (a) (i)	3		4		4
2 (a) (ii)	4		4		4
2 (b)	2		6		6
3 (a )	1		5		5
3 (b)	1		3		3
3 (c )	2			2	2
4 (a) (i)	5	3			3
4 (a) (ii)	6	1			1
4 (b)	4	4			4
4 (c )	4		4		4
4 (d)	4		3		3
4 (e)	4			4	4
5 (a)	1	1			1
5 (b)	1		4		4
5 (c )	2			4	4
5 (d)	2			4	4
5 (e ) (i)	2		2		2
5(e) (ii)	2			2	2
5 (e) (iii)	2			2	2
6 (a)	2			6	6
6 (b)	2		3		3
6 (c ) (i)	2			3	3

6 (c ) (i)	2			2	2
6 (d)	2			6	6
<b>TOTAL</b>		<b>12</b>	<b>47</b>	<b>41</b>	<b>100</b>

**Table 6 – Pass Rates**

	<b>Ass 1</b>	<b>Q1</b>	<b>Q2</b>	<b>Q3</b>	<b>Q4</b>	<b>Q5</b>	<b>Q6</b>
Pass	68%	38%	40%	25%	48%	46%	41%
Fail	32%	62%	60%	75%	52%	54%	59%

### **3.5. Overall Performance**

Overall, the exam paper and assignment (combined) acted as a reasonable discriminator, with raw marks ranging from 77 to 129 out of 200. Overall candidate 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 candidates to apply core concepts in extraordinary new areas. However, we felt that on balance it was a reasonable paper that would provide a good broad test of candidates' knowledge and understanding and ability to apply this, and their judgement, to some practical situations.

Generally the scores assigned by the markers were consistent with what might normally be expected based on the marking guide. Marker pairs had generally reconciled any differences in their marks and the extent of remarking was fairly limited. Markers adjusted the grade cut-offs according to the perceived difficulty of the question.

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

Candidates found question 4 the easiest of the exam questions (48% pass rate) and question 3 the most difficult (25% pass rate).

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

- i. 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 sometimes difficult to conclude whether the candidates have the requisite skills to apply their knowledge, or if this is exam technique issue.
- ii. The "list" mentality is demonstrated by very few students showing sufficient depth of knowledge to score 'A' grades on the exam questions.

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

### **3.7. Question by Question Analysis**

#### **Question 1 (18 marks)**



Part (a) tested knowledge of capital and risk margin. This was generally well answered, however the majority of students did not mention the need for capital to cover tail events and non claim related risks in part (iii).

Part (b) tested FCR and impact of GFC. Many answers were generic and failed to provide details of key GPC specific impacts and responses.

Part (c) tested knowledge of APRA's GPS113. Students missed marks by failing to list the key points in the standards.

A summary of performance is set out below:

	Raw Marks Required	% of Total Marks	Number of Candidates	Proportion of Candidates
Strong Pass	10.8	59.7%	2	3%
Pass	8.8	48.6%	22	35%
Below Standard	6.8	37.5%	36	57%
Weak	4.0	22.2%	3	5%
Showed Little Knowledge	0.5	2.8%	0	0%
Did Not Attempt	0.0	0.0%	0	0%
Maximum Mark	11.0			
Average Mark	8.2			
Standard Deviation	2.3			

### **Question 2 (14 marks)**

Overall, the candidate's responses for this question were disappointing. We expected a relatively high proportion of people would pass as the question was relatively straight forward and the subject matter was not complex but the candidates did not demonstrate a strong understanding of the topic.

The large majority of students in part (b) calculated the reinsurance premium using a traditional actuarial approach. That is, calculated the expected claims cost and allowed for profit and expenses. Only a handful of students acknowledged that there was an exchange commission and even less calculated correctly.

For part (a) (i) CTP and home/motor limits were common answers (although not all explained why properly). The aggregate XOL and property FAC points were mentioned by few.

Most of the candidates calculated the ceding percentage correctly in part (b) but there didn't appear to be a great understanding of how surplus reinsurance worked, especially that exchange commission is paid.

A summary of performance is set out below:

	Raw Marks Required	% of Total Marks	Number of Candidates	Proportion of Candidates
Strong Pass	9.3	66.1%	4	6%
Pass	7.5	53.6%	21	33%
Below Standard	5.8	41.1%	21	33%
Weak	4.0	28.6%	13	21%
Showed Little Knowledge	0.5	3.6%	4	6%
Did Not Attempt	0.0	0.0%	0	0%

Maximum Mark	11.8
Average Mark	6.7
Standard Deviation	3.4

### Question 3 (10 marks)

This was an easy question and much shorter than the other questions in the exam paper. Surprisingly a couple of students ran out of time and skipped some parts of the question.

Part (a) was a straight forward calculation question and was answered reasonably well.

- However many students forgot to allow for the proportion of injuries which related to at fault drivers, and some made the inappropriate assumption that all injured were at fault.
- Many students were confused by the hospitalization information and used this as a basis of projecting future injury numbers.
- Some misunderstood the meaning of exposure and a couple failed to show basic understanding of how frequency is calculated.
- There was a variety in the magnitude of the final answer (ie cost per policy), ranging from a few dollars to several tens of millions. Some students obviously did not check the reasonableness of their results.

