

Report to Council from the Board of Examiners

2001 PART III EXAMINATIONS REPORT

(STUDENT VERSION)



Institute of Actuaries of Australia

Publisher

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SUMMARY & RECOMMENDATIONS

The year 2001 Part III examinations of the Institute of Actuaries of Australia were held between 2 and 12 October 2001 with candidates in Australia (Sydney, Melbourne, Brisbane, Canberra, Adelaide) and overseas (Hong Kong, New Zealand, United Kingdom, Singapore, Malaysia, Dublin, India, Netherlands, Switzerland, USA).

For the first time the number of candidates sitting the Part III exams were less than the number sitting in the previous year.

Table 1 Candidate Numbers by Part III specialist subject

	1996	1997	1998	1999	2000	2001
1 Investment Management	58	77	99	109	102	92
2 Life Insurance	58	72	66	71	82	79
3 General Insurance	51	49	54	43	55	59
4 Superannuation	34	23	21	21	25	23
5 Finance	27	31	34	42	45	47
	228	252	274	286	309	300

The process followed in setting the exams and determining the recommended pass list was similar to the process followed in previous years. The number of candidates, recommended passes and resulting pass rates are as follows:

Table 2 Recommended Number of Passes by Part III specialist subject

Subject	2001 Sat	2001 Passed	2001 Pass %	2000 Pass %
1 Investment Management	92	30	33%	27%
2 Life Insurance	79	30	38%	45%
3 General Insurance	59	20	34%	31%
4 Superannuation	23	8	35%	44%
5 Finance	47	18	38%	31%
Total	300	106	35%	35%
2000	309	107	35%	

The Chief Examiners aim to produce a consistent standard of passing candidates rather than a consistent pass rate from year to year. This year the overall pass rate is the same as last year. The pass rates by specialist subject have changed significantly however this year the pass rates by specialist subject are relatively consistent ranging from 33% to 38% (27% to 45% for 2000).



If the recommended passes are adopted by the Council the number of members that will be made Fellows subject to attendance at a professionalism course, completion of the Practical Experience Requirement and payment of any outstanding fees is 45.

CHAIRMAN'S REPORT

Examination Administration

The Board

The Board of Examiners oversees the Part III Examination process of the Institute of Actuaries of Australia ("IAA"). The Board of Examiners consists of the Chairman and his Assistants, the Chief Examiners for each subject and the Exam Supervisor.

For 2001 the Chairman and his assistants were:

- | | |
|-----------------------------|---------------------|
| • Chairman | Mr Warrick Gard |
| • First Assistant Chairman | Mr Michael Playford |
| • Second Assistant Chairman | Mr David Wong |

The Chief Examiners for 2001 were

- | | |
|-------------------------|---------------------|
| • Investment Management | Mr Andrew Croft |
| • Life Insurance | Mr Anthony Bofinger |
| • General Insurance | Mr Adam Driussi |
| • Superannuation | Mr Darren Wickham |
| • Finance | Mr Richard Hitchens |

The Sydney Examination Supervisor was Mr Craig Ginnane

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

In particular I would like to thank my two assistants Michael Playford and David Wong for their support and untiring efforts in ensuring the overview process of the Chairman worked smoothly.



Meetings of the Board

The Board met on two occasions during the year.

- The first meeting was held in February and was attended by all Chief Examiners. The purposes of this meeting were:
 - general training in the setting of examination questions
 - outline of responsibilities of Chief Examiner and timetable for the year
- The second meeting was held in November and again, was attended by all Chief Examiners. The purposes of this meeting were:
 - review the process adopted by each Chief Examiner
 - review recommendations on pass lists
 - discuss prize winners

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

Administration

The Board of Examiners were ably assisted by a number of Institute staff including Mr Jac Smit, Ms Jan Heath and Ms Carolyn MacLulich. Without the dedicated support of these Institute staff the work of the Board of Examiners would be far more onerous.

The Examination process

The examination process began in February 2001 with an initial meeting of Chief Examiners and some of their assistants. The Chief Examiners' assistants are listed in the individual Chief Examiners' reports.

Each subject adopts a slightly different approach to setting examination papers, marking papers and determining grades and passes. These processes have been established over time and seem to suit each subject area.

The basic framework followed by each subject is the same and all subjects contain a rigorous review processes. The general framework used to set examination papers is described as follows:

- The Chief Examiners 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.
- At least two scrutineers 'sat' the paper under exam conditions to assess the length of the paper.
- Exams were redrafted after feedback from the scrutineers.

- Draft exams, solutions and marking guides were then submitted to the Chairman for review. A documentation of the exam process was also submitted for review. The draft exams and solutions were reviewed by the Chairman and the Assistant Chairmen.
- Exams, solutions and marking guides were finalised by the Chief Examiners and their assistants.
- The Chief Examiners signed off the final exams.
- The Chairman provided final signoff.

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

- Two markers mark each questions. For some subjects inconsistencies were discussed amongst the markers before the results were forwarded to the examiner. For other subjects the Chief Examiner and his Assistants resolved inconsistencies.
- Marks were scaled to allow for the fact that some questions were difficult and some questions were easy.
- Each question was ranked as A, B, C, D or E where A was regarded as a strong pass and B an ordinary pass.
- Candidates overall performance was determined using several metrics including total raw mark, total scaled mark, weighted average grade and weighted average rank.
- Candidates were ranked based on these metrics.
- Candidates were divided into clear passes, clear failures and a middle group that required further consideration.
- The middle group was examined individually by the Chief Examiner who determined the pass standard by assessing the whole paper and the student's ability to use judgement.
- The recommended passes were examined by the Chairman in light of a reasonable mix of grades and average grades. 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.

The year 2001 Part III examinations of the Institute of Actuaries of Australia were held on the following dates:

- | | |
|-------------------------|-----------------------|
| • Investment Management | Tuesday, 2 October |
| • Life Insurance | Thursday, 4 October |
| • General Insurance | Monday, 8 October |
| • Finance | Wednesday, 10 October |
| • Superannuation | Friday, 12 October |



Candidates sat the exams in large number of centres both in Australia and overseas.

Table 3 Candidates by Exam Centre

Australia	No of candidates
Sydney	156
Melbourne	58
Brisbane	4
Canberra	3
Adelaide	1
Overseas	
Hong Kong	33
New Zealand	14
United Kingdom	11
Singapore	8
Malaysia	7
Dublin	1
India	1
Netherlands	1
Switzerland	1
USA	1

Exam sittings

Table 4 Candidate Numbers by Part III specialist subject

	1996	1997	1998	1999	2000	2001
1 Investment Management	58	77	99	109	102	92
2 Life Insurance	58	72	66	71	82	79
3 General Insurance	51	49	54	43	55	59
4 Superannuation	34	23	21	21	25	23
5 Finance	27	31	34	42	45	47
	228	252	274	286	309	300

The mix of specialist subjects sat by candidates in 2001 followed the pattern of the last few years. A slightly lower percentage sitting the Investment Management, a slightly higher percentage sitting the General Insurance subject and a relative constant percentage sitting the other three subjects over the last 3 years.

Table 5 Candidate Mix by Part III specialist subject

	1996	1997	1998	1999	2000	2001
1 Investment Management	25%	31%	36%	38%	33%	31%
2 Life Insurance	25%	29%	24%	25%	27%	26%
3 General Insurance	22%	19%	20%	15%	18%	20%
4 Superannuation	15%	9%	8%	7%	8%	8%
5 Finance	12%	12%	12%	15%	15%	16%

Examination papers

The structure of the examinations in 2001 was identical to that in 2000.

- Investment Management 2 x 3 hours
- Life Insurance 2 x 3 hours
- General Insurance 2 x 3 hours
- Superannuation 2 x 3 hours
- Finance 2 x 3 hours

In each subject there is a mix of questions covering three categories

- interpreting bookwork to the application of familiar and unfamiliar circumstances.
This group is aimed at testing the candidates' knowledge and understanding.
- problem solving requiring simple judgement
- problem solving requiring complex judgement

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 subject, the principles on which papers are to be set and the marking procedures are set out in the Guidelines to Examiners. To ensure proper balance guidance as to the proportion of marks given to each category have been established.

The standards of difficulty as determined by the Chief Examiners at the time they set the papers are set out below with a comparison to prior years.

Table 6 Standards of Difficulty by Part III specialist subject

	Knowledge & Understanding			Simple Judgement			Complex Judgement		
	1999	2000	2001	1999	2000	2001	1999	2000	2001
Investment									
1 Management	25%	27%	15%	40%	40%	48%	35%	33%	37%
2 Life Insurance	20%	21%	18%	45%	44%	49%	35%	35%	33%
3 General Insurance	20%	21%	15%	40%	42%	40%	40%	37%	45%
4 Superannuation	18%	20%	24%	44%	40%	35%	38%	40%	41%
5 Finance	15%	13%	22%	41%	45%	32%	44%	42%	46%
	15%-25%			35%-45%			35%-45%		

Detailed comments on the answers to the questions are contained in each Chief Examiners report.

General observations on each paper are as follows:

- Investment Management
 - The exam was of a reasonable length (rectifying problem of previous year).
 - The exam was set to be easier than the 2000 exam but harder than the 1999 year. The distribution of marks scored indicated that this intention was achieved.
 - The course has a very broad syllabus covering a number of specialist areas. This represents challenges for educating, exam setting and marking.
- Life Insurance
 - The exam markers commented that they often found it difficult to give marks for candidates' answers. This comments is similar to that made in previous years. The Chief Examiner is concerned about this observation however it is not clear whether this is a comment about the questions or the candidates.
 - Initial impression that exam was easier than 2000 did not seem to be borne out in the results.
- General Insurance
 - This year's paper was designed to be easier than those of previous years. Feedback from scrutineers, markers and candidates would appear to indicate that this was the case. This was also supported by the distribution of marks that showed that whilst the average total marks were higher the relative distribution of marks was very similar to last year.

