Report to Council from the Board of Examiners

2000 PART III EXAMINATIONS REPORT

December 2000

Institute of Actuaries of Australia

Publisher

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SUMMARY & RECOMMENDATIONS

The year 2000 Part III examinations of the Institute of Actuaries of Australia were held between 10 and 20 October 2000 with candidates sitting in Australia (Sydney, Melbourne, Brisbane, Perth, and Canberra) and overseas (London, New York, Wellington - NZ, Auckland, Hong Kong, Singapore, Kuala Lumpur, Amsterdam, Wakefield (USA)).

Once again, Investment and Finance accounted for 48% of entrants. The overall candidate numbers over recent years have been:

Table 1.1 Candidate Numbers by Part III specialist subject

	1996	1997	1998	1999	2000	Mix
Investment Management	58	77	99	109	102	33%
Life Insurance	58	52	66	71	82	27%
General Insurance	51	49	54	43	55	18%
Superannuation	34	23	21	21	25	8%
Finance	27	31	34	42	45	15%
Total	228	232	274	286	309	

Candidate numbers continue to grow strongly and have grown at an average compound annual growth of almost 8% over the past 4 years.

The process followed in setting the exams and determining the recommended pass list was similar to the process followed in previous years. The numbers of candidates and the recommended passes are:

Table 1.1: 2000 Candidate Numbers and Recommended Passes

	Sat	Passed	Pass%	*1999*
Investment Management	102	28	27	*47*
Life Insurance	82	37	45	*41*
General Insurance	55	17	31	*40*
Superannuation	25	11	44	*57*
Finance	45	14	31	*38*
Total	309	107	35	*44*
1999	*286*	*125*	*44*	

The Chief Examiners aim to produce a consistent standard of passing candidates rather than a consistent pass rate from year to year. This year pass rates are much lower than last year reflecting, in part, the higher proportion of candidates sitting subjects for the first time.

At the date of producing this report, it was not possible to determine the number of new fellows and associates. Passing the Institute's fellowship examinations is only one contributing factor for the fellowship qualification. Consideration also needs to be given to the results of the Actuarial Control Cycle courses and the results of the SIA course for Finance.

Once these results are available, the final pass list can be compiled. The compilation of the list of new fellows now happens through the use of linked spreadsheets rather than a manual process. Jac Smit has confirmed that all results have been double-checked.

The Board of Examiners asks Council to approve the award of Prescott Memorial prizes in Life Insurance, Superannuation and Finance. No award is recommended for Investment Management and General Insurance. Examination and the Control Cycle results have also been reviewed in the light of the conditions required for the major Prescott Prize.

Recruitment of examination resources (especially markers) is the responsibility of the practice committees and I would like to express my appreciation for the excellent job that they have done. In addition, Jac Smit played a key role in organising resources for the setting and marking of the Investment Management exam.

I would ask Council to express its appreciation to the Chief Examiners. Each Examiner commits over 200 hours per annum of their own time to make the process work. It is a significant commitment and one which must be made within very tight time constraints and ever increasing work pressures. My thanks are also due to Jac Smit (who effectively administers the whole process), Michael Playford (my Assistant who reviews the exam papers and developed a standardised scaling procedure), Craig Ginnane (who efficiently supports the examination centres and runs the Sydney centre) and Jan Heath (who types the exam papers, distributes material to exam centres and processes results).

The recommended constitution for the Board for 2001 is:

Chairman	Warwick Gard
Assistant to Chairman	Michael Playford
Secretary	Jac Smit
Investment	Andrew Croft
Life Insurance	Anthony Bofinger
General Insurance	Adam Druissi
Superannuation	Darren Wickham
Finance	Richard Hitchens
Exams Supervisor	Craig Ginnane

The examination process

The year 2000 Part III examinations of the Institute of Actuaries of Australia were held between 10 and 20 October 2000 with candidates sitting in Australia (Sydney, Melbourne, Brisbane, Adelaide, Perth, and Canberra) and overseas (London, New York, Wellington - NZ, Auckland, Hong Kong, Singapore, Kuala Lumpur, Amsterdam, Wakefield (USA)).

Once again, the 2000 Part III exams were run on an open book basis. Students seem to make only limited reference to the material they bring in to the examination room. The best advice to students is still "Read the question, read the question and then answer the question".

A new Investment Management course was introduced and the Investment Management examinations were held over two three hour exams with no credit for Securities Institute of Australia (SIA) exams. (Previously there were two 2 hour papers and credit for three SIA passes at the appropriate level)

The examinations in each subject were set by the following process:

- The Chief Examiner and their Assistants set draft examinations.
- Draft exams and solutions were reviewed by scrutineers for coverage and fairness. The scrutineers were a mix of newly qualified actuaries and experienced actuaries.
- One of the scrutineers 'sat' the paper to assess the length of the paper.
- Exams were redrafted after scrutineers' feedback.
- The Chairman and Assistant Chairman reviewed the redrafted exams.
- The Chief Examiners then signed off the final exams.

The examination results of students were subject to the following process:

- Two markers marked each question. In most subjects inconsistencies were discussed amongst the markers before results were forwarded to the examiner.
- Marks were generally scaled to allow for the fact that some questions are hard and some are easy (only Superannuation did not use scaling).
- Candidates were ranked in numerical order.
- Candidates generally divided into clear passes, clear failures and a middle group.
- The middle group of papers were read by the examiners who determined the pass standard by assessing the whole paper and the student's ability to use judgement.
- Each question was ranked as A, B, C, D or E where A and B is a pass.
- The recommended passes were examined by the Chairman in light of a reasonable mix of question grades and average grade. Overall results were then reviewed by the full Board of Examiners.
- The recommended pass mark was finalised and papers were graded A, B, C, D or E.

Examination administration

The Board

The Board of Examiners for 2000 comprised:

Mr S Miles	Chairman
Mr M Playford	Assistant Chairman
Mr J Smit	Secretary
Mr A Croft	Investment Management
Mr R Baillie	Life Insurance
Mr A Bendall	General Insurance
Mr G Humphrys	Superannuation and Other Employee Benefits
Mr R Hitchins	Finance
Mr C Ginnane	Exams Supervisor

I would like to take this opportunity to thank all Chief Examiners and their assistants (who are named in their reports) for their efforts in preparing and marking the examination papers. I also appreciated the support of Michael Playford who was critical in reviewing the overall quality of the exams.

Administration

The Secretary, Mr Jac Smit, issued comprehensive memoranda covering duties of supervisors, instructions to candidates, and so on. Once again, the supervisor procedures had been improved by Mr Craig Ginnane but were broadly similar to previous examinations. Overall the examinations ran very smoothly and I want to take this opportunity to thank the Institute office staff who handle all the administration matters so ably.

In addition, Jac Smit provided vital support in managing the exam development process (reducing my workload considerably) and organising the recruitment of resources for Investment.Management. Investment Management entrants accounted for 33% of entrants, which places a severe strain on existing resources.

Examination sittings

The examinations were held between 10 and 20 October 2000. The dates were chosen to avoid public holidays and religious holidays and allow time for students to become involved in the Olympic Games. There was at least one day's break between the examinations.

Once again, Investment and Finance accounted for 48% of entrants. The overall candidate numbers over recent years have been:

Table 3.1 Candidate Numbers by Part III specialist subject

	1996	1997	1998	1999	2000	Mix
Investment Management	58	77	99	109	102	33%
Life Insurance	58	52	66	71	82	27%
General Insurance	51	49	54	43	55	18%
Superannuation	34	23	21	21	25	8%
Finance	27	31	34	42	45	15%
Total	228	232	274	286	309	

Mr Craig Ginnane has presented a report on the running of the examinations. All went smoothly and some minor improvements were recommended to the verbal instructions given to candidates. A recommendation to have 15 minutes reading time (rather than the current 10) was also adopted.

Meetings of the Board

The Board met on two occasions during the year. The first meeting was held in March and attended by all Examiners. The purpose of each meeting was:

- Meeting 1 – general training in the setting of examination questions. This was a new initiative and proved to be quite successful.
- Meeting 2 – review pass list

It is envisaged that two meetings will be held next year at dates yet to be set in February and November.

Examination papers

The structure of the examinations in 2000 was:

Subject	Specialist
Investment	2 x 3 hours
Life	2 x 3 hours
General	2 x 3 hours
Superannuation	2 x 3 hours
Finance	2 x 3 hours

This was a change for Investment Management. A new course was introduced which meant that students no longer needed to sit the SIA subjects. As a result the examination sitting was increased from 2x2 hours to 2x3 hours.

In each subject there is a mix of questions ranging from interpreting bookwork to the application of familiar and unfamiliar circumstances. The questions aim to cover the whole syllabus. Students should be aware of the fact that the whole syllabus is examinable even when part of that syllabus is also taught and examined by the Securities Institute.

The standards to be achieved by candidates sitting each level, the principles on which papers are to be set and the marking procedures are set out in the Guidelines to Examiners (an abridged copy of which is provided in the Education Handbook). To ensure proper balance guidance as to the proportion of marks given to the interpretation of bookwork, and its application, have been established.

The standards of difficulty as determined by the Chief Examiners at the time they set the papers are set out below:

Table 4.1: Standards of Difficulty

	Interpretation of Bookwork		Straightforward Application		More Difficult Application	
	1999	2000	1999	2000	1999	2000
	%	%	%	%	%	%
Investment Management	25	27	40	40	35	33
Life Insurance	20	21	45	44	35	35
General Insurance	20	21	40	42	40	37
Superannuation	18	20	44	40	38	40
Finance	15	13	41	45	44	42
Recommended	15-25		35-45		35-45	

The consensus of views of the standard of difficulty of the examinations was:

Table 4.2: Examination Paper Standards	
Investment Management	Difficult
Life Insurance	Moderate
General Insurance	Moderate
Superannuation	Moderately Difficult
Finance	Moderately Difficult

The scrutineers reviewed the papers set by the examiners before being approved by the Chairman. Copies of the 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 answers to the questions are contained in each Chief Examiners report and will be reported separately to the Tuition Service by the Education Manager.