Part b): Most students understood the points about expenses, profit margin and reinsurance. However, not much explanation was given. Some students went off track in this question and focused on the potential behavioural impact on drivers and did not explain what actual adjustments would be made to allow for the add-on benefits.

Part (c) was poorly answered, which is understandable since the question is categorized as requiring complex judgment. Most students were not prepared to make a stance on the level of risk. A few students mentioned the riskiness of a long tail portfolio without referring specifically to this add-on product.

A summary of performance is set out below:

	Raw Marks Required	% of Total Marks	Number of Candidates	Proportion of Candidates
Strong Pass	7.9	78.8%	1	2%
Pass	6.5	65.0%	15	24%
Below Standard	5.0	50.0%	31	49%
Weak	4.0	40.0%	9	14%
Showed Little Knowledge	0.5	5.0%	7	11%
Did Not Attempt	0.0	0.0%	0	0%
Maximum Mark	8.1			
Average Mark	5.5			
Standard Deviation	2.7			

### Question 4 (19 marks)

Part (a): some specific comments are:

- Some forgot to list several sources
- Students often focused on line items without explaining how these would be used in

- calculation an appraisal value
- Answers relating to shortcoming tend to be vague.

Part (b): common responses tended to be rather vague, especially disadvantages.

Part (c): some specific comments are:

- Most students failed to pick up that Retention will increase goodwill, and that the overall expense assumption reduced
- Many students failed to recognise that shutting down head office would entail costs
- Diversification Benefit was particularly poorly answered.

Part (d): some responses were vague like "change in market conditions, legislation, and competition"

Part (e) tested knowledge of ERM framework. This was particularly poorly answered – very few students appear to know what an ERM framework is.

A summary of performance is set out below:

	Raw Marks Required	% of Total Marks	Number of Candidates	Proportion of Candidates
Strong Pass	11.8	61.8%	4	6%
Pass	8.8	46.1%	26	41%
Below Standard	6.8	35.5%	22	35%
Weak	4.8	25.0%	11	17%
Showed Little Knowledge	0.5	2.6%	0	0%
Did Not Attempt	0.0	0.0%	0	0%
Maximum Mark	14.8			
Average Mark	8.6			
Standard Deviation	4.1			

### **Question 5 (19 marks)**

Part (a): most candidates failed to mention that per k rating is not relevant for theft.

Part (b) and (e) was generally well answered

Part (c) Most candidates came up with only one alternative instead of two.

Part (d) Some candidates went straight for the GLM approach without realising that the data would be unavailable.

A summary of performance is set out below:

	Raw Marks Required	% of Total Marks	Number of Candidates	Proportion of Candidates
Strong Pass	11.3	59.2%	3	5%
Pass	9.0	47.4%	26	41%
Below Standard	6.5	34.2%	13	21%
Weak	4.3	22.4%	18	29%
Showed Little Knowledge	0.5	2.6%	3	5%
Did Not Attempt	0.0	0.0%	0	0%

Maximum Mark	12.8
Average Mark	7.7
Standard Deviation	5.0

### **Question 6 (20 marks)**

Part (a) was generally well answered. The majority of students picked up the need for a large size, stable claim history and good credit rating with high performing students also recognising the other characteristics.

Part (b) was a standard knowledge questions involving minimal judgement. The majority of students were able to recognise the key risks of the scheme.

Part (c) many responses appeared to be reproduced from reading material, with only a few students showing any greater understanding.

Part (d) The responses were quite varied. The better answers recognised the main reasons why a company would chose self insurance as well as recognising that the risk appetite of the board would need to be considered. The poorer answers tended to use more of a "scatter-gun" approach, often replicating responses for Part (a) and therefore failing to appreciate the differences for a company with regards to burners and self insurance.

A summary of performance is set out below:

	Raw Marks Required	% of Total Marks	Number of Candidates	Proportion of Candidates
Strong Pass	14.0	70.0%	3	5%
Pass	11.5	57.5%	23	37%
Below Standard	6.0	30.0%	34	41%
Weak	4.0	20.0%	3	54%
Showed Little Knowledge	0.5	2.5%	0	5%
Did Not Attempt	0.0	0.0%	0	0%
Maximum Mark	17.5			
Average Mark	10.4			
Standard Deviation	4.9			

# **5A Investment Management and Finance Examination Report Semester 2 2009**

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## **1. Summary**

### **1.1. Pass Rates**

52 Candidates enrolled for the Semester 2 2009, Investment Management and Finance exam. Of these, 5 withdrew from the course and 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 17 Candidates be awarded a pass, which implies a pass rate of 37%. This compares with a pass rate of 50% for the 2009, Semester 1 exam.