- Many markers indicated that candidates did not answer the question asked. Candidates also ignored information provided in the question. It is extremely important to read the question and answer the question that is in the paper. Marks are not given for good general knowledge.
- Based on the answers provided it appeared to markers that many candidates concentrate more on preparing detailed filing systems of course notes to refer to in an exam rather than in spending time understanding general insurance concepts.
- Markers felt that candidates were unable to demonstrate a broad understanding of general insurance. This concern was developed from two observations. Firstly, many candidates simply performed too inconsistently throughout the exam to convince the examiners they understood the whole course. Some candidates performed very well in one or two questions only to perform equally poorly on several others. Secondly, candidates in general had a disturbing tendency of 'pigeon-holing' questions to be from one specific section of the course and then ignoring all other sections.
- Many students demonstrated either a poor technical grasp of concepts (in particular Paper 1, Questions 1 and 4) or a poor application of methods.
- Superannuation
 - The exam was of reasonable length.
 - The Chief Examiner noted that a number of markers had identified that a large percentage of candidates had answered questions by copying sections of the course without adapting it for the specific question asked.
- Finance
 - Overall, the exam had good discriminating power with a coefficient of variation of 22% (very similar to last year's finance exam of 21%), and a range of marks from a low of 61.25 to a high of 161.5 out of 200 possible marks, for the 47 candidates.

Results

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

Candidates are required to demonstrate:

- a strong knowledge of the nature, operations, legislation and current issues of the selected practice area(s)
- a detailed knowledge and understanding of the application of actuarial concepts and skills to the chosen practice area(s)



- an ability to apply judgement to solve problems in the chosen practice area(s) which may be characterised by complexity, varying degree of clarity of definition and novel or unseen circumstances.

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

The Chief Examiners in the specialist subjects place great emphasis on the questions that require the candidate to demonstrate the ability to apply bookwork to specific situations and show judgement to solve problems. When grading borderline candidates, their ability to do well in such questions has a great bearing on whether they pass or fail. The Chief 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 expected to be able to demonstrate their skills to those outside the profession. Candidates are expected to be able to communicate clearly and will be penalised if their answers are not clearly expressed.

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 7 Recommended Candidate Passes by Part III Specialist Subject

	1996	1997	1998	1999	2000	2001
1 Investment Management	30	27	39	51	28	30
2 Life Insurance	25	30	23	29	37	30
3 General Insurance	18	15	13	17	17	20
4 Superannuation	15	10	10	12	11	8
5 Finance	13	14	15	16	14	18
	101	96	100	125	107	106

Table 8 Recommended Pass Rates by Part III Specialist Subject

	1996	1997	1998	1999	2000	2001
1 Investment Management	52%	35%	39%	47%	27%	33%
2 Life Insurance	43%	42%	35%	41%	45%	38%
3 General Insurance	35%	31%	24%	40%	31%	34%
4 Superannuation	44%	43%	48%	57%	44%	35%
5 Finance	48%	45%	44%	38%	31%	38%
	44%	38%	36%	44%	35%	35%

The overall recommended pass rate for 2001 is approximately equal to the pass rate for 2000. This pass rate is broadly similar to 1997 and 1998 however it is significantly lower than 1996 and 1999. The Board of Examiners discussed in detail the comparability in assessment standard between 2000 and 2001 and the general consensus was that the standard applied was the same and that differences in pass rates between 2000 and 2001 for individual subjects represented a real difference in the quality of the papers presented.

Further detail on the deliberations of each Chief Examiner is contained in their individual reports. I am satisfied that the processes adopted in the marking of papers and grading of papers have been fair and robust and that every effort has been made to ensure consistency between years and between subjects.

Pass rates by centre

The Council of IAA has requested that I examine the pass rates by exam centre. For the first time in the last six years the overall pass rate for candidates sitting in Melbourne exceeded the average pass rate and exceeded the pass rate for Sydney.

Table 9 Comparison of Pass Rates by Centre

	1996	1997	1998	1999	2000	2001
Sydney	47%	38%	38%	49%	35%	37%
Melbourne	38%	32%	31%	34%	27%	38%
Other	42%	44%	37%	40%	42%	31%
Total	44%	38%	36%	44%	35%	35%

An examination by individual specialist subject however reveals significant differences. The most striking difference exists for General Insurance where the pass rate for Melbourne was 13% compared to a pass rate for Sydney of 34%. In isolation



this would not be unusual as only 8 candidates sat General Insurance in Melbourne and hence there is an 18% chance that 1 or less candidates would pass in Melbourne assuming that the underlying pass rate is the same as the total for all centres. However, this is a continuation of a trend of many years standing which indicates there may be an underlying difference in the pass rates between Sydney and Melbourne for General Insurance. There have been a number of theories proposed for this difference including different tuition opportunities, different practical experience of candidates and different proportions of candidates resitting the examination. Unfortunately the available data does not confirm any of these theories.

I have examined the pass rates by specialist subject, examination centre (Sydney, Melbourne, Other) and whether the candidate was sitting the exam for the first time or was resitting the exam. This analysis does not reveal any consistent trends. For some subjects and exam centres resitting candidates have a higher pass rate while for others first time candidates have a higher pass rates.

Pass Marks and Scaling

The scaled pass marks since 1996 have been as follows:

Table 10 Scaled Pass Marks by Part III specialist subject

		1996	1997	1998	1999	2000	2001
1	Investment Management	216	215	220	230	222	224
2	Life Insurance	228	224	205	219	240	224
3	General Insurance	229	204	203	220	224	231
4	Superannuation	204	208	210	206	221	203
5	Finance	234	230	230	239	225	230

The relationship between scaled and raw marks was:

Table 11 Raw and Scaled Pass Marks by Part III specialist subject

		Raw	Scaled
1	Investment Management	180	224
2	Life Insurance	189	224
3	General Insurance	227	231
4	Superannuation	198	203
5	Finance	232	230

Despite the difference in pass marks (both raw and scaled) the weighted average grade cut off for each subject was very similar. The comparability of standards of

assessment was discussed by the Board of Examiners and all Board members were comfortable that the standard applied for each specialist subject was broadly similar.

Recommendations for 2002

Board of Examiners

The recommended constitution for the Board for 2002 is:

Chairman and Assistants

- | | |
|-----------------------------|-----------------|
| • Chairman | Mr Warrick Gard |
| • First Assistant Chairman | Mr David Wong |
| • Second Assistant Chairman | to be filled |

Chief Examiners

- | | |
|-------------------------|--------------------|
| • Investment Management | Mr Andrew Croft |
| • Life Insurance | Ms Caroline Bennet |
| • General Insurance | Mr Stephen Wilson |
| • Superannuation | Mr Jason Marler |
| • Finance | to be filled |

Examination Dates

The dates for the examinations in 2002 and those recommended for 2003 are as follows:

Table 12 Examination Dates by Part III specialist subject

	Subject	2002	2003
1	Investment Management	Tuesday, 1 October	Tuesday, 30 September
2	Life Insurance	Thursday, 3 October	Thursday, 2 October
3	General Insurance	Tuesday, 8 October	Tuesday, 7 October
4	Finance	Thursday, 10 October	Thursday, 9 October
5	Superannuation	Monday, 14 October	Tuesday, 14 October

Exam Solutions

The Board of Examiners has agreed to release the Year 2001 examination papers along with the examination model solutions/ marking guides. It is recommended that these be released in February 2002.



EXAMINERS' REPORTS

Subject 1: Investment Management

Chief Examiner: Andrew Croft

Summary

The 2001 Investment Management examination was the second to test the new, broader syllabus. The level of enrolment was comparable with 2000, remaining at a very high level. The pass rate for 2001 was higher than for 2000, with an average raw mark of 41% (compared to 35% in 2000 and 51% in 1999). This may reflect:

- Improved candidate familiarity with the course.
- Course since 2000 has a broad syllabus, covering multiple fields of specialisation
- Broadly-based examination, requiring substantial knowledge in all aspects of the syllabus

	N° candidates
Originally enrolled	100
Absent from the exam	8
Sat the exam	92
Passed	30
Failed	62

General observations

Length of papers

Both papers appear to have been at an appropriate length. Although markers of the last question of each paper noted some candidates running out of time, this is to be expected to some degree, and was not as prevalent as in 2000. This correlates with scrutineers' observations that students should very comfortably complete the exam within the time allowed. It appears that the length of the exam was shorter than in 2000, consistent with the expectation and experience that the paper was less difficult than in 2000.

Results by centre

Centre	Enrolled	Absent	Sat	Passed	%
Sydney	52	5	47	17	36
Melbourne	16	1	15	5	33
Australia other	3	1-	2	1	50
New Zealand	5	-	5	2	40
Overseas	24	1	23	5	22
Total	100	8	92	30	33



Scrutineers and Marking

Each question was reviewed by the Chief Examiner. Trial papers were generated and scrutineered by two scrutineers.

The response from both scrutineers to the initial trial papers was that the papers were a reasonable or comfortable length. Each made valuable corrections, clarifications and suggestions, which were utilised in the final paper. The Assistant Chairmen of the Board of Examiners also reviewed and approved final exams before they were issued.

Each question was marked by at least two markers, who marked independently before comparing results.

Grading

For each question, the markers agreed on a grading scale (A,B,C,D,E) that they believed reflected the standard of the candidates. I reviewed the grading scales and made some modifications:

- the raw pass mark for a question had to be no less than 40% and no more than 60%;
- very few candidates should have raw marks truncated by scaling at either 0% or 100%.
- the maximum possible raw mark exceeds the raw mark at which the scaled mark is 100% for every question (provided this does not cause excessive truncations).