This year, several papers included questions which required candidates to demonstrate their understanding through the use of mathematical examples. These questions proved to be important discriminators for the quality of questions.

The individual subject reports highlight the following comments:

- The Investment Management exam was longer than desirable. Students had most difficulty with those questions that require the combination of different sections of the course.
- The Life Insurance exam was deliberately shorter than 1999. The difference between the highest ranking failure and the lowest ranking pass was the amount of breadth and detail in the answers.
- In General Insurance the standard of candidates' answers was considerably lower than last year. This was due to lack of consistency, inability to perform in more difficult questions and poor technical knowledge.
- Finance students found questions on non standard applications difficult.

Results

The philosophy adopted in setting the pass mark is based on the fact that those who pass all subjects become entitled to the designation of Fellow of the Institute of Actuaries of Australia, subject to attending the professionalism course. They are therefore qualified to provide actuarial advice, subject to the Code of Conduct which requires, among other things, that an actuary not provide advice in areas where he does not have sufficient experience. This requires that the candidate demonstrate the qualities of judgement and common sense.

A candidate is not expected to be a skilled practitioner at this stage. Provided the candidate shows a grasp of the main principles, a pass should be awarded. Conversely, a candidate who demonstrates dangerous misconceptions is viewed more seriously than one who shows ignorance. Overall, successful candidates should enhance the reputation of the profession.

The examiners in the Specialist subjects place great emphasis on the questions which require the candidate to demonstrate the ability to apply bookwork to specific situations. When grading borderline candidates, their ability to do well in such questions has a great bearing on whether they pass or fail. The examiners however, are very conscious of the fact that it is unreasonable to expect students to demonstrate the degree of understanding of an actuary of some year's experience. In addition, actuaries are supposed to be able to demonstrate their skills to those outside the profession. Therefore, lack of clarity in the use of the English language will be regarded as a negative feature when assessing the candidates' papers.

Candidate's 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 5.1: 2000 Candidate Numbers and Recommended Passes

	Sat	Passed	Pass%	*1999*
Investment Management	102	28	27	*47*
Life Insurance	82	37	45	*41*
General Insurance	55	17	31	*40*
Superannuation	25	11	44	*57*
Finance	45	14	31	*38*
Total	309	107	35	*44*
1999	*286*	*125*	*44*	

There has been a fall in the overall pass rate this year. The examiners have been conscious of this fact and have reviewed their pass lists to ensure that standards are consistent with previous years and the minimum required standard. Particular attention was given to the Investment Management subject where a new course was introduced. The 1999 Chief Examiner (Denis Gorey) reviewed the marginal cases as well as this year's examiner (Andrew Croft). Further comment is given in the specific subject reports.

Over the past 5 years, the pass rates have been:

Table 5.2: Comparison of % Pass Rates by Subject					
	1996	**1997**	**1998**	**1999**	**2000**
Investment Management	52	35	39	47	27
Life Insurance	43	42	35	41	45
General Insurance	35	31	24	40	31
Superannuation	44	43	48	57	44
Finance	48	45	44	38	31
Total	44	38	36	44	35

There were no significant problems in running the exams.

Four students asked for special consideration. The examiners considered that there was no justification to alter the results. Overall, one student passed and the remaining three failed.

Pass rates by centre

The percentage pass rates by major centre are shown below. These results whilst interesting should be treated with care as they are affected by different subject mixes.

Table 5.3: Comparison of Pass Rates by Centre					
Centre	**1996**	**1997**	**1998**	**1999**	**2000**
Sydney	47	38	38	49	35
Melbourne	38	32	31	34	27
Other	42	44	37	40	42
Total	44	38	36	44	35

Melbourne and Sydney results are still different although it is difficult to draw any useful conclusions from this analysis. The difference tends to be concentrated in general insurance and finance for Melbourne, reflecting the lack of practical experience in these subjects in Melbourne.

Last year the IAAust Council asked for more analysis of pass rates and the percentage of students resitting the exam. The analysis for 2000 is:

Table 5.4: Percentage of Candidates Resittting

	Sydney		Melbourne		Total	
	% Resit	Pass %	% Resit	Pass %	% Resit	Pass %
Investment Management	25%	27%	22%	27%	29%	29%
Life Insurance	47%	42%	42%	45%	49%	52%
General Insurance	60%	35%	40%	9%	52%	38%
Superannuation	20%	42%	45%	50%	31%	33%
Finance	21%	42%	44%	12%	38%	44%
Total	37%	35%	36%	27%	40%	42%

The results of this analysis are inconclusive. I am concerned that too much analysis will lead to spurious correlation and a concentration on applying statistical techniques rather than maintaining exam standards.

Pass Marks and Scaling

The pass marks for the last five years have been:

Table 5.5 Comparison of Pass Marks (out of 400) 1995 - 2000					
	1996	**1997**	**1998**	**1999**	**2000**
Investment Management	216	215	220	230	222
Life Insurance	228	224	205	219	240
General Insurance	229	204	203	220	224
Superannuation	204	208	210	206	221
Finance	234	230	230	239	225

In setting the pass marks, examiners have concentrated on maintaining standards. The life insurance pass mark appears to be high. This is a result of the scaling process. The scaling formula is of the form y=ax+b (where x is the unscaled mark). Generally "b" is negative but this was not the case for life insurance where the effect of "b" was such that even a candidate with a zero unscaled mark would achieve 28 out of 400. If allowance is made for this factor then the overall pass mark is similar to last year. Next year's scaling formula will correct this anomaly.

Only Superannuation did not follow the scaling process. The relationship between scaled and raw marks was:

Table 5.6 Comparison of Raw and Scaled Pass Marks		
	Raw	**Scaled**
Investment Management	176	222
Life Insurance	209	240
General Insurance	218	224
Superannuation	221	n/a
Finance	222	225

Scaling had the greatest impact on Life and Investment. Management. The problem with Life was discussed above. The poor standard of answers in Investment meant that pass marks were low and therefore the amount of scaling was high. For some time now I have had concerns about how marks are allocated for more difficult questions and have consequently recommended a review of this issue for next year.

Andrew Prescott Memorial 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 Australian Institute's examinations. Prizes are awarded in two divisions:

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

Subject prizes

The minimum standard for a subject prize has been set at 115% of the pass mark. Under the previous four-subject system it was considered possible that four subject prizes might be awarded in a year, but it was expected that on average, prizes would be awarded in two subjects each year. Given five subjects and the large number of candidates it is more usual to have three or four prizes each year.

Three candidates met the criteria and presented outstanding papers. Consequently the Board recommends prizes be awarded to the following candidate numbers:

- Life Insurance - 1267
- Superannuation - 1206
- Finance - 1027

No prize is recommended for Investment Management or for General Insurance.

Major prize

A candidate for the major prize must complete the whole of the examinations in a reasonable period. Candidates should not have failed a subject. Candidates should be in the top five for each of their chosen specialist subjects and have an average rank of five or better. The candidate's rank should be taken into account when determining the average rank.

As a result of this review, Council awarded the major prize to Candidate 1206. This Candidate:

- Completed the Part I program in 1994
- Gained a High Distinction in the Control Cycle in 1996
- Passed Subject 1 in 1999 (ranked 4^{th}) and Passed Subject 4 in 2000 (ranked 1^{st})

Recommendations for 2001

The recommended constitution for the Board for 2001 is:

Chairman	Warwick Gard
Assistant to Chairman	Michael Playford
Secretary	Jac Smit
Investment	Andrew Croft
Life Insurance	Anthony Bofinger
General Insurance	Adam Druissi
Superannuation	Darren Wickham
Finance	Richard Hitchens
Exams Supervisor	Craig Ginnane

Examination dates

The dates for the examinations in 2001 and those recommended for 2002 are as follows:

Subject	2001	2002
Investment Management	Tuesday, 2 October	Tuesday, 1 October
Life Insurance	Thursday, 4 October	Thursday, 3 October
General Insurance	Monday, 8 October	Tuesday, 8 October
Finance	Wednesday, 10 October	Thursday, 10 October
Superannuation	Friday, 12 October	Monday, 14 October

Exam Marking

Students seem to perform poorly on the larger more testing sections of the exam paper. One cause of this may be the inadequate preparation of candidates who complete the Actuarial Control Cycle. Another cause may be in the marking process. It is recommended that this problem be referred to the Institute’s education consultant.

Exam Solutions

The Board of Examiners has agreed to release the Year 2000 exam papers along with the examination marking guides. It is recommended that these be released in February 2001.

Results of Recommendations for 2000

- Candidates' reading time should be extended from 10 minutes to 15 minutes.

  Introduced

- The scaling process be reviewed and either adopted for all subjects or dropped altogether.

  Introduced for all but Superannuation

- A training day be held for examiners to help them develop a common approach to questions.

  Held successfully and will be repeated in 2001

- The examination team, for each subject, should consist of a Chief Examiner, and a team of question writers. The role of the Chief Examiner would be to coordinate the production of exam questions, ensure quality and recommend the final pass list.

  Introduced, particularly successful in Investment and Finance.