### **1.2. Candidate Numbers**

The Candidate numbers can be summarised as follows:

**Table 1 – Candidate Numbers**

	<b>Number of Candidates</b>
Originally enrolled	52
Withdrawn prior to exam	5
Absent from exam	1
Presented at exam	46
Passed	17
Failed	29

The analysis by examination centre is as follows:

**Table 2 – Analysis by Examination Centre**

<b>Centre</b>	<b>Presented</b>	<b>Passed</b>	<b>Pass Rate</b>
Sydney	31	11	35%
Melbourne	8	2	25%
Canberra	2	2	100%
Auckland	1	0	0%
Hong Kong	2	2	100%
Singapore	0	0	0%
Taiwan	0	0	0%
Kuala Lumpur	2	0	0%
London	0	0	0%
Total	46	17	37%

## 2. Examination Administration

### 2.1. Examiners

The examiners for this semester were:

Chief Examiner: Colin Priest

## 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
1 (a)	2	1	1	4
1 (b)	3	2	1	6
1 (c)		4	3	7
1 (d)		1	2	3
2 (a)		3		3
2 (b)		2	3	5
2 (c)	1	2		3
2 (d)	2	3	2	7
2 (e)			2	2
3 (a)	2	1	3	6
3 (b)	1	1	6	8
3 (c)			3	3
3 (d)	1	2		3
4 (a)	1	1		2
4 (b)		4		4
4 (c)			3	3
4 (d)		1	2	3
4 (e)			2	2
4 (f)		1	3	4
4 (g)			2	2
5 (a)	2			2
5 (b)	3	4		7
5 (c)			3	3
5 (d)		4		4
5 (e)		1	1	2
5 (f)			2	2
<b>TOTAL</b>	<b>18</b>	<b>38</b>	<b>44</b>	<b>100</b>

The proportion of marks allocated for complex judgement was more than 40%, making this a relatively difficult exam, and this was reflected in the raw marks achieved by students.

**Table 6 – Pass Rates**

	<b>Ass 1</b>	<b>Q1</b>	<b>Q2</b>	<b>Q3</b>	<b>Q4</b>	<b>Q5</b>
Pass	50%	59%	47%	35%	29%	24%
Fail	50%	41%	53%	65%	71%	76%

### **3.5. Overall Performance**

As with other actuarial exams, this semester's exam proved to be reasonably difficult for the majority of candidates. The pass rate of 37% (17 from 46 candidates), is not dissimilar to past examinations and is lower than last semester's pass rate of 50%. While some concerns could be expressed regarding the overall performance, an analysis of the results highlights a core group of 10 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.

### **3.8. Question by Question Analysis**

#### **Question 1 (20 Marks)**

This question covered analysis of financial statements and required the candidate to infer the implications for future viability of the business. While the business under consideration was an actual business, the concepts being examined did not require any domain specific knowledge.

	Raw Marks Required	% of Total Marks	Number of Candidates	Proportion of Candidates
Strong Pass	23.0	57.5%	7	15%
Pass	18.5	46.3%	18	38%
Below Standard	13.0	32.5%	18	38%
Weak	8.0	20.0%	3	6%
Showed Little Knowledge	1.0	2.5%	0	0%
Did Not Attempt	0.0	0.0%	1	2%
Maximum Mark	29.3			
Average Mark	18.5			
Standard Deviation	4.7			

Overall comments on the question parts are as follows:

(a) Very few students picked up the association between the direct revenue reduction and the increase in franchise revenue.

(b) Most students were able to calculate some simple liquidity/leverage ratios, but did not realise they had to analyse the need for internal financing. As the retail business is mainly based on cash, the only need for financing was for growth through acquisition.

(c) The point of the question was that DMP's profitability was based on exploiting economies of scale in marketing, R&D, and perhaps central purchasing. These economies can best be exploited by transferring risks of revenue to franchisees, and the point at which this becomes feasible for a given operation is critical in DMP's business model. Only the best solutions recognised these issues.

(d) This part was generally well done, with most students recognizing the unpredictability of DMP's direct revenue base (as a result of its strategy of growth through acquisition). However a few argued it to be stable, and were only partially rewarded in recommending DCF as a valuation approach.

## Question 2 (20 Marks)

The question covered financial structures, and the particular scenario that was given involved a group restructure involving both debt and equity financing. The question was based on a reading about hybrid securities included as part of the course.

	Raw Marks Required	% of Total Marks	Number of Candidates	Proportion of Candidates
Strong Pass	22.0	55.0%	5	11%
Pass	14.0	35.0%	20	43%
Below Standard	12.0	30.0%	5	11%
Weak	8.0	20.0%	11	23%
Showed Little Knowledge	1.0	2.5%	5	11%
Did Not Attempt	0.0	0.0%	1	2%
Maximum Mark	31.0			
Average Mark	14.3			
Standard Deviation	5.9			

In general, the question was answered poorly because students did not take account of the context of the question (a restructure of a global property group's finances).

(a) The hint was given that the property group was global in its operations, which should have suggested motivations about a global appeal for the group's securities. However many answers simply referred to flexibility in financing, without specifying how this would be achieved.

(b) The majority of answers referred to the mispricing of ABS during the financial crisis. Whilst this may be a current concern for issuing ABS, a greater concern is the ongoing ability of the group to transfer further developments to the trust as they mature. How should these be financed, and would debt or equity be attractive to new investors?

(c) The question on reset preference shares was essentially bookwork. However many answers did not address the information that conversion to ordinary equity was at the option of the company.

(d) This part was the main point of the question, which was the separation of the property development and management operations of the group. Few students were brave enough to suggest that stapling is designed mainly to protect the group's interests, rather than the investor's, or that stapling may actually hinder the aims of the restructure.

(e) The last part of the question was on how the group's interests and the investors' could be balanced by the restructure of operations. This required a little extrapolation on the part of students, but few succeeded in doing so.