For Paper 1 Question 6 & Paper 2 Question 6, the raw pass mark was specially permitted to be between 30% and 40%, as it was recognised that these questions were intended to be “stretch” questions, and therefore more challenging than the others.

Scaling

Each question was scaled by a linear transformation of the raw marks, so that:

- the cut-off mark for D was given 20%;
- the cut-off mark for B was given 60%; and
- in a small number of cases, this resulted in marks being truncated at either the maximum or zero.

Analysis of Questions

Paper 1, Question 1

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

- Aim 4a) Explain the concepts underpinning modern finance theory including the capital asset pricing model (CAPM), efficient market hypothesis (EMH), and arbitrage pricing theory (APT).
- Aim 3b) Consider the historical performance (mean, variance, covariance) of the various asset classes and possible implications for projections.

The aim of this question is to test (1) whether students are able to demonstrate an understanding of basic efficient market hypothesis theory, (2) basic applications thereof. In the final part, the student is to examine a past economic relationship and relate them to an investment decision.

Required knowledge at minimum was the various forms of the efficient markets hypothesis, and appreciating what drives the efficiency of markets in practice.

The final part required candidates to demonstrate understanding of a relative valuation measure of stock & bond markets (eg risk premia) and comment on a statement on the absolute valuation of the stock market.

This question was reasonably well handled, with the average raw mark in excess of 50%.

This question was a moderate discriminator between candidates, and was a good indicator of overall candidate strength.

Paper 1, Question 2

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

- Aim 7: Demonstrate an understanding of how to design personal financial plans
- Aim 18a) Demonstrate an understanding of the key features of the Professional Standards, which relate to investment management.

The aim of this question is to test whether students are able to demonstrate a basic understanding of issues surrounding financial planning, and in particular recommendations to a client and their particular situation, while also complying with legal, regulatory and professional requirements.

This question outlined a scenario where a recently divorced individual needs to arrange their assets to fund a divorce-related settlement in a way that took into account their present financial (especially liquidity) position, and maximised the client's future financial position. The candidate was asked to make recommendations for this client under a number of scenarios, and also state the factors that need to be taken into account in order for the actuary to satisfy Corporations Law and the Professional Standards.

This question was generally not well answered, with the average raw mark 38%. It was a good discriminator but a moderate indicator of overall candidate strength.

Paper 1, Question 3

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

- Aim 9d) Identify the main factors that influence interest rates and analyse the various methods for forecasting them.
- Aim 2a) Describe the main features of Australian capital markets such as types of securities, issuers, investors, intermediaries, indices and costs.

The aim of this question is to test candidates' understanding of fixed interest markets.

This is a good, practical question that was prompted by the July speculation that the states would issue through the Commonwealth. It merely requires candidates to show an understanding of the issues involved with such an idea.

This question was moderately well answered, with the average raw mark 49%. It was a good discriminator but a moderate indicator of overall candidate strength.

Paper 1, Question 4

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

- Aim 11 - Demonstrate an understanding of the principles and techniques for managing international investment.
- Aim 12a) Describe the various types of property investment and their characteristics.
- Aim 12b) Discuss the alternative ways of constructing a property portfolio by direct purchase and by listed or unlisted vehicles.

The aim of this question was to assess parts of Unit 5.

The underlying question covered is:

What risks does one bear when seeking to enhance returns against a liability benchmark? ... specifically for international fixed interest investments ... and which risks are acceptable?



Demonstrate an understanding of the characteristics of the various property asset types.

This question was reasonably well answered, with the average raw mark 53%. It was a poor discriminator but a very good indicator of overall candidate strength.

Paper 1, Question 5

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

- Aim 4b) Explain the Black-Scholes approach to option pricing (Note: A formal derivation of the BS formula is not expected).
- Aim 8a) Describe the principal derivative instruments (including the specification for each contract) used in institutional investment management in Australia.

The aim of this question is to understanding of the weaknesses of blindly applying Black-Scholes formula for all options. It tests their UNDERSTANDING of the use of formulae, not just the numerical formulae.

Part iv is a bit “left field”; executive options are not explicitly covered in the course but are common enough to be assessed as a stretch question (as the idea, eg with IT companies, was to reward executives for achieving certain work-related targets).

This question was reasonably well answered, with the average raw mark 51%. It was a moderate discriminator but a good indicator of overall candidate strength.

Paper 1, Question 6

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

- Aim 10c) Analyse the various means of adding value in managing an Australian equity portfolio.
- Aim 10d) Critique the main quantitative measures and qualitative considerations taken into account by a fundamental stock picker.
- Aim 10e) Demonstrate the use of quantitative techniques in designing an active quantitative portfolio.
- Aim 10f) Demonstrate how to take risk into account in constructing a portfolio involving any of the above methods of adding value.

The aim of this question is to test whether candidates are able to demonstrate a basic understanding of the issues surrounding quantitative equity investment for an institutional investor. This includes understanding how the models are used, interpreting their output and understanding their limitations.

Although the first part of this question was well answered, the portions of the question relating to quantitative equity models were extremely poorly handled, consistent with the 2000 experience. The part which referred in passing to the change in ASX sectors, (and then asked for comment on how this change would affect the results of quant equity work), showed mass ignorance of this development, despite the announcements which featured in the financial press earlier this year.

Overall, this question was poorly answered, with the average raw mark 24%. It was a good discriminator but a moderate indicator of overall candidate strength.

Paper 1, Question 7

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 candidates' understanding of how a strategic asset allocation is derived for a fund, and then awareness of how various listed issues impact that asset allocation.

This question was not particularly well handled, with an average raw mark of 42%. Although the bookwork portion was handled well enough, a comprehensive failure to read the question meant that most candidates did not display much understanding of how the asset/liability approach applies to a superannuation fund. Part of the problem also was that some candidates ran out of time.

Overall, this candidate performance is below that expected for this question, which was expected to be straightforward.

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

Paper 2, Question 1

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

- Aim 14a) Discuss the uses of investment performance measurement, and analyse the various methods of calculating return and risk.
- Aim 14f) Interpret performance calculations within a qualitative assessment framework.

The aim of this question is to test candidate knowledge of straightforward performance measures.

This question was not well handled, with the average raw mark 39%. It was a moderate discriminator but a good indicator of overall candidate strength.



This question is a straightforward question on performance, meant to add to candidate confidence on their return to the exam room. The average raw mark was expected to be well above 50%. I am as yet unable to explain this poor performance.

Paper 2, Question 2

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

- Aim 11b) Compare the main styles of international equity investment.
- Aim 13a) Analyse alternative configurations of investment managers including the number and type of investment managers.
- Aim 13b) 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 candidates' ability to understand and assess multiple manager structures.

This question was moderately well handled, with the average raw mark 48%. It was a moderate discriminator but a good indicator of overall candidate strength.

Paper 2, Question 3

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

- Aim 18a) Demonstrate an understanding of the key features of the Professional Standards, which relate to investment management.
- Aim 18b) Identify situations where other expertise is required and reconcile when the Code of Conduct is applicable.
- Aim 18c) Explain the implications 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 the Professional Standards and Corporations Law apply, especially to a situation where an actuary potentially has a conflict of interest, and needs to manage that to ensure compliance with the legal/professional requirements

This question was moderately well handled, with the average raw mark 44%. It was a moderate discriminator but a good indicator of overall candidate strength.

Although candidates showed an understanding of the main points, they were less convincing in applying them to the specified situations. Hence marks tended to bunch.

Finally, reading the question continued to be a problem for some candidates; “explain with reasons” commonly calls for an explanation WITH reasons attached!

Paper 2, Question 4

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

- Aim 11a) Describe the distinctive features of investing in international equity and fixed interest markets.
- Aim 11c) Compare the advantages and disadvantages of hedging currency risk.
- Aim 12a) Describe the various types of property investment and their characteristics.
- Aim 12e) Outline the features and advantages of "alternative" asset classes such as: high yield debt, private equity, hedge funds, managed futures.

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. The question also tests understanding issues related to investing in alternative asset classes.

This question was well handled, with the average raw mark 55%. It was a poor discriminator but a very good indicator of overall candidate strength.

The underlying question covered is:

What risks does one bear when seeking to enhance returns through international investment within a competitive accumulation super fund environment? ... specifically for currency risk within various international asset classes, and allocations to hedge funds ... Which risks are acceptable? Why?

Paper 2, Question 5

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

- Aim 6b) Determine the asset classes that should be included in a particular strategic asset allocation.
- Aim 6c) Determine the required features of, and relationships within, an asset liability model.
- Aim 6d) Develop a simple asset liability model for use in setting a strategic asset allocation for each major type of institution.
- Aim 17a) Consider the impact of experienced investment returns on the Balance Sheet of an institution, and the effect this may have on future investment objectives.

The aim of this question is to test knowledge of what asset liability modelling is, how an ALM might be developed and how this can apply to ad-hoc suggestions or requests. This question was framed in an unusual setting, but the key points behind ALM work are the same.

This question was not particularly well handled, with the average raw mark 43%. It was a poor discriminator but a very good indicator of overall candidate strength.

Paper 2, Question 6

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

- Aim 10e) Demonstrate the use of quantitative techniques in designing an active quantitative portfolio.
- Aim 10g) Analyse the cost of various alternative dealing methods (including brokerage, market impact and opportunity costs).

The aim of this question is to test candidates' knowledge of the more practical aspects of running and implementing quantitative equity models.

This question was very poorly handled, with the average raw mark 16%. It was an extremely good discriminator but a moderate indicator of overall candidate strength. People either knew it or did not; hence many candidates bunched at low marks.