Subject 1: Investment Management

Summary

The 2000 Investment Management examination was the first to test the new, broader syllabus. The level of enrolment was comparable with 1999, remaining at a very high level. The pass rate for 2000 was substantially lower than for 1999, with an average raw mark of 35% (compared to 51% in 1999). This may reflect:

- New course, with a much broader syllabus, covering multiple fields of specialisation
- Broadly-based examination, covering most of this much broader syllabus, and requiring substantial knowledge in all aspects of the syllabus
- Candidate unfamiliarity with this broadly-based style of examination

In addition, this candidate cohort did not appear strong. Although 3 of 16 questions were handled well, there were other parts of the papers that were straightforward and ought to have been handled well but were not. Markers across a range of questions generally expressed disappointment with the way in which questions were handled.

Examiners

Chief Examiner Andrew Croft

Markers

The following markers assisted with the 2000 exam marking:

Catherine Luk	Ken Ragell
Jason Doughty	Andrew Croft
Shane Mather	Michael Blayney
Moira de Villiers	Peter Chun
Peter Vere	Graham Horrocks
Hugh Sarjeant	Alan Brown
Andrew Croft	Anthony Carey
Andrew Harrex	Stewart Cox
Jason Kim	Ken Ragell
Terry Nelson	Martin Lam
Martin Lam	Terry Nelson
Michael Blayney	Shane Mather
Jason Kim	Glen Harris
Luis Sarmiento	Nicole Raffin
Simon Eagleton	Grant Peters
Michael Dermody	Andrew Leong

Analysis of Questions

Paper 1, Question 1

This question referred to the following aim(s) in the syllabus:

- Aim 8(a) – Describe the principal derivative instruments used in institutional management in Australia
- Aim 8(b) – "Calculate economic exposures for each of the main derivative instruments"

The aim of this question is to test whether candidates are able to demonstrate a basic understanding of hedging with options

Required knowledge at minimum was merely the expiry payoff for call and put options. An understanding of put-call parity was very helpful, but not actually necessary to complete this question.

This question asked candidates to hedge downside exposure on a named share using call or put options with given prices, choose the trade to be used, and say why.

It was generally poorly answered, with many candidates not recognising that two methods of hedging existed, and that one actually needed to compare them to choose the "better" one.

This question was a very good discriminator between candidates, but was a weak indicator of overall candidate strength.

Paper 1, Question 2

This question referred to the following aim(s) in the syllabus:

- Aim 13(a) – Analyse alternative configurations of investment managers including the number of and type of investment managers

The aim of this question is to test whether candidates are able to demonstrate a basic understanding of selecting and combining investment managers to achieve a desired investment objective.

This question outlined a scenario where a superannuation fund has invested its Australian equity monies in an investment manager whose style was to take sizeable active positions away from benchmark and which had underperformed. The candidate was asked to recommend how the active risk of the Australian equity monies might be reduced using first one manager and then two. The candidate was asked to recommend the characteristics of the manager chosen and explain why.

It was generally well answered, and was a moderate discriminator but a good indicator of overall candidate strength.

Paper 1, Question 3

This question referred to the following aim(s) in the syllabus:

- Aim 11(a) – Describe the distinctive features of investing in international equity and fixed interest markets

The aim of this question is to test whether candidates are able to demonstrate an understanding of the issues behind investing a portion of a portfolio in global assets and an awareness of current themes relating to global equity investing.

This question had a more general "asset consultant" feel; namely asking candidiates to explain why investing outside of Australian assets, specifically international shares and hedged international bonds, would provide diversification. It also asked candidates to explain in respect of international equity portfolios the likely relative performance in future of sector or country positioning.

The question was generally well answered. It was a weak discriminator, but a good indicator of a candidate's overall strength.

Paper 1, Question 4

This question referred to the following aim(s) in the syllabus:

- Aim 8(b) – Calculate economic exposures for each of the main derivative instruments

The aim of this question is to test whether candidates are able to demonstrate an understanding of how to calculate economic exposures for futures.

This question was intended to be a calculation question, but put in the unfamiliar environment of commodity futures. Further, the commodity in question did not have a liquid futures market of its own, so an imperfect hedge had to be constructed.

This was moderately well answered.

The question was a moderate discriminator, and a weak indicator of a candidate's overall strength.

Paper 1, Question 5

This question referred to the following aim(s) in the syllabus:

- Aim 7(a) – Determine the key needs and circumstances of the client/stakeholder. In particular, ascertain their investment time horizon and disposition to risk.
- Aim 7(b) – Decide what variables and assumptions should be taken into account to design an appropriate personal financial plan.
- Aim 7(c) – Apply the investment management cycle to the design of financial plans.
- Aim 18(b) – Identify other situations where other expertise is required and reconcile when the Code of Conduct is applicable.

- Aim 18(c) – Explain the implication of the main sections of the Corporations Law, which relate to professionalism or ethics generally within the investment management industry, in particular the requirements of Dealers and Advisers Licenses

The aim of this question is to test whether candidates are able to demonstrate an understanding of how to design personal financial plans, and of their Corporations Law obligations in doing so.

It was moderately well answered, primarily due to the bookwork element in this question. However, candidates generally speaking were unable to move away from the "institutional" mindset to a "personal financial planning" mindset. For example, the question explicitly states that the client has recently received a damages payout. Candidates were then prepared to ask the individual client about their risk profile, their investment horizon, time to retirement, or even "why would you invest the money?", but generally not about how any disability related to the damages case would affect the client's future income and costs.

The question was a weak discriminator, and a moderate indicator of a candidate's overall strength.

Paper 1, Question 6

This question referred to the following aim(s) in the syllabus:

- Aim 12(a) – Describe the various types of property investment and their characteristics.
- Aim 12(b) – Discuss the alternative ways of constructing a property portfolio by direct purchase and by listed or unlisted vehicles

The aim of this question is to test whether candidates are able to demonstrate a basic understanding of the issues surrounding property investment for an institutional investor in the current market environment. This question tackles both the issue of concentration in Australia's listed property trust sector and the "unlisted vs listed" question.

This was moderately well answered.

The question was a moderate discriminator, but a very good indicator of a candidate's overall strength.

Paper 1, Question 7

This question referred to the following aim(s) in the syllabus:

- Aim 9 – Demonstrate an understanding of the principles and techniques in investing in fixed interest securities.

The aim of this question is to test candidates' ability to demonstrate an understanding of the principles and techniques in investing in fixed interest securities. This question is applied, and was definitely simplified for exam conditions.

This question was extremely poorly done, and many candidates showed very limited understanding of fixed interest. The first half of this question was quite straightforward, and should have been well answered (but was not). Although the second half (part e) was more testing, it was constructed to be able to be completed under exam conditions by those who read and understood the hint given. Quite a number of candidates failed to read or understand the hint and wasted considerable time exploring possibilities that were explicitly stated to be outside of the question's scope. One candidate scored eight of nine marks in this question, proving it could be done in the time allowed.

The question was a very good discriminator, and a good indicator of a candidate's overall strength.

Paper 1, Question 8

This question referred to the following aim(s) in the syllabus:

- Aim 10(a) – Describe the main approaches to managing equity portfolios
- Aim 10(f) – Demonstrate how to take risk into account when constructing a portfolio
- Aim 14(f) – Interpret performance calculations within a qualitative assessment framework

The aim of this question is to test :

- *Understanding of differences in investment styles, what the value style involves, and what has happened in the Australian share market over the last couple of years.*
- *The concept of tracking error (a rudimentary risk measure), and to be able to measure an ex-post figure.*
- *Knowledge of portfolio risk control from both a quantitative implementation perspective and a real-life pragmatic situation.*

This question was generally not well handled. This was surprising, as the section on tracking error (6 marks of 24) should have been very straightforward, and the first section should have yielded at least half marks to most candidates.

The question was a good discriminator, and a very good indicator of a candidate's overall strength.

Paper 2, Question 1

This question referred to the following aim(s) in the syllabus:

- Aim 10 – Demonstrate an understanding of the principles and techniques for managing an Australian equity portfolio

The aim of this question is to test :

- *Knowledge of how converting preference shares differ ordinary shares, and in particular how their valuation differs.*
- *Knowledge of key thematic factors and fundamentals that affect a company.*

This question was in general very poorly answered. The first part of the question was a small question on converting prefs. The second part related to a particular company, and why an analyst might have a published “sell” view on the company. This was a stretch question, in that it required some awareness of the general trends in the retail sector. Candidates generally appeared to concentrate on the financial information provided, despite the instruction given in the question to address the key issues in the retail sector.

The question was a good discriminator, but a moderate indicator of a candidate’s overall strength.

Paper 2, Question 2

This question referred to the following aim(s) in the syllabus:

- Aim 8 – Demonstrate knowledge of the various derivatives used in Australian markets
- Aim 9 – Demonstrate an understanding of the principles and techniques in investing in fixed interest markets

The aim of this question is to test whether candidates could demonstrate how options can alter payoffs for and characteristics of bond portfolios. The twist to this otherwise straightforward question is that using a price/yield chart reverses the usual shape of a graph of an option’s payoff.

This question was intended to require candidates to combine their knowledge about the duration and convexity of a bond with their knowledge of call and put options. It was not intended to be a “stretch” question, merely placing what should have been a straightforward question in an unfamiliar environment.

However, it was generally extremely poorly done. A majority of candidates who sat scored E. Given that options are definitely used in fixed interest portfolios in Australia, and that embedded options are extremely common in US corporate and mortgage-backed bonds, I suggest that in future tuition material should directly address this topic.

This question was an outstandingly discriminator in a statistical sense; candidates either knew it or did not; however it caused marks to bunch, especially at very low raw mark levels. Therefore, it was only a moderate indicator of a candidate's overall strength.

Paper 2, Question 3

This question referred to the following aim(s) in the syllabus:

- Aim 6(b) – Determine the asset classes that should be included in a strategic asset allocation

The aim of this question is to test whether candidates are able to demonstrate an understanding of how a strategic asset allocation needs to combine both the nature of the liabilities and the nature of the available assets. It further covers bookwork questions which compare some techniques used to backing liability cashflows with a bond portfolio, namely immunisation, matching & dedication.