## Question 3 (20 Marks)



This question involved the discounted cash flow valuation of a bank. Two different discounted cash flow approaches were given and the candidates were required to understand the relative behaviours of each method and therefore their appropriateness.

	Raw Marks Required	% of Total Marks	Number of Candidates	Proportion of Candidates
Strong Pass	21.0	52.5%	4	9%
Pass	17.0	42.5%	8	17%
Below Standard	13.0	32.5%	17	36%
Weak	8.0	20.0%	12	26%
Showed Little Knowledge	1.0	2.5%	4	9%
Did Not Attempt	0.0	0.0%	2	4%
Maximum Mark	27.0			
Average Mark	13.7			
Standard Deviation	5.3			

This question was answered quite poorly, most likely because of the proportion of questions requiring complex judgement. However the marks for the knowledge and understanding, and straightforward judgement sections of this question were also low.

(a) When asked about when the two discounted cash flow methods produced the same result, some candidates were able to produce the correct formulae for the two methods, few were able to show that they were equivalent, and none of the candidates noticed the extended conditions regarding inflation. In general most of the students had difficulty identifying many circumstances where the two methods would produce different results.

(b) This part of the question required candidates to critique the practicality of the discounted cash flow approaches. Candidates' answers generally did not provide enough depth or breadth of comments. Most students missed the point that the cost of debt depends on the level of debt. However many students realised that banks were unusual in that borrowing and lending money was part of their business. Students had difficulty identifying many of the advantages of the equity approach to valuation when valuing a bank.

(c) Requires candidates to allow for changes in regulatory controls when doing their discounted cash flows. This part of the question had the highest performance from candidates as most candidates got the key points.

(d) The last part of the question required an understanding of how to include fee income in the discounted cash flows. This part of the question was generally attempted competently, although some students' knowledge of the range of business transacted by a bank seemed to be derived from their own experiences as a retail customer. Most candidates did not link the fee income to the other activities of the bank.

#### Question 4 (20 Marks)

This question involved the use of multifactor models in the context of the global financial crisis.

	Raw Marks Required	% of Total Marks	Number of Candidates	Proportion of Candidates
Strong Pass	21.0	52.5%	1	2%
Pass	18.0	45.0%	8	17%
Below Standard	14.0	35.0%	16	34%
Weak	10.0	25.0%	13	28%
Showed Little Knowledge	1.0	2.5%	8	17%
Did Not Attempt	0.0	0.0%	1	2%

Maximum Mark	21.5
Average Mark	13.6
Standard Deviation	4.6

The general quality of answers for this question was relatively low. While the knowledge and understanding questions were handled relatively well, in each part of the question requiring complex judgement most of the students got no marks.

- (a) This part of the question was answered quite well.
- (b) Once again this part of the question was answered quite well. However most candidates did not discuss which factors were most important.
- (c) Although it was specifically asked for in the question, almost no candidates addressed the issue of non-linearity.
- (d) While candidates were able to identify factors relating to staleness, most candidates were unable to recommend a way of dealing with staleness in the model.
- (e) Most candidates were able to identify factors that would have anticipated the effects of the global financial crisis.
- (f) Most candidates seemed to miss the point of this question and did not answer in the context of a factor model.
- (g) A number of candidates got the collinearity issue in g but almost no-one identified the issue relating to the GFC potentially not going on for long enough for the model parameters to be estimated.

#### Question 5 (20 Marks)

This question involved a scenario in which a life insurer was considering a dynamic asset allocation strategy.

	Raw Marks Required	% of Total Marks	Number of Candidates	Proportion of Candidates
Strong Pass	25.0	62.5%	6	13%
Pass	19.0	47.5%	14	30%
Below Standard	14.0	35.0%	18	38%
Weak	8.0	20.0%	7	15%
Showed Little Knowledge	1.0	2.5%	0	0%
Did Not Attempt	0.0	0.0%	2	4%
Maximum Mark	35.8			
Average Mark	18.3			
Standard Deviation	6.8			

The first half of the question, which was mainly book work, was answered relatively well.

- (a) This part of the question was answered well by most candidates.
- (b) Once again, this part of the question was answered well by most candidates although many did not get the point about the Black-Scholes model being linked to option replication.
- (c) Most candidates got the two main points about the reasonable of the Black-Scholes assumptions about the price movements. No candidates mentioned the point about the alternative models being able to match a volatility smile.
- (d) Despite this question not requiring any complex judgement, most candidates struggled to get any relevant points about the possibility of replication strategies for the alternative models.
- (e) While some candidates knew whether AEQ models could be used, few were able to explain how these models could be used.

(f) No candidates recognised that both approaches will work, but most candidates were able to get the key point.

# **6B Global Retirement Income Systems Examiner Report Semester 2 2009**

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## **1. Summary**

### **1.1. Pass Rates**

19 Candidates enrolled for the Semester 2 2009, 6B Global Retirement Income Systems (GRIS) exam. All presented at the exam. The assessment comprised one assignment worth 15% and an exam worth the remaining 85%.

It is proposed that 10 Candidates be awarded a pass, which implies a pass rate of 53%. This compares with a pass rate of 56% for the 2008, Semester 2 exam, and 36% for the 2009, Semester 1 (6A) exam.