This question concentrated on active return factor based quantitative equity models. This time, it also looked at the more practical issues involved, and is intended to be a “stretch” question. In short, the question covers why do earnings matter in stock valuation, how are they measured, how is the data sourced, what are the transaction cost and capital gains implications of high portfolio turnover and how can that be managed?, and finally, a simplified form of “how do you determine if this variable is significant?”.

The marking was set so that a “perfect” answer would achieve well in excess of 100%.

Although the initial author of both Paper 1 Question 6 AND Paper 2 Question 6 was also the writer of the applicable section of the course material, and candidates had access to similar questions with solutions from the 2000 exam, it appears that candidates are still handling these questions extremely badly. I suggest that the tuition material in this part of the course be amended to include these issues.

Paper 2, Question 7

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

- Aim 9a) Describe the main methods of managing fixed interest portfolios.
- Aim 9b) Apply the techniques for managing a fixed interest portfolio on an indexed basis.

- Aim 9c) Analyse the various means of adding value in managing an active fixed interest investment.
- Aim 17a) Consider the impact of experienced investment returns on the Balance Sheet of an institution, and the effect this may have on future investment objectives.

The aim of this question is to test candidates' understanding of the basic fixed interest calculations, and the more practical side of immunisation & dedicated cashflow matching.

This question was not particularly well handled, with the average raw mark 38%. It was a very good discriminator and a good indicator of overall candidate strength.

This question was surprisingly poorly done. Clearly a substantial number of candidates ran out of time, but even so, the patchy effort on the calculations which were much simpler than the previous year was disappointing. Some were able to add marks discussing immunisation and cash flow matching, but others did very poorly in these sections.

Subject 2: Life Insurance

Chief Examiner: Tony Bofinger

Summary

It is recommended that 30 of 79 candidates be awarded a pass, implying a pass rate of 38%. This compares with awarding passes to 35 of 83 candidates, a pass rate of 42%, in 2000.

The pass list was set by looking at the scaled marks, raw marks, weighted average grade, number of passes and the number of showed little knowledge. A criterion was set up for each measure and candidates were expected to satisfy all criteria. Any candidate who did not satisfy one or two of the criteria was investigated more closely.

In summary:

	N° candidates
Originally enrolled	83
Absent from the exam	4
Sat the exam	79
Passed	30
Failed	49

The analysis by examination centre is as follows:

Centre	Presented	Passed	Pass rate %
Sydney	39	16	41
Melbourne	11	5	45
Hong Kong	11	2	18
Singapore	4	1	25
Malaysia	3	0	0
UK	3	2	67
Auckland	3	1	50
Brisbane	2	1	50
Adelaide	1	0	0
Dublin	1	1	100
Switzerland	1	1	100
Wellington	1	0	0
Total	79	30	38

Examiners

Examiners for this year were:

Chief Examiner	Tony Bofinger
Deputy Chief Examiner	Caroline Bennet
Assistant Examiners	Trevor McMahon, Andrew Mead

Scrutineers & Marking

The first drafts of the papers were reviewed by four scrutineers, two using exam conditions and two not. Scrutineers were specifically requested to check for the following:

- clarity
- coverage
- difficulty
- time requirements (recent fellows only)
- being correct (experienced fellows)

All four scrutineers provided useful information on consistency between question and answers and also suggested additional items for the marking guide.

As is now standard, two markers were assigned to each question. Each marker and co marker was provided with a Marking Package consisting of:

- The exam question;
- A marking guide, including a description of the level of difficulty and Aims or Objectives being tested (by part for each question);
- An excel spreadsheet to enter final results for uploading by the examiners; and
- Marking Instructions.

Markers were asked to perform several tasks:

- Compare their results and resolve any differences to within 1 mark.
- Recommend, with commentary, appropriate pass, slightly below standard and weak marks for the question. These are used as a basis (for review) by the examiners.
- To provide comment on the marking guides, and any adjustments or changes made during the marking process.
- To comment on how candidates actually answered the question.

Analysis of Questions

Paper 1 Question 1

Part (a)

Generally, this was answered satisfactorily. Comments:

- Many candidates did not state the obvious source of profit – release of planned profit margins.
- A large number of students only mentioning mortality, and forgetting morbidity.
- Very few students mentioned tax or loss recognition.
- A number of students were penalised for mentioning new business strain which does not occur under MOS Policy Liabilities.
- A number of students were penalised for making a comparison to pricing assumptions, rather than BEA
- Many students covered expenses, but not commission – although we did not penalise this omission.
- Very few students mentioned comparison of actual to expected experience based on the previous best estimate assumptions.
- A number of students put down everything they could think of with regard to sources of profit, without having regard to the question. This lead them to raise items that were not appropriate for the question asked – ie the calculation of policy liabilities.

Part (b)

Again, this was generally answered satisfactorily. Comments:

- Most students covered data analysis.
- Many students mentioned methods and models, although they did not give particular ways to review them. Very few made reference to AS 1.02.
- Assumptions was well covered, the main problem was where this item were missed altogether.
- Many students realised that the results should be checked, although many found it difficult to express sufficiently how they would do this.
- Analysis of Profit was well covered, although few students explained that the profit had to be consistent with the experience.

Conclusion: This question was KU and SJ, and designed to be a good starting question. The marks reflect this intent.

Paper 1 Question 2

Some candidates did not answer the part (a) of the question as requested. They should have discussed general issues with modelling and then address the particular issues with each product group.

Most candidates were able to discuss the general issues. However, it was disappointing to see that many candidates had shown a distinct lack of product knowledge. The examiner was looking for the key features and profit drivers for each product. These elements require special attention in setting up the model points. As an example, for annuities, the key features were Life or Term Certain annuities, guaranteed period, residual amounts and single/joint life and the profit driver was the payment amount per month or quarter.

Part (b) was well answered with many candidates scoring close to full marks.

The layout of candidates' answers could be improved by the use of subheadings and bullet points. Illegible handwriting was also a problem in some cases. We also undertook great care in "searching" candidates' answers for various points.

Conclusion: The marks for part (a) were particularly disappointing given the SJ rating of the question. It is also disappointing that candidates did not answer questions in the way that they were asked.

Paper 1 Question 3

Part (1) of the question was mostly book-work and it is disappointing that only 18 out of the 81 candidates got more than 5.5 out of 8.

Part (2) was poorly answered by the candidates. A number of candidates assumed that when capital gains are realised, the office could declare a higher crediting rate. This implicitly assumes that the realised gains would be invested in less volatile assets.

Conclusion: This question was poorly answered.

Paper 1 Question 4

Generally well answered. However many students focussed on detailed comments concerning the solvency standard and inadmissible assets.

The students that did poorly failed to mention that APRA or the Board needed to be notified of the breach.



Students rarely mentioned the following comments in part (b)

- obtaining advice from another Actuary or APRA
- review the investment guidelines (ie set up procedures to reduce risk of similar incident)
- need to determine at what point APRA should be notified

In part (a) students generally mentioned adherence to solvency is compulsory and that APRA has the power to give directions, "show cause" or apply for judicial manager.

In part (b) students generally understood that some investigation should be undertaken first, followed by notifying the board with some proposed solutions, followed by notifying APRA.

Conclusion: This question was the first CJ on the paper, and was generally well answered.

Paper 1 Question 5

Part (b) was misinterpreted by many students who listed where to find experience investigations (e.g. FCR) instead of listing different investigations. However, many students who made this mistake showed good exam technique and listed some of the investigations as examples of what an FCR may contain. This allowed these students to score some marks even though they had misinterpreted the question.

Many students managed to put several relevant points forward without mentioning the most important points. In particular, in part (a) less than 50% of students mentioned the importance of examining both the incidence and duration of claims, while in part (c) even fewer students questioned whether the increase in expenses was an increase in total costs or an increase in unit costs.

Although the question was not ambiguous, several students managed to misread the question and made mistakes like talking about factors specific to income protection in part (b) when the question specifically referred to "a broad range of products".

Although this question produced a broad range of marks and the better answers were easily identifiable, we suggest care be taken when using this question to assess borderline pass or fail candidates. This is because some students who displayed good answers to part (a), the "complex judgment" part of the question, missed "easier" marks elsewhere. In contrast, some students who struggled in part (a) picked up these "easier" marks and may have scored higher for the question overall. Examples of these "easier" marks that were missed by some students are:

- The misunderstanding in part (b) regarding listing types of investigations Vs where to find these investigations; and

- The fact that many students received less than full marks in part (c) by merely listing, and not explaining, the uses of expense analyses.

Conclusion: This question was well answered, despite the misinterpretation of some parts. Students need to be aware of the need to read questions carefully.

Paper 1 Question 6

The question was generally poorly answered. Despite having PR35 in the exam with them, many students still made references to items which aren't included in them, such as policy numbers.

In Part a) many students failed to discuss why suggested KPI's were sensible and their short comings – therefore missing out on marks. The ROE KPI was not well answered.

Part b) should have been fairly straight forward but many students didn't provide enough points obvious disadvantages related to cost of capital and lack of pricing comparison were not well provided.

Similarly in Part c) many responses provided did not link back to b) properly. The question was specifically related to PR35 and it was quite apparent the many students did not have an in depth knowledge PR35 even though in practice it is an important return.

Conclusion: A poorly answered question.

Paper 2 Question 1

There was really nothing in this question which was specifically life insurance - it could be asked as a relatively straightforward investment subject question.

The most common simpler errors were:

- interpreting the price index quoted as a CPI index;
- inability to recognise how to calculate the gross actual return from the information given (many candidates introduced an assumed rate of tax);
- comparing net and gross returns without comment;
- not knowing what to do with the various tax amounts in calculating the return; and
- quite a few errors in arithmetic!

Candidates who failed also generally did not distinguish between the returns from dividends and income versus capital growth, and the standard of overall comment was very weak.

There were no outstanding answers, although some were good.