This question was generally well answered. It was mostly bookwork and was therefore well handled. It was only a moderate discriminator but a very good indicator of a candidate's overall strength.

Paper 2, Question 4

This question referred to the following aim(s) in the syllabus:

- Aim 11(c) – Compare the advantages and disadvantages of hedging currency risk.
- Aim 13(e) – Identify the key elements in an investment mandate

The aim of this question is to test whether candidates are able to demonstrate an understanding of the issues involved in determining whether, or to what extent, to hedge currency risk.

Note: The course material explained what currency hedging is, including a paper on optimising a hedge ratio, which is merely one way of determining to what extent one hedges currency risk.

This question asked candidates to state the issues to be considered when hedging and explain the shortcomings of a model seek to find an optimum hedge ratio. It also asks candidates to comment on a "practical" example, where the currency manager had an unhedged benchmark but was paid performance fees, and had an extremely broad mandate.

Overall, this question was reasonably well answered. It was a weak discriminator but a good indicator of a candidate's overall strength.

Paper 2, Question 5

This question referred to the following aim(s) in the syllabus:

- Aim 10(e) – Demonstrate the use of quantitative techniques in designing an active quantitative portfolio.

The aim of this question is to test :

- *Knowledge of how an active quantitative stock selection model might be developed and how this is different to a risk model.*
- *Knowledge of problems that might be encountered and the testing that may be required while developing a model*

This question was intended to be a "stretch" question. Risk models are clearly covered in the reading, return models also but to a lesser degree. However, developing models, testing and dealing with the problems encountered is a core actuarial skill. This question was not well handled, which suggests the tuition material needs to be added to in future.

This question was a moderate discriminator, but a good indicator of a candidate's overall strength.

Paper 2, Question 6

This question referred to the following aim(s) in the syllabus:

- Aim 7(a) – Determine the key needs and circumstances of the client/stakeholder. In particular, ascertain their investment time horizon and disposition to risk.
- Aim 18(a) – Demonstrate an understanding of the key features of the Professional Standards, which relate to investment management.
- Aim 18(b) – Identify other situations where other expertise is required and reconcile when the Code of Conduct is applicable.
- Aim 18(c) – Explain the implication of the main sections of the Corporations Law, which relate to professionalism or ethics generally within the investment management industry, in particular the requirements of Dealers and Advisers Licenses

The aim of this question is to test candidates' knowledge of their professional obligations, under GN151 and Corporations Law. Part c provides an applied situation to test this knowledge.

The question was not handled especially well. This was disappointing; such a question should be well handled, and should be core knowledge. However, this question was a good discriminator, and a very good indicator of a candidate's overall strength.

Paper 2, Question 7

This question referred to the following aim(s) in the syllabus:

- Aim 13(a) – Analyse alternative configurations of investment managers including the number and type of investment managers.
- Aim 13(b) – Develop the appropriate qualitative and quantitative selection criteria which should be used in selecting investment managers and how these should be modified according to the asset classes and investment styles involved.

The aim of this question is to test knowledge of investment manager styles and the types of results that can be achieved by combining investment managers, and how they would be combined.

This question was surprisingly poorly done. A number of candidates seemed to believe that "growth" plus "value" equated to indexing, which is absolutely not the case. This question was a moderate discriminator, but a good indicator of a candidate's overall strength.

Paper 2, Question 8

This question referred to the following aim(s) in the syllabus:

- Aim 6 – Formulate an asset allocation strategy for institutional investors

The aim of this question is to test whether candidates are able to produce an asset allocation within a standard environment, namely for the Trustees of a defined contribution superannuation fund.

This question should have been pretty straightforward; 30% of the marks were on how one would ensure an asset allocation would meet Trustee investment objectives, which was overed in an assignment question. Another 25% was on the advantages/disadvantages of a smoothed crediting rate, which is very standard. However, it was handled surprisingly poorly.

This question was a weak discriminator, but a good indicator of a candidate's overall strength.

Subject 2: Life Insurance

Summary

It is recommended that 37 of 82 candidates be awarded a pass, implying a pass rate of 45%. This compares with awarding passes to 29 of 71 candidates, a pass rate of 41%, in 1999.

The pass list was set by looking at the scaled marks, raw marks, number of passes and the ranking by question. A criterion was set up for each measure and candidates had to pass using the scaled mark and at least two other measures. Any candidate passing on just one or two of the criteria was investigated more closely.

This year there has been an explicit attempt to shorten the examination by reducing the unnecessary information in each question. This was in response prior years were the raw pass mark was low, in part I believe to students not having time to answer the questions.

Sydney and Melbourne both experienced a similar pass rate as the overall average. This eases the fear expressed in last year's report that the Melbourne experience appeared to be worse than in Sydney.

The most disappointing part of the exam setting process was the number of errors that made their way into the final exam. Most of these were due to changes made just before the paper was printed that were not properly scrutinised. It is recommended that in future a final proofread of the exam be made by some one who has not previously seen the exam questions.

Examiners

Examiners for this year were:

Chief Examiner	Robert Baillie
Deputy Chief Examiner	Tony Bofinger
Assistant Examiners	Trevor McMahon, Caroline Bennet

Markers

The following markers assisted with the 2000 exam marking:

Sydney – Paper 1		Melbourne – Paper 2	
Trevor McMahon	Mike Lau	Robert Baillie	Mark Barda
Tony Bofinger	Inbam Devadason	Andrew Barker	Peter Barnes
Craig Lamb	Christopher Murphy	Andrew Brown	Lawrence Heyman
Brad Louis	Grant Peters	Paul Pesavento	Marianne Watt
Mark Stewart	Peter Fallows	Michelle Finlay	James Hickey
Puvan Arulampalam	George Attard		
Chris Woolfrey	Guy Horton		

Analysis of Questions

Paper 1 Question 1 (10 marks)

a) This was a bookwork question and was generally well answered bookwork. Most candidates easily received 1.8 marks.

b) Again this was bookwork and most students answered well. Most candidates received marks for naming each standard. Worryingly, a few believed that there was only one actuarial standard.

c) It was unfortunate that, immediately after a question about the actuarial standards, the word "standard" was used to describe the company's approach. Eight students misread the question this way and answered how successful they think the Australian actuarial standards will be. No marks were awarded for their answers, as they misinterpreted what the question was referring to with "our standard approach", and they made no use of the information provided in the question.

This was a straightforward question and was put in to cover legislation, conventional products and surplus distributions. This was designed to be an easy first question.

Paper 1 Question 2 (17 marks)

We were happy with the Marking Guide and only one change was made to it. The solution to Part D talked about claims standards as influencing mortality. It was thought that claims standards have little impact on mortality and therefore to get full marks for this question, claims standards didn't have to be mentioned.

One area we were flexible in was the distinction between the short and the long term. Some of the points the solution had for the long-term were relevant points when considering the short term. For example, for part (b) it is conceivable that the life company could begin selling products through the bank in the first 2 years. When students made a point, which we thought was relevant in either time frame, they were awarded marks for this answer even if the solution had it as a point for the other time frame.

The marking guide introduced a category for "other". Marks were awarded under the "other" category for the following points:

a) Reduction in distribution overhead expenses because of the rationalisation of both companies' product range or selling more life products through the bank.

b) Sales may increase in the long run if the company can be seen to be a "one stop shop" for financial products. Sales may increase in the long run by selling investment linked life insurance products to the unit trust customer base. The level of sales will depend on how the company manages its brand.

c) Surrender rates may increase if customers are given the opportunity to convert from one product to another in the merged entity.

d) As more products are sold through the bank the client base will change because banking clients have different socio-economic characteristics then the clients of tied agents and multi agents. This will impact mortality. If lapses are higher, those lapsing are more than likely to have better health thus resulting in higher mortality.

Overall, the question was answered well.

a) Many candidates failed to talk about removing duplicated functions preferring to talk about economies of scale. Most candidates missed the point about the increase in redundancies.

b) The majority of candidates failed to mention the impact on existing distribution channels.

(c) and (d) Generally answered well with a lot of students raising valid points not in the solution.

Students missed on marks by not thinking of enough issues. This was a practical question and many different items would be impacted the experience.

Paper 1 Question 3 (17 marks)

We were generally happy with the Marking Guide and only made some minor changes to it. The changes and the reasons for making them were:

a) Another purpose for the expense analysis should be added to the model solution:

Taxation. An expense analysis could be conducted to apportion the various expenses into the appropriate classes of business for appropriate taxation treatment and to investigate tax effects across product lines.
However, marks were still limited to 5 marks overall, given that this question was bookwork.

c) Marks were granted where the candidate pointed out that the treatment of the IT expenses were dependent on the purpose of the expense analysis as outlined in part (a). This should be added to the model solution.

All parts of the question were marked generously in an attempt to award as many marks as possible.

a) This was primarily a bookwork question and was answered well by most candidates. However, a number of candidates put down the points, but failed to provide a brief explanation of each.

b) This was poorly answered predominantly as a result of misinterpreting the question. The first part of the question asked for the factors that impact the cost of **managing** claims, not the cost of claims. Nevertheless this part of the question was answered satisfactorily in most cases where the question was interpreted correctly.

Only a handful of candidates interpreted that part of the question relating to "the structure and level of claims management expenses" correctly. Many interpreted this as the structure and level of claims. Nevertheless marks were awarded for the way that the type of claims affected the level of management expenses. The model solution sets out the appropriate response to the question.

c) Most students did not give a satisfactory answer when considering the treatment of one-off IT expenses. However, some candidates did point to the fact that the treatment would be dependent on the use of the expense analysis. Marks were awarded in this case.