### **1.2. Candidate Numbers**

The Candidate numbers can be summarised as follows:

**Table 1 – Candidate Numbers**

	Number of candidates
Originally enrolled	19
Withdrawn prior to exam	0
Absent from exam	0
Presented at exam	19
Passed	10
Failed	9

The analysis by examination centre is as follows:

**Table 2 – Analysis by Examination Centre**

Centre	Presented	Passed	Pass Rate
Sydney	6	5	83%
Melbourne	9	5	56%
London	4	0	0%
Total	19	10	53%
Total Aus	15	10	67%
Total Overseas	4	0	0%

A review of the spread of marks across questions for the four overseas candidates confirmed there were no systematic problems for those based outside of Australia.

## 2. Examination Administration

### 2.1. Examiners

The examiners for this semester were:

Chief Examiner: Debra Lewis

Assistant Examiner: Jim Repanis

## 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**

Questions	Unit	Knowledge & Understanding	Straight-Forward Judgment	Complex Judgment	Total Marks
1a	1	1			1
1b	1	2	4	2	8
1c	1,7		3	6	9
1d	1,7		6		6
2a	1,7,8			1	1
2b	1,6,7,8	6	4	2	12
2c	1,7,8		2	4	6
3a	7	1			1
3b	7		3	3	6
3c	7	1	1		2
3d	7		3		3
4a	1,2,6		3	6	9
4b	1,2,6			3	3
4c	1,6,8		1	2	3
4d	1,6,8	1	1	2	4
4e	1,6,8			1	1
5a	3,4,5	4	4	4	12
5b	3,4,5	3	6	4	13
<b>Total</b>		<b>19</b>	<b>41</b>	<b>40</b>	<b>100</b>

**Table 6 – Pass Rates**

	Ass 1	Q1	Q2	Q3	Q4	Q5
Pass	89%	42%	63%	47%	74%	42%

Fail	11%	58%	37%	53%	26%	58%
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### 3.5. Overall Performance

The paper provided a good differentiator of candidates with a good spread of marks and a clear gap in scaled marks from the lowest pass at 125 to 119 for the highest fail.

### 3.9. Question by Question Analysis

#### Question 1

This question covered transition from defined benefit to defined contribution, including impact on company financial statements, adequacy of retirement income and relative equity

(Total marks = 48)	Raw Marks Required	% of Total Marks	Number of Candidates	Proportion of Candidates
Strong Pass	36.0	75.0%	2	11%
Pass	26.0	54.2%	6	32%
Below Standard	21.0	43.8%	6	32%
Weak	13.0	27.1%	4	21%
Showed Little Knowledge	1.0	2.1%	1	5%
Did Not Attempt	0.0	0.0%	0	0%
Maximum Mark	39.5			
Average Mark	24.4			
Standard Deviation	7.3			

#### Marker comments:

In some circumstances we felt candidates simply took answers from the book without relating them to the context of the question (eg. Non-voluntary transfer).

#### Specific Comments on each part

- (a) Generally well understood and well answered. Though some students seemed to spend too much time for only 1 mark.
- (b) Well understood overall but some candidates took a different interpretation than that used in the marking guide (ie they responded to the specific immediate impact of this transfer rather than of transfers in general).

Poorly answered overall – most candidates were able to describe (at least in general terms) the impact on financials but very few explained them. Very few answered the question of adequacy well, and surprisingly few were able to discuss equity well.

- (c) Generally well understood and well answered, but most candidates failed to realise that transfer was compulsory, not voluntary.

We felt the model answer's DARB and PV Accrued Benefit were too similar and an additional method (eg. Equitable share, Retrenchment) should have been provided.

- (d) Generally well understood and well answered, although a few suggested methods that were inconsistent with the question (eg SG rate, even though the question specified that the employer wanted to provide equivalent benefits).

Various candidates indicated DB long term cost can provide equivalent benefit, not realising this depends on transfer basis. Finally, only a few candidates indicated the issue of concessional tax limit if contribution set too high.

### **Chief Examiner comments:**

Based on the above commentary, the Chief Examiner determined that the Question 1 markers had been rather more harsh than other markers (i.e. had set the cut off marks at a level that was difficult to achieve in exam conditions even for good candidates). The marks were also reviewed to ensure that these were not too readily awarded for duplication in parts c & d. Those ranked 6 and 7 for this question, both had close to 50% CJ marks, so the cut off for a pass was moved down to enable them to pass that question. Consequently, the cut off marks were reduced (by three raw marks) both for the pass mark and for grade C. The table below shows the impact of this change:

Original marker distribution					Following Chief Examiner Adjustment			
	Raw Marks Required	% of Total Marks	Number	Proportion	Raw Marks Required	% of Total Marks	Number	Proportion
A	36.0	75.0%	2	11%	36.0	75.0%	2	11%
B	29.0	60.4%	3	16%	26.0	54.2%	6	32%
C	24.0	50.0%	5	26%	21.0	43.8%	6	32%
D	13.0	27.1%	8	42%	13.0	27.1%	4	21%
E	1.0	2.1%	1	5%	1.0	2.1%	1	5%
X	0.0	0.0%	0	0%	0.0	0.0%	0	0%

### **Question 2**

This question also covered transition from defined benefit to defined contribution ... in this case, a projection of potential benefits, and different methods to structure the conversion offer