Conclusion: This was intended to be a fairly simple question, and so the poor results are a surprise. Almost half of the candidates are either Weak or Showed Little Knowledge. The fairly basic errors identified by the markers are concerning.

Paper 2 Question 2

Part (a)

The majority of students answered this part of the question well. It was, however, disappointing to see the number of students that answered the question without considering the type of product that was to be developed. Despite the question referring to a single premium super unit-linked superannuation product, a number of students discussed issues such as premium rates, reinsurance arrangements and underwriting standards.

Part (b)

As for part (a), most students answered this question well, however many students tended to list all possible assumptions, without considering the type of product being developed. For example, many students mentioned mortality/morbidity (without clarification), premium dormancy and mode of payment. It was also concerning to see the number of students that mentioned both lapse and surrender rates in their solutions, and that many did not understand the relationship between the unit growth rate and the investment earning rate. Many students listed commission and fees/charges as assumptions, rather than known components of the product design. Finally, most students neglected to mention the risk discount rate as a specific separate assumption.

Part (c)

This part of the question was not as well answered as the other sections. A large proportion of the students failed to specifically address the question posed as to the relevance of the existing experience. Most students failed to provide sufficient detail as to how the various assumptions would be derived and the relevance of company and/or industry experience. Whilst most students made mention of industry experience, many did not specify that it was necessary to isolate the results for similar products in terms of features and target market.

In discussing the mortality requirement, most did not seem to appreciate that a non-underwritten SPUL product would not experience the mortality of the standard tables published by the IAA.

Part (d)

Generally quite well answered. A number of students expressed the ratios as a percentage of PV(premiums) without recognising that it was a single premium product. Some students failed to mention the appropriate discount rate to be used for

each measure. A large number of students failed to consider how appropriate each of the measures was for this particular product.

Conclusion: Another fairly straightforward question, in this case it was well answered.

Paper 2 Question 3

Many students found it quite difficult to set out suitable formulas in the first part of this question. Only a handful took into account the features of the investment-linked product. Many candidates ignored the information that the EV was calculated using MOS assumptions. None were able to obtain a formula for capital release involving both the interest rate used for the MOS valuation and the risk discount rate for the EV. The instruction to ignore net worth components of the EV proved to be a distraction to some candidates.

The formula for the movement in EV over the year often lacked components relating to new business and the expected profit and capital release. Nevertheless in the second part of the question the same students were usually able to comment accurately on the effect these components had on the difference between change in EV and the MOS profit.

The level of performance in the second part of the question was usually better than the first. However several candidates revealed shallow product knowledge by using surrender values and/or mortality as examples of important differences.

A general comment is that candidates displayed far better verbal skills than algebraic skills when answering this question.

Conclusion: This was expected to be a more complex question, so the result achieved is pleasing.

Paper 2 Question 4

Part a) asked for the investigations you would carry out in relation to a small life company which cannot comply with the solvency standard.

Many students approached this as an investigation as to how the company had become insolvent rather than the actions required for the company as an on-going concern.

It is quite possible for a profitable life office to become insolvent if they don't have access to sufficient capital. In this case the life office has a market value and could be sold as an on-going concern. Most students neglected to consider whether the embedded value is positive or not.



Many students neglected to consider the projected short-term cashflows to determine whether there are immediate liquidity concerns. Part a) was generally poorly answered

Part b) asked for actions to consider regarding the companies future.

Most students picked up the standard 4 options ie. transfer/sale, continue in business with possible changes, wind-up, other reasonable actions.

Many neglected to mention the obvious “seek alternative sources of capital” eg. subordinated loans. However the question wording may have contributed to this omission by referring to “no direct access to additional capital”.

Part b) was generally answered reasonably

Part c) asked for the changes you would make to policies.

Most students picked up the first 3 points but missed a comment on considering equity and reasonable expectations. Part c) was generally answered well

Conclusion: Results are pleasing

Paper 2 Question 5

- On the whole the question was poorly answered. Few students answered well enough to pass the question and most achieved a “D” grade.

Part (a)

Most students calculated a loss ratio allowing for earned premium to be in the denominator and changes in CICP in the numerator. Few students added anything more meaningful beyond one type of loss ratio. Only a handful of students performed an analysis of the run-off of the CICP.

Several students went to some effort to produce analyses that did not analyse the experience of the portfolio. Such analyses included:

- Growth of business (claims and premiums);
- UPR : Revenue Premium;
- CICP : Claim Payments; and
- Partial loss ratios (such as claim payments only to premiums).

Students were not rewarded for such analyses, as they did not answer the question.

Part (b)

This part was poorly answered.

Only slightly more than half of students managed to say something meaningful about experience.

Few students managed to say anything meaningful about the reserves, although this is not surprising given that most students failed to perform an analysis that could lead to any points being picked up. Only 5 students picked up that the IBNR had not been allowed for.

Part (c)

This part was also poorly answered. On average students could pick up only one genuine shortcoming with the analysis, but few would then explain what the impact on results may be.

Other shortcomings that were awarded marks included:

- The analysis not being split by rating variables. The impact being that there could be large unders and overs that are being masked by a high-level analysis.
- Claim numbers are not being analysed. The impact being that a few large claims could distort the results.

Conclusion: This question was not directly covered by the course but is based on course concepts. It was the worst answered of any questions. It is possible that some students were misled by part (a) which only asked about “the experience of the portfolio”, rather than specifying the claims experience, although claims experience was referred to in the introduction.

Paper 2 Question 6

A To achieve an ‘A’ mark students generally had to show a good understanding of the impact of all 3 of the changes and provide at least 3 ways to reduce the impact.

B To achieve a ‘B’ students generally had to show a good understanding of the impact of at least 2 of the 3 changes and provide at least 2 ways to reduce the impact. These students showed a solid grasp of the concepts and practicalities involved, but missed a couple of the peripheral points.

C These students tended to either provide a poor explanation of the impact of the 3 changes or provided few ways to mitigate the impact. Either way they tended to miss a number of core points.

D These students tended to miss a significant number of key points.



(a)(i) Nearly all students picked up that the removal of the 3 month exclusion would increase anti selection, but about half of the students failed to point out that this would increase claims. (Many may have assumed that the marker would make this connection).

(a)(ii) Most students picked out that auto blood test removal would increase anti selection and most of these students noted that the removal would weaken the insurers medical underwriting abilities.

(a)(iii) Most students failed to actually state the obvious - that this change, in isolation, would not have an impact. These students tended not to make any statement at all about the impact of the change although some did pick up that there would be pressure to accept substandard lives as standard. Whilst this could be seen as implying that the change in isolation would have no effect only 1 mark in total was given for this.

No one picked up the bonus mark.

A few students picked up that anti selection would be increased if this co. is the only one making the changes.

(a) Marks were reasonably easy to come by in this section and most students came up with at least 2 or 3 reasonable suggestions.

(ii) $\frac{1}{2}$ mark for each reason

(b) Improved underwriting and other suggested answers generally received 2 marks provided they were adequately fleshed out.

A reduced sum insured on early claims was generally awarded 2 marks.

Other suggestions given 1 mark were:

- Increasing prem rates
- Reinsurance
- Age limits
- Exclusions

Conclusion: This question was well answered, particularly given that it was the last question on the paper.

Subject 3: General Insurance

Chief Examiner: Adam Driussi

Summary

64 Candidates enrolled for the 2001 exam. Of these, 5 did not present at the exam.

It is proposed that 20 Candidates be awarded a pass, which implies a pass rate of 34%. This compares with a pass rate of 31% for the 2000 exam.

In summary:

	N° candidates
Originally enrolled	64
Absent from the exam	5
Sat the exam	59
Passed	20
Failed	39

The analysis by examination centre is as follows:

Centre	Presented	Passed	Pass Rate
Sydney	38	13	34%
Melbourne	8	1	13%
Other	13	6	46%
Total	59	20	34%

Examiners

Examiners for this year were:

Chief Examiner	Adam Driussi
Assistant Examiner	Stephen Wilson
Assistant Examiner	Geoff Trahair

Scrutineers and Marking

Each paper was sat and reviewed by two scrutineers.

For each question, two markers independently marked each candidate's answer. The markers were asked to recommend cut-off marks for each of the grades Strong Pass, Pass, Slightly Below Standard and Weak. The remainder of the candidates were graded Showed Little Knowledge.



Markers were also asked to comment on the questions, and in particular whether the questions were misinterpreted or ambiguous.

The candidates' marks and the markers' recommended cut-offs were entered into an Excel spreadsheet. The spreadsheet performed the following tasks:

- ranked and graded candidates on each marker's assessment;
- measured the correlation between the markers on mark, rank and grade;
- identified candidates where the markers' assessment varied by more than one grade, by more than 20% of the candidates in terms of rank and by more than one standard deviation in terms of mark (after adjustment for mean for all candidates of each marker); and
- produced scaled marks which adjusted raw marks to produce a more even distribution of marks for each question (an attempt to allow for the difficulty of the question).

Overall performance

Full details of the exam questions and candidates' performance is contained in Analysis of Questions.

This year's paper was designed to be easier than those of previous years. Feedback from scrutineers, markers and candidates would appear to indicate that this was the case. This was also supported by the distribution of marks which showed that whilst the average total marks was higher the relative distribution of marks was very similar to last year.

Despite the feedback of scrutineers, many candidates commented that they found paper one too long. Perhaps in hindsight this was a result of the paper including multiple questions involving calculations. Whereas candidates under exam conditions tend to check calculations multiple times, scrutineers probably tend not to worry. In addition, many candidates seemed to over-complicate many calculations, hence adding to their time pressures.

Despite the exam being considered relatively 'easy', the performance of candidates was disappointing. Whilst the average mark was higher than last year this was purely reflective of the ease of questions rather than superior performance.