The main mistake of candidates was that they failed to understand what was required in parts (b) and (c) of the question.

Another point to note was that many candidates were quite verbose in their responses without actually addressing what the question was seeking. In an exam situation the candidate should concentrate on getting the major points down on paper.

Students lost marks by not following the question completely, either by not answering it completely or by misinterpreting it.

Paper 1 Question 4 (18 marks)

We were generally happy with the Marking Guide and only made some minor changes to it. The changes and the reasons for making them were:

Part (a)

- The marking guide did not address how new business should be handled.
- The simplest way of handling new business is to assume that no surrenders arise from it.
- A method of handling new business in the solution (either through an assumption or including it in the calculations) was required to get full marks.

Part (b)

- In addition to the criteria listed in the marking guide we added
  (a) compliance with AS4.01; and
  (b) surrender values are aimed at recouping initial expenses.

Overall the question was well answered, however this was largely due to the "bookwork" nature of the question, which meant it was possible to gain several marks without the need to demonstrate a good understanding of the issues.

a) Candidates tended to fall into 2 main groups
- those that answered the question well gaining 2.5 or 3 marks; and
- those that showed little knowledge of the question.

About half of the candidates received zero or 0.5 marks for this question.

b) A bookwork type question that was generally well answered. It seems this question has been used before or is part of the text because some candidates almost reproduced the model solution.

c) This part was not well answered. Most candidates' answers were at odds with the marking guide. Most candidates focused purely on what the standard said (many simply copied parts of the standard), whereas the marking guide solution was in terms what the standard was trying to achieve.

   Perhaps the question could have been worded differently such as "Explain the impact of AS4.01 on the surrender value basis of this type of business, *having regard to the purpose of the standard"*.

d) Another bookwork question that was well answered. Candidates could generally attain up to 5 marks without much effort.

Generally candidates did not answer the first 3 parts of the question well (on average scoring 2.7 out of a possible 9). The final part of the question was answered well.

One of the issues this caused is that if a candidate did well in part (d) they would obtain a reasonable grade even if the rest of the question was not handled well. For this reason when reviewing borderline candidates we were particularly interested in how they performed in part (a) which was the most challenging part requiring practical application of their knowledge.

The final bookwork part of the question was well handled but students are not familiar with LIASB 4.01. As this is a standard, students did to know it well.

Paper 1 Question 5 (18 marks)

We were generally happy with the Marking Guide and have not recommended any changes.

Overall, the question was poorly answered. The average mark for the 82 candidates that scored above zero was 7.4 and the maximum mark was 13, out of a possible 18 marks.

All parts of the question were marked generously in an attempt to award as many marks as possible. The main mistake of candidates was that they failed to understand what was required in each part of the question. The poorer answers focussed solely on the error in the computer systems and the need to pay policyholders their maturity benefits immediately – i.e. the answers did not pay enough attention to the issues of incorrect accounts, materiality, shortage of time and professional responsibilities.

a) This was generally well answered with most candidates having mentioned the point on system and account reconciliation. However, most of the candidates failed to mention "Analysis of Profit" as a key tool in picking up these types of errors. Some candidates did not show a good understanding of " Analysis of Profit" as they mentioned that these types of errors would appear as experience profits. In practice, they would show up as untraced profits.

b) Many candidates showed a lack of practical insight by failing to

- Check the materiality of the error.
- Check for other compensating errors (ie check the “overs and unders” list).
- Be aware of the options that the accounts may or may not be changed.

c) Most students gave a reasonable answer but many showed a complete lack of understanding of the Profit and Loss Accounts. Some had doubled up by changing both the outstanding claims liabilities and the policy liabilities. Some even believed that the effect of profit was zero!

d) This was generally well answered and this part gave the students easy marks. Students who answered this part quickly and briefly missed out on easy marks because the answer was very straightforward.

This was a new issue for students as the aim is new to the course. Students should expect to have questions on any new topic.

Students could do better by looking at the bigger picture than just focusing on the issue. The “big picture” was the important part in this question. Students should be familiar on how changes to cashflows or policy liabilities impact the profit and the MoS profit analysis.

Paper 1 Question 6 (18 marks)

We were generally happy with the marking guide and made only a few minor changes to it. The changes and the reasons for making them were:

Marker 1

a) We were generally happy with the marking guide although observe that few students mentioned equities could be a better match which could suggest that this was not an obvious comment to make in the context of the question.

We also awarded a bonus half mark to students who mentioned the additional difficulties in matching indexed liabilities.

b) Part (iii) was the most difficult and time consuming of this question. If more marks were allocated, students may have put a bit more time and effort into the answers. It would have also been easier to differentiate the students.

c) We were happy with the model solutions although we did accept other views on the ease of implementation of each method as long as this view was well presented.

We also accepted other suggestions, including the selling of product types, which do not include mortality, risk eg allocated pensions, term certain annuities.

Marker 2

a) This question was fairly straightforward covering the "book work" issues related to immunisation and annuity portfolio matching. The average mark for this question was 1.8 out of 3.0, which is less than we would have expected. Many students appear to have limited their comments to three points, which were not sufficiently different in all cases.

   Most students obtained a mark for identifying the limited quantity of suitable assets to support annuity liabilities.

   Less than half the students commented that companies may not be perfectly matched due to positioning for profit. We believe this point was appropriately included in the marking guide and we would have expected more students to mention this point in their answers. (Many students framed their arguments around impracticability of matching. There was generally little awareness that in practise, even if it were practical to perfectly match, many would consider mismatching because of the potential for profits).

   Less than half the students mentioned that perfect matching was not practical. We believe this point was appropriately included in the marking guide and we would have expected more students to mention this as it was a "book work" comment.

   Few students referred to equities being used as a better duration match. This suggests that this may not have been an obvious point to include in the model solutions.

   We awarded up to half a mark for students who gave other valid reasons. In particular some students mentioned the difficulties in matching indexed liabilities.

b) It was probably not 100% clear in the question whether the student was still addressing the director in this part of the question. Many students did not seem to consider that this was the case.

   i) The average mark for this question was 0.6 out of 2.0. We were a little concerned at the number of students who did not appear to understand the impact of mismatching on reported MoS profits.

      A surprising number of students did not realise that experience items flow into profits reported under MoS! Another area of concern was the high number of students who suggested that there would be experience profits without any acknowledgment that such experience items could be negative.

      Few students specifically mentioned the profit impact of increasing and decreasing interest rates. This suggests that students may not have expected to include this level of detail in answering a 2 mark question.

ii) The average mark for this question was 1.6 out of 3.0. Most students picked up the link between mismatching, resilience reserving and the resultant increase in capital adequacy requirements. However, virtually no students mentioned the point contained in the model solutions discussing immunisation versus resilience suggesting that this was not an obvious point to include in the solutions. The few who did clearly had kept in mind that they were still talking to the director.

iii) The average mark for this question was 1.8 out of 4.0. Most students mentioned the impact of increased capital requirements (from (ii)) on the net worth. Many students did not go into enough detail in answering this question. Like the model solutions, we would have expected students to run through the impact of mismatching on each component of the appraisal value, which many students did not do.

c) The average mark for this question was 2.9 out of 6.0. We do not believe this question was particularly difficult and should have represented a relatively easy opportunity for students to pick up marks. The lower than expected result may partly reflect time restraints on students given this was the last part of the second last question in the paper.

About half the students covered mortality improvements and reinsurance. Few students consider participating options. We awarded marks for other reasonable suggestions mentioned by students such as issuing term certain or allocated pension products.

A number of students did not cover the implementation part of the question properly and by doing so missed out on relatively easy marks.

Many students came up with quite impractical ideas, often that did not address the mortality risks.

Students missed out on marks for this question for not considering enough different issues. Matching is too often seen by students as minimising risk and not as an opportunity for positioning for profit. How it impacts profit and capital are key issues for the actuary to consider.

Paper 1 Question 7 (10 marks)

No real changes were made to the marking guide.

For an easier question, this question was generally not well answered.

There were easy marks to be earned in all parts of the question and the marking was quite generous. Even making the same point for each product (E.g. expense experience loss) earned candidates more than one mark, for what is really only one point. Thus it was not even necessary to make ten different points to earn full marks.

Nearly all candidates missed at least one significant point and so there were few really high marks even though it was not a difficult question.

A surprisingly large number of candidates did not mention planned profit as being part of MoS profit anywhere in their answer, and in general there was only limited discussion of the basic features of MoS.

Most candidates missed the subtlety that the profit margins shown in the information were as at the end of the year and that no information was provided regarding the beginning of year profit margins (E.g. Many answers assumed the annuity business had been in loss recognition for the whole year.) We did not penalise candidates for missing this point.

Mortality experience was rarely referred to in relation to the two unit linked products. Candidates were not significantly penalised for missing this more minor point.

Most candidates did not make a distinction between the single premium and regular premium unit linked products in their discussion of experience profit. Candidates need to provide additional points/discussion for the regular premium product to earn high marks for that part of the question.

Some students included quite a large amount of discussion of impact of assumption changes on future profit margins. This was not what was asked for by the question and did not earn marks.

We recommended a minimum mark for a passing grade off 6. We have reviewed a sample of papers that scored around this mark and were satisfied that the knowledge demonstrated to score six should be the minimum to pass this question. We also increased the minimum mark for a below standard grade from 3 to 4. This was because it was very hard for a candidate that answered the question not to score at least 2 marks.

There were a number of items to consider in this question and from a number of points on view.

Paper 2 Question 1 (16 marks)

Some changes were made to the marking guide:

b) 0.5 marks for using stepped rather than level premiums to mitigate anti-selection

c) 1/2 point for mentioning target market and 1/2 point for mentioning marketing/ branding/advertising strategy

Maximum of 1.5 marks for internet related comments (Eg number of hits, links to other sites, number of applications per hit, current buying habits over net etc).