(Total marks = 38)	Raw Marks Required	% of Total Marks	Number of Candidates	Proportion of Candidates
Strong Pass	29.0	76.3%	3	16%
Pass	22.0	57.9%	9	47%
Below Standard	15.0	39.5%	4	21%
Weak	8.0	21.1%	3	16%
Showed Little Knowledge	1.0	2.6%	0	0%
Did Not Attempt	0.0	0.0%	0	0%
Maximum Mark	32.5			
Average Mark	22.1			
Standard Deviation	6.1			

### Markers comments:

- Some candidates answered part (a) well. However, a lot of candidates failed to recognise that a 15% long term cost is an average rate, and that the cost of future benefits for individual members will vary around this which would lead to selection risk.
- Part (b) was the part which differentiated candidates in this question. There was a wide distribution of marks. Some candidates gave excellent, and well-structured answers. A disappointingly common error (by a quarter of candidates) was that they combined the salary inflation rate and expected return on assets to calculate an s-n function when projecting accumulation benefits, rather than recognising that contributions early in the projection period receive less salary inflation but more investment returns up to projected date, and later contributions receive more salary inflation but less investment return. This is an important formula to learn as it is often needed in real world practice. Only a few candidates made reference to quoting projected benefits in today's dollars. Most candidates neglected to make a reference to the sensitivity of the projections to the chosen financial assumptions. A number of candidates wasted time attempting projections at multiple ages, not just at 65 as asked. The best answers were those that separated the calculations and the sample letter. The sample letter was then much less cluttered and understandable. Some candidates made no attempt at formatting a sample letter, these did poorly.
- Part (c) was generally well answered, although some candidates missed the point that the question was asking for ways to increase the conversion rate and so making the transfer compulsory was not a valid alternative. These were relatively easy marks.
- Generally a good question, relatively easy to mark.

### Chief Examiner comments:

Based on above feedback, the Chief Examiner considered that Question 2 markers were relatively more generous, and adjusted the cut off for pass and Grade C (up by 1 raw mark). The table below shows the impact of this change:

Original marker distribution					Following Chief Examiner Adjustment			
	Raw Marks Required	% of Total Marks	Number	Proportion	Raw Marks Required	% of Total Marks	Number	Proportion
A	28.0	73.7%	4	21%	29.0	76.3%	3	16%
B	21.0	55.3%	9	47%	22.0	57.9%	9	47%
C	14.0	36.8%	3	16%	15.0	39.5%	4	21%
D	8.0	21.1%	3	16%	8.0	21.1%	3	16%
E	1.0	2.6%	0	0%	1.0	2.6%	0	0%
X	0.0	0.0%	0	0%	0.0	0.0%	0	0%

### Question 3

This question covered executive options

(Total marks = 24)	Raw Marks Required	% of Total Marks	Number of Candidates	Proportion of Candidates
Strong Pass	18.0	75.0%	1	5%
Pass	15.0	62.5%	8	42%
Below Standard	12.0	50.0%	4	21%
Weak	8.0	33.3%	3	16%
Showed Little Knowledge	1.0	4.2%	3	16%



Did Not Attempt	0.0	0.0%	0	0%
Maximum Mark	18.3			
Average Mark	12.9			
Standard Deviation	3.5			

**Markers comments:**

Q 3a - bookwork question. Well answered.

Q 3b - Few students picked up all the issues. The strike price and long term retention features were not identified by most students.

Q 3c - most students interpreted the question differently to the official solution. They interpreted the question to mean "why is Black Scholes option value x probability of vesting" not a good method for the option. The response was generally along the lines that the method does not take into account the positive correlation between the option value and the probability of vesting. We gave 1 mark to students who interpreted the question in this way.

Q 3d - generally well answered.

**Question 4**

This question covered adequacy of retirement income, and associated risks, along with investment strategy for DC plans.

(Total marks = 40)	Raw Marks Required	% of Total Marks	Number of Candidates	Proportion of Candidates
Strong Pass	20.5	51.3%	4	21%
Pass	14.5	36.3%	10	53%
Below Standard	13.3	33.1%	2	11%
Weak	8.5	21.3%	3	16%
Showed Little Knowledge	1.0	2.5%	0	0%
Did Not Attempt	0.0	0.0%	0	0%
Maximum Mark	25.5			
Average Mark	17.2			
Standard Deviation	4.3			

**Markers comments:**

Part a) - straightforward with most candidates identifying investment, inflation & longevity. Interest rate risk was a differentiator.

Part b) - only a handful of candidates provided an answer in line with the solution. Most candidates answered along the lines of "what is the main problem with DC". A slight rewording of the question to "what is the main problem with the scheme for providing retirement benefits in this country" might have helped a bit.

Part c) d) & e) - straightforward with most candidates having a reasonable grasp of the concepts.

Overall, a pretty straightforward question on which we passed a high proportion of candidates.

**Chief Examiner comments:**

The difficulty of this question, reflected in the high proportion of CJ marks, was reflected in the grade mark cut offs being a relatively low percentage of the available marks.

### **Question 5**

The question covered risks associated with a Defined Benefit scheme, and self insurance.