There were several areas of major concern to the examiners. These can be summarised as follows:

Failure to answer the question. Whether it is due to poor exam technique or a poor understanding of the course material, the most common reason for candidates failing individual questions was failing to answer the question. Generally when information is given in questions it is given for a reason – candidates seem to find enough ways of failing questions without examiners needing to include useless information to trick

them. If the candidate is asked to respond to the concerns of a CFO the concerns of the CFO should be addressed. I STRONGLY recommend that all candidates who failed and all future General Insurance candidates read the full details of performance (and why people failed) Analysis of Questions Section .

An “Open Book Exam Mentality”. Related to the point above is the influence that the open book exam format has on the way candidates both prepare for an exam and answer questions during an exam. It would appear that many candidates concentrate more on preparing detailed filing systems of course notes to refer to in an exam rather than in spending time UNDERSTANDING general insurance concepts. At the time of assessing fringe candidates it is the candidates who have demonstrated an understanding of general insurance who will pass, as opposed to those who were able to list various points from the textbook. This is most obvious in questions where candidates were asked to list the additional information they would request or questions they would ask to answer a question. Whilst some candidates may have had the key points in their answer, these points were often part of a much longer list which included points which were either fundamentally wrong or clearly irrelevant to the question in point.

The inability of candidates to demonstrate a broad understanding of general insurance. This concern comes through in two main ways. Firstly, many candidates simply performed too inconsistently throughout the exam to convince the examiners they understood the whole course. Some candidates performed very well in one or two questions only to perform equally poorly on several others. Secondly, candidates in general had a disturbing tendency of ‘pigeon-holing’ questions to be from one specific section of the course and then ignoring all other sections. An example of this is Paper 1, Question 4 where candidates were presented with an existing pricing structure and GLM model output. The majority of candidates seemed to categorise this as a GLM question and then ignore anything else to do with pricing in the course.

A poor technical understanding of many concepts and methods. Many students demonstrated either a poor technical grasp of concepts (in particular Paper 1, Questions 1 and 4) or a poor application of methods. For example - it is disturbing how few candidates select a tail assumption in an Incurred Claim Development triangle.

How few candidates referred to the relevant accounting standards or actuarial standards when required. Relative to other practice areas, there are very few relevant standards that candidates need to refer to in general insurance. The fact that few students did refer to them (when two parts of one question were directly trying to test that) was very disturbing.

Analysis of Questions

Paper 1 Question 1

Question 1 was a moderately difficult question asking candidates to calculate the underwriting margin required to generate a certain return on capital target for a company (given certain other assumptions).

The question was not particularly well answered and only one candidate used the approach suggested in the model solutions. Most candidates tried to use actual figures from the accounts provided in the background to the paper. Students were not penalised for using this approach.

Unfortunately many candidates simply did not answer the question. The question clearly asked for an underwriting ratio yet many candidates responded with a target COR, target loss ratio or target profit margin. A number of candidates gave answers that should have looked obviously wrong but didn't acknowledge that their results did not look reasonable.

A disturbing number of candidates either did not attempt the question or had very little idea of how to attempt it.

Paper 1 Question 2

Question 2 involved undertaking a functional expense allocation and then using the re-allocated expenses to estimate expenses per policy and per claim. The question was generally straightforward although some judgement was required in part (d). The question proved to be long in exam conditions where candidates either spent too long checking their calculations or took the long route to answering the question.

The question was answered moderately well by most candidates. Most students came up with some reasonable re-allocation of expenses although few gave consideration to the number of policies invited to renew. Almost no one allowed for commission and the marking guide was altered so that students were not penalised for this.

Part (d) was very poorly answered. Very few candidates showed any understanding of how expenses per policy would change for a half-yearly policy with some students even estimating that expenses per policy would increase. The very few students who seemed to understand that most expenses would be halved but some expenses would remain at their full level were awarded high marks, despite the fact they did no calculations.

Paper 1 Question 3

Question 3 was a practical question projecting future claim frequency and average claim size by claims type and then estimating a sound premium rate.



Most candidates were able to reasonably attempt parts (a) to (c) although the general standard of answers was still only mediocre. Part (d) was very poorly answered with few candidates showing any understanding that the impact of the price increase on the portfolio COR is delayed until the premium is earned.

Paper 1 Question 4

Question 4 was a pricing question involving the selection of and practical implementation of a GLM model. The question was moderately difficult, although there were certainly some easy marks to be gained.

Unfortunately the overall standard of answers was very poor. Many students demonstrated very little understanding of even the basics of GLMs. Considering the amount of course material devoted to this topic this was most disappointing. Many other candidates seemed to struggle with the wider pricing implications of the proposed approach. Many candidates focussed narrowly on the GLM model and assumed that the primary reason management might not adopt the model results in practice was simply due to not understanding the GLM model! Many others failed to recognise that there are actions an insurer can take to improve profitability without having to increase rates such as reduce benefits, increase the excess level or be stricter on claims management.

The question proved to be an excellent discriminator and a good guide to overall performance in the exam. Only 2 candidates who scored a D or E on this question passed the overall exam, whilst only 2 candidates who achieved an A or a B on the question failed.

Paper 1 Question 5

Question 5 was a straightforward question on investment policy, with part (a) being pure bookwork.

Overall, the standard of answers for this question was very disappointing. Many students simply listed points in part (a) with no discussion of why these points were relevant (despite the question specifically asking for a discussion). Many candidates also listed numerous fringe points without including the most important influences. Despite these problems, most students were able to secure a reasonable amount of marks from what I consider the easiest question on either paper.

Part (b) was also answered below the standard that might be expected. Astoundingly few candidates made any reference to the potential differences between DUI and the competitor, despite the fact that this was the key feature of the question (and indeed the whole reason why the CFO was requesting the report in the first place). Most strategies suggested were broadly reasonable and providing they were supported with sound logic were awarded reasonable marks.



Paper 1 Question 6

Question 6 was a moderately difficult question requiring candidates to analyse a proposed quota share contract for an inwards reinsurer. Part (a) was bookwork, part (b) required a basic application of judgement whilst part (c) required more detailed application of judgement.

Parts (a) and (b) were reasonably answered overall. Most candidates understood the concept of exchange commission and were able to recognise that the proposed contract did not look attractive in isolation. Once again, however, candidates showed a narrow focus in answering part (b). Few commented on the fact that depending on what other business may come from the relationship with the ‘major player’ in the industry it may be worth writing this business at a loss.

In projecting ultimate loss experience very few candidates selected a tail assumption despite the fact that the losses were clearly developing strongly.

Part (c) proved to be a good discriminator. Better candidates were able to suggest sensible information and further analysis whilst some candidates made largely generic statements. Clearly, however, some candidates were running out of time by this stage of the exam.

Paper 2 Question 1

Question 1 was largely a bookwork question on the nature of Householders, Public Liability and Mortgage Insurance.

As one would expect, the question was generally well answered although many candidates had trouble identifying the distinguishing features for reserving and unearned premium purposes.

Paper 2 Question 2

Question 2 was a relatively straight forward question on prudential regulation. Candidates were asked a series of questions about the role of APRA and current inadequacies of the Insurance Act. Part (c) required students to use judgement in ranking 6 different classes of business according to riskiness for the purposes of outstanding claims reserving.

Overall the question was poorly answered. In part (a) many students failed to mention APRA’s role in protecting policyholders. In part (c) many students had Facultative Fire in the wrong place by confusing uncertainty in premium rating with uncertainty in setting outstanding claims reserves.

Paper 2 Question 3

Question 3 required candidates to investigate the claims experience of a public liability portfolio and comment on assumptions made by an actuarial analyst. Candidates were then asked to comment on additional information they would seek and analysis they would undertake before finalising results.

The question was fairly straight forward with some judgement required and was answered reasonably well overall.

Paper 2 Question 4

Question 3 should have been another straight forward question on outstanding claims reserving and provisioning. Parts (a) to (c) required the student to identify the relevant reserving method for an excess liability portfolio, the assumptions required in this method and the possible ways of determining these assumptions. Most candidates identified the Bornhuetter-Ferguson method as the most appropriate method and understood the assumptions required. Not all candidates suggested reasonable methods of determining these assumptions.

Parts (d) and (e) required candidates to comment on the investigations required before finalising an outstanding claims provision and to comment on remarks made by the US parent to reserve to the global reserving policy. These parts of the question were very poorly answered. Disturbingly few candidates made reference to the actuary's obligations under AASB1023 and PS300. This understanding should surely be fundamental to anyone wishing to practice as an actuary in general insurance. There will be many occasions in real life where the actuary will be placed under pressure to alter their results and it is critical that actuaries fully understand their professional obligations in such situations.

Part (f) required the candidate to comment on the observation that case estimates were sufficient for the purposes of reserving for a claims made portfolio. Once again, the question was poorly answered with many candidates clearly confused by the distinction between IBNR and IBNER. Claims made continues to be poorly understood by candidates in general.

Paper 2 Question 5

Question 5 was a reasonably difficult question on a public sector workers compensation scheme suffering from increasing common law utilisation, premium leakage and cross subsidies in pricing.

Part (a) required candidates to identify six Key Performance Indicators that could be used to monitor the scheme's claim and financial performance. This question was poorly answered with many candidates merely describing KPI's irrelevant to the problems being monitored (and irrelevant to workers compensation). Few candidates

identified the need to have KPIs that could be monitored on a monthly basis (due to the urgent issues needing addressing in the scheme).

Part (b) required candidates to suggest possible scheme reforms to improve the financial position of the scheme. This part of the question was reasonably attempted overall.

Parts (c) and (d) asked candidates to suggest a method for reducing the cross subsidies in the scheme and the problems with phasing in any changes over a three year period. Once again, these sections were very poorly answered. Few candidates suggested a credibility style approach and most struggled with the problems associated with a three year phase in.