1/2 point for get data from industry / other industries / overseas

Comments on Performance

On the whole, the question was well answered

The students did particularly well in picking up points on how to minimise anti-selection.

Students struggled a little to make some strong points in answering part c. Many weren't able to think outside the Actuarial course.

Few students mentioned the obvious points about competitor analysis

Some of the less obvious points were more commonly missed, part apart from that, there weren't too many mistakes repeatedly made.

While this question looked at e-commerce, many of the issues are all old issues affecting direct distribution and reduced underwriting. However, there were marks for considering some of the e-commerce issues. Overall students did well however some could have gained more marks by thinking of items outside the course.

Paper 2 Question 2 (20 marks)

Some changes were made to the marking guide:

a)

Mortality	0.5 marks for saying 5 year selection more usual.
Expenses	0.5 marks for mentioning tax deductibility, 0.5 marks for mentioning stamp duty or claims expense
Interest	0.5 marks for saying assets backing term products are mainly short term fixed interest.
Lapses	0.5 marks for commenting on inconsistency between clawback assumption and 0 lapses in Year1.

b) 0.5 marks for saying that interest assumption unchanged and/or that reserving method the same. 1 mark given for just saying commission nil. This might be a bit generous and should be considered for borderline cases.

Comment on Performance

a)

Mortality	Generally fairly well answered. Many students did not mention that underwriting standards (both current and future) for initial and claims processing should be investigated.
Commission	Many students assumed that commission rates were not yet finalised and lost marks for this. This was probably more due to the wording of the question rather than a lack of knowledge and as such should be reviewed for borderline students. Many students did not comment on the bonus assumption
Expenses	Generally reasonably well answered although few students mentioned budget sales and expenses.
Interest	Most students forgot to mention checking the allowance for investment expenses and many forgot that tax needed to be considered. A large number of students assumed that the assets would be invested in short term fixed interest rather than saying that the investment strategy should be checked.
Lapses	Many students did not know the usual level of lapses for this type of product. Most students did not comment on the effect of the distribution strategy on lapse experience. No student commented on competitive position. *{This would have to be past competitive position}*. Competitive position may have effected past lapse experience but future competitive experience cannot be known and current position will mainly effect new business. Very few students mentioned obtained info on distribution strategy.
Reserves	Overall not answered well. Many students did not realise that reserve for profit testing has to be at least that used by the company to distribute profits. Even fewer mentioned that target surplus might need to be considered.

Part b)

Many students missed the point that the mail out was to existing policyholders and lost marks because of this.

No one mentioned the increased smoker non disclosure and very few mentioned that the target market might be different.

There were a limited number of coherent discussions on what might happen to expenses.

This was a straightforward question and covered a lot of issues. Students lost marks by not considering the full range of answers or for not mentioning additional information.

Paper 2 Question 3 (23 marks)

The only change to the marking guide for part (e):

Only 0.5 mark (rather than 1.0) was awarded for general statements on changing the product mix without mentioning Capital Guaranteed versus Unit Linked products or other specifics.

The model solution did not cover the annuity mis-match, claims and underwriting control, nor improved efficiency (we gave 0.5 marks for each)

0.5 mark was given for the use of subordinated debt to gear shareholders' returns.

a) Generally poorly answered. The main faults were weak description of methods and poor interpretation for the Managing Director.

The description of the methods was usually incomplete, with most students giving only the name of the method or a few words in description.

Some did not understand the differing capital requirements of products, ie small for unit linked and large for Yearly Renewable Term.

Some outlined 4 methods (2 for each product) and others two methods overall. Both approaches were able to gain full marks.

We awarded marks for IRR and Break Even period for the Unit Linked product if the student stated that the focus of the company was on capital.

The interpretation part of the questions was generally weak for a non-actuary to understand

Some students did not express PV(profits) as a ratio of premium, FUM, etc and hence gained no marks.

b) The interpretation of what was required was satisfactory.

Some listed criteria for adequate premium rates and received minor marks

The marking guide omitted sensitivity testing (we awarded 0.5 marks for this)

Poor answers were due to not being able to think of enough points in the 4 minutes available.

c) Very poorly answered. The interpretation was the main difficulty, with most students not realising that it was the capital required by the product that had to be described.

Most described the capital as either the source of the free reserves (ie, shareholders, retained earnings) or the three components of the estate. No marks were awarded for these interpretations.

We feel that many students would know the components of the Capital Adequacy requirement if asked directly, but this would make it a bookwork question.

d) Again terribly answered. The use of product revenue accounts to determine the MoS profit for the year was not appreciated, so many students reverted to describing how to set up a model office.

   Part (c) showed that there was little appreciation of the product capital requirements, so part (d) re the earning on capital was reduced to a description of measuring the IRR of new business

   Some students did recognise that an analysis of profit was needed, and were awarded some marks.

e) A fair attempt by most students, with a satisfactory interpretation of the question.

   Some said that more aggressive assets would produce a higher return for shareholders, but only received 0.5 mark if they stated that there would be capital adequacy implications.

   Only 0.5 mark (rather than 1.0) was awarded for general statements on changing the product mix without mentioning Capital Guaranteed versus Unit Linked products or other specifics.

   Students were weak on target surplus, currency mismatch and reviewing Capital Adequacy margins.

The main problem in this question was the bad interpretation of parts (c) and (d), ie not knowing what the examiners were wanting.

Our view is that the question was fair and satisfactorily worded. However, as parts c & d were widely not understood, we would not reduce the weights of parts a, b or e, but it would be fair to reduce them for parts c and d.

Students did much worse than expected. This was not expected to be a difficult question. Some of the cause may have been in the wording of the question where a word was left out. This did not change the nature of the question but it may have thrown a few students. The poor result may be due to the course not looking at the allocation of capital requirements by product group.

Paper 2 Question 4 (29 marks)

a) Overall well answered. Part i) is mainly bookwork. Most students answered the question by breaking the appraisal value down to its three mathematical components, which is a bit different to the marking guide. Many students missed that appraisal values can be used for external reporting

   It was thought it was a bit much to give a full mark for saying in recent Australian history sale prices have been much higher. Instead there was up to one mark for reasons (generally for talking about a control premium and expense synergies or other valid points).

b) Most students did not have all four items. In hindsight it may have been better to give extra weight to a good answer on the "published financial statements", which is the most important of the four items. Students missed the other items like product descriptions and marketing information. Many students used a scattergun approach for this part and went on to list information that was not publicly available.

c) Most students could list some information but generally no more than four different reports. The priorities and the justification were poor as they did not concentrate on the best information that could be used to value the company.

d) It was difficult to give a full two marks for the "impact of new business" item. Therefore it was hard to give full marks. Students generally picked up the issues of solvency and capital adequacy but did not explain it fully.

e) Most students correctly calculated the net assets. However, the discounted components were not understood by most students. About half understood that the present value of profit margins would be less using a higher discount rate. Less than a third of the students could work out the value for the capital adequacy component but those that did generally got it fully correct.

On the whole I think most students made a fair attempt given it was under Exam conditions. On the other hand there were only a few outstanding answers.

This was not an overly difficult question and people with an understanding of appraisal value should be able to do it. However, the course does not teach appraisal values well and the textbook needs to be improved. The concept is straightforward and is an application of present values at different discount rates. This is the third year in a row there was a large question on appraisal values – students should have been aware that the examiners considered it to be an important topic.

Paper 2 Question 5 (29 marks)

There were some changes made to the marking guide:

b) The marking guide was altered as both markers interpreted the question differently to the marking guide. All students answered the question in line with the revised marking guide.

c) The start of this question was deleted just prior to finalising the exam. Unfortunately the remaining part of the question may have been confusing with the first part omitted. However, nearly all students interpreted the question correctly. One student was given a mark even through they misinterpreted the question as their answer was appropriate, allowing for the misinterpretation.

The marking guide needed to be altered slightly to match up the number of marks.

d) Students were given marks for saying the net assets would fall by $5m, without necessarily calculating the new net asset number.

Overall the number of marks was fairly high as there were some easy marks to get. Most students picked up the mathematical marks but many did not do well in explaining the issues. The question was really about assumption changes but some students were too obsessed with the issue of taxation.

a) Generally this question was not well answered. Some students copied out parts of the textbook that did not really answer the question. Most mentioned the need to validate the statistical information but many students missed that a key item to check is that the reserves after the modelling are not materially different to the reserves determined on a policy by policy basis.

Most students mentioned that model points should represent homogenous blocks but did not take it further and say that all the business needs to be allowed for in the model.

Materiality was not well handled.

b) Most students picked up the change in the best estimate liability and the pricing liability for solvency and capital adequacy. Most students picked up the impact on the present value of profit margins. Most students did not refer to the other solvency and capital adequacy impacts on top of the pricing liability.

c) Many students said that the risk liabilities were negative due to high acquisition expenses. A better reason for the negative liability is that future premiums exceed future benefits and expenses, which is most likely due to the charges for the acquisition costs

d) This section was generally well answered. The mathematics was straightforward. Most students picked up that group risk had capitalised losses and the profit margins would stay at zero.

Some students assumed that the group business was valued using the accumulation technique. As this was not specified in the question they missed out on getting the full marks available as they could not refer to capitalised losses.

A number of students correctly calculated the impact on the liabilities but then said, incorrectly, there would be no impact on the net assets.

This question was about assumption changes and not about tax legislation, although many students were thrown by the reference to tax. Students lost marks by not considering the impact on Solvency and Capital Adequacy in full detail. Students picked up the mathematical marks but not the marks for discussing the issues. Some students appear to not have left sufficient time to answer the question.