(Total marks = 50)	Raw Marks Required	% of Total Marks	Number of Candidates	Proportion of Candidates
Strong Pass	26.0	52.0%	3	16%
Pass	23.0	46.0%	5	26%
Below Standard	17.0	34.0%	5	26%
Weak	12.0	24.0%	5	26%
Showed Little Knowledge	1.0	2.0%	1	5%
Did Not Attempt	0.0	0.0%	0	0%
Maximum Mark	30.0			
Average Mark	19.4			
Standard Deviation	6.0			

### **Markers comments:**

- Candidates were able to define each risk discussed adequately. Better responses contextualised each risk to the defined benefit scheme considered in the question.
- Market risk was generally described well. Most candidates were able to define market risk; however, most candidates focused on asset fluctuations rather than financial position effects. This was most evident in the mitigation strategies suggested by candidates.
- Covenant risk was generally described quite poorly. The majority of candidates were unable to define covenant risk and even fewer were able to identify mitigation strategies.
- Longevity risk was described well. All candidates were able to describe the risk of longevity in the context of the defined benefit scheme considered in the question. The majority of candidates were able to identify mitigation strategies; however, few identified the key area of actuarial oversight as being the assessment of pension reserves in light of future mortality improvements.
- Liquidity risk was defined adequately by most candidates. Better definitions contextualised this risk by identifying that a pension fund is less exposed to liquidity risk since benefits are released gradually and annuity payments are more predictable than lump sum schemes.
- The risks to the scheme from providing self-insured death / permanent disability benefits was generally answered poorly. Few students stated that since benefits are provided in accumulation form assets held in respect of members is less than death / permanent disability benefits. Better responses discussed the strain to the scheme that is created by death / permanent disability.
- Most candidates were able to list a number of actuarial issues to be considered in self-insuring death and permanent disability benefits. No candidates identified the size and hence predictability of experience of the scheme as an actuarial issue. Likewise, no candidate discussed how notional premium rates would be determined (age based or a flat) in the event that the cost of insurance were to be passed to members. Most candidates realised that a death and disability reserve would have to be set up within the scheme.
- Most candidates identified that disability benefits would have to be monitored against

expected. However, no candidate pointed out that poor experience resulting in the death and disability reserve becoming negative meant that the scheme was actually insolvent. Few candidates mentioned that notional premium rates should also be reviewed periodically in light of scheme experience.

# ***C10 Commercial Actuarial Practice Examiner Report Semester 2 2009***

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## **1. Summary**

### ***1.1. Course Outline***

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

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

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

The assessment method changed this semester. There are still two assessment tasks, but they are now:

3. A take-home report on one of the non-traditional topics, distributed after the residential course. This semester it was on the Health topic. It is worth 20% of the final mark.
4. An 8-hour case study report chosen by each student from among the other 7 topic areas, to be prepared under exam conditions but with use of a computer. This is worth 80% of the final mark.

The pass mark is 50%. Students who had passed part of the previous course, were allowed to submit only the other equivalent part this semester. Marks are no longer awarded for quality of participation in the residential course.

### ***1.2. Pass Rates***

Of the 92 candidates who presented for the course, it is proposed that 55 be awarded a pass, representing a pass rate of 60%. This compares with 55% last semester, but is still below the 4-year average of 63%.

Although passes are no longer given separately for the 2 assessment tasks, repeat candidates were given credit for past passes. Of the 28 candidates sitting only the case study, 16 passed. Of the 2 students completing only the post-course report, 1 passed. Hence repeat candidates’ pass rate of 59% was little different to the overall 60%.

In contrast to past experience, “Overseas” candidates had a higher pass rate than did Australian-based candidates, with 11 out of 17 or 65% of overseas candidates passing.

A summary of results is set out in Attachment 1. The pass experience is shown by topic in the first table in section 6, and I suggest the Institute should consider publishing those results. A listing of marks and grades for each candidate is shown in Attachment 2.

### **1.3. Candidate Numbers**

A total of 93 candidates were enrolled for one or both of the assessments in Semester 2 of 2009. Of these, 61 attended the 4-day residential course. 90 presented for the case assessment while 2 completed the post-course report only.

The candidate numbers and results can be summarized as follows:

	<b>Post-course report only</b>	<b>Case Study only</b>	<b>Both</b>	<b>Total</b>
Originally enrolled	2	28	63	93
Withdrawals	0	0	1	1
Absent	0	0	0	0
Presented	2	28	62	92
Passed	1	16	38	55
Failed	1	12	24	37

## **2. Examination Administration**

### **2.1. Examiners**

The examiners for this semester were:

Chief Examiner: Bruce Thomson  
Assistant Examiner: James Fitzpatrick

## **3. Case Studies**

At the end of the residential course, one of the 4 non-traditional topics (chosen by the Faculty) was issued to candidates for completion within 2 weeks. **Health** was chosen this semester. The result was worth 20% of the potential marks for the course. The result and feedback was given to candidates a week prior to them completing the second case study below.

The other 80% of the marks were available for an open-book case study prepared using a computer (without web access) but under exam conditions on 23 October. The candidates were given up to 8 hours to absorb the question material, choose 1 topic from among the other 7 listed above, perform all the necessary analysis and prepare their written response. The answer was required to be a substantial written report.

### **3.2. Marking Process**

Each case study response was marked twice, first by the person who set the particular case and then secondly by one of the other course team members. David Service was either the first or second marker in every case and in this way had the opportunity to ensure consistency across the different subjects. In addition, the Chief Examiner and Assistant Examiner reviewed all of the cases considered borderline.