Part (e) required candidates to describe excess of loss and aggregate excess of loss insurance, how they are rated and the likely data requirements for rating. Whilst most candidates understood excess of loss insurance, many struggled with describing aggregate excess of loss. Many candidates also struggled to describe how these covers are rated.

Subject 4: Superannuation and Other Employee Benefits

Chief Examiner: Darren Wickham

Summary

23 candidates presented themselves for examination. It is recommended that the pass mark be set at 203 (scaled) out of 400 with the result that 8 candidates pass.

In summary:

	N° candidates
Originally enrolled	23
Absent from the exam	0
Sat the exam	23
Passed	8
Failed	15

There were no candidates that failed to sit the exam.

The distribution by centre is:

	Sat	Passed
Sydney	11	5
Melbourne	5	2
Brisbane	2	1
Hong Kong	4	0
Malaysia	1	0
	23	8

Examiners

The three examiners were:

Chief Examiner:	Darren Wickham
Senior Assistant Examiner:	Jason Marler
Assistant Examiner:	David Shade



Scrutineers and Marking

Two scrutineers were appointed this year. Comments from the scrutineers were taken into account when finalising the questions, model solutions/ marking guides.

20 markers were recruited. The markers came from Sydney, Melbourne Brisbane and Tokyo and were recruited because they were known to be working in the superannuation industry. Many have previous exam marking experience but a small number didn't. Two markers were assigned to each question. Some markers were responsible for one question and others, due to the numbers involved, were responsible for two.

As in past years there was a high degree of consistency between most of the markers. Most sets managed to agree both gradings and marks. Consequently the rankings were also broadly consistent.

Analysis of Questions

Paper 1 Question 1

This question was a straightforward question in relation to splitting superannuation upon divorce and in particular, how the amount to be split should be determined.

- Overall, disappointing in the standards of response, given the straightforward nature of the question.
- It appeared from the answers given that few students had read the prescribed reading for the question.
- Many candidates did not discuss each method sufficiently.
- Some placed a greater emphasis on accumulation methods rather than defined benefit, when it should have been clear that the situation in a defined benefit plan was more complex.
- There was evidence of weaker students not reading the question properly. Topics were discussed which weren't asked for in the question, and a number of candidates gave Australia specific detail in their answer.
- A lot of the responses were not set out very well, making them difficult to mark. Also many students wasted time in the exam writing out the question again in their answer.

Paper 1 Question 2

This question dealt with the issue of remuneration and placing of value on the superannuation component of a salary package where defined benefits are provided.

Overall, the question was very poorly answered. This was disappointing, as we feel that this was a clear and reasonably straightforward question testing only fairly basic level of knowledge about surcharge plus, in the case of part (b), some judgment / common sense.

Part (b) in particular showed that students on the whole do not understand the concepts involved. For example, a number of students suggested showing the member's total vested benefit or actuarial reserve (both clearly inappropriate to the question), while another used member contributions as an example of a suitable measure of employer cost!

Paper 1 Question 3

This question examined a fundamental part of this course – funding methods. Part a) asked the students to explain these methods, parts b) and c) asked for a more complex application of them.

Overall, the question was well done with just over half passing. Most people did well in part a) which was mainly bookwork and worth 8 of the 20 marks.

Parts b) and c) proved to be the differentiator between the candidates with the marks varying quite widely. The candidates who ended up passing were the ones who showed good knowledge with these questions.

Overall, the question was fair as it tested both the individuals knowledge as well as the application of the knowledge.

Paper 1 Question 4

This question dealt with the topic of Long Service Leave valuations that are now part of the course. For the most part, this question tested straightforward judgement and some knowledge and understanding.

- (a) This question was well done as expected as it is basically bookwork.
- (b) While some students did well on this questions others didn't understand what was required. Some students made a statement that the liability could reduce if an actuary involved but didn't understand why. Others wrote very general statements on the advantage of using an actuary.
- (c) This question was a relatively easy 5 marks, but only one student received full marks which was probably down to exam technique. Many students wrote detailed explanations on each assumption they would discuss with the company but there was only 1 mark available for each assumption/issue mentioned.



- (d) This question was generally not very well done, with a bit of thinking required beyond bookwork. Unfortunately some students missed out on marks because it was difficult to understand the point they were trying to get across.
- (e) This part was well done, most students could do the calculation and most noted at least one of the qualifications required.

Paper 1 Question 5

This question dealt with benefit design issues in the context of the historical development of superannuation in Australia.

Overall the question was quite poorly answered. Most people missed easy marks as they didn't read the question properly. The question asked for comments in four areas of benefit design (history, appropriateness, recommended design and practical issues). Many people only covered two or three of the areas in their answers, with those who did cover the four areas only giving brief answers on some parts.

Overall, most candidates failed to display a proper understanding of the issues.

Paper 1 Question 6

This question dealt with the practical issues involved with the implementation of "Choice of Funds". It required complex judgement and an understanding of the concept and required the student to consider the consequences of applying it.

Many students missed that the question related to the "implementation" of fund choice and therefore provided pros and cons of whether to do it or not rather than the issues to consider after the decision had been made to proceed.

Students also seemed to muddle the issues that related to the Trustee and those that related to the employer. A particular example of this was that often students had the Trustee helping "advertise" the benefits of choice and other funds rather than considering how to make their fund more competitive.

Overall, it was a fairly simple straightforward question that was poorly answered due to misreading.

Paper 1 Question 7

This question focussed on the issues relating to the operation of a master trust – an area of increasing interest for actuaries involved in superannuation. The question dealt with issues of profitability and fee structure.

Overall this question was poorly done. Being the last question on the paper students probably ran out of time

- Some confusion about actual revenue for 2000. Some students recalculated using total figures even though the amount was given. This meant that a student did not allow for new business coming in over the year and resulted in a profit being shown.
- Few students assumed that new business come in at mid year on average. Most gave it full year weighting.
- Few students considered amortizing the new business strain over a period of time when commenting on profitability.
- One student calculated a profit of >\$100M and didn't comment that it was obviously incorrect.
- In part (a) most students calculated that a loss was made, but few discussed the reasons for the loss.
- In part (b) some students commented on how the budgeted figures were derived rather than projecting the revenue.

Paper 2 Question 1

This question tested students knowledge and judgement in relation to Funding and Solvency Certificates.

Part a) of the question was generally answered reasonably well. The better answers identified one of the reasons for the differences in notifiable events, and gave an appropriate list of notifiable events for the 2 funds.

However, only a very small number of candidates were able to identify more than one valid reason for the differences in notifiable events - most recognised the relative solvency positions, but not the length of the certificate or the contribution levels. The weaker answers did not adequately stress the need for more stringent notifiable events in the FSC of the weaker fund.

Only a handful of candidates realised that the MRB in part b) was still in defined benefit form. Most assumed that the comment "the defined benefits rarely apply (ie the fund is largely accumulation in nature)" also referred to the MRB.

In this regard it was felt that the question was slightly misleading and could have been worded better - it was not unreasonable for a candidate to misunderstand the question in the heat of an exam. As a result, it was decided to give some credit to candidates who identified that the difference between the actual earning rate and the credited rate is a significant issue in a fund that is predominantly accumulation in nature.

Paper 2 Question 2

This question related to the various investment alternatives available to the trustee of a superannuation fund. The question clearly stated that the investment strategy had been determined (70% growth assets), meaning that students could concentrate on comparing different investment styles.

Overall, this question was answered poorly. Albeit that it has an investment focus, the issue of investment style should be fundamental to the running of a superannuation fund. Hence it was disappointing that many fairly basic concepts were missed. Very few student responses gave adequate scope in the consideration of the issues. Students could have secured a very easy pass in this question by consideration of the following main points:

- pooled vs discrete portfolio
- diversified vs specialist managers
- passive vs active managers
- styles of active management
- number of managers
- tactical asset allocation
- reporting and monitoring

Most students identified that investment could be made directly by the trustee. However, very few were able to accurately describe this concept or its consequences (eg. tax and accounting requirements).

Most students identified the possible use of pooled portfolios.

Most students gave a reasonable discussion of specialist asset class managers. Some students incorrectly indicated specialist managers to be the alternative to pooled investment. No student referred specifically to diversified managers, although many students substituted balanced managers. This led some students away from the style focus of the question as they then went on to discuss other diversified products, such as capital stable and growth funds.

Only one or two students discussed the use of passive management. Similarly, only one or two students discussed active investment styles.

A number of students identified the possible use of tactical asset allocation and provided a view on the number of managers to be used.

The better responses referred to the need for ongoing reporting and monitoring.

No student discussed possible currency issues.

Paper 2 Question 3

This question required students to recommend a crediting rate for a fund with a potential deficit.

Most candidates were able to successfully calculate the fund earning rate and notional rate. Some candidates adopted the weighted manager return method to approximate the fund earning rate (only part marks were awarded in this case).

Most candidates were able to successfully recognise that, if the fund earning rate or notional rate was declared, the fund would be in an unsatisfactory financial position. However, many candidates only commented on the unsatisfactory financial position and failed to quantify the resulting deficit or funded status position. Very few candidates commented on the reasons for the deficiency if the notional rate/earning rate was declared.

Most candidates identified the notional rate and fund earning rate as crediting rate options but completely ruled them out for solvency reasons. Nearly all candidates did not recognise that these were valid recommendations provided the company paid additional contributions into the fund.

Most candidates were able to calculate the crediting rate cross-over point (vested benefits = assets), and was recommended as the crediting rate in most cases for solely solvency reasons. In these cases, only a few candidates were able to justify this crediting rate (subject to company being unwilling to pay additional contributions) and none identified/addressed the any of the related member expectation issues (actually, no candidate recognised member expectations as an issue at all!).