Subject 3: General Insurance

Summary

61 Candidates enrolled for the 2000 exam. Of these, 6 did not present at the exam.

It is proposed that 17 Candidates be awarded a pass, which implies a pass rate of 31%. This compares with a pass rate of 40% for the 1999 exam.

Examiners

Examiners for this year were:

Chief Examiner	Andrew Bendall
Assistant Examiner	Adam Driussi
Assistant Examiner	Alan Greenfield

Markers

The following markers assisted with the exam marking:

Clive Amery	Chas Beynon
Mireille Campbell	Paul Cassidy
Michael Crouch	Jason Doughty
Paul Driessen	Deborah Driussi
Corrine Glasby	Peter Hardy
Gillian Harrex	David Heath
Mark Heydon	Rod Hoskinson
Andrew Houltram	Susan Ley
Andrew Matthews	Richard Mayo
Travis Mills	David Minty
Shams Munir	Estelle Pearson
Ian Peterson	Craig Price
Daniel Smith	John Tucci
Stephen Wilson	Keilic Wong
Lynda Young	

Special thanks to Gillian Harrex who once again organised the Melbourne markers as well as marking a question.

Analysis of Questions

Paper 1 Question 1 (6 marks)

Question 1 was a straightforward question on the investment strategy for 3 companies with different liability/risk profiles.

The question was not particularly well answered. Many candidates missed the key issues in respect of 2 of the 3 companies (the international reinsurer and the mortgage insurer).

The markers' assessments were not particularly well correlated (slightly under 70%) and 21 candidates had their marks adjusted. 19 candidates were awarded a pass.

Paper 1 Question 2 (8 marks)

Question 2 was a very straightforward question on the allocation of reinsurance premium to multiple lines of business.

The question was answered well by most candidates.

The markers' assessments correlated well (over 80%) and 11 candidates had their marks adjusted. 35 candidates were awarded a pass.

Paper 1 Question 3 (11 marks)

Question 3 was relatively straightforward and asked candidates to analyse and critique a business plan, with significant growth targets, prepared by the liability portfolio manager. This was a practical application of basic underwriting statement analysis.

The question was answered poorly. Surprisingly few candidates picked up the key point, which was the absence of the valuation strain in the financial projections.

A methodical approach to answering the question would have improved most candidates' scores significantly.

The markers' assessments were not particularly well correlated (slightly under 70%) and 17 candidates had their marks adjusted. 18 candidates were awarded a pass, but only 2 received a strong pass.

Paper 1 Question 4 (15 marks)

Question 4 was a practical question on the capital requirements for two different insurers, before and after a proposed merger. Part (a) required a simple statutory minimum capital calculation to be carried out, and was reasonably well answered. Part (b) was a small question on diversification benefits and was well answered. Part (c) comprised two thirds of the marks and was looking for the pitfalls when comparing different insurers' published balance sheet capital levels. This part was generally well answered and was a good discriminator of performance. A number of candidates, however, were not able to separate out the important points and therefore lost marks through a scattergun approach.

The markers' assessments correlated well (over 80%) and 7 candidates had their marks adjusted. 28 candidates were awarded a pass, with 10 receiving strong passes.

Paper 1 Question 5 (18 marks)

Question 5 was a relatively straightforward bookwork premium rating question, with a slightly more difficult practical component at the end.

Although candidates scored reasonably well in the bookwork parts, almost no-one was able to inflate claims for the correct period of 2 years. As this is a fundamental actuarial skill requirement, this is very disappointing (and somewhat concerning). Other basic elements of "compound interest" were not well demonstrated throughout this question.

The markers' assessments were poorly correlated (60%-65%) with one marker clearly taking a more lenient approach. Also, the question did not discriminate well, with considerable bunching around the pass mark of 11. 15 candidates had their marks adjusted. 24 candidates were awarded a pass, although only 2 were awarded a strong pass.

Paper 1 Question 6 (12 marks)

Question 6 was a medium to difficult question on the analysis of three valuation basis changes over successive outstanding claims valuations. The question required candidates to demonstrate a strong understanding of the PPCI valuation method.

Part (a) was a small bookwork calculation, yet less than half of the candidates got the 2 marks on offer.

Part (b) was the main part of the question and was poorly answered. No candidates were able to correctly complete the reconciliation of basis changes. This may well reflect a weakness in the course material on this aspect of reserving.

The markers' assessments were highly correlated (over 90%). As a result, only 6 candidates had their marks adjusted. Only 15 candidates were awarded a pass.

Paper 1 Question 7 (30 marks)

Question 7 was borrowed from the 1986 exam, slightly modified for the current environment. Although a large question, it was broken into 5 parts and covered a range of topics. Candidates were asked to discuss various aspects relating to a policy for skiing holidays in Australia.

Although a classic product design question, candidates had difficulty adapting their answers to the uniqueness of the product. There was also a general lack of depth in candidates' answers.

The markers' assessments correlated reasonably well (over 70%) and 19 candidates had their marks adjusted. Only 13 candidates were awarded a pass.

Paper 2 Question 1 (5 marks)

Question 7 was a relatively straightforward question testing candidates' ability to calculate a reinsurance recovery subject to a stability clause operating.

This question was another example of general weakness in applying basic compound interest techniques. Most candidates failed to correctly inflation adjust the claim payments.

The markers' assessments were highly correlated (approx 90%). As a result, only 7 candidates had their marks adjusted. Only 15 candidates were awarded a pass.

Paper 2 Question 2 (12 marks)

Question 2 essentially asked candidates to perform an analysis of lapse experience using a chain ladder projection technique. This "unusual" application of the chain ladder method threw a number of candidates. The fact that the data was given in triangulation format should have been a give away. Those that realised that a chain ladder technique was required generally proceeded to score well.

Overall, the performance was disappointing given that the question was close to "bookwork" standard.

The markers' assessments were very highly correlated (approx 95%). As a result, only 1 candidate had their mark adjusted. 21 candidates were awarded a pass.

Paper 2 Question 3 (10 marks)

Question 3 required candidates to draft a memo to the fleet motor manager discussing the areas in which the company's actuary could add value to the performance of the portfolio.

It was disappointing how few candidates picked up the key concept of the financial control cycle, particularly as this is now a separate core subject of the IAA examinations.

However, the question was moderately well answered overall.

The markers' assessments correlated well (over 80%) and no adjustments to their marks was required. 18 candidates were awarded a pass.

Paper 2 Question 4 (20 marks)

Question 3 was a reasonably straightforward question on premium rating. Part (a) was bookwork, requiring the steps involved to develop the premium to be charged. This was reasonably well answered, although many students failed to give the level of detail that would be expected for 10 marks. Part (b) asked students how they would adjust the premium for the introduction of a NCB and an increase in the policy excess. Again, this part was reasonably well answered, although the markers expressed a concern that candidates' answers were too general or vague and lacked technical foundation.

The markers' assessments correlated reasonably well (slightly over 70%) although one marker was clearly more lenient than the other. 22 candidates had their marks adjusted. 28 candidates were awarded a pass, with 10 receiving strong passes.

Paper 2 Question 5 (15 marks)

Question 5 was a moderately difficult question on outstanding claims valuation. It asked for the investigations that would be carried out assuming four different changes to the underlying data (eg a change in case estimate procedures).

The question required candidates to think deeply about the impact of the changes described.

The standard of answers was clearly disappointing. Very few candidates were able to discuss the relevant issues. Instead, most candidates wrote a lot of irrelevant points, relying on a scattergun approach. Although explicitly covered in the course material, many candidates showed little understanding of the difference between claims made and claims occurring policy coverage. So poor were the answers that only one candidate scored above 10 out of 15.

The markers' assessments were not particularly well correlated (approx 70%). 13 candidates had their marks adjusted. This was the worst performing question of the exam with only 7 candidates awarded a pass. No strong passes were awarded.

Paper 2 Question 6 (20 marks)

Question 6 was a practical rating question based on GLM techniques. Part (a) was a simple calculation of claim frequency and size to give a risk premium. Once again, many candidates failed to correctly inflate the average claim size for the correct period.

Parts (b) and (c) asked for improvements which could be made to the given claim frequency model. Disappointingly few candidates picked up the obvious issue in the rating structure where the premium is loaded if the vehicle is fitted with an alarm! Some candidates misinterpreted the differences required between parts (b) and (c) of the question. With the benefit of hindsight, the question could have been reworded to make it more obvious. The marking was more lenient where misinterpretation was not considered unreasonable.

Part (d) was bookwork, although only one candidate scored more than 2 out of 3.

Overall, the results were a little disappointing given that the question was assessed as requiring "straightforward judgement" only.

The markers' assessments were highly correlated (approx 90%). As a result, only 7 candidates had their marks adjusted. 19 candidates were awarded a pass, with only 1 strong pass.

Paper 2 Question 7 (18 marks)

Question 7 was considered the most difficult question of the exam. It asked candidates to draft a discussion paper around 3 issues in respect of offering motorists a choice between fault and no-fault CTP coverage.

Candidates were expected to think through the practicalities of the two options and the behaviour that each option would drive.

Sadly, few candidates were able to explore the issues in sufficient detail to obtain a pass. It is also possible that time and fatigue (being the last question of the exam) contributed to the poor performance, although this is not the sort of question that should be left to last.

The markers' assessments correlated well (high 70's). None of the marks were adjusted. The markers' recommended pass mark was reduced from 7.25 to 6.0 resulting in 11 candidates being awarded a pass.

Subject 4: Superannuation and Other Employee Benefits

Results

25 candidates presented themselves for examination. It is recommended that the pass mark be set at 220 out of 400 with the result that 11 candidates pass.