The final marks used were based on the average of the first and second markings, after any refinements agreed in review with the Chief Examiner and Assistant Examiner.

In the non-traditional areas, candidates are required to have a high-level general knowledge sufficient to contextualise actuarial solutions. They are not required to have the specific knowledge that would be required to pass equivalent Modules 2 or 3, were they to be offered in those areas. In marking the exams, the examiners were therefore reminded to assess candidates against the practical objectives of the course rather than test specific knowledge of the non-traditional areas.

In general, the markers did not try to allocate marks according to a pre-determined scale for each point that a candidate might make. Rather, the markers took an integrated perspective as set out in the generic marking guide. The pass mark was 50% in each case.

### ***3.3. Credit for prior passes***

2 candidates who had passed the Case Study in a previous semester were assessed only on the post-course report this semester. One of these was a very weak fail. The other was a clear pass and consequently has now passed the CAP course.

28 candidates sat only the Case Study this semester, having passed the (different format) Exam in a previous semester. Of these 28, 16 passed this semester. Another 5 failed by a narrow margin, and were then given credit for the relative margin by which they had passed the previous Exam, in the hope this might enable them to be passed overall now. Despite this effort to view them in the best possible light, no additional passes have been recommended on these grounds. Details of the individual candidates are given below.

#### **4. Post-course Health report results**

The Health case study required candidates to analyse a public report projecting Australian health expenditure to 2030 (Goss, 2008), then comment on aspects that the client could criticize such as assumptions or data collection.

Unlike in previous semesters, a pass/fail decision was not required for each candidate; this simply formed 20% of their overall mark. Nevertheless, marks around 10 / 20 were reviewed carefully by Marker 1, and the Examiner reviewed other marks with Marker 1 when they had the potential to impact the overall pass decision.

There was a wide range of marks, from 4 to 18. Given the take-home nature and the 2 weeks available, we were surprised at the poor quality of the weaker attempts. 9 candidates scored 6 or less out of 20. Of 64 candidates, 44 or **69% achieved 10 or more**.

The health marks for each individual candidate are considered below, as grouped according to the optional case study they chose under exam conditions. Interestingly, the average Health marks within each case Study group, were tightly bunched from 11.0 to 13.3. This allowed some consideration of standardizing marks between the case study groups, as discussed below.

## **5. Case Study results**

### ***5.1. Banking***

The Banking case required candidates to analyse a notional bank's financial statements, and comment on the mismatch of assets and liabilities, how it could be measured, and how it could be managed.

### ***5.2. Environment***

The Environment case required candidates to assess a regional government's long-term plans for electricity supply. Comments were required on alternative energy sources and their emission reduction prospects.

Sadly, the one candidate attempting this case was not close to pass standard. The analysis was inadequate, the assumptions were not explained and the specific question was not fully addressed. In contrast, the Health answer was good, but even full marks would not have been enough to gain an overall pass.

### ***5.3. ERM***

The Enterprise Risk Management case required candidates to report on the risks facing Servcorp, a listed provider of office space around the world. Servcorp's annual report was supplied, and candidates had to assess the severity and likelihood of financial risks, comment on the effectiveness of existing risk management, and suggest improvements.

The standard of the papers was generally good. Although standardization across topics suggests that several marks could be subtracted from each ERM result, that would not be highly valid with only 4 candidates. In any case, there are no marginal passes, so it is not an issue.

### ***5.4. Life Insurance***

The Life case required candidates to develop premium rates and some product design and management recommendations, for a new loan protection product to be sold in the Pacific Islands. Return on capital, uncertain mortality, minimal underwriting and amateur administration all had to be dealt with.

### ***5.5 Investments***

The Investments case required candidates to give advice to a charity on an appropriate investment strategy for a large bequest that is designed to cover medical research for many future years. Some issues were what investments are appropriate given the conflicting viewpoints of the testator and the charity, what distributions could be expected, and for how long.

### ***5.6 GRIS***

The Case Study for Global Retirement Income Systems required candidates to analyse a scheme allowing partial commutation of government age pensions. Particular complaints had to be addressed, and a cost-neutral suggestion made to improve the system.



In general it was not well answered, with many candidates omitting consideration of mortality when projecting pension payments.

### **5.7 General Insurance**

The case for General Insurance required candidates to provide pricing recommendations to an insurance company on how to implement changes to their rating algorithm having been provided with new segment relativities. Candidates were required to project subsequent impacts on their market share and profitability in a duopoly motor insurance market.

In general it was well answered, with the majority of candidates providing responses that addressed the key issues. An area of weakness was that many candidates failed to understand the impacts of expenses despite guidance in the question.

## **6. Comparison of results**

A table of the results by topic chosen shows that pass rates have varied considerably, albeit rates for Banking, Environment and ERM have no statistical credibility. (I suggest the Institute should consider publishing this pass experience by topic.)

<b>Topic</b>	<b>Sat</b>	<b>Passed</b>	<b>Pass %</b>
Banking	4	1	25%
Environment	1	0	0%
ERM	4	3	75%
General Insurance	30	21	70%
GRIS	12	5	42%
Investment	10	7	70%
Life Insurance	29	17	59%
Post-course report only	2	1	50%
<b>TOTAL</b>	<b>92</b>	<b>55</b>	<b>60%</b>