Most candidates were able to successfully draft a logical, basic recommendation letter. However, some candidates forgot to include a recommendation (which was a key component of this question). In these cases, only part marks were awarded for style/logic.

Overall, this relatively straight-forward question was considered to be poorly answered, with no candidate displaying any real strong grasp of the issues.

Whilst the majority of students passed there was no stand out answers.

Paper 2 Question 4

This question dealt with issues in relation to group life insurance and uses the context of the failure of an insurer to apply judgement.

Many students missed the key action items required for part (a) and were too concerned about other peripheral matters.

Overall, the question was poorly answered, with many students simply writing lists of features rather than distinguishing criteria.



Part (a) was more discriminating than part (b) - with most students able to make a reasonable attempt at part (b) which was just bookwork.

Paper 2 Question 5

This question examined students understanding of executive share options which are now a part of the course.

This question was answered particularly poorly, with a lot of students making sweeping comments that are not necessarily true. Some students confused share and option schemes throughout their answer.

As a general note, many parts of this question required students to step back from their notes and think about what was being asked and the logic behind the question, and to give a reasoned answer. Many students desperately copied material from various parts of the course notes that did not sufficiently answer the questions being asked.

(a) Some students did not make a good link between the executives desire to increase profitability (and the share price) specifically with shareholder interests. Generally a lot of students didn't really answer the question.

(b) A lot of students talked about the appropriate number of options (which was not even asked). Eligibility was addressed particularly poorly, with not too many people being specific about which employees would be eligible. The performance hurdle was another major failing for some people, who showed little knowledge of what one was, and how it might be measured. Not many people specifically addressed measurement against their hurdle properly. People confused vesting periods with the term of the option.

Generally, people didn't bother, or had trouble explaining their choices in the various parts to this question.

(c) This question was not a very good discriminator. Many people just copied out notes on simulation, hence many answers were identical. Again, students that better explained in a practical sense how they would go about the exact task at hand scored higher marks.

(d) This was a reasonably difficult question, and clearly the most poorly answered part of this question. Not a single student gave an explanation that would gain full marks. A lot of answers showed very little knowledge, and there were a number of non-attempts.

(e) Again, the markers expected this part to be answered better than it was. Few students focussed on the scheme being forward-looking and giving incentive for performance from the CURRENT position. A lot of people focussed on or mentioned the performance hurdle, but this is not even an issue at this point with

the initial options a long way out of the money (the option value is zero regardless of whether you have had a better TSR etc than competitors, since the share price is less than the exercise price!). Better students suggested, quite rightly, that the 50% fall may have been due partly or fully to factors outside the control of the executives, and these students tended to score better.

Paper 2 Question 6

The question dealt with some issues arising from an acquisition situation and tests students understanding of transfer values and how they should be applied.

This question was generally answered poorly, with relatively few good responses to the individual parts. No individual student or students were able to give a good answer to all 3 parts, so there is a large number grouped in the average and slightly below average range.

- (a) Many students did not read the question properly, with a lot of answers not picking up on the fact that in the scenario described the company wanted members to transfer out with an incentive and so the fund would be in surplus after a contribution. Vested benefits, MRBs and other possible "transfer values" should not be considered on this basis. Only around half of the students considered looking at the Trust Deed of the BLUESTAR fund to see what that said under a transfer-out or wind-up situation.

Some students gave little detail on a whole host of suggested methods (including vested benefits, MRBs and others), other students gave a lot of detail but didn't canvass too many viable options.

Generally, the recommended methods were not described well with good supporting reasons.

- (b) This part of the question was very poorly answered. A surprising number of answers did not recognise that the conflict arose because you had to provide advice to 2 separate parties (the Trustee and the Employer-sponsor) who had very different agendas. A lot of students talked about conflicts between 2 Trustees, or conflicts because the actuary had to act in the best interests of members (the BLUESTAR's Trustee responsibility).

It was interesting that most students that did pick up on the conflict correctly decided that they would remain in their capacity to act as actuary to the BLUESTAR fund, rather than advising RINGTEL (the large client who you have advised for many years who took over a small internet services provider who's fund is winding up). In practice, the actuary would most likely provide advice to RINGTEL and find a third party to advise BLUESTAR.

- (c) This was the best answered part of the question. It did not tend to discriminate between average/better than average students all that well, but did expose those that had little knowledge (particularly of solvency, and the different measures).

More than half of the students picked up the fact that they needed to consider MRBs, the Trust Deed, SIS legislation and other provisions where there is a deficit on wind-up. Many students described the "process" of the wind-up, rather than the method/process of selecting a basis for transfer value calculations. Due to the "loose" wording of the question, and the number of students that responded this way, students that did this were not penalised and answers were marked accordingly.

In addition to this question mostly being answered well, there were a significant number of very poor responses.

Paper 2 Question 7

This question looked at the issue of Retirement Incomes Policy and asked the students to suggest methods of improving retirement incomes.

Subject 5: Finance

Chief Examiner: Richard Hitchens

Summary

Overall, 47 candidates sat the finance specialist exam in 2001, compared to 46 in 2000. Of the 47 candidates who sat, 18 are recommended for a pass.

In summary:

	N° candidates
Originally enrolled	61
Absent from the exam	14
Sat the exam	47
Passed	18
Failed	29

The proportion passing by centre is as follows:

Centre	Sat	Passed	Pass rate
Sydney	21	6	29%
Melbourne	19	9	47%
Other	7	3	43%
Grand Total	47	18	38%

Examiners

The two examiners were:

Chief Examiner:	Richard Hitchens
Assistant Examiner:	Julie Osborn
Assistant Examiner:	Kevin Francis
Assistant Examiner:	Darion Pohl

Scrutineers and Marking

The exam papers were scrutinised by two scrutineers.

The papers were marked according to the process laid out in the Examiners Guide, and each question was marked independently by two markers. The differences between the marks and grades allocated by the two markers were examined.

Where the differences were not significant (which was generally the case because the markers discussed their difference directly), the marks were simply averaged, and the grade determined from the average mark. Where the differences were significant, the



papers of the candidate in question were scrutinised and the chief examiner determined the final mark and grade.

Analysis of Questions

Paper 1 Question 1

This was a fairly straightforward portfolio hedging question. Generally the question was well answered, with only a few students having significant difficulty. A reasonable number of students suggested to hedge the portfolio with a portfolio of options over the individual stocks. Whilst in theory possible, in practice stock options are not available over all of the ASX 200 stocks and if so would be extremely costly, so this answer, which is not part of the model solution was only given half marks.

Paper 1 Question 2

This was a straightforward currency swap question that was well handled by the students, which was pleasing as currency swap questions are not always handled that well. Commonly students failed to specify a fixed forward rate in the first part and quote the rate as a premium in the third part.

Paper 1 Question 3

This question examined students' understanding of advantages and disadvantages of a number of different interest rate derivative models. Whilst on the face of it, it appears to be a simple bookwork question, there is actually no one page that gives the answer and hence actually requires a good understanding of why you would use one model in preference to another. A good range of answers, with better students performing well, it had strong discriminatory power.

Paper 1 Question 4

This question required the students to calculate a spot yield curve, the associated forward rates and apply the rates to calculate the premium/discount margin between an in advance and in arrears interest reset swaps. The first couple of parts were well handle as they were fairly straightforward calculations. Many students struggled on the last part, due to lack of understanding in what is in reality not that difficult a question. As such the question resulted in a diverse spread of answers, with better students again performing well. This question had the highest individual CV.

Paper 1 Question 5

This question was an application of the Finite Differences Model. The question proved to be too straightforward. The question was revised as part of the scrutineering process to provide more guidance as to what was required. The revision was clearly not necessary. As a result almost all students passed.

Paper 1 Question 6

This was a real option pricing question, which is an area the students are not that familiar with. It required judgment, general reasoning and thinking skills. The students performed quite poorly as a group exhibiting generally poor logic. The question resulted in a very low pass rate, but still had good discriminatory power.

Paper 2 Question 1

This was a straightforward VAR question that tried to test fundamental understanding. It provided a full range of scores and thus gave reasonable discriminatory ability.

Paper 2 Question 2

This question required students to discuss sources of capital, considerations for raising capital and the relative merits. The question was relatively well handled by the students particularly the alternate convertible note valuation method. The question in the earlier parts did give rise to a lot of answers that were not in the marking guide and were rewarded on merit accordingly. Moderate discriminatory power.

Paper 2 Question 3

This question required students to discuss differences between prices in practice and in theory, highlight whether put-call parity holds and show the arbitrage profit for a given situation. This question was poorly answered by many students, which I thought was a little surprising given I think there have been similar style questions in the past. Should really have been bread and butter stuff. Strong discriminatory power.

Paper 2 Question 4

This question required students to explain how hedging changes with time to maturity and set up a delta, gamma and vega neutral hedge using seemingly limited information. The first part of the question proved more challenging than the second, with only basic discussion of the hedging in a lot of cases. The challenge in the second part was to be able to neutralise for delta after neutralising for gamma and vega by using a formula to back out the deltas for the available hedging tools. This was handled well by the better students.

Paper 2 Question 5

This was a long, calculation intensive leasing question, which was generally well handled by the students. Not one student calculated the rental properly due to weakness of candidature and/or wording of the question. A reasonable spread of marks enabled moderate discriminatory power.



Paper 2 Question 6

This was an intentionally difficult exotic option question. Most students struggled with the option value computation. Particularly alarming was the way almost all students blindly used the effective interest rate provided in the question as if it were continuously compounded. Possibly easy to miss, but questions how much the students are learning from memory versus first principles. Also alarming was the way a meaningful proportion of the student got part (a) correct, but then valued something else in part (b). The question had a slightly ambiguous statement about the treatment of the re-spray and was marked accordingly. Good discriminatory power and a relatively low pass rate.