Examiners

The three examiners were:

Chief Examiner:	Graeme Humphrys
Senior Assistant Examiner:	Darren Wickham
Assistant Examiner:	Jason Marler

Markers

The following markers assisted with the 2000 exam marking:

Tracy Polldore	Alan Creighton	Greg Smith
Darren Wickham	Rodney Venn	Jason Marler
Stephen Woods	Mark Nelson	David Shade
Kate Maartensz	Graeme Humphrys	Tony Snoyman
Gabrielle Barson	Graeme Miller	Ian Patrick
David McNiece	Esther Conway	

Analysis of Questions

Paper 1 Question 1

This questions was designed to be a gentle lead-in question focussing on tax issues and benefit design. The quality of the answers was surprisingly poor. Perhaps this question did not 'fit the mould' of a standard question. The final pass mark was set at 7 out of 12 and 9 candidates (36%) passed. A further 6 candidates were graded C. Surprisingly this question ended up being a good discriminator of candidates.

Paper 1 Question 2

This question was a fairly straight forward funding question with only a minor 'twist'. Surprisingly only a minority of students identified the 'twist'. More importantly many students missed out on marks in the easier bookmark marks in (a) and (b). Overall the responses were disappointing and only 7 candidates (28%) passed the question. This question helped discriminate between candidates.

Paper 1 Question 3

This question was generally of a judgement nature dealing with stochastic valuations. The worse students answered (a) and (b) without regard to the question and answered as though a deterministic valuations was requested. Parts (c) and (d) tended to discriminate well with many candidates not able to provide a non-superannuation example of where stochastic valuations would be beneficial. Overall the question was reasonably answered with 15 candidates (60%) passing the question and a further 6 candidates were graded C.

Paper 1 Question 4

This question was a more complex benefit design question and included a component on option schemes. Few candidates showed a broad knowledge in part (a). The majority of students answered the option schemes at a reasonable level. Overall 15 candidates passed (60%) and a further 6 candidates were graded C. Overall this question did not tend to discriminate between candidates.

Paper 1 Question 5

This question was an analysis of surplus question but was unusual in that it required an analysis of profit/loss in a defined contribution fund. Most candidates realised that (a) was really an arithmetic exercise although some candidates attempted to apply defined benefit techniques and confused themselves. Part (b) tended to discriminate between candidates as a thorough understanding of the mechanics of a defined contribution was required. Overall 13 candidates (52%) passed and only a further 3 candidates were graded C.

Paper 1 Question 6

This question dealt with the distribution of investment fluctuation reserves. The markers considered this to be a reasonably easy question answered poorly. The Chief Examiner thought it to be a more complex question that was answered reasonably. A number of candidates identified the majority of issues even if their solution was not always practical. These candidates generally passed the questions. The question was a very good discriminator between candidates.

Paper 1 Question 7

This question tested the candidates knowledge of the superannuation marketplace and applied it to a typical real-life example. Most candidates identified master trusts and industry funds as the suitable vehicles. Most candidates understood the master trust concepts but industry funds were less understood. Overall the quality of answers were quite strong and 22 candidates passed (88%). This question therefore did not discriminate between candidates. Perhaps in hindsight this question could have been rephrased and been less ‘leading’.

Paper 2 Question 1

This question dealt with choice of insurance. Part a) was essentially bookwork but was quite poorly answered. Part (b) required judgement and was answered better than (a). Interestingly all candidates who passed the exam all passed this question. In this sense the question was a good discriminator. Overall 16 candidates passed this question and a further 4 were graded C.

Paper 2 Question 2

This question dealt with the accounting treatment of superannuation funds both in Australia and overseas. The answers in part (a) and (b) were reasonable, allowing candidates to pick up easier marks. Part (c) tended to discriminate between the candidates. Overall the responses were reasonable given the complexity of the question, with 14 candidates passing and a further 6 attaining a grade C.

Paper 2 Question 3

This question focused on the investment of fund assets and the appropriateness of investment objectives and the asset mix of the funds. The overall responses were only reasonable, especially in c) where candidates tended to 'fish' for marks by answering the question as a bookwork without particular reference to the question. This question did discriminate well. The mix of grades were:

Paper 2 Question 4

This question was focussed on the advent of benefit calculators in e-commerce. The question deliberately gave candidates 'freedom' in that the question did not ask the candidates to focus on individual items in turn, but rather a broad breakdown of concepts. In a) there was generally a poor consideration of the issues. Part b) was answered better and some responses were quite creative. Given the construction of the question it was not surprising that this question was a good discriminator between candidates. 10 Candidates passed and a further 9 candidates were graded C.

Paper 2 Question 5

This question dealt with bulk transfer issues. The questions combined bookwork components with more complex judgement questions and tended to mask the effects in some instances. Part c) was generally answered poorly as little thought was given to the effects of various transfer options. A lot of candidates only focussed on 'past service' transfer methods although the question specifically asked for past and future incentives. 15 Candidates passed this question including all but one of the candidates who ultimately passed the exam.

Paper 2 Question 6

This question dealt with the existing problems within the existing retirement income system. The majority of students focussed on the issues of integrating superannuation with social security and were generally of very good quality. Most candidates then passed comments on other areas of concern but with much less detail. Overall 17 candidates passed and it was not a good discriminating question.

Subject 5: Finance

Results

Overall, 45 candidates sat the finance specialist exam in 2000, compared to 42 in 1999. Of the 45 candidates who sat, 14 are recommended for a pass. Marks and grades awarded to each candidate are set out in Appendix 1, together with recommendations as to the recommended pass list.

Examiners

The two examiners were:

Chief Examiner:	Richard Hitchens
Assistant Examiner:	Julie Osborn

Markers

The following markers assisted with the 2000 exam marking:

Sue Clarke	Eric Ranson
Laurel Franettovich	Julie Osborn
Richard Hitchens	Tim Kyng
Ed Swayne	Rayman Yan
Rayman Yan	Ed Swayne
Richard Hitchens	Tim Kyng
Tony Kench	Julie Osborn
Sue Clarke	Marcus Arena
Tim Kyng	Kevin Francis
Richard Hitchens	Laurel Franettovich
Tony Kench	Julie Osborn
Kevin Francis	Marcus Arena

Analysis of Questions

Paper 1 Question 1 was a fairly straightforward currency pricing, hedging and options problem. Generally the question was well answered, with only a few students having significant difficulty.

CV = 26%, Discriminating Power = Low, Pass Rate = 37.8%

Paper 1 Question 2 was a two variable application of Ito's Lemma and application of the Jamshidian bond option pricing method to an imaginary product. It proved to be a very difficult question, with most students performing quite poorly. The key problems were: (i) that students commonly suggested that the process followed by L was geometric Brownian motion despite a stochastic variable r remaining in the final result and (ii) the Jamshidian's method was not that well understood, which is probably more a function of a lack of importance it has in the course, than lack of ability by the students.

CV = 40%, Discriminating Power = Moderate, Pass Rate = 8.9%.

Paper 1 Question 3 examined students understanding of how hedge parameters change with stock price. A fairly easy question, but not handled very well. It showed a general lack of understanding of concepts fundamental to option pricing. It had the greatest discriminating power of all questions.

CV = 65%, Discriminating Power = Strong, Pass Rate = 37.8%.

Paper 1 Question 4 covered modifications of the Black-Sholes model to allow for a negative dividend, put-call parity and boundary conditions. Most students struggled to identify that the second instalment of an instalment receipt can be treated as a negative dividend. As such the question was generally poorly answered. The question was designed to give better students a chance of showing that they grasp this material and generally achieved this aim.

CV = 56%, Discriminating Power = Strong, Pass Rate = 15.6%.

Paper 1 Question 5 was a straightforward Black's Model bond option pricing question with a few tricks thrown in to test how well students understand the application of the model. There was a good range of marks, however, most were concentrated close to half marks. Very few students excelled, many failed to calculate the duration of the bond to adjust the bond yield volatility to get the bond price volatility.

CV = 33%, Discriminating Power = Moderate, Pass Rate = 11.1%.

Paper 1 Question 6 a long analytic and numeric barrier option pricing question. The question was surprising well answered by most of the students.

CV = 31%, Discriminating Power = Moderate, Pass Rate = 66.7%.

Paper 2 Question 1 was a straightforward yield curve question. This question has been asked in a very similar form in previous exams. As expected it had the lowest discriminating ability.

CV = 19%, Discriminating Power = Low, Pass Rate = 75.6%.

Paper 2 Question 2 required students to construct a straightforward BAB futures hedge and implement a tail-hedge. The question resulted in a broad range of answers and discriminatory power.

CV = 48%, Discriminating Power = High, Pass Rate = 37.8%.

Paper 2 Question 3 required students to discuss considerations required when applying option pricing methods to illiquid assets. The question also tested the ability to look at a problem and determine there was something wrong with the input parameters, i.e resulted in negative probabilities in the tree. This question was poorly answered by many students, which I thought was a little surprising given I think there has been a similar style question in the past.

CV = 54%, Discriminating Power = High, Pass Rate = 31.1%.

Paper 2 Question 4 required students to explain why observed prices vary from Black-Scholes prices, determine and apply appropriate alternate models and assess reasonableness. Overall the students performed well on the calculations and poorly on the written/judgment questions.

CV = 27%, Discriminating Power = Low, Pass Rate = 44.4%.

Paper 2 Question 5 was a long, but straightforward calculation intensive leasing question, which was generally well handled by the students.

CV = 26%, Discriminating Power = Low, Pass Rate = 68.9%.

Paper 2 Question 6 was a fairly simple option strategy question veiled in the complex new area of weather options. Many students struggled with setting up the hedge. Maybe the question was not well worded or they ran out of time. Students also struggled to connect the option style, i.e. Asian, with the best option valuation methodology, i.e. Monte Carlo Simulation. Overall reasonably poorly answered.

CV = 57%, Discriminating Power = Strong, Pass Rate = 28.9